A TECHNO-ECONOMIC STUDY OF SMALL SCALE ENGINEERING INDUSTRIES OF DISTRICT SAHARANPUR

A THESIS

Submitted for the award
of the degree
of
DOCTOR OF PHILOSOPHY
in
ECONOMICS

By
DINESH KUMAR GOYAL

DEPARTMENT OF HUMANITIES AND SOCIAL SCIENCES
UNIVERSITY OF ROORKEE,
ROORKEE-247672 (INDIA)

1979

University of Roorkee, Roorkee
Certified that the ... Thesis/ Dissertation has been accepted for the award of Degree of Doctor of Philosophy / ~~Master of Engineering~~ ... (Humanities) ... notification No. Ex/..150/E-191 (Exam.) dated 20.1.81

Registrar (Exam.)

Certificate

Certified that the thesis entitled "A TECHNO-ECONOMIC STUDY OF SMALL SCALE ENGINEERING INDUSTRIES OF DISTRICT, SAHARANPUR" which is being submitted by Mr. Dinesh Kumar Goyal for the award of the degree of DOCTOR OF PHILOSOPHY IN ECONOMICS, of the University of Roorkee, Roorkee, is a record of his own work carried out under our supervision and guidance. The matter embodied in this thesis has not been submitted for the award of any other degree of any university.

It is, further, to certify that he has worked for a period of four years to prepare this thesis.

Dr. M. R. KHARE
Professor
Department of Mechanical
and Industrial Engineering
University of Roorkee
Roorkee-247672 (India)

Dr. MANSOOR ALI
Head
Department of Humanities
and Social Sciences
University of Roorkee,
Roorkee-247672 (India)

ACKNOWLEDGEMENT

I feel great pleasure in availing of this opportunity to express my gratitude and indebtedness to my teachers Dr. Mansoor Ali, Head, Department of Humanities and Social Sciences, University of Roorkee, Roorkee and Dr. M.K.Khare, Professor, Department of Mechanical and Industrial Engineering, University of Roorkee, Roorkee, for their inspiring and invaluable guidance during the present course of investigation.

The sustained interest of Dr. R.L.Goyal, Professor and Head, Department of Economics, Meerut University, Meerut and Dr. S.K.Goyal, Head, Department of Economics, J.V.Jain College, Saharanpur, in this study and their advice was a source of great help and encouragement to me.

I am also grateful to Dr. B.N.Mukherjee, Course Director, Council for Social Development, New Delhi for giving me the opportunity for discussing various aspects on Research Methodology during the course of this study.

I further appreciate the cooperation and assistance that I received from the Deputy Director of Industries, Saharanpur and the Development Commissioner (SSI), Ministry of Industry, Government of India, New Delhi. I am also thankful to all the small industrialists who gave me all cooperation in collecting the data and who spared time to discuss their problems.

I know of no adequate way to express my deep sense of gratitude to my parents and brothers and sisters for their cheerful, enthusiastic and dedicated efforts.

I am greatly indebted to my dear friends Dr. Rajeev Jain, Mr. Chandra Mohan and late Apurna Jain, who have been the continuous source of encouragement to me to complete the work at the earliest.

My tender sentiments are always due to my dear friends Er.H.M. Sharma, Er.V.J.B.Singh, Mr. Uday Shanker, Mr. Santosh Kulshrestha, Dr.V.K.Gupta, Mr.D.D.Agarwal, Mr. Ashok Singhal, Mr.Pradeep Mitra, Km. Sharad Agarwal, Km.Sudha Tyagi, Km.Anita Sharma, Km.Sadhna Goel and Mrs. Alka Garg for their affectionate and timely help.

I am thankful to my would be, Miss Anshu, who is the timely source of encouragement for me in completing the thesis.

Last, but not the least, I wish to thank the authorities of Roorkee University, Roorkee for providing me all possible facilities and to the University Grants Commission, New Delhi for awarding a Junior Research Fellowship.

Dinesh Kumar Goyal

DINESH KUMAR GOYAL

Department of Humanities and
Social Sciences,
University of Roorkee,
ROORKEE -247672 (INDIA)

Dated: October 2 ,1979

C O N T E N T S

CHAPTER I

INTRODUCTION

Small scale industries are an integral part of the present industrial structure. They present themselves as an essential and continuing element of the World Economy. The small scale industries play a strategic role in the industrialization of developing countries and assume an important position in the economies of developed countries. Small scale industries provide large scale employment to industrial labour force and account for a substantial number of industrial establishments in all countries. The economic analysis and practical experience in many countries show that the small scale industries have displayed remarkable persistence and have contributed significantly to the economic development of the country.

It would not be an exaggeration to say that economic development was equated with the growth of large and medium scale industries till the efficacy of small scale industries to promote economic development has proved it otherwise in India. The pioneering efforts successfully made by our country to promote small scale industries are acknowledged and other developing countries have evinced keen interest to benefit from our experience in the field. The small scale industries in India account for about 40% of the total combined industrial production. The small scale industries also account for 10% of the total fixed capital for all factories. These are, however, very important, ~~according~~ accounting for 38% of employment and 26% of output of all manufacturing concerns.

This sector also accounted for about 16.2% of the total value of exports from the country in 1975-76. It also contributes to 21% of the value added by manufacture. A small scale industry requires fixed capital investment of only Rs.2,700 per worker as against Rs.20,000 in large scale industries.

Besides, small scale industries may be conceived and developed as an integral part of total industrial structure to achieve not only economic objectives but also certain socio-economic goals of economic planning. The advantages of small scale sector are recognised from time to time and some of them may be summarized as follows :

(i) Creation of employment opportunities at low level of capital employment,

(ii) Introduction of new products,

(iii) Diversification of existing production lines,

(iv) Import substitution,

(v) Facilitate easy mobilization of capital and skill in more equitable distribution of national income,

(vi) Products easily adaptable in local market,

(vii) Assist in developing indigeneous skill and utilising indigeneous resources, which may otherwise remain unutilized,

(viii) Help in decentralisation & diversification of manufacturing activities and in reducing regional imbalances, and

(ix) It preserves the artistic skill of the craftsmen and preserve the 'human touch' in the product.

Growing recognition of these facts has stimulated interest in the problems of developing prosperous small scale industries. However, very few systematic efforts have so far been made to study the problems connected with their promotion and development. The need for systematic studies in the field is being envisazed from a long time. These problems require to be studied both in depth and breadth on the regional and national levels to obtain the correct prospective of the role of small scale industries in promoting economic growth.

The development of small scale industries in district Saharanpur has been found far from being satisfactory despite ~~of~~ the fact that it has good industrial base comprising 1036 small scale and 13 large scale industries. An overview of small scale industries in the area shows a large potential that needs to be exploited properly and efficiently. The intrinsic need for proper policies formulation to this group of industries had been found, which would help in removing the constraints that exist and hampers the efficiency of small scale industries in the area. It was also observed that most of the units in the area are operating below their capacities, while using modern and semi-modern machines and techniques of production and business management. Hence, there arises the need for critical evaluation of present state of affairs of this sector and look into the conditions prevailing in these small scale industries.

Thus, there exists a need of study in this area. The present study has been taken up to evaluate and examine the techno-economic position of small scale engineering industries

of district Saharanpur. The study also takes care of various factors effecting the growth of small scale industries in the area. Besides, the critical appraisal of the trends in production, investment, employment, value added, an effective and meaningful examination of production pattern, financial structure and employment potential has been covered. The study has been designed in such a way that it could add to a conceptional and theoretical frame work of the issue at hand and it could help us to come out with certain policy implications in this connection.

This study will remain important again in two different ways. First it will lead to a better understanding of the variables at work, which influences the growth of small scale sector in the area. Secondly, it will provide in its own humble way, specific guidelines for the development of small scale industries.

The scope of the present study is restricted to those industrial units which fall in the definition of small scale industries. The study is further restricted to the coverage of small scale engineering industries operating in the area. The engineering industry in the area covers a number of hetrogeneous, but closely inter-connected groups of industries.

The primary data was collected with the help of self prepared and pre-tested comprehensive interview schedule by giving a personal visit to every sampled unit. For this purpose the stratified sampling procedure was adopted, by dividing the population in four strata and 20% sample of the total 320 small scale engineering units has been taken for this purpose.

The thesis has been divided in nine Chapters, covering different aspects of the study. After Introduction, the second Chapter covers the small scale industries as a whole defining - the Meaning, importance and rationale of small scale industries, growth pattern and promotional measure taken by Govt. in promoting the small scale industries in India. Besides, the present position of SSI in India has also been covered.

Chapter III deals with the brief review of literature related to small scale industries in India. It covers the modern small scale industry studies, of analytical nature and having bearing with the present study.

Chapter IV provides a brief review of Industrial Economy of the area covering geography, demography and present industrial structure prevailing in the area, with the role of large scale and small scale industries in the industrial economy of the district.

Chapter V deals with the methodology of the study covering problem formulation objectives, scope, sampling plan and basic concepts etc.

Chapter VI discusses the trend in growth of small scale industries in the area. A comparison of growth rates in various groups of studies in the area has also been covered.

Chapter VII discusses the general characteristics of S.S. engineering industries in the area and their investment characteristics, output pattern and employment potential. Beside this, it also analyses the various ratios having bearing with the

study, in assessing the efficiency of U.S. engineering industry.

In Chapter VIII, the major problems faced by the entreprenuers have been discussed.

Chapter IX deals with the recommendations drawn in favour of this study.

CHAPTER II

SMALL SCALE INDUSTRIES IN INDIA

The turn of last two decades have witnessed the multi-dimensional development of small scale industries in India. Continued emphasis has been accorded to the growth of small sector, since the advent of its planning process for providing immediate large scale employment, decentralization of economic power, offering a method of ensuring a more equitable distribution of national income and facilitating an effective mobilisation of resources of a capital and skill, which might otherwise remain unutilised. The rapid growth of modern small scale industry during last 20 years is indeed a success story in industrial India. The increase in volume of production, the wide variety of new products requiring highly developed skilled taken up, the employment opportunities created, the entrepreneural skill development, the increase attained in productivity, the extent of industrial dispersal achieved, the volume of capital mobilised for industrial purpose, the contribution to localise industrial production on risut all these testify to the progress achieved and the vast potentialities that further exist in the small scale sector.

While industrialisation on the whole plays an important role in the development of underdeveloped countries, small scale industries have their unique place in the conspectus of economic development.

In a country like India, where unemployment and underemployment are proliferating economic diseases and where most of the entrepreneurs are capable of making only small investment and where there is a dearth of sophisticated machinery and modern technology, small sector, which is capital-dear and labour-cheap, plays a vital role in the overall economic development of the country. Adaptability of small sector to semi-urban and rural environments where the infrastructure is lacking makes an additional case for this sector to flourish.

2.1 MEANING OF SMALL SCALE INDUSTRIES

Before going in detail it would be worthwhile to know the meaning of the term 'small-scale industry'. It is obvious that the term 'size of industry' means 'size of the unit in the industry', when the term small scale industry is used in the foregoing pages.

In the light of the nature and objective of the study, it is necessary to clarify the meaning of SSI. For measuring the size of the unit many criteria can be put forth like amount of capital investment, the number of persons employed, output (physical quantity), horse power used etc. ~~All~~ These criteria ~~used, while defining the SSI~~ were considered and criticized time to time while defining the SSI due to different reasons. It has been discussed in detail, in the chapter 'literature Survey', of this study (Chapter III).

At a glance the small scale sector covers the industrial

activity ranging from the artisan or traditional small industry to the sophisticated type i.e. modern small industry. In broad way it may be classified in three different categories viz. traditional, partly modern and modern small scale industry. The traditional small industry category includes in it village industries like khadi, handloom, edible oil, coir, tannary etc. that are mainly concerned with the processing of raw material for local markets and also non-factory sector covering both artisan and household units which are widely dispersed throughout the country and their markets are also restricted to Indian boundary. In contrast to it the modern small industry means 'small industry which caters to the need of the emerging modern economy is progressive in outlook and adaptable to changing conditions, uses the result of modern science and inventions in its production processes, and applies reasonably uptodate ideas of organization and management in its business operations'[1] Lastly, the partly modern industry may be called as an intermediate term to designate small industrial units which have broken away from the traditional to the moderate units. Finally, for administrative purposes, by Government of India, some index of size has been used to define and demarcate the SSI from MSI and LSI, and also to broaden the scope of the small scale industry. Such changes in their definition were needed to keep pace with the development

---

1 Staley, E., and Morse, R., Small Scale and Household Industries in a Developing Economy, Asia Pub., Bombay, 1963, p.4.

of the sector, and to attain eligibility for various facilities offered by Government. The definition for small scale industry states that-

'Undertaking having investment in fixed assets in plant and machinery not exceeding Rs.10 lakhs'.

Besides this, an ancillary sector has also been identified to widen the inter-relation among SSI and LSI. It speaks-

'Undertakings having investment in fixed assets in plant and machinery not exceeding Rs.15 lacs and engaged in-

(a) the manufacture of parts, components, sub-assemblies, toolings or intermediates; or

(b) the rendering of services, and supplying or rendering or proposing to supply or render 50% of their production or the total services, as the case may be, to other units for production of other articles:

Provided that no such undertaking shall be a subsidiary to or owned or controlled by, any other undertaking'.

While announcing New Industrial policy (1977) the new sector of unit called 'tiny sector' has also been identified. It defines-

' while the existing definition of SSI will

remain, within the small scale sector, special attention will be given to unit in the tiny sector namely, those with investment in machinery and equipment upto Rs. one lakh and situated in towns with a population of less than 50,000 according to 1971 census, figures and villages. Schemes will be drawn up for making available margin money, assistance specially to tiny units in the small sector as well as to cottage and household industries'.

The new definitions[2] for small scale industries are much more scientific and also give a broader base to the economic progress in India.

2.2 IMPORTANCE

There is general agreement on the imperative need for many underdeveloped countries to make vigorous efforts to the development of SSI. The reasons regarding the encouraging of the development of small scale industries in India fall into following four main groups:

1. Employment reason,
2. Decentralization reason,
3. Social and political reason,
4. Use of latent resources,

First, reason which is based on the view that small

---

2. Definition from 'Handbook of Statistics', 1977, SSI in India, DC(SSI) New Delhi.

enterprises are essentially labour intensive and capital saving. A given amount of capital invested in SSI undertakings is likely to provide more employment, at least in the short run, than the same amount of capital invested in large scale undertaking. The country like India where unemployment is rampant and capital is scarce, small scale industries can be started with small capital and which provides employment to many. Furthermore, the cost of economic overheads, like factory building etc. is much less in small enterprises than in large one. SSI would use labour and capital in proportion corresponding more closely to the proportions in which these two factors of production are available in India than does large scale industry.

Prof. Mahalnobis, also advocated the reasons in the way, that in view of the meagreness of capital resources there is no possibility in the short run for creating much employment through the factory industries... Now consider the household or cottage industries. They require very little capital.... with any given investment, employment possibilities would be ten or fifteen, even twenty times greater is comparison with corresponding factory industries[3].

There is no doubt whatever the number of jobs that can be created per unit of capital is much larger in

---

3. Quoted by Myrdal in Asian Drama, Vol.II, p.219.

small scale sector than in medium or large scale sector. The following table reveals that the average capital per employee in the various sectors in 1975-76 was Rs.4,500 in small scale sector, Rs.17,250 in m.s.sector and Rs.33,395 in large scale sector. However, this is not the whole story. There are wide variations inter se the various sectors in terms of output per employee and value added per employee and more particularly the rate of growth in productivity.

Table 2.1 EFFICIENCY OF SMALL SCALE SECTOR

S.No.	Category	Per employee			Fixed cap.output ratio	Output per employee at 1961-62 price
		Fixed capital	Output	Value added		
		in rupees				
1.	Small scale Sector	4,500	33,502	5,041	0.13	13,195
2.	M.S.Sector	17,256	44,010	8,921	0.39	17,334
3.	L.S. Sector	33,395	56,736	13,117	0.59	22,346

Source : A.S.I. 1975-76

Secondly, there is a decentralisation argument, which is based on the belief that small enterprises can more easily be dispersed into small towns or villages compared to large enterprises. Encouragement of SSI may help to preserve a healthy balance between the rates of economic growth in urban and rural areas. Beyond a certain point, additions to urban population involve heavy costs in the form of investments in social capital expenditure. Again, a rapid flow of population to the town not only creates unhealthy conditions

but is bad for vitality of village life; the argument being that those who go to the towns include a high proportion of the movable and enterprising villagers who are dissatisfied with the lack of opportunities for progress and advancement in the villages. Large scale industry is almost inevitably attracted to the large urban centres and same is likely to be true of many small undertakings too, but there may be considerable scope, if appropriate policies are adopted for decentralisation of SSI.

Thirdly, there is a group of arguments which stresses the social and political virtues of small enterprise. It is observed that growth of large scale enterprise have led to the emergence of inequalities of income and concentration of economic power in a few hands. But, small scale sector, with proper safeguards will lead neighbour to sweating nor to inequitable distribution but will result in a larger and more widely distributed sharing of the productive function and therefore to a more equitable distribution of the products of industry.

Lastly, there is an argument that small enterprises help in drawing out latent reserve of scarce resources, especially of entreprenuership and capital. Penetration of SSI into rural and semi-urban areas would help in tapping latent resources and growing entrepreneural skills.

The growth of a very large number of small firms in the

post-independence period, highlights the fact that given the basic conditions such as supply of power and credit facilities, the latent resources of entrepreneurship can be tapped by the growth of small enterprises only.

Besides these arguments in favour of small scale enterprises, we may further add that LSI calls for a great deal of managerial and technical skill. These skills are in very short supply in underdeveloped countries and it is important to economise as much as possible in their use. SSI provides a way of doing this, and at the same time provides industrial experience and serves as a training ground for large number of small scale managers. Another writer in this regard remarks, 'they are the nurseries where they train entrepreneur to embark on more ambitious projects, workers of higher industrial skill, greater industrial attitude.' [4]

While assessing the real role of SSI in the economic development of our country, it is found that those who have sympathy with small industry, argue that they can get almost every thing from the small industry. While on the other hand, the other school feels that the cost of small industry are and would be very high, it cannot take advantages of economics and skill and cannot generate quality goods and therefore ultimately, unless the product

---

4. Singh, Amarjit, and Gupta, N.S., Industrial Economy of India, Light and Life Pub. New Delhi, 1978, p.174.

of the industry is not subsidized, the small units will not be viable.

Prof.P.S.Lokanathan[5] approach appeared to be much optimistic, compared to these two extreme view points discussed earlier. He is of the view that -

> 'The future of SSI lies in strengthening itself in various ways; first by modernising its management techniques; second there should be a special financial institution or institutions to meet its working capital needs. Further the industry should expand in those lines of production where there are outstanding advantages. In all these sectors, the growth of small industries should be considered as forming like with the medium and large plants'

2.3 GROWTH OF SSI IN INDIA

It would be worthwhile to see how the quantitative role of small scale sector has changed during the past. In the last decade small industry in India has registered a remarkable growth rate of 15% in the number of units and in terms of diversity as well as in production. Currently, the SSI accounts for roughly 40% of the industrial production of the country with a production value of Rs.13,000 crores

---

5. Loknathan, P.S., Role of Small Industries in a Developing Economy, in SSI, DCSCI, New Delhi.

showing growth rate of 8 to 10 percent in the last five years. It is estimated that in 1982-83 the production would be of the order of Rs.19,000 crores and the anticipated employment would increase from 5.9 million to 8.7 million.[6]

Even in the matter of export, there has been a considerable increase in the last years. The total value of export today is of the order of Rs.800 crores which in the next five years is expected to increase ~~about~~ by Rs.2,000 crores. The contribution of the small sector to the country's export is curr ntly of the order of 17% and it is expected that this would go upto 20% by the end of F.Y.P. period 1978-83.

Simultaneously, with the increase in production value, there is a wide diversity of the items which are now being manufactured in the small scale sector. It is significant that whereas 180 items were reserved for exclusive development in the small scale sector between 1967 to December 1977, the number of items increased to 504 in one year. According to National Industrial Classification (NIC) these items are identified into 807 products. There is no doubt whatsoever that the measure of reservation would alone raise the share of small Ind. sector in total industrial production and in consequence increase the purchasing power of tiny industry units in the rural areas and also provide larger employment.

---

6. Laghu Udhyog Samachar, Vol.III, No.6, 1979, p.2.

2.3.1 FINDINGS OF THE CENSUS OF SSI

The national census of small scale industries conducted by DC(SSI) S.I.D.O. provides very valuable data on small sector. It covers about 1.4 lakh units working in 1972. Small scale industries with the total investment of Rs.1,450 crores are employing about 22 lakh persons with an estimated gross output in 1975 of Rs.5,700 crores. The employment generation capacity of SSI is seen from the fact that in S.S. sector 21 persons find employment for an investment of Rs.1 lakh, whereas the same amount of investment offers employment for 5 persons in the L.S. sector. Similarly, the rate of output to investment in the S.S. sector is nearly three times the corresponding ratio in the L.S. sector. About 2,400 products were manufactured in the small scale sector in 1972 with gross value of Rs.2,600 crores. Raw material worth Rs.1,497 crores were utilised by small units, 9 percent of which were imported. This again proves that small units are more indigenous-input based.

The capacity utilisation in 1972 was of the order of 53 percent whereas unit utilising 60 percent to 80 percent of their installed capacity were from industries like vegetables, tanned light leather, woolen knitted wears, printing, cashewnut roasting and frying, ready made garments, tiles and parts of industrial machinery. During the last 2 years the growth rate in the small scale sector works out to 10 to 11 per cent per year.

CONTRIBUTION TO NATIONAL PRODUCT

The national income accounts do provide us with a basis, though rough, for estimating the contribution of the small scale sector to the Indian Economy. Value added by the manufacturing establishments in the country are presented in the national income account under two heads: registered and unregistered. The latter corresponds to the non-factory segment of industry, i.e. manufacturing and processing activities undertaken by households and non-households, all of which do not strictly fall under the purview of Modern SSI For want of data, however, one may regard the entire contribution here as that of the small scale sector. The registered sector, on the other hand, covers all factory establishments whether small, medium or large, registered under the factories Act. Only the portion of this sector, viz., the small scale factory establishments, form part of the S.S. sector. Data on these could be called out of the statistics given in the ASI. By using this information and the national income data, an attempt has been made here to estimate the contribution of the small sector to the national economy.

The data given in Table 2.2 coming on the next page reveal a few interesting insights into the working of the small industry. Nearly half the value added by the manufacturing establishment in the country seem to originate in the small sector. Here it need to be remembered that small

Table 2.2 CONTRIBUTION TO NATIONAL INCOME
(S.S. sector)

(Rs. million)

S.No.	Net value added by	1960-1961	1965-1966	1968-1969	1970-1971
1.	Manufacturing	18,560	30,640	37,480	44,080
	a. Registered	10,710	18,390	21,920	25,970
	b. unregistered	7,850	12,250	15,560	18,110
2.	Small factory establishment	2,668	3,605	4,504	5,200*
3.	Small sector-Total	10,516	15,855	20,064	23,310
4.	All economic units	132,940	206,210	286,780	339,460

*Estimated ; (At current price)

sector here is broadly defined to cover cottage as well as house hold industry where a major portion of the value added seems to originate.

2.4 GOVERNMENT POLICIES FOR PROMOTING SSI

Industrial development is a complex process. Yet it is imperative for India's economic regeneration. To achieve the national objective of eradicating poverty and unemployment, of attaining self-reliance and social justice, industrial policies have been formulated time to time. The first Industrial Policy Resolution was announced way back in 1948. The resolution recognised that the cottage and small industries had to play a very important role in the better utilization of local resources and achievements of

self sufficiency.

The second industrial policy announcement followed eight years latter in 1956. The industrial policy resolution 1956 recognised the cottage, village and small industries as a combined category. Reiterating the role of SSI in developing our economy, the resolution emphasised the aim of state policy with regard to this sector.

Third industrial policy comes after the lapse of two decades. The new industrial policy announced in December 1977, shows its main thrust on effective promotion of cottage and SSI widely dispersed in rural area and small towns. It would be worthwhile to quote a few important points from the policy:

' For the past 20 years, Government policy in the sphere of industry has been governed by the Industrial Policy Resolution of 1956. While some of the elements of that Resolution in regard to the desirable pattern of industrial development still remain valid, the results of actual policies in the industrial field have not been upto the expectations or declared objectives. The growth of per capita national income during the last 10 years has been about 1.5 per cent per annum and is clearly inadequate to meet the needs of a developing economy. Unemployment has increased, rural-urban disparities have widened and the rate of real investment has stagnated. The

growth of industrial output in the last decade has been no more than 3 to 4 percent per annum on an average. The incidence of industrial sickness has become widspread and some of the major industries are the worst affected. The pattern of industrial cost and prices has tended to be distorted; and dispersal of industrial activity away from the large urban concentrations has been very slow.

The new industrial policy must therefore be directed towards the distortion of the past so that the genuine aspirations of the people can be met within a time bound programme of economic development'.

Besides this we may also take account of direct and indirect measures discussed in new policy.

2.4.1 DIRECT MEASURES

RESERVATION: Behind declaring the new industrial policy the main objective is that 'whatever can be produced by the small and cottage industries must only be so produced'. For assiduous promotion of this idea , the list of 'reserved' items has been increased from 180 to 807 which will be produced exclusively by small units.This will constitute a significant widening of small scale sector.

TINY SECTOR: Within the small scale sector, 'tiny sector' has been treated with special attention.

CREDIT WINDOW: Adequacy of credit facilities for cottage and small scale sector is an important plank of the new policy. The IDBI has opened a new window to meet financial requirements of SSI, on priority basis.

ORGANISATION: The fundamental policy measure in the new scheme is to set up 'District Industries Centres' (DICS) in the place of District Industries offices, to provide credit guidance, a package of raw-material, training, marketing etc. These centres will operate as liaison between the development block and specialised institutions concerned with the development of SSI.

2.4.2 INDIRECT MEASURES

BAN ON NEW LICENCES The new licensing policy is designed to discriminate SSI against the LSI and, particularly the big houses. There will be no new capacity creation or expansion in the respect of reserved items of production, by LSI.

CREDIT SQUEEZE: Large business houses will be starved of the credit facilities now available to them for the asking.

Industrial development is a complex process requiring the effective interaction and cooperation of all sections of society. It is hoped that the new direction that is being given to the industrial policy of the country will help in

the creation of a just and equitable society in which the benefits of industrial development will be shared by all the people.*

2.5 DEVELOPMENT PROGRAMMES

The formulation of good industrial policy does not serve the purpose, till there is lack of proper extensions services and efficient government machinery to implicate the policies. The need of small manufacturers as we have described above been well summarized by W.Arther Lewis. A well managed small firm in a suitable line of production, he says-

'.... can survive easily if markets are well organized, so that it can buy cheaply such factors as specialist advice, engineering service, component parts, raw-material and the like, and can dispose easily of its product, whether to final or to intermediate buyers. The better organized market, the less each firm needs to do for itself, and the smaller is the advantage of large scale organisation...

The large organisation can conduct research, buy in bulk, raise funds easily, produce a standardized articles... . The small organisation can succeed just as well if it is surrounded by agencies - private, cooperative

---

* Quoted from New Industrial Policy, 1977.

or statutory - which will take over all that part of the work needs to be done on a large scale, so that the small firm can concentrate on those activities which are adequately done on a small scale.[7]

Visualising the need of small sector the Government of India has developed a most comprehensive small industry development organisation. Staley and Morse[8] speaks on the India's comprehensive programme for small industry development as-

> ' India has by all odss the most comprhensive small factory development programme of any newly industrializing country... No effort combining so many elements in a simultaneous approach to small factory stimulation has been launched in any other economy'

The summary of the small-scale industries organisation can be seen in Chart-1, describing the various functional responsibilities of and relationship among the Central and State Government agencies that are primarily concerned with Small Industry Development.

2.6 PROGRESS UNDER PLANS

During the economic planning of India the Government emphasised the development of small scale industries to achieve the objective of providing additional employment opportunities, mobilising resources of capital and skill

---

7. W.Arthur Lewis, the Theory of Economic Growth, George Allen and Unwin, Ltd., London 1955, p.77.
8. E.Staley and R.Morse, 'Modern Small Industry for Developing Countries', McGraw Hill Book Company, N.Y. 1965, p.397-398.

and providing a more equitable distribution of national income.' Though the burden of financing the small scale units lies mainly on the shoulders of small industrialists themselves, the central and state Government claim that they have been assisting them financially and otherwise by making suitable provisions in five year plans.'[9] Here we will examine these provisions in brief.

FIRST FIVE YEAR PLAN (1951-56):

Till 1951 - the year in which the first FYP was formulated, the SSI had not emerged as a significant sector in the economy. The provision for the development of SSI during this plan was Rs.50 million.

'Hence although the importance of small industries was recognised in the First Plan the allocation made for its development was nominal, Rs.50 million in a plan of Rs.42,000 million or little more than one-eighth of one percent which was hardly adequate for any meaningful programme to be implemented.[10] The Ford Foundation Team which submitted its report in 1954 had stressed the need to divert a large share of the total outlay to this sector and to establish some key institutions to assist the small units. 'Small scale Industrial Board' and two very important institutions - Central Small Industries Organisation and

9. Mishra, G.P. and Mishra, P.N., Govt. policies for promoting SSI Laghu Udyog Samachar, Vol.III, No.II, June 1979, pp.11.
10. Vepa, Ram, K. 'Small Industry in Seventies', Vikas Pub. 1971,p.16.

National Small Industries Corporation were set up, on Ford Foundation recommendations. Simultaneously , some noteworthy assistance programmes were also taken up during the period. The construction of Industrial Estates were also taken up during the plan period.

Consequently the Govt. outlay on this sector showed a sharp rise towards the end of this plan. It is clear from the following table:

Table 2.3 PLAN EXPENDITURE ON SMALL INDUSTRY DEVELOPMENT

Year	Outlay (Rupees in lakh)
1951-52	5.67
1952-53	7.90
1953-54	33.25
1954-55	154.44
1955-56	317.00
Total	518.26

Source: Mishra and Mishra, op.cit p.11

SECOND FIVE YEAR PLAN (1956-61):

Before the formulation of Second Five Year Plan, the Industrial Policy Resolution of 1956 had been enunciated and the Karve Committee has submitted its report. Both the documents recommended for a greater emphasis on this sector. As a result the Plan Outlay increased

to Rs.61.00 crores. It was about one percent of the total plan expenditure during this period.

'The Second Plan period witnessed the beginning of a positive and a definite process of institutionalizing finance to the SS.sector. The Central Small Industries Organisation, State Governments and the Reserve Bank took active interest in extending institutional and Govt. credit to S.S. sector through various measures-direct and indirect, statutory or otherwise. A foundation was laid with the establishment or extension of specialised institutions, like the State Financial Corporation (one in each State) and the NSIC with its programme for financing on Hire-Purchase[11].

THIRD FIVE YEAR PLAN

Integration of large and small scale industries was one of the main objectives of the third plan. The Third Five Year Plan outlay on SSI was again about 1 percent of the total outlay. It was proposed in the beginning to spend Rs.84.60 crores for SSI and Rs.30.20 crore for Industrial estates. But the total expenditure during this period was Rs.88.85 crores as against the plan provision of Rs.113.96 crores. Another important feature of this plan was the reservation of nine items for exclusive production in the S.S. sector.

---

11. Development of SSI in India- Prospects, Problem and Policies, Report of the International Perspective Planning Team,p.103.

FOURTH FIVE YEAR PLAN

The Fourth Plan envisaged a total outlay of about Rs.293 crores in the public sector for the development of village and small industries. In addition to the outlay in the public sector, about Rs.560 crores were expected to be invested from private sources, including financial and banking institutions.

'In the Fourth Plan, the small scale sector grew into a full blossomed youth, a ruddy-checked and strong muscled, concious of its newly acquired straight and great responsibilities that they lay ahead..... The thrust has been towards more and better production innovation and import substitution, widening of entrepreneurship base, development of ancillary industries, and exporation of export markets[12].

The Government fixed target of 1.6 lakh new SS units for the Fifth Plan. The creation of new units and modernization and expansion of existing ones would require an additional investment of Rs.1,750 crores.

FIFTH FIVE YEAR PLAN

The principal objective of the programme for the development of different small industries in the Fifth Plan were to facilitate the attainment of some of the major task

12. Saaz, J.L. Spectacles of SSI in India, Laghu Udhyog Samachar, October, 1976.

for the removal of poverty and inequality in consumption standard of the masses through creation of large scale opportunities for fuller and additional productive employment and improvement of their skills so as to improve their level of earnings.

For the development of such industries a total outlay of about Rs.611 crores in the public sector was envisaged, ~~the outlay~~ which is double the outlay made in Fourth Plan. In addition to the outlays in the public sector about Rs.1050 crores were expected to be invested from private sources including bank and financial institutions.

2.7 PRESENT POSITION

It cannot be denied that during the last decade or so the country has witnessed a fairly rapid rise in the number of SSI units. It is also to be conceded that production in this sector has witnessed greater diversity and a higher degree of sophistication. The following table shows the progress made by small sector in the decade of 1965-75.

Table 2.4 PROGRESS OF SS SECTOR
(1966-75)

S.No.	Items	1966	1975	Percentage Increase
1	2	3	4	5
1.	Number of registered units	1,20,000	5,00,000	317
2.	Employment (lakh nos.	29.3	55.0	90
3.	Fixed Assets (Rs.crores)	548	1,500	174
4.	Production (Rs.crores)	2,954	11,000	272
5.	Export (Rs. crores)	154.99	540.71	250
6.	Items reserved for exclusive production in S.S. sector	47	177	-
7.	Items reserved for exclusive purchase from SS Sector	72	222	-

Source: Annual Report of 1975-76 by DC(SSI), New Delhi

Compared to the earlier years the trend in the development of small scale industries in India shows that there has been a noticeable expansion in the lines of production in the S.S. sector. Small scale enterprises have, of late, taken up the manufacture of modern and sophisticated products and have ventured into many new lines of production.

It is now widely held that SSI have an important role to play in the economic growth of developing countries. Staley and Morse for example, maintain that the S.S. sector could be made a viable and constructive element in the process of growth through development programme comprising (i) the gradual transformation of the traditional sector and

(ii) the establishment and growth of new type of SSI.

Despite a sharp division of opinion about the role of small scale industries in the planned development of the country it is increasingly being recognised that the important place accorded to the small scale industries during Five Year Plans is quite in keeping with their potential contribution to the growth of the economy. Shetty advocates the issue- 'small scale industries have displayed remarkable persistence in the course of economic development of modern industrialisation of all the advanced countries of the work have come to occupy a significant place in these economies'[13]

13. Shetty, M.C., Small Scale and Household Industries in a developing economy, Asia Pub. Bombay, 1963, p.1-2.

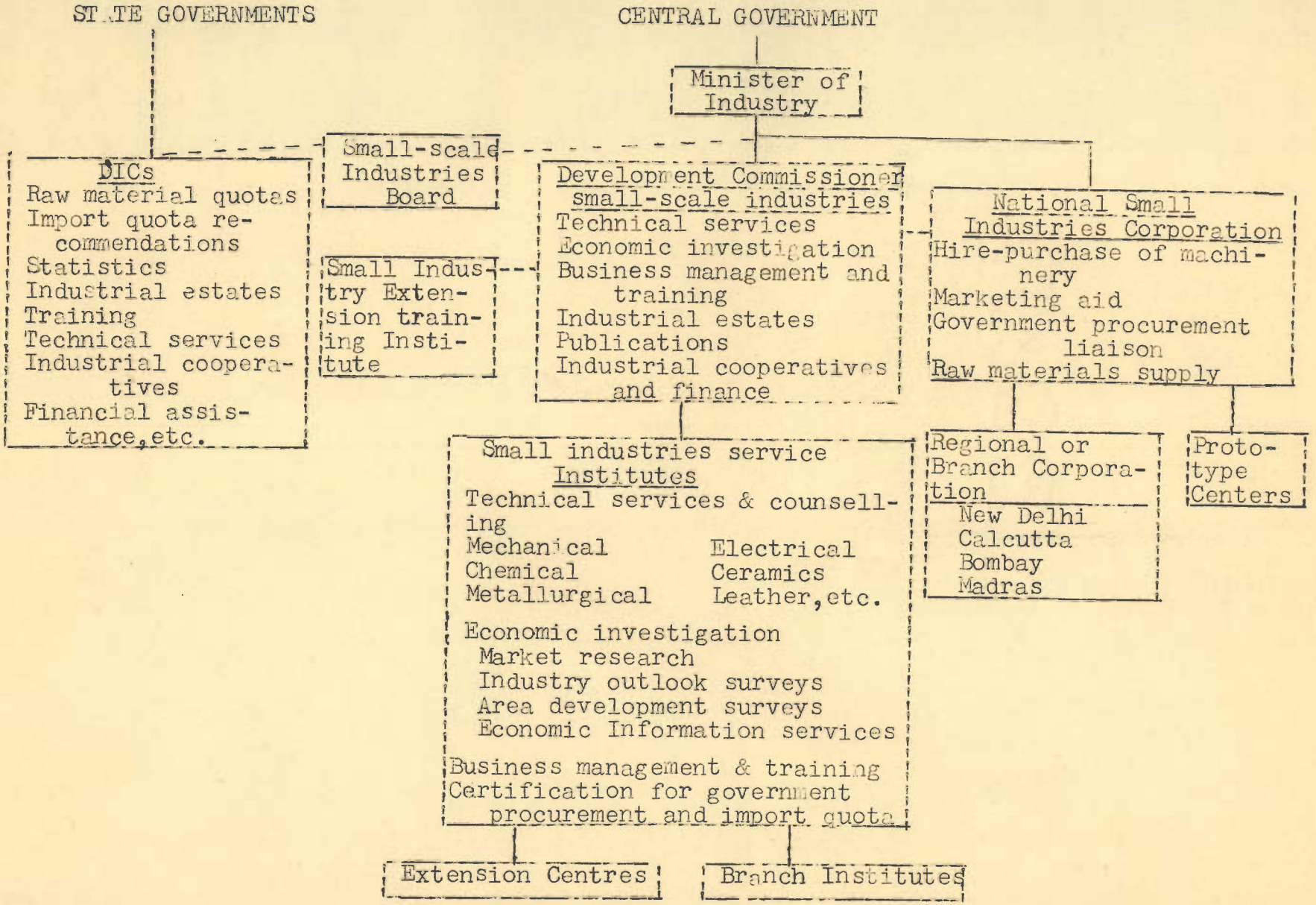

CHART -I Small-scale industries organization, India

CHAPTER III

STUDIES ON SMALL SCALE INDUSTRIES IN INDIA

The promotion of small industry sector has been regarded as an important element of the developmental strategy underlying the Five-Year Plans. The subject has naturally aroused considerable interest resulting in numerous research studies and a large volume of other literature, particularly since the formulation of the Second Five Year Plan. The studies on the subject is varied, but may broadly be divided into two groups. The First group is constituted by studies of an analytical nature which at times also provides policy prescriptions concerning issues like

(i) the role of small industry sector in the industrial structure, and

(ii) performance, problems and prospects of specific industries or areas.

The second group of studies includes a large number of publications in the form of model schemes, project sheets and progress reports coming mainly from the government sponsored agencies, which are mainly of descriptive and informative nature.

Relating to the nature of present study, the survey is confined to the analytical studies, although the importance of the second group of studies, to the extent that these provide raw materials for research output is not to be denied.

The survey was made of that part of the literature which treats small scale industry in its totality, as it fits into the overall economic policy framework. The primary focus for the modern small scale sector, apart from case studies pertaining to various problems such as finance, raw materials, marketing, organisation and so on has been made to examine the relation among scale and efficiency.

The whole small industry group may broadly be divided in two groups, viz. (i) Traditional small sector, and (ii) Modern small scale enterprises. The traditional small industry category includes in it, village industries like khadi, handloom, edible oils coir, tannery, etc., that are mainly concerned with the processing of raw material for local market and also non-factory sector covering both artisans and household units which are widely dispersed throughout the country and their markets are also often far flung, at times crossing national boundaries.

According to United Nations, 'Report on the World Social Situation, N.Y., the traditional small industries are those ~~forms~~ which prevail in and cater to the needs of the traditional economy[1]. Traditional small industry is characterized by products,

1. 'In the less developed countries', says the U.N. Report, 'the most significant gap is usually between the modern economy and what may loosely be called the 'traditional' economy, the differences between market economy and the subsistence sector... It partly coincides, but again not entirely, with urban-rural differences; the modern sector in mainly urban and traditional economy is associated with ethic differences. It may also be associated with regional differences within countries', 'Report on the World Social Situation, United Nations, New York, 1961, p.60. Quoted from E.Staley and R.Morse, op.cit.p. 4

techniques, and organisation not very different from those of previous generations.

Modern small industry, by contrast, means 'small industry which cater the needs of the emerging modern economy, is progressive in outlook and adaptable to changing conditions, uses the results of modern science and invention in its production processes, and applies reasonably up-to-date ideas of organization and management in its business operations'[2]. Here Modern small industry means the small units mainly urban based, better integrated with large scale units, and turn out modern products through non traditional techniques for market that often transcend purely local demand.

According to Staley and Morse,[3] ~~study~~, the Modern Small Industry ~~thus~~ differs from traditional industry in four major respects:

1. Outlook: There is a continual search for improved ways, adaptability.

2. Products and Product Design: Products are suited to modern needs or to the emerging needs of an economy in transition from traditional to modern.

---

2. Staley, E. and Morse, R., op.cit. p.4.
3. ibid, p.4

3. Physical Technology of Production: Appropriate use is made of efficient machines, good plant layout, precise control of chemical processes etc.

~~3. Social technology of organisation and Management: Appropriate use is made of efficient machines, good plant layout, precise control of chemical processes etc.~~

4. Social Technology of Organisation and Management: Appropriate use is made of business planning and budgeting, market analysis, cost accounting, enlightened ideas of personnel management, etc.

Here, the literature survey is confined to analytical studies relating to Modern Small Industry only. The primary focus on the Modern Small Scale Sector, apart from case studies pertaining to various problems such as finance, raw-materials, marketing, organization, employment, and so on, has been to examine the relation among scale and efficiency. The subject of Modern Small Scale units has been given an extensive coverage, ranging from fact finding area studies to comprehensive treatment about their role and prospects in an inter-country frame work. The Indian literature with respect to modern small scale sector has mainly concerned itself with an examination of scale and efficiency and problems and prospects of specific areas and industries in the light of various promotional measures adopted by the Government, including the device of industrial estate. Though some

studies of Modern Small scale Industry done with traditional small industry and large industry has also been considered in the survey, to check their inter-dependence and performance etc.

The survey of studies has been divided in the following sections:

3.1 Definition of small scale industries,

3.2 Government policy,

3.3 Role and importance of SSI

3.4 Fact finding studies,

3.5 Scale and efficiency,

3.6 Other aspects

- 3.6.1 Capital and skill,
- 3.6.2 Urbanization,
- 3.6.3 Ancillary industries

3.1 Definition

Treating the small-scale, cottage, and village industries on a common footing, in Industrial Policy Resolution 1956, the concept of SSI does not seem to lend itself to scientific definition and, therefore, vagueness and lack of exact delineation permeates the literature in this area. The phrase 'Small Industry' itself is considered a misnomer. In their study Dhar and Lydall[4] argue that only when all the units in an industry are operating on small scale, one might legitimately call it small industry. Otherwise, the most appropriate phrase would be small scale enterprise

4. Dhar, P.N. and Lydall, H.F., The Role of Small Enterprises in Indian Economic Development, 1961, Delhi

or unit. This terminological inexactitude has led to a number of definitions with distinctly different connotations.

The literature shows the definitions both functional and statistical in nature. Functional definitions broadly tend to view the production methods and/or the nature of market served as the demarcating factors. Nanjundan et.al.[5] defines the concept in terms of presence of most, if not all, characteristics, such as (i) little specialisation in management, (ii) close personal contact, (iii) handicaps in obtaining capital and credit, (iv) sheer number of small scale units and (v) no dominant position in the market.

Secondly, ~~in statistical purpose~~ methods, some index of size has been used to define and demarcate small industry statistically. The employment figure has been considered as the most convenient and 'least objectionable'. But the quantum of employment used in demarcating small industry has been varying. ECAFE'S working party of industry and trade in 1951 defined small industry as ~~or~~ operating mainly with hired labour not exceeding twenty if using power or upto fifty if not using power. For international comparisons the Nanjundan et al. study regarded, units employing upto 100 workers in the category of small enterprise.

In India, the Industries Development and Regulation Act 1951, regarded units employing less than 50 workers if using power, and less than 100 workers if not using power, as

5. Nanjundan,S., Robinson, H.E. and Staley E., Economic Research for Small Industry Development, 1962, Bombay.

small units. Apart from Employment 'Capital' has also been used, singly or along with employment, as the size variable. In 1956, Karve Committee[6] regarded all units having capital investment upto Rs. 5 lakhs and employing less than 100 persons, without using power, as small scale unit. First time the Government of India adopted employment-cum-capital criterion, on the lines of the Karve Committee. Subsequently, only capital was used as the limiting factor for small units. First, the limit was Rs. 5 lakhs of capital investment which includes land, building and machines. In 1966, this was changed to a ceiling of Rs.7.5 lakh but excluding land and building. Again in 1975 this limit was extended upto Rs.10 lakh. In the case of ancillary units, the limit was extended from Rs.10 lakh to Rs.15 lakh.

However, this definition for financial and technical assistance is applicable to those units that come under the purview of SSI Board. From the administrative view point, units coming under other bodies such as Khadi Commission, All India Handloom Board, Silk Board, Coins Board, etc. are regarded on a different footing and distinct from SSI.

This takes us to consider the question whether cottage and small scale units be treated as two distinct classes or not. The Fiscal Commission 1949-50 made a clear distribution on the basis of type of work force employed without referring to the use of power. House hold units were defined as those

6 Govt. of India, Planning Commission, Report of the Village and Small scale Industries Committee, 1956, Delhi.

carrying an operation wholly or primarily, with the help of family members. Small scale unit, on the other hand, were those which used hired help between ten to fifty workers. Generally, cottage units are distinguished from small scale units with reference to broad characteristics, such as (a, work place (b, hired labour, (c, use of motive power and (d, extent of market served. By Herman[7] a sixfold classification of 'Small Industry' on the basis of extent of market alone was suggested. He divided S.S. units into (i) cottage and for home use, (ii) Cottage for local market, (iii) SSI for the domestic mass market, (iv) Handicraft Industries for luxury markets at home and abroad, (v) SSI for mass market abroad and (VI) SS powered industry.

The most prevalent view, however, is that small and cottage enterprises, have some common characteristics, hence an inclusive class, yet a sub-classification is required in view of differences. The Ford Foundation Report[8] distinguishes between traditional village craft (cottage for local market) and SSI aiming at non-local markets and yet both groups are treated as part of small industry. Dhar and Lydall[9] draw a distinction between traditional industry producing traditional products and small firms producing modern products, with the help of hired labour.

---

7. Herman, Theodore, 'The Role of Cottage and Small Scale Industries in Asian Economic Development', Economic Development and Cultural Exchange, 1955-56, 4, p.356-70.
8. Government of India, Ministry of Commerce and Industry, Report on Small Industries in India (International Planning Team, sponsored by the Ford Foundation) 1954, Delhi.
9. Dhar, P.N., and Lydel, H.F. op.cit.

The confusion and lack of clarity in distinguishing various variants of small unit has also prompted some authors to wish away the problem. For example, Mitra[10] suggested, purely on technological consideration that small unit be classified as traditional units, improving units and improved units, irrespective of number of workers, and place of work. To some extent, the problem of demarcating does not permit an easy solution. A continuation of size variation, where it exists, creates the difficulty of drawing a line between different categories. Cottage units, being small scale operators could legitimately be called small industry. But it may not be advisable to treat cottage unit at part with factory type small enterprises, particularly for the purpose of economic analysis and policy prescriptions.

3.2 Government Policy

At the official policy level, the specific role of modern small scale industries, following the stress laid by the Ford Foundation Team[11] on its potentialities, was envisaged only when the Second Five Year Plan was half way through, no distinction was made between small scale, cottage and village industries and their role in the economy. The Industrial Policy Resolution of 1956, which was served as the guide post to industrial policy in India, referring to 'the role of cottage and village and SSI' mentioned:

10. Mitra, L.K. Employment and Output in Small Enterprises of India, 1967, Calcutta.
11. Govt. of India, Ministry of Commerce and Industry, op.cit.

'To provide immediate large scale employment, they offer a method of ensuring a more equitable distribution of the national income and they facilitate an effective mobilisation of resources of capital and skill which might otherwise remain unutilised[12].

The argument of Employment, decentralisation, social and political virtues and drawing out the latent resources of enterprise and capital we questioned cottage industries, and also for modern SSI[13].

The operational content of the policy was protection of cottage industries through common production programme, differential tax treatment and direct subsidies. Similarly, various programmes were initiated to assist the SSI The current Government policy regarding small scale industries has already been discussed in Chapter II.

3.3 Role and Importance of SSI

The role that small scale sector should be playing in the process of planned development in India evoked an interesting debate with the formulation of second Five-Year Plan. The sudden spurt of interest was, to a large extent, a natural outcome of the strategy underlying the Second Plan which envisaged a crucial role for the household and SS sector in the production of consumer goods.

12. Government of India, Planning Commission, SecondFive Year Plan, 1956, Delhi, p.47.
13. Dhar, P.N., and Lydall, H.F. op.cit.

By Mahalnobis[14] the household and hand industries were viewed both as generators of surpluses to sustain and possibly increase the investment in heavy industry, and also as a solution to the unemployment problem. To perform this dual role, the house hold and small scale industries were given protection against competition from large scale industries and subsidies in various forms.

The Mahalnobis approach[15] appeared as a compromise of two extreme view points between those who wanted protection and expansion of household sector for ideological reasons with Gandhian overtone and those who considered it as a 'clog on progress', a deliberate turning away from efficiency in favour of antiquated methods of production and a dishonest concessions to tradition. Vakil and Brahmananda[16], strongly criticised the Mahalnobis approach, as they argued for the use of surplus labour for the creation of capital assets instead of inefficient production of consumer goods. Prof.Nurkse[17], while supporting the approach of Vakil and Brahmananda, mentioned, 'If the hand workers drawn from disguised unemployment in agriculture are to enjoy tariff protection from the competition of Indian factory products, they will, through higher prices, still be receiving subsidy

14. Mahalanobis, P.C., 'The approach of operational Research to Planning in India', Sankhya, December,1955, 16,p.3-130.
15. ibid
16. Vakil, C.N. and Brahmananda, P.R., Planning for an Expanding Economy, 1956, Bombay.
17. Nurkse, Ragner, 'Reflections on India's Development Plan', Quarterly Journal of Economics, 1957,71,p.194.

from the rest of the community, just as they were subsidised on the farms where their marginal productivity fell short of their consumption. This means that the locus of disguised unemployment is shifted: one make-work scheme replaces another'.

The various studies involved in the field, apart from highlighting the important consideration for each parameter, suggests that an overall programming approach to the problem may be useful. Maximization of output or employment in a long run perspective has been suggested as the important objective. In addition to the technological opportunities available (different techniques of production), surplus per unit of output or employment, import coefficients etc. have been suggested as the important constraints.

3.4 Fact Finding Studies

Before discussing Modern Small Scale units in detail, it may be useful to discuss the quantitative significance of Small Scale units. Although the role of small industry in planned development did not receive unqualified acceptance, yet its quantitative significance is important. Various studies whether official or non official, have shown that small industry sector continues to occupy an important place in terms of number of units, employment, output and other related parameters.

At the official level, Karve Committee[18] in 1956 made a broad assessment of the increase in demand for products of village/household enterprises and set out the broad magnitude of required capacities. Since then, several working groups have gone into the performance of different types of small units. However, almost all these evaluation reports were in broad aggregate and mainly concerned with the evaluation of public sector outlay for these industries. Data gap has been the major bottleneck for any serious analysis of the progress of this vital sector.

A large part of the unofficial studies have also been in the nature of survey reports based on case studies of selected industries in different localities, with the view to collecting information on existing structures and development potential. The survey of household industries made by Baljit Singh[19], highlighted that the technology used was traditional with little or no application of modern science. Lakshman[20] in his study has revealed that cottage and small enterprises adhered to obsolete tools and techniques. Lakdawala and Sandesara[21] also point out that most of the units in Bombay were ill-equipped, average fixed capital being Rs.1,781 with 70% of the units having fixed capital less than Rs.1,000.

---

18. Govt. of India, Planning Commission, Report ofthe Villages and Small Scale Industries Committee, 1956, Delhi.
19. Singh Baljit, The Economics of Small Industries- A Case Study of Small Scale Industrial Establishments of Moradabad, 1961, Delhi.
20. Lakshman, T.K., Cottage and Small Scale Industries in Mysore, 1966, Mysore.
21. Lakdawala, D.T. and Sandesara, J.C., Small Industry in a Big City: A Survey of Bombay, 1960, Bombay.

The problems of marketing and finance also figured in most of the fact finding enquiries. Shetty[22] in his survey made on selected sample of household manufacturing unit revealed that (a) operational activities of these units were highly seasonal, (b) bulk of the products were sold locally, (c) a considerable proportion of producers were indebted mainly on account of working capital and (d) lack of capital resources, mainly working capital, posed a big constraint on their efficiency. McCrory[23] also advocated the inadequacy of capital as a main obstacle in the growth of craftsman entrepreneurs. Baljit Singh's study[24] showed that small units competed strenuously among themselves. These units were obliged to sell their products to a limited number of whole sellers and had to pay high prices for their raw material requirements. There was, thus considerable scope for reducing the sale prices and raising the share of the producer through a rational marketing system.

The low utilization of capacity in small units was another significant fact that was discernible from most of the studies. Both supply conditions like shortage of funds and raw material, and lack of demand seemed to have

---

22. Shetty, M.C., Small Scale and Household Industries in a Developing Economy, 1963, Bombay.

23. Mc.Crory, James, T., Small Industry in a North Indian Town, 1965, Delhi.

24. Singh, Baljit, op.cit.

contributed to the phenomenon. Shetty[25] in his study found substantially low capacity utilisation of the units covered. Dhar's study[26] showed that most of the units were suffering from surplus capacity ranging from one-tenth to three-fourths of rated capacity . Lakdawala and Sandesara[27] also revealed in their Bombay Survey, that as many as 85% of the unit worked below capacity, ranging from one fifth to fourth-fifth of the full capacity.

Apart from theoretical discussion various authors examined the relative suitability of different techniques of production ~~through appeal to data~~ statistically. The discussion in this regard ranges from industry wise analysis to broad product groups.

First, some broad industry-wise studies will be considered. Baljit Singh[28] discussed the problem of capital-intensive versus labour-intensive techniques in small scale units of Moradabad. In his study he argued that capital-intensity should be viewed in two different senses, that is, capital-labour ratio (CLR, and capital output-ratio (COR, and these two need not move in the same direction.

25. Shetty, M.C. op.cit

26. Dhar, P.N., Small Scale Industries in Delhi, 1958, Bombay.

27. Lakdawala, D.T., and Sandesara, J.C. op.cit.

28. Singh, Baljit, op.cit.

Dhar's[29] findings in this respect were also quite similar. Dhar noticed that capital employed per worker increased appreciably in most industries without changing the COR in a similar manner. It may be mentioned that as both the studies pertained to units hiring less than 20 workers, the correlates of scale of efficiency would be of doubtful nature when the scale variation is examined in such a narrow range.

3.5 SCALE AND EFFICIENCY

One interesting field of study has been the relative efficiency or productivity of modern small scale enterprises vis-a-vis large scale units. Here main concern has been to empirically verify whether modern small scale units share the employment-creation and capital-saving characteristics of traditional house-hold industries, as was postulated in the indsustrial policy resolution 1956.

Time to times various studies have compared the efficiency level of small scale and large scale enterprises through the interrelationships between capital and labour, and output and surplus. The conclusions drawn by them however, have been conflicting. Dhar and Lydall[30] in their study compared the output capital ratio for a number of reasonably homogeneous industry groups each depicting size variation. Two sets of exercises were made, one for 9 industries with the data base furnished by census

of Indian Manufacturers, 1956, and the other for 15 industries using data from Perspective Planning Divisions' studies[31,32]. On the basis of both the exercises, Dhar and Lydall concluded that 'for factories which employ 20 or more persons, OCR increase with the size of unit'[33]. Compared to unregistered small scale enterprises also, the relative position of modern small enterprises was noticed to be unfavourable. It was observed that for enterprises employing less than 20 workers, the output capital rate was generally more favourable than those immediately above them, but not necessarily more favourable than those in large enterprises. Thus Dhar and Lydall found small scale unit, using modern machinery and hiring upto 50 workers, to be the most capital intensive type of enterprises. In

---

29. Dhar, P.N., op.cit.

30. Dhar, P.N. Lydall, H.F., op.cit.

31. Government of India, Planning Commission,(Perspective Planning Division) A Study of Economic Coefficients or organised industries in India, 1959, Delhi (Mimeo).

32. Government of India, Planning Commission (Perspective Planning Division) Capital and Labour Requirement, of Small Enterprises, 1960, Delhi (Memeo).

33. Dhar, P.N. and Lydall, H.F., op.cit., p-19.

contrast to Dhar and Lydall's study, Sandasara[34] extended the analysis in his search for scale and efficiency relationship, over time, 1953-58, and covered more industries and efficiency parameters. For both the studies, census of Manuf. Ind.(CMI, formed the data base, size was defined in terms of employment and capital broadly defined as total productive capital. Sandasara examined the relationship between size and capital-intensity (CLR) and also between size and other economic characteristics like output, ~~usage~~ and surplus ~~each~~ for each worker, and output and surplus per unit of capital. Sandesara's study revealed lack of positive association between size and capital intensity, but size and OCR, size and surplus-capital ratio, and size and wage rate were seen to be positively associated and thus provided further evidence supporting the conclusions earlier reached by Dhar and Lydall.

Mehta[35] disputed the approach and inference drawn by Dhar and Lydall and Sandesara.He doubted the efficacy of measuring size variation by employment units, for this did not rule out the possibility of sick or ailing large scale units employing only a skeleton staff, and new units, undergoing teething troubles, being classified in the small size group. Mehta also argued that wide variations of CLR during 1953-58, as seen from CMI data, for the small size group as compared to large size group could

34. Sandesara, J.C., Size and Capital Intensity in Indian Industry, 1969, Bombay.

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

hardly be taken as explaining scale or technology effect; instead, the unfavourable position of S.S. units might be due to low and fluctuating levels of capacity utilization.

Mehta in his study examined the capital labour, output labour and output capital ratios for three size classes viz., small having fixed capital upto Rs.5 lacs, medium over Rs.5 lakhs but not exceeding Rs.25 lakhs, and large scale over Rs.25 lakhs, covering 32 industries. The relevant data were obtained from ASI-census sector and ASI-sample sector. In his study Mehta justified the use of fixed capital as size variable because 'Scale' was defined that way by the Government. He revealed that in almost all industries, CLR increased with size. Labour productivity was also generally found to increased with size but not in the same proportion as capital intensity and, as a natural corollary, output capital ratio was noticed to decrease with size.

The conflicting statistical evidences is somewhat baffling. It is doubtful whether the capacity utilisation picture would have changed so much for small scale units between 1958 and 1961 as to completely alter the conclusions. In fact, International Perspective Planning Team[36] during 1962, noticed widespread under utilisation of capacity in the Modern Small Scale Sector due to raw material shortage which were much more severe for small scale units

36. Government of India, Ministry of Industry, Development of Small Scale Industries in India: Prospects, Problems and Policies (International Perspective Planning Team, sponsored by the Ford Foundation), 1963, New Delhi.

as compared to large scale units. Perhaps, the contradictory results are suggestive of inadequacy of treatment given and also of inherent limitations of the statistical analysis itself.

3.6 OTHER ASPECTS

The studies on small scale sector evaluating that promotion of small scale enterprises enables the mobilisation of latent capital and skills, and checks over urbanization and concentration of incomes, have also been considered worth discussing. Some studies examining these claims have been discussed as follows:

3.6.1 Capital and Skill

The role of small scale industries that play in capital formation is hard to make out by thoughts from the available studies. It cannot be asserted that small scale units as a class, compared to large scale production, use capital more efficiently. The question arises as to how small enterprises score in their ability to save and reinvest. McCrory[37] in his case study in a North India town found that inspite of craftsmen-entrepreneures' high propensity to save and reinvest, they were not able to break the size barriers. Berna[38] in his study of metal working firms, arrived

37. McCrory, James, T. op.cit.

38. Berna, James, J., Industrial Enterpreneurship in Madras State.

at a different conclusions. He revealed, entrepreneurs employing 50-250 workers, were successful in breaking the size barriers despite the limited flow of loan finance from banks. The four studies sponsored by UNESCO Centre[39] indicated that the propensity to save and reinvest varied with the (i) location-small capitalised in Okhla indulging in conspicuous consumption and almost all Rajkot firms ploughing back the profits, (ii) nature of the enterprise-metal based industries generally doing better, (iii) size of the enterprise-bigger size units having an edge, and, (iv) the background of the entrepreneur.

Dhar and Lydall[40] emphasized about the role of small sector in encouraging the human capital formation through the process of 'Learning by Doing'. He argued that since there is no overall shortage of small entrepreneurs in India, there is no need to search for latent resources, but there is good case for trying to make the path of new entreprenuers as smooth as possible. Berna[41] studied that, economic forces like access to capital, possession of business experience and technical knowledge, appeared to

39. UNESCO, Small Industries and Social Change, 1966,Delhi.

40. Dhar, P.N. and Lydall, H.F. op.cit.

41. Berna, James, J., 'A Quantitative Study of Entreprenuership' in South India', Economic Development and Cultural Exchange, 1958-59, 7,p.343-362.

be more important than social group in the emergence of industrial entreprenuers. The case studies sponsored by the UNESCO Research Centre, on the other hand, highlighted that traditional social institutions played an important role both in the selection of small scale entrepreneurs and in determining the size of their undertakings. The study suggested that, '.... the social structure affects and is effected by the size of the manufacturing plants. Thus, the more socially privileged among the entrepreneuers and workers are likely to be found in the more substantial firms'[42]. Here it may be mentioned that the focus and methodology of the two studies differed.

3.6.2 Urbanization

Various studies, doubted whether SSI possess enough location flexibility so as to serve the objective of regional dispersal of industries and to counter the over urbanization tendencies. On the ~~topic~~ subject Staley and Morse[43] speaks, the SS unit as a class cannot be treated as 'footloose' and that their locational requirements would vary with the specific product, the type and level of technology, and other factors. Generally, there is a tendency that initially SS units flourish best in large cities, and efforts to 'grow small industry

42. UNESCO, op.cit. p.29.

43. Staley, E. and Morse R. op cit.

where nothing else grows' are unlikely to succeed. International perspective planning team[44] and Staley and Morse argued for a phased programme, consisting in -

(i) Selecting intermediate urban growth points,

(ii) promoting comprehensive development of these growth points, and

(iii) developing rural-urban linkages.

By Dhar and Lydall[45] it has also been argued that large scale units, and not small scale, are more suited for opening an underdeveloped area.

3.6.3 Ancillary Industry

The studies made between large and small enterprises from time to time reflects that relationship between small and large scale units is not always competitive. Very often they support each other through mutual buying and selling and also through the process of sub-contracting. Staley and Morse mention 'Part of the process of industrial development is growth of inter-firm relationship and complementarities - indirectly through the market, and directly by arrangements for further manufacturing and by contracts to produce components and supplies'[46].

In India, special efforts have been made for the

44. Govt. of India, Ministry of Industry, Development of Small Scale Industries in India: Prospects, Problems, and Policies (International Perspective Planning Team, sponsored by the Ford Foundation), 1963, New Delhi.

45. Dhar, P.N. Lydall, H.F., op.cit.

46. Staley, E. and Morse, R., op.cit. pp.273-274.

development of ancillary industries. Berna[47] observed ancillary system as a tendency towards self-sufficiency. He reported that even a smallest metal working unit had their own foundry, although utilized only for three months in a year. Rosen[48] also noted that the amount of sub-contracting practised by Bombay engineering firms during 1955 and 1956 was on an extremely limited scale. This has perhaps created the problem of capital equipment imbalances in the large scale units. While studying the operation of machine manufacturing units. Mathur et al.[49] noted, that even with the best programme of production, about half of the capacity of the units studied would remain unutilized. The optimum production would have required phasing out of many product lines.

The studies evaluating the factors seems to have hampered the growth of ancillary units, were also discussed time to time. Failure of small unit to meet the order in time and to provide desired quantities meeting the specifications asked for,(Rosen[50]),(Basu et.al[51] and International perspective Planning team[52]), have been some of the prominent factors which figure in the discussion. Further work, suggesting ways and means of evolving healthy inter-dependence between large and small firms, were made time to time.

47. Berna, James,J., Industrial Entreprenuership in Madras State, op.cit.
48. Rosen, George, Industrial Change in India: Industrial Growth, Capital Requirements and Technological Exchange, 1958, Glenwe, (Massachussetts Institute of Technology Centre for International Studies).
49. Mathur, P.N. et al., 'Optimum Capacity and Imbalance of Capital Structure: The Case of Machine Manufacturing Industries", Artha Vijnava, Sept.-Oct., 1967, 9,p.428-436.
50. Rosen, George, op.cit.
51. Basu, S.K. et.al., Problems and Possibilities of Ancillary Industries in an Developing Economy,1965,Calcutta.
52. As in Ref.36.

The review of major work in the field and the available data base suggests that, though several studies of analytical nature, covering the small scale in their totality had been made time to time. But it may however, be stated that very few systematic efforts has so far been made to study the problems connected with their promotion and development. There is ~~an~~ a universe need to conduct the studies both in depth and breadth on the regional and district level, to obtain the correct perspective of the role of SSI in promoting the economic growth.

CHAPTER IV

SMALL SCALE INDUSTRIES OF DISTRICT SAHARANPUR

In this chapter it is proposed to explain the factors which weighted in the selection of the area for the study. Here it is found necessary to take a brief account of the salient features of the area, mainly from the point of view of providing a general background as a framework for the subsequent analysis of the data collected from the survey of small scale industries in District Saharanpur.

This chapter takes care of regional background of the area, population structure, occupational pattern, educational level, agricultural resources and minerals, power, transport and communication and banking facilities, besides this it takes the detailed account of industrial structure prevailing in the area. This section covers the aspect effecting the size and location of small scale industries, in the area, area of concentration, contribution of large scale and small scale industries in the industrial economy of the district in respect of their investment, employment and production and it also takes care of industrial estates prevailing in the area.

REGIONAL BACKGROUND:

The district Saharanpur is one of the few industrially developed districts in Uttar Pradesh. It is situated in the

upper half belt of the Meerut Division in between Dehradun and Muzaffarnagar. It is centrally placed and well linked by other districts and states viz.,Delhi, Meerut, Dehradun, Haryana etc. It has a peculiar status, with the view of its location and natural resources. Good infra-structural facilities are available all around the district and has a very good status both from the point of view of industrial structure and agriculture. It is well developed ~~with~~ and has the population of 20.59 lacs (1971) and the area of about 5521 sq.kms.

The district is separated in the north from Dehradun district by the Shiwaliks, in the east from Bijnor district by the holy river Ganges, in the west from the state of Haryana by the another important river Yamuna and in the South it is continguous to District Muzaffar Nagar separated by conventional boundary. The district lies between 29°34' and 30°24' north latitude and 70°7' and 87°12' east longitude(Fig.4.1).

It has four tehsils namely, Saharanpur, Deoband, Nakur and Roorkee. Tehsil Roorkee covers the largest area in the district compared to other tehsils. The details of area and population can be seen from table 4.1. In 1970, there were 13 towns including six municipalities but presently the number has increased to 17. This trend of migration and concentration shows the availability of good infrastructural facilities in the district.

The area of the district can be divided into three physical tracts viz., Ghar, Khadar and the Bangar. The tract Ghar

is sub-mountainous belt below Siwaliks covered with land and soil accumulated from mountains and is fertile. ~~a blackish layer in the region~~. The Khadar is the hinterland of the rivers ~~of~~ Ganges and Yamuna. The tract Bangar, slopes from north to south with upper limits roughly running parallel to the Siwaliks.

The length of the district from East to West is 105 kms and from North to South 90 kms.

POPULATION STRUCTURE

The total population of the district according to 1971 census goes to 20.59 lacs compared to 16.15 lacs in 1961. It shows ~~the all~~ about 27% increase in the population during last decade. Of the total population 76% people comprises the rural population, compared to 86% in U.P. and 80% in India. The ratio of male and female population ~~is almost equal i.e. there~~ are 55% males in the district compared to 45% female. Out of total only about 30% are workers, engaged in different kinds of jobs like, cultivation, agricultural labour, workers engaged in manufacturing jobs, construction, trade and commerce and other services. Cultivators and agricultural labour constitute the major part of the working population i.e. 62% of the total working population. The density of the population per sq.km. has also increased from 292 to 373 during the last decade. This shows the ~~very~~ high density of population in the

district compared to the state (300 persons per sq.kms, and India (182 persons per sq.kms). The high rate of density clearly indicates the availability of more basic amenities in the district compared to others.

If the total population of the district is divided according to the tehsil, it was found that tehsil Saharanpur has shows the highest level of population (6.55 lacs) among other tehsils in the district.

According to the density tensil Saharanpur has also a highest density of population i.e. 422 persons per sq.km. compared to others. The details of area, population and density in ~~different~~ other tehsils may be seen from the table 4.1.

Table 4.1: Tehsilwise, Area, Population and Density

S.No.	Tehsils	Area sq.km.	Population (lacs,	Density per sq.km.
1.	Saharanpur	1,573	6.55	422
2.	Roorkee	1,864	6.40	343
3.	Deoband	1,072	4.05	377
4.	Nakur	997	3.54	355
	Total	5,521	20.54	373

Source: 'Let the figure tell': R.I.P. at Glance, Deputy Director of Industries, Saharanpur.

OCCUPATIONAL PATTERN

Among the total population of the district only 30% of the population are worker, engaged in different kinds of jobs compared to 32% in the State and 32.9% in India. Among the workers in the district are, cultivators, agricultural labourers, workers engaged in mining and quarring, worker engaged in manufacturing jobs, construction, trade and commerce, transport and communication and other miscellaneous jobs. Among all these categories the cultivators and agricultural labour constitute a major group, which are about 63% of the total working population in the district. This shows a good level of agricultural activities in the district. Among them the workers engaged in manufacturing jobs show a good percentage. There are about 11% workers engaged in manufacturing jobs, compared to 2.5% in India. This high level of manufacturing activities in the district show the presence of good industrial base in the district. Out of 11% workers engaged in manufacturing jobs, about 4.37% are engaged in house hold manufacturing and rest 6.31% in other than household manufacturing compared to 3.6% and5.9% respectively in India.The engagement of workers in non-household manufacturing at a high degree represents the good level of industrialisation in the district and availability of much better facilities and market for the manufactured products. The details of workers and non-workers in the district and distribution of workers in different categories have been given in table 4.2 and 4.3 respectively.

Table 4.2- Working and non-working population in the district, U.P., and India.

(1971 census)

S.No.	Nature	Saharanpur (lacs)	Uttar Pradesh (lacs)	India (lacs)
1	2	3	4	5
1.	Workers	6.12 (30%)	284.17 (32%)	1804.00 (32.9%)
2.	Non-workers	14.42 (70%)	599.48 (68%)	3676.00 (67.1%)

Source: 1. Distt. Industries Office, 2. Statistical Diary 73, 3. Stat. Outline of India 1978, Tata Economic Services.

Table 4.3- Percent distribution of workers, engaged in different activities in the district, U.P. and India

(1971 census)

Category	Saharanpur	Uttar Pradesh	India
1	2	3	4
A- Agriculture and allied activities	62.94	75.34	69.7
1. Cultivators	36.06	56.00	43.4
2. Agriculture-Labourers	26.88	19.34	26.3
B- Non-Agricultural activities	37.06	24.66	30.30
1. Manufacturing process	10.68	N.A.	9.50
(a) Household industry	4.37	N.A.	3.6
(b) Other industry	6.31	N.A.	5.9
2. Construction	1.37	N.A.	1.2
3. Trade and Commerce	6.28	N.A.	5.5
4. Transport and Commn.	3.46	N.A.	2.4
5. Other services*	15.27	N.A.	11.5
C- Total	100	100	100

* Including Forestry, fishing, mining, etc.
Source: (As in table 4.2)

EDUCATION

Saharanpur is well placed both in respect of academic education and technical institutions. The percentage of literacy in the district has gone up from 20.4% to 23.16% in the last decade (1961-71). In all, there are 476975 literates in the district of which 75% are male and 25% are female. The general trend of higher literacy ratio for men is true for the district. Of the total male population in the district 31.64% are literate compared to 12.86% among females. The total number of primary and junior high schools is about 1572 (March 1974). Besides there are 109 High schools and 11 Degree Colleges in the district upto March1974. The district has three universities viz., Gurukul Kangri Vishwavidyala, Darul-Uloom, Deoband and Roorkee University, Roorkee. Gurukul Kangri and Roorkee universities are among the well known universities in India and abroad. Besides this, there are large number of technical institutions in Saharanpur district which includes, industrial training institute, polytechnics, Govt. pilot workshop and other training-cum-production centres.

The table 4.4 ~~we may see~~ shows the different institutional facilities available in the district and improvement among them during December 1970 to March 1974. The data shows the highest level of increase in the number of Degree colleges in the district i.e. it shows 83% increase during four years.

Table 4.4- Educational facilities available in district.

S.No.	Type of Institution	Dec.1970	March 1974	% increase
1.	Primary and Junior High School	1382	1572	14
2.	High School and Inter College	89	109	22
3.	Degree College	6	11	83
4.	Universities	3	3	-

Source: P.N.B., District Action Plan, Saharanpur (U.P.), 1975.

AGRICULTURE

Because of high fertility of soil and good water facilities nearly 80% of the total area of the district is under cultivation. About 62% of the total working population in the district is engaged in agriculture. Out of which only 60% are cultivators and remaining 40% are agricultural labourers.

The main crops of the area are wheat, paddy, sugarcane, tobacco, gram, maize etc. The production ~~of agriculture crops~~ has gone up manifolds during 1966-~~67 and 1973~~-74. The table 4.5 gives the production of main crops at two points of time.

Table 4.5: Production of different crops in area

(Tonnes)

Type	1966-1967	1973-74	% increase
1. Wheat	118996	228580	92
2. Paddy	24429	117718	482
3. Sugar cane	2927670	4322000	48

Source: P.N.B., District Action Plan, Saharanpur, 1975.

The production of paddy has shown a remarkable increase of production i.e. 482% compared to 92% in wheat and 49% sugarcane. Among the factors responsible for this increase are, increasing consciousness towards new varieties of crops, development of scientific methods of cultivation, improved seads, increase in irrigational facilities and use of chemical fertilisers.

RESOURCES AND MINERALS

Among the main resources in the area are agricultural resources, the principal crops of the area are wheat, paddy, maize and pulses. Sugarcane is the main cash crop of the district, whose total production is about 38.65 lakh m.tonnes. Other cash crops are groundnut, cotton, potato, oil seeds, and tobacco.

Another important resource of the district is forest which constitutes 15% of the total area. The main forest

products are Sal, Sheesham and Sain. Among the minor forest products, mention may be made of bamboo, bhabbar grass, gum, honey, Katha. The most of the forest products are used as a raw material for various types of industries. The district is not important in respect of minerals. Only simple stones are available in the area and which are used in construction of roads etc.

POWER:

Electricity in the district is supplied from Bahadrabad power station. The total number of villages electrified were 1152 in March 1974 compared to 556 in 1969-70, i.e. an increase of 107%. In 1973-74 about 17 towns were electrified including municipilaties as compared to 13 in 1969-70. Of these total 1152 electrified villages, 331 are electrified with low tension lines, whereas 821 villages are connected by Central Water Power Commission lines. Taking these together they form 69% of the total inhabited villages of the district.

TRANSPORT COMMUNICATIONS

District Saharanpur is well linked with surrounding districts and other parts of the country by roads and rail. The main railway lines passing through the district are Saharanpur-Ambala, Saharanpur-Hardwar, Saharanpur-Delhi and Saharanpur-Moradabad etc. Similarly it is connected by

roads ~~the district~~ with Hardwar, Dehradun, Ambala, Delhi etc. The total net work of 654 km. of metalled road is well spread in the district compared to total net work of 148 km of broad gauge railway line. The U.P. Roadways ply buses in the district on different routes besides private roadways also operate in the district. ~~The District~~ Saharanpur, which is centrally located and lies hardly 164 km. from Delhi, 80 km. from Hardwar and 69 km. from Dehradun. Similarly other important cities in the northern Indian are almost within the range of 200 to 300 km. from Saharanpur. There are in all 3 railway junctions viz., Saharanpur, Hardwar and Laksar and 24 railway stations in the district constituting a good net work within the district and also well connected with other parts of the country.

COMMUNICATION

The district besides other facilities also has good postal facilities with one Head Post Office and 72 sub-Post offices and 185 Branch Post-offices in 1975 as compared to total 225 in 1970. That there is a 12% increase in the number of post offices within a 5 year (1970-75). At present there is one post-office for every 6 villages and each post office on an average serves a population of about 8000. All the post offices in the district provide the facilities of saving banks to help the poor and also to initiate the savings.

There are 14 telegraph offices and 12 telephone exchanges

in the district, performing a good communication system within the district as well as with other parts of the country.

RAINFALL AND TEMPERATURE

The average normal rainfall of the distt. recorded by the Meteorological Centre at Roorkee is 1067.6 mm and temperature ranges between 0.9°C to 39.4°C, during 1970-71.

BANKS

Saharanpur district is well served by the financial institutions. Number of commercial banks' ~~offices~~ has increased from 37 in 1970 to 67 in 1974. This shows about 81% increase in the number of banks during 1970-74. Currently there are about 75 banks operating in the district. Besides the commercial banks in district cooperative banks also operate in the district with 9 branches. There are on an average one bank per 30700 persons ~~are served by one commercial bank~~ in the district in December 1974 as compared to all India average of 30,000. This average has come down from 60,000 persons in 1969, 41,000 in December 1972 to 30,700 in December 1974 in the district. The overall growth and performance of the banking sector in the district can be assessed from the selected indicators as shown in table 4.6.

Table 4.6- Performance of Scheduled Banks

S.No.	Details	Dec.1970	Dec. 1974
1.	Deposits (Rs.lacs)	1774	3905
2.	Advances (Rs.lacs)	1483	2699
3.	Credit-Deposit Ratio	83.59	69.11
4.	Number of branches	37	67
5.	Deposit per branch (Rs.lacs)	47.95	60.07
6.	Advance per branch (Rs.lacs)	40.08	41.52
7.	Population per bank office ('000)	60	31
8.	Deposit per capita (Rs.)	86	190

Source: P.N.B. District action Plan, Saharanpur, 1975.

As the table 4.6 shows that there is a steady growth in the deposits as well as advances by the banks in the district. The total deposits of all scheduled banks was ~~come upto~~ 3905 lacs in Dec.74 as compared to Rs.1774 lacs in December 1970, i.e. 120% increase in the deposits during 1970-74. The deposit average of per branch hasalso increased from Rs.47.95 lacs to Rs.60.07 lacs during this period. Besides this the per capita deposits has been also increased by 121% during this period, which goes from Rs.86 to Rs.190 during this period.

Similarly the total credit in the district has shown an increase of 82% , i.e. it has gone from Rs.1483 lacs to

Rs.2699 lacs during this period. The advances per branch has also gone from Rs.40.08 lacs to Rs.41.52 lacs, during this period.

The table 4.7 shows the sector wise position of bank advances during 1972-74. We found that there has been an overall increase in the advances to priority sectors.

Table 4.7- Amount of advances during 1972-74

S.No.	Sectors	Dec. 1972	Dec. 1973	Dec. 1974
1.	Agriculture			
	(a) Direct	10462	18223	20378
	(b) Indirect	354	664	6398
2.	Small Scale Industries	14446	14848	13157
3.	Transport	1404	1608	1590
4.	Retail Trade	2420	1728	2124
5.	Others	138	365	333
6.	Total	29224	37508	43980

Source: PNB, Distt. Action Plan, Saharanpur, 1975.

Total priority credit shows an increase of 50.6%. i.e. it goes from 292 lacs to 440 lacs. There is also an increase of 94.3% in the direct credit to agriculture and tremendous increase in indirect credit to agriculture. It increased from Rs.3.54 lacs to Rs.64 lacs in this period.

The appraisal of credit position of SSI, is very disappointing and, the advances during this period

has gone down from Rs.144 lacs to Rs.131 lacs. Similarly in the case of retail trade the position is also very poor; the total advances from Rs.24 lacs comes down to Rs.21 lacs. This represents a presence of depression in the case of industry during the period.

4.2 INDUSTRIAL STRUCTURE

The existing industrial structure of the district comprises of large scale, medium scale, small scale and cottage units which are scattered almost all over entire district. However, the main concentrations of industrial units are at Saharanpur, Roorkee, Hardwar and Deoband. These industries are either registered factories or unregistered organised establishments and household units engaged in the manufacturing of variety of items. The district has a fairly wide industrial base, consisting of 13 large scale units and 1036 SSI (registered). In addition to this there are 1625 (estimated)* unregistered SSI in the district.

The large scale industries (LSI) in the district is comprised of ~~account for~~, textile mills, cigerette factory, card board oil ~~mill~~, milk products and ghee factory, distillery and sugar factories. These LSI constitute a good industrial base in the area, while small scale industries in the area also comprise of various types ranging from engineering industries, instrument, electrical and electronics, chemical, wood based, animal based, agro based, ceramic and textile based industries.

* Dy. Director of Industries, Saharanpur

Inspite of various units in the area, the engineering industries predominates because, it has good marketability for their products in the area.

The presence of BHEL at Hardwar and various sugar and textile industries in the area has widened the scope for small engineering units, engaged in various activities. The development of ancillary unit has also shown a remarkable scope in the last few years with the establishment of BHEL.

The number of small industries in 1975-76 was 1036 ~~during 1975-76~~, providing an employment to about 5213 persons with the investment of Rs.3.72 crore and estimated production ~~the tune~~ of Rs.4.70 crore in 1975-76. Contrary to this the large sector in the area provides employment to about 13,000 persons with the investment of Rs.95 crores. The total production in large sector goes to Rs.145 crores during 1974-75.

Before going in detail we would like to review L.S.I. and S.S.I. in the area in detail. First, we would like to consider the LSI, in brief.

LARGE SCALE INDUSTRIES

As discussed ~~in~~ above ~~given lines~~ the large scale sector in the area constitutes an important industrial structure and plays a vital role in the industrial development of the area. The following table gives a bird eye-view of ~~idea about~~ the large scale industries in the district.

Table 4.8 LSI in the Area (1975-76)

(Rs.crores)

S.No.	Type of units	Capacity	Capital Investment	Employment	Production Tonnes.
1	2	3	4	5	6
1.	Sugar factories (5)	-	15.28	6,000	9.52
2.	Cigarettes Factory	766 crore cigarettes	6.19	2,146	49.67
3.	Paper mill	46200 m. tonnes	9.42	1,900	5.93
4.	Textile Mill	-	1.36	2,345	3.92
5.	Distillary	-	0.49	151	0.14
6.	Ghee Factory	-	1.28	300	3.93
7.	Govt. Workshop	-	61.63	200	72.33
8.	Total	-	95.65	13,042	145.44

Source: Report on marketing problem of SSI in RIP Saharanpur, DC(SSI, and Directorate of Ind., Pub.R.I.P., Saharanpur 1977.

Besides, these large units, # BHEL is located at Ranipur, Hardwar, established in 1965-66, and is biggest public sector industry with heavy investment. The unit provides employment to more than 2,000 persons.It produces Hydro-generating sets, turbo generating sets and electrical machines together with associated apparatus and control gears.

The analysis of the figures in respect of LSI shows that average capital per employee was Rs.7.3 lakh and output per employee was Rs.11.10 lakh. The capital output ratio in

this sector ~~goes~~ is 1:1.5 i.e. with the capital investment of Rs.1 there is output of Rs.1.5.

SMALL SCALE INDUSTRIES

In this section an attempt is made to give a general idea about the small scale industries in the area.

The district Saharanpur has a fairly good number of SSI manufacturing various products. The number of SSI in the area has shown about four fold increase during the last decade (1966-76). The number of SSI has gone up from only 252 units 1965-66 to about 1036 small units 1975-76, showing the growth of 41% during the period. If we take into account cottage as well as unregistered small units, the estimate goes to 2100 units in Saharanpur district

The following table shows the category wise distribution of small scale units in the last decade. In the table we find that engineering industries, itself, constitute one third of the total small industries in the area. If it is combined with Agro based industries, these constitute major part of the total industries in the area. The data given in Table 4.9 shows the multidimensional growth of chemical industry in the area, which has risen from 5 units in 1965-66 to 103 units in 1975-76.

Table 4.9- Category wise Distribution of SSI
(1966-76)

(No. of Units)

S.No.	Category	Years							
		1965-66	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76
1.	Engineering Ind.	65	120	158	202	242	271	300	320
2.	Agro Based	69	116	132	172	200	234	255	265
3.	Forest Based	49	91	106	124	153	165	165	191
4.	Animal Based	52	64	81	87	89	92	92	97
5.	Chemical	5	4	18	43	55	69	86	103
6.	Textile	6	8	11	19	22	22	-	-
7.	Ceramic	1	3	5	10	12	17	15	15
8.	Building Material	-	1	1	3	3	3	4	5
9.	Other	5	13	12	16	17	22	28	40
10.	Total	252	423	524	676	793	895	967	1036

Source: Deputy Director of Industries , Saharanpur.

CONTRIBUTION OF SSI

If one takes the account of the total contribution of SSI in respect of employment, capital investment and production, one will find the following: The total 1036 SSI in the area 1975-76 offers an employment to 5213 persons with the capital investment of Rs.372.10 lakhs and estimated production of Rs.49.10 lakh during 1975-76. The following table gives a detailed picture in this respect.

Table 4.10- SSI in the Area (1975-76)

(Rs. lakh)

S.No	Category	No. of units	Capital Investment	Employment	Production
1.	Engineering	320	91.95	1189	126.64
2.	Agro	265	187.20	2167	257.43
3.	Forest	191	17.56	773	33.13
4.	Animal	97	4.44	274	7.19
5.	Chemical	103	47.25	405	32.05
6.	Textile*	-	-	-	-
7.	Ceramic	15	3.52	51	7.21
8.	Building Material	5	1.89	32	2.04
9.	Other	40	18.27	322	25.41
10.	Total	1036	372.10	5213	491.10

Source: Deputy Director of Ind.Saharanpur

* Eliminated, on the set up of separate directorate in 1974-75.

The analysis of data in respect of SSI shows that an average capital required per worker was Rs.7,138 only and output per employee goes to Rs.9,420. The capital output ratio is about 1:1.32.

COMPARISON OF ECONOMIC RATIOS

If we take care of both large and small sector in respect of their labour productivity, capital intensity and capital productivity, we find the following interesting results.

The following table gives the comparative picture among large scale industries and small scale industries of their various ratios.

Table 4.11- Salient Derived Ratios for LSI and SSI

S.No.	Category	Capital Productivity	Labour Productivity	Capital Intensity
1.	Large Scale Industries	1:1.50	Rs.11.10 lakh	Rs.7.30 lakh
2.	Small Scale Industries	1:1.32	Rs. 9,420	Rs.7,138 lakh

It is interesting to note, that there is not much difference in the capital productivity of large and small scale sector. But contrary to that we find a great difference in labour productivity of large and small sector. If ~~Rs.11.10 lakh is~~ is Rs 11.10 lakh output per worker in large sector, it is only Rs.9,420 in small scale sector. Similarly, the large sector is highly capital

intensive compared to small scale sector, whereas, in large sector the capital labour ratio was Rs.7.30 lakh, it was only Rs.7,138 in small sector, in the area.The analysis provide a strength to the thinking that 'small scale industries are 'labour cheep' and 'capital dear'. While we are discussing about the country like India, where unemployment is rampant and capital is scarce, it is viable to promote the small scale sector. The development of small scale sector in the area also proves the correctness of the thinking. Conclusively, we may say that it will be beneficial to promote small sector in the district covering rural area for eradicating the problemof regional imbalances and in helping the equal distribution of national income.

LOCATION OF SSI

The growth of small scale industries in few pockets of the district can be seen from the table given below:

Table 4.12 Area of Concentrations

S.No.	Area	No. of Units	Percentage of total
	NON-RIP		
1.	Saharanpur	470	45
2.	Roorkee	260	25
3.	Gangoh	2	-
4.	Sub-total	732	70
	RIP		
5.	Deoband	227	21
6.	Nanauta	17	1
7.	Rampur	53	5
8.	Nakur	5	-
9.	Behat	2	-
10.	Total	1036	100

Source: Deputy Director of Industries Saharanpur.

The concentration of SSI in particular region ~~may be~~ are because/influenced by the presence of good infrastructural facilities, ~~those points.~~ Geographical distribution of these industries in the district may be determined by weighing and assessing the relative significance of historical, economical, natural and often psychological factors. Some of the factors, which affected the location of small industries in the district are like, availability of good transport facilities which affected the good availability of raw material and access of market, availability of power resources, labour, marketing facilities and financial facilities are the among other factors affecting the location of SSI in the area.

The implementation of rural industries project (RIP) programme at Deoband, has also great influence in concentrating the small scale industries in that particular region. About 22 percent of the total industris are concentrated at Deoband. The RIP programme, which was initiated in 1962 as a centrally sponsored scheme in 45 selected areas with the idea to work out an intensive programme of development of SSI so that effective methods and techniques for industrialization of rural areas were evolved under different set of conditions which could be later used in extending the programme throughout the country.

Important points of concentration of SSI in the distt. are Saharanpur ~~proper~~ and Roorkee. The concentration of Instrument industries at Roorkee emphasize the importance of 'historical factor' effecting the location of industry.

In Saharanpur the important industries are casting, conduit pipe, agriculture implements, steel furniture and units manufacturing machine parts, like, textile and sugar industry. This concentration is due to factor affecting the marketing of products, besides the concentration of ~~almost all the~~ large scale units at Saharanpur has also given the chance of establishing small scale units at few points.

4.4 ANCILARY INDUSTRIES

With the establishment of BHEL at Hardwar , fourteen small scale units have developed as ancillary. These are engaged in doing all sorts of work for the BHEL, which includes fabrication and machinging, tool room and heat treatment, machine components, manufacture of insulating material, mica tape and sheets, carbon bushes, ferro, ammonia and other sensitised paper and many other types of jobs. At present 13 small ancillary units are working and are being run mostly by qualified engineers/technocrates.

The total investment in respect of 13 ancillary units is estimated to Rs.80 lakh and total output/job work in respect of 10 units in 1975-76 amounts to only Rs.8.17 lakh. They give employment to 219 persons.

4.5 INDUSTRIAL ESTATES

Presently three 'industrial estates' are functioning in the district. These include a medium size conventional

estate at Roorkee, Rural Industrial Estate at Deoband and Ancillary Estate at Hardwar. According to the size of plots/ sheds, the Industrial estate has been divided into four categories viz.,

(1) Big Industrial Estates, where four types of sheds- A,B,C and D have been constructed.

(2) Medium Industrial Estate, where only B, C and D type of sheds have been constructed.

(3) Small Industrial Estate, where only C and D type of sheds are available.

(4) Rural Industrial Estate, where type (1) and (2) sheds have been provided.

The details of area for various types of sheds can be seen from the table given below.

Table 4.13 Type of Sheds

S.No.	Type of Shed	Area of shed	
1.	'A'	2000	sq.yds
2.	'B'	1200	sq.yds
3.	'C'	600	sq.yds
4.	'D'	300	sq.yds
5.	Type (1)	60'x50'	sq.yds
6.	Type (2)	60'x40'	sq.yds

Source: DC(SSI),EDP State Profile No.2, p.11.

District Saharanpur shows a good position in respect of availability of industrial estates. Out of total 44 industrial estate in the State, 3 are situated in Saharanpur at different points. Inspite of this, the need for one more industrial estate at Saharanpur proper is felt since a long time. Because, the increasing impact of small scale industries in the Saharanpur city is creating the congestion within municipal limits of the district. The construction of one industrial estate in the outer area of the city will help in diluti g the congestion and also in giving healthy environment to the city.

The industrial estates at Deoband, Roorkee and Hardwar are functioning well. Though few plots/sheds are lying vacant in the industrial estate at Deoband, mainly due to ~~good performance, because,~~ abnormally high cost of land ~~the estate at Deoband~~ as compared to the adjoining areas of the estate. The unreasonable pressure of octroi duties in the area has acted as a drag in the development efforts.

The detail picture of the industrial accommodation available in the Estates and also the number of sheds/plots lying vacant with them, is given in Table 4.14. on the next page.

INDUSTRIAL ESTATE DEOBAND

The Industrial Estate at Deoband is mainly engaged in the production of items viz., cheff cutter blade, P.V.C. wires and cables, paints and varnishes, polythene tubing

Table 4.14 Industrial Sheds/Plots

S.No.	Name	Type	No. of Total Sheds	No. of Total Plots	Vacant Sheds	Vacant Plots
1.	Deoband	Semi-Urban	30	42	4	22
2.	Roorkee	Urban	15	48	Nil	3
3.	B.H.E.L.	Urban	14	N.A.	1	N.A.

Source: DC(SSI), DP, State Profile Series No.2, Appendix V

and agricultural implements, etc. and its investment, employment and production as on December 1976 is given below. It shows a good performance in the term of capital productivity

No. of units	Investment (Rs. Lakhs)	Employment	Production (Rs. lakh)
27	24.75	140	75.00

The data shows presence of less capital intensitive unit in Estate.

BHEL ANCILLARY ESTATE

The estimated figures regarding BHEL Ancillary Estate is as follows:

No. of units	Investment (Rs. lakh)	Employment	Production (Rs. lakh)
13	80	219	8.176*

* For 10 units only.

The BHEL Ancillary Estate did not show very good performance in the term of it capital productivity. It show the presence of highly capital intensive small units at Hardwar. The average investment per unit comes to about Rs.6.0 lakh, compared to less than Rs.1.0 lakh in Deoband estate. But the difference in the nature of both estates convinces us about their discrimination.

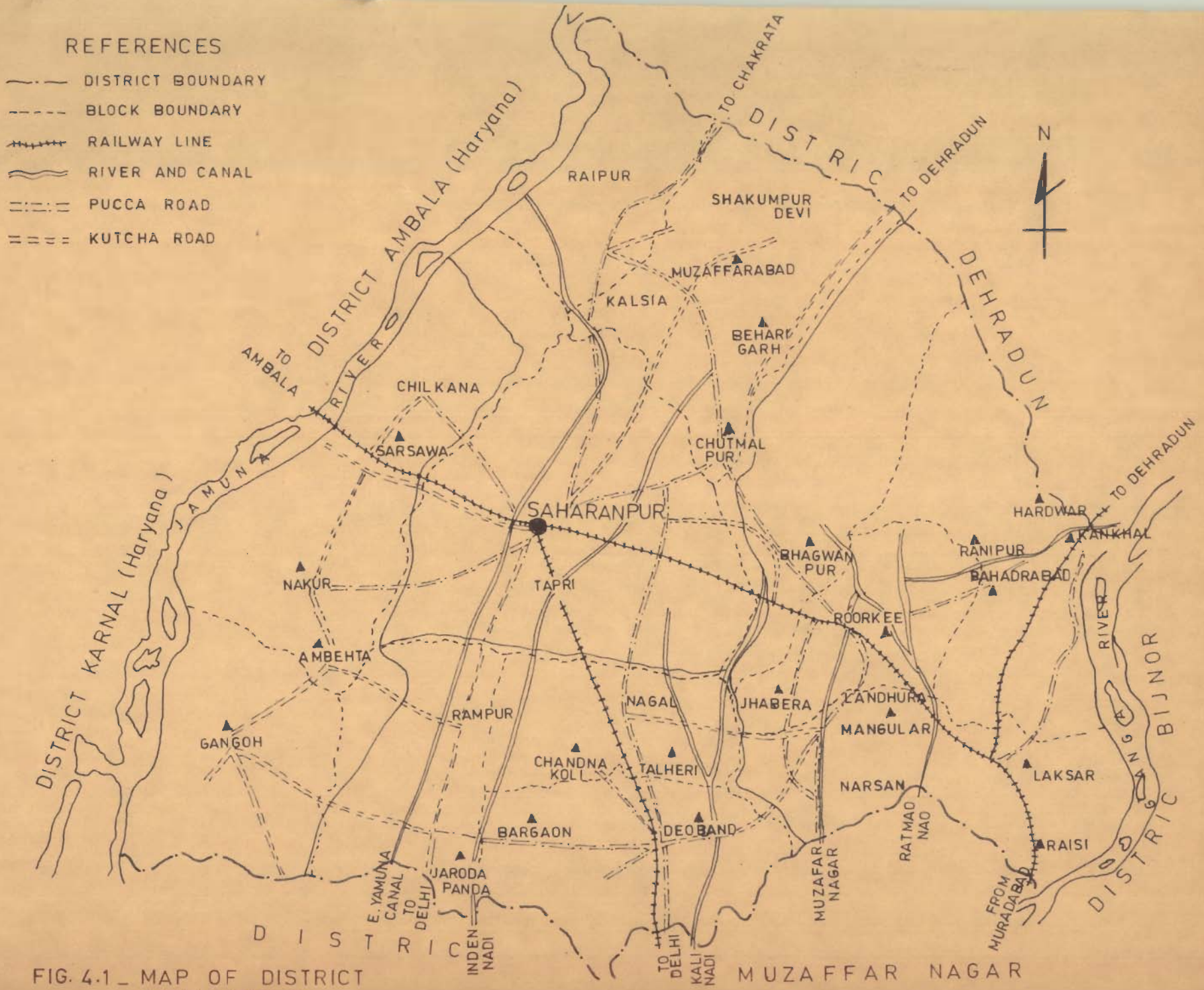

FIG. 4.1 _ MAP OF DISTRICT SAHARANPUR

CHAPTER V

PROBLEM FORMULATION AND METHODOLOGY

In this section of the study it is proposed to study the need, objectives, scope and methodology of the field survey. Besides this, the shortcomings and limitations of the data are also discussed.

5.1 PROBLEM FORMULATION

An overview of the picture of small scale industries in the area, made in the earlier chapters, shows a large potential of SSI that needs to be exploited properly and efficiently. The intrinsic need for proper policies formulation to this group of industries has been found, which would help in removing the constraints that exist and hampers the efficiency of small sector.

It was also observed that most of the units in the area are operating below their capacities, while using modern or semimodern machines and techniques of production and business management. Besides, they faces many problems which encounter their daily ~~and time-to-time~~ working.

An inquiry into their operative conditions would corroborate this proposition and would throw light on the factors affecting their growth and productivity. Such inquiry would also suggest measures to improve their productivity and enhance their competitive strength. With this view it was

decided to undertake the techno-economic study of small scale engineering industries in district Saharanpur.

5.2 OBJECTIVES

On the basis of the conclusions arrived at in earlier chapters it is now easy to lay down the objectives of the present study.

It was decided to confine the study to the investment, employment and output aspects of the small scale engineering industries in Saharanpur. The broad objectives of the study was to analyse:

(1) An appraisal of the operative condition of small scale industries,

(2) The structure and composition of the investment, employment and output in the industries.

(3) A quantitative assessment of the numerous specific problems encountered by each of these industries in their day-to-day functioning, and

(4) To assess the pattern of growth of small scale industries in the area, in the past.

It may, however, be noted here that the above is a broad set of objectives which is sought to be achieved through the present study to the extent possible within the limitations to which any study of the present nature is

subject to. Among these may be mentioned those incidental in the design, conduct and the coverage of this survey. These, it may be repeated, are inevitable, perhaps with variations in degrees, to any study which has to deal with the type of industries such as we have for analysis. These shortcomings will be mentioned at sufficient length as and when they occur in the following pages. Here it is only emphasized that the conclusions arrived at on the basis of the data obtained by the field work is subject to the limitations imposed by these shortcomings.

5.3 SIGNIFICANCE

With the help of this study the aforesaid objectives will be achieved, for the purpose of our two fold aims in this respect. First, to design and interpret this study in such a way that could add to a conceptual and theoretical frame work of the issue at hand and, secondly, to interpret the study in a way that could help us to come out with certain policy implications in this connection.

In this way the study will remain important, again, in two different ways. First it will lead to a better understanding of the variables at work, which influence the growth of small scale sector in the area. Secondly, it will provide in its own humble way, specific guidelines for the development of small scale industries.

5.4 SCOPE OF THE STUDY

As far as the scope of the present study is concerned, it is restricted to those industrial units which fall in the definition of small scale industries, as defined earlier in Chapter II. The study is also restricted to the units registered with Directorate of Industries. This excludes a large category of S.S. units which come within the purview of different specialized boards, committee or agencies operating them and are not registered with Director of Industries.

This conscious decision was made to cover the modern small scale industries falling within the purview of 'Small Industries Development Organization(SIDO)'[1] and availing assistance and facilities made available to them by different government or semi-government agencies.

The study is further restricted to the coverage of small scale engineering industries operating in the district. It covers the engineering units in respect of the following four groups of industries.

1. Mechanical engineering industries,
2. Drawing, Surveying and Mathematical instruments, industries,
3. Agricultural implement industries, and

1. SIDO: Industries not coming within the purview of other government agencies and statutory boards, i.e. hand-loom board, khadi and village industries commission, Handicraft board etc.

4. General engineering industries.

The reasons and justification for this decision has been discussed, in detail in Chapter VI.

5.5 NEED OF THE FIELD SURVEY

The need of the present field survey was felt mainly to study the techno-economic condition of small scale engineering industries in the district Saharanpur. More, specially, the field enquiry is designed to ascertain the operative conditions of the small scale engineering industries in the area.

It is well known that the data relating to the small scale industries in our country are not adequate for the study. Whatever data are available, is disconnected and uncoordinated. On the one hand, disquieting as it is, no coordinated attempt has been made to conduct any comprehensive field inquiry to obtain integrated and detailed picture of the small scale industries in the country as a whole or a region thereof. On the other hand, such data as is available today cannot be regarded as either satisfactory or adequate for purpose of any integrated and comprehensive analysis.

It was therefore thought necessary to underake an independent enquiry, so that the data which were necessary for the present study could be collected in an integrated and coordinated manner.

It is also well known that small scale industries are relatively less organised and are geographically widespread all over the country. Their ways of keeping account books are not scientific and systematic in many cases and generally the small industrialists are relatively not ~~more~~ reluctant to disclose information about different aspects of their units.

Keeping the limitations in view, it was decided to restrict the coverage of the field investigation to a manageable block of a continguous area. It was decided to select the area of district Saharanpur (U.P.), for the study. The reasons which weighted in the selection of this area for the field inquiry may be summarised as below.

1. A more or less fertile agriculture tract with a relatively prosperous population.

2. Concentration of industries of diverse type and varying techniques.

3. Existence of one of the oldest, market of Drawing, Surveying and Mathematical Instrument industry in the area.

4. Operation of the Rural Industries Project (RIP) scheme in the portion of the area for the last many years.

The reasons and justification for this decision has been discussed, in detail in Chapter IV.

5.6 METHODOLOGY

On the basis of records available with Deputy Director of Industries, Saharanpur, about 1036 small scale units were registered in 1975-76. Out of total 1036 SS units registered with Industries Department, nearly 320 units fell under the purview of engineering units. These 320 small scale engineering units, constitute the population for the study.

However, as discussed earlier, the meagreness of the data available with Industries Department, compelled us to collect the first hand information for our study. The population of nearly 320 small scale engineering units was considered so large and dispersed that complete coverage was ruled out because of scarce resources and limited time in hand. In addition to these practical considerations, a sample coverage was also believed to be more efficient and reliable, because it often permits a higher overall level of accuracy than that of complete enumeration. One can also expect to create conditions in a small survey which are definitely superior from the point of view of cost, accuracy and depth of information.

5.6.1 SAMPLING PROCEDURE

In order to select the representative size of sample from the total population, the stratified sampling approach

was followed. In order to ensure a fairly representative and accurate coverage, a minimum of 15 percent of the total industrial establishment was ~~decided to be~~ covered for all the industries to be studied.

Keeping in view the chances of non-response during the course of field inquiry the 20 percent sample of the total industrial establishment was chosen for interview, which finally comes upto 17% .

The whole population of 320 units was stratified into four broad categories, on the basis of their nature. The number of total establishment in each group does not represent much deviation. So from every stratum 20% sample was drawn randomly. The following table shows the detailed sampling plan.

TABLE 5.1 SAMPLING PLAN

S.No.	Category	Total number of units	Sample drawn	Successful units
1.	Mechanical	85	17	14
2.	DSMI	75	15	13
3.	Agricultural Implement	70	14	12
4.	General Engineering	90	18	16
5.	Total	320	64 (20%.)	55 (17%.)

In all 64 sampled industrial units covered during field survey, ~~But out of total 64 units~~, 11 units were found non-traceable or left due to non response or refusal. In all, 55 successful units were surveyed intensively on the basis of comprehensive questionnaire, which was used to collect the required information from every sampled unit by giving a personal visit to each unit.

Almost in all the cases it was tried to secure the interview from the entrepreneur of the unit. Only in the absence of entrepreneur, manager or next man of that unit was chosen for the interview. Although the above sampling plan was followed with some amount of regour , there was a clear instance of departure on account of non-availability of entrepreneur from the sampled unit or chance of refusal by the entreprenuer to produce any data. In some cases the non traceability of unit was also observed.

5.6.2 Data Collection

The information was elicited from small scale engineering industries with the help of questionnaire covering the following broad categories:

i) General information
ii) Product and production structure
iii) Employment and wage structure
iv) Capital structure
v) Cost structure

vi) Market and management, and

vii) Problems etc.

In this respect first, we prepared a draft questionnaire based on the above mentioned seven categories, containing the questions relating to our requirements. Then with the help of this questionnaire a primary survey was performed of some units selected from the different stratum, to check the relevance of the draft questionnaire. Latter, with the help of data collected by primary survey we checked the relevance of each question or its part by making an item analysis and frequency count and on the basis of general observations a number of questions were found missing despite, many irrelevant questions. Accordingly final comprehensive questionnaire was prepared, comprising of all the questions relevant to the study.

5.6.3 Conducting the Survey and Field Problems

The field work was carried out by direct field-in-questionnaire for every sampled unit. Every sampled unit was visited personally to fill-up the questionaire and also made several discussions with entrepreneurs pertaining to their future prospects, present conditions, and the problem coming across the development of small unit, besides this, suggestions and recommendations given by them were also entertained.

During the course of field work the several problems

were faced. Some common problems come across the field work are as follows:

First, the most common problem faced during the course of survey was problem of 'non-response' and 'refusal' to provide any information or data pertaining to small scale unit. Some had also shown their inability to produce any data because of varied factors.

Second, important problem came across was the large number of bogus or non-traceable units. However, this also included the unit closed some time before due to varied factors.

Lastly, the problem of 'non-availability of entrepreneur in the workshop. Because most of the time entrepreneurs were supposed to be out to look after their different jobs like procuring of raw material, and looking for marketability of their products etc. In such cases twice or some time thrice visits were made to interview the entrepreneur and ~~inspite of such effort,~~ in some cases manager or some responsible person of the unit was interviewed, who had adequate information of the unit.

5.7 BASIC CONCEPTS

Before proceeding with the analysis it is necessary to provide brief clarification of the various terms and concepts used in the analysis. In what follows therefore, an attempt was made to clarify all important terms and concepts. The

specific meaning attached to them, their shortcomings, limitations and the problems and difficulties encountered in working these out in the most suitable, desirable and satisfactory way.

5.7.1 Productive Capital

Productive capital is generally described as the total capital resources at the command of an unit of production which effectively contributes in its production function. For all practical purposes it is taken to be the sum total of (i) Fixed asset in the form of machinery and equipment and other fittings, (ii) Working capital or the floating assets, which includes stock of raw material, finished production in stock, cash balance in hand or in bank, credit due to the unit and so on.

(a) Fixed Assets

Fixed assets used in our study are those of a permanent nature with an economic life (production life) of over one year and used in manufacturing, repairing and servicing e.g. machinery and equipments and tools etc.

(b) Working Assets

It includes (i) raw material, fuel etc. in stock , (ii) semi-finished products in the stock or in process, (iii) stock of finished products, (iv) cash in hand or in bank, (v) credit due to the unit, i.e. net receivable and net payable amounts.

5.7.2 Output: (Value of production).

Output of the unit represents the value of products turned out or services rendered by the unit over a period of time. In other words, the value of output is the ex-factory gross (selling) value of the products manufactured by a unit plus the value of services rendered or work done for others. Therefore, total output or production of the unit includes the proceeds of the commodities manufactured and sold during the reference year plus the stock of finished goods held by the unit plus remuneration earned for work done for others during the year plus arrears of amount due for the work done or services rendered during the reference year.

5.7.3 Maximum Capacity:

The maximum capacity or installed capacity of the unit may be the production potential of a unit, with the existing set of machinery and equipment already installed and/or labour employed, assuming that the operative conditions of the unit will work uninterrupted throughout the year. The aggregative volume of production that turned out during 300 days, working one shift per day of 8 hour each, is reckoned as the maximum capacity of a unit.

5.7.4 Workers:

Worker as defined in the factories act is 'A person employed directly or through any agency, whether for wages or not, in any manufacturing process or in any cleaning of

parts of the machinery or premises used in manufacturing process or in any other kind of work incidental to or connected with the manufacturing process'. For the purpose of study the workers are divided in various categories and studied, are as follows:

(i) Self-Employed: The properietors, partners or members of the owning family who work in the premises of a unit.

(ii) Skilled Worker: A worker who is engaged in the jobs requiring special training and/or experience in the line.

(iii) Un-skilled worker: One who is engaged in the jobs not requiring any specialised type of training or experience.

(iv) Supervisory and Managerial Staff: All persons holding positions of supervision and management whether defined as a worker or not under factories act. It also includes the working proprietors, partners and unpaid family members engaged in such positions.

(v) Other Employees: Clerks, accountant , peons, watchmen, drivers, etc. who do not conform to the definition of workers.

(vi) ITI/Technical: It includes all those technically trained and having the degree or diploma of I.T.I. or engineering etc.

(vii) Annual Emoluments: All the payments made in cash as compensation for work done during the year e.g. basic

wages, dearness allowance, overtime payments, shift allowances, leave wages, wages for paid holidays, etc. Bonus is not included in it and kept separately.

5.7.5 Raw Material and Components

Raw material are material that undergo a change in the process of production. Components are items that are used in some form in the final product.

5.7.6 Type of Industrial Activity

(i) Manufacturer: The industrial unit manufacturing the products with own materials with the help of installed machines and equipments in the workshop.

(ii) Supplier: Not manufacturing the product, but only performing the job of supplying the products, produced by manufacturer, either in their own name or in the manufacturers name/brand.

(iii) Job Work: It includes the job work production and process both. The job work Production means - a product manufactured by a unit on behalf of another with the raw material supplied by the latter. The job work (process) includes all the parts of manufacturing process, undertaken by a unit on behalf of another on payment basis, e.g. milling, polishing, shaping, electroplating, galvanising etc.

(iv) Repairing/Servicing: This means the process of restoring something defective to good condition and improving working condition of a machine or equipment.

(v) Ancillary: Perform the ancillary job i.e. work on behalf of other units, i.e. manufacturing sub-assemblies, toolings, components to one or more large units, known as parent unit, manufacturing complete product.

5.7.7 Source of Income

(i) Primary: Primary source of income means that entrepreneur or owner is full time engaged in this manufacturing process and not having any other source of income except that small unit.

(ii) Secondary: Owner also engaged in some other job except the small unit, or having some part time, or side income.

5.7.8 Type of Establishment

(1) Individual Proprietorship: It is a one man show type of industrial enterprise as it is owned and run by a single individual. The owner bears full responsibility of managing and running the concern, and his legal liability extends even to his private property. This is known as 'unlinited liability'.

(ii) Partnership:(Joint Family and others): It may be defined as an association of two or more persons to carry on, as co-owners a business undertaking for

profit.

(a) If the co-owners are from the single family i.e. having relation with each other will be called as joint family partnership,

(b) Remaining will be counted as partnership.

CHAPTER VI

STUDY OF GROWTH PATTERN OF SMALL SCALE INDUSTRIES

In ~~the earlier~~ IV chapter, we have discussed the industrial economy of the district, in which we also covered the general overview of large and small scale industries in the area, showing the number, location and their contribution to the industrial economy in developing the district. Finally, the earlier chapter takes care of both large and small scale industries, in the district.

In this section of study a modest attempt has been made to analyse the growth pattern of small scale industries in district in particular and besides this, effort has also been made to include some other aspects also.

6.1 TYPE OF SMALL SCALE INDUSTRIES

Perhaps, to begin with it would be better to see the composition of small scale industries. According to the National Industrial Classification (NIC) the Indian small industry produces a large variety of items. The major industry classification divides them in 16 ~~various~~ classes on the basis of their nature of production. These are given on the next page.

1. Food Products	9. Glass and cermanics
2. Beverages	10. Basic Metal industries
3. Hosiery and Garments	11. Metal products
4. Wood products	12. Machinery
5. Paper and paper products	13. Electrical Machines
6. Leather and Leather Products	14. Transport Equipment
7. Rubber and Plastic Products	15. Misc. industries
8. Chemicals	16. Job Work, repair services

Source: All India census of SSI units, DC(SSI) New Delhi, 1976.

A cursory glance into the industrial structure of any country reveals that it consists of ~~varying~~ different nature and size groups, which may broadly be classified as small, medium and large, measured by any common acceptable denominator. It is significant to note that despite the size of the unit both large and small sector produces variety of products. Now-a-days small sector is playing an important role in economic development of the country. Shetty, speaks[1], 'There are significant examples among industrially advanced countries where the small establishments have not survived but have persisted and continued to play an important part in the organisation of the economy'.

As, the small scale industries in the district are concerned, on the basis of their nature of production, may

1. Shetty, M.C., op.cit.p.12.

broadly be classified into nine categories. The following are the nine major categories engaged in the production of various products in the district, as reported by Deputy Director of Industries, Saharanpur.

1. Engineering Industries
2. Agro Based
3. Forest Based
4. Animal Based
5. Chemical
6. Ceramics
7. Textile
8. Building Material
9. Miscellaneous

SMALL SCALE ENGINEERING INDUSTRIES

Among the various groups of industries, the engineering industries has an important place. Because, the metal working complex of industries offer a higher growth opportunities of small manufacturer both because of importance of metal based production in India's development strategy and because of the natural suitability of selected metal working operations to small plants. [2]

Secondly, the expert bodies like 'National Council for

2. The report of International perspective planning team, op.cit, p.34.

Applied Economic Research (NCAER) have also placed high reliance on the promotion of light engineering industries as a method of industrialising the state. Thirdly, the engineering group of industries helps a country to become more and more technologically independent, which is so vital for real economic development. Without technological independence the country remains backward even if it has high per capita income derived from the exploitation of natural resources.[3] Fourthly, the engineering industry forms the single largest section of registered small scale industries.

COMPOSITION OF ENGINEERING INDUSTRY

The engineering industry covers a large number of hetrogeneous, but closely inter-connected groups of industries. 'The engineering industry is primarily a metal using industry' though other materials like plastics, nylon rubber etc. are also used as inputs. The main function of the engineering industry is to process the end products of iron and steel and non-ferrous metal industries, and to assemble these processed parts into final products'[4].

As the Indian Engineering Industry produces large varieties of items, products of this industry are broadly

---

3. Majumdar, A.G., Indian Engineering Industry, ESRF, New Delhi 1972, p.3.

4. ibid, p.2.

classified into the following five main divisions and twenty-five sub-division, depending on the raw materials used and the process employed in the manufacturing of goods.[5]

1. Metal Products, except machinery and Transport Equipments (35)

   1.1. Fitting, fixtures, and fasteners (353)

   1.2. Hand tools and small tools (354)

   1.3. Enamelling, japanning, lacquering, galvanising, planning, polishing metal products (357)

   1.4 Metal products not elsewhere classified (359)

2. Machinery except electrical machinery (36)

   2.1 Agriculture machinery (361)

   2.2 Mining, earth-moving and construction machinery

   2.3 Prime movers, boilers and steam-generating plants (363)

   2.4 Industrial Machinery (364-5)

   2.5 Machinery components and accessories (366.7)

   2.6 Commercial office and house-hold machinery (368)

3. Electrical Machinery, Apparatus, Appliances and Supplies (37).

   3.1 Machinery, apparatus and supplies for the generation, storage, transmission and transformation of electrical energy (371).

   3.2 Electrical motors and furnaces (372)

   3.3 Electrical cables and insulated wires (373)

   3.4 Batteries (374)

---

[5] Figures in bracket indicate ISIC (Indian Standard Industrial Classification, Codes as used in the current official index of industrial production.

3.5 Electrical appliances (375)

3.6 Communication equipment (376)

3.7 Electrical Machinery, apparatus, appliances and supplies not elsewhere classified (379)

4. Transport Equipment (38)

4.1 Ship-building and repairing (381)

4.2 Rail road equipment (382)

4.3 Motor vehicles (383)

4.4 Motor cycle and scooters (385)

4.5 Bicycles and tricycles (386)

4.6 Transport equipment not elsewhere classified (389)

5. Miscellaneous Engineering Products [Part of (39)]

5.1 Professional, scientific, measuring and controlling instruments (391)

5.2 Watches and clocks (393)

6.2 SMALL SCALE ENGINEERING INDUSTRIES IN THE AREA

The small scale engineering industries in the district Saharanpur are engaged in the manufacturing of different kinds of products, namely, hand pump casting, casting of sugar mill machinery parts including crushers, agriculture implements, cheff cutter blades, conduit pipes, steel boxes, centrifugal pumps, tubewell machinery parts, nut and bolts, steel furnitures, steel doors and windows, tin containers, and tin printing, including drawing surveying instruments, soil testing equipments and apparatus, weighing bridges etc. and electrical goods like chokes, transformers, electric wire cables, miniature bulbs, emergency light and assembling

of radios and transistors etc.

The small scale engineering industries in the district, depending on their nature and concentration, are divided in four major categories, for our study purpose. These four major groups of industries are:

1. Mechanical industries- covering industrial machinery, machine parts, nut and bolts, pumps etc.

2. Drawing, surveying and mathematical instrument industry includes all sort of drawing and survey instruments.

3. Agricultural implements- all sorts of agricultural machineries like trashers, harrow, cheff cutter blades etc.

4. General engineering industries- it covers otherwise industries like-conduit pipe, foundary, tin containers, steel furniture etc.

The following table gives the statistical picture of 320 small scale engineering industries operating in the district out of total 1036 SSI in the area.

Table 6.1- S.S. ENGG. INDUSTRIES IN THE AREA

S.No.	Type of industries	No. of units
1.	Mechanical	85
2.	Drawing, surveying and mathematical instrument (DSMI)	75
3.	Agriculture Implements	70
4.	General Engg.	90
5.	Total	320

Against this background, it would be interesting to look into the growth pattern of small scale engineering industries in the area, besides, considering the growth pattern of small scale industries during the last decade, in district Saharanpur.

GROWTH OF INDIAN ENGINEERING INDUSTRY

Before going in detail of growth pattern of small scale engineering industries in the area, we would like to have a brief idea about the engineering industry in India.

Although the engineering industry is more than 80 years old in India, it is only during the last two decades that spectacular developments have taken place in this industry. In this process of development, the industry has succeeded in laying a firm foundation for the manufacture of heavy machine tools, heavy electrical equipment and a large variety of industrial machinery and electronic goods vital for the rapid industrialisation of a country.

The Engineering industry has been one of the most rapidly growing sector of the Indian economy in the past two decades. While the industry could hardly produce Rs.100 crore worth of goods in 1951, its total value of production almost reached Rs.2,000 crores in 1970. Even after eliminating the price effect, the real growth is founded to be very high. It shows about nine fold increase in the output over the period 1951-70. Compared to this, the

increase in the output of the textile industry was only 37.6%., the food industry 135.4%., the basic metal industry 341.7% and the chemical and chemical products industry 457.1%.. In other words, as compared to an average annual rate of growth of 13.0% recorded by the engineering industry, that recorded by the textile industry was only 1.7% , the food industry 4.6% the basic metals industry 8.1% and the chemical products industry 9.5%..

GROWTH OF SSI IN INDIA

Compared to engineering industry in India the estimates of the growth of small scale industries in India are also available from the Development Commissioner (SSI), Government of India[6]. The data relates to the year 1972. According to this estimate, on the register of the State directorates of industries 2.58 lakh units under 'SIDO' purview were located as on 30th November 1973. Among these the census covers only 1.40 lakh small units.The data reveals that out of 1.4 lakh units, 38 percent had come into existence only after 1950 i.e., with the beginning of the first five year plan. It also reveals that during the first four years of the Fourth Five Year Plan there was a striking increase in the growth of number of small scale units, when about 35% of the census units came into existance. As against this it

6. All India report on the census of SSI, DC(SSI), New Delhi, 1976.

shows 19%. growth during the Third Five Year Plan, 12%. during the 2nd five year plan and only 5% growth during the Ist Five Year Plan.

Of these 1.4 lakh units, 61 percent were proprietory units predominating in the small sector. The estimate reveals that 1.4 lakh units with the investment of Rs.1055 crores in fixed asset, provided employment to 16.53 lakh persons and had gross value of output of Rs.2603 crore in 1972. The total investment in productive assets amount to Rs.1677 crore comprising Rs.1055 crore in fixed assets and Rs.622 crore in working assets. On an average plant and machinery constituted about 50% of the total fixed assets.

The census reveals that among the employees including self employed, 44% were skilled, 38% were unskilled, 12% managenerial and supervisory staff and 6% others, including clerks, accountants, peons etc.

Out of the total gross value of output of Rs.2603 crore, Rs.2459 crore relates to production or manufacturing and Rs.144 crores represents earning from job-work, repairing and servicing. The average gross value of output per unit was Rs.1.86 lakh in 1972.The capacity utilisation in the sector as a whole was of the order of 53 percent.

Certain economic indicators show that the value added by the census small scale units worked out to Rs. 841 crore

or 32% of the gross value of output. Also some significant economic indicator shown in the census are notable. The output per unit of investment in fixed assets (original value) were 4.47 (3.28 at book value,. The value added per unit of investment in fixed assets (original value, were 0.80 (1.06 at book value, and value added by per worker Rs.6204 only. The employment per Rs.1 lakhs of investment in fixed assets (original value, goes to 13 for workers only and 16 for all employees and 17 and 21 respectively at book value.

GROWTH OF SMALL SCALE INDUSTRIES IN THE AREA

The growth of small scale industries in the area has shown manifold increase in the number of units, investment, production and employment during the last one and a half decade. The number in units has shown 7.5 fold increase during the period (1963-76). The number of small scale industries in the area has risen from 180 to 1036 in the period. Similarly the amount of investment in small scale industries has gone upto Rs.372.10 lakhs (1976) from Rs.17.13 lakh (1963). The increase in investment has shown 22 fold increase during the period. If we take care of inflation during the period still we find the 7.4 fold increase in investment during the period.

Similarly the production in small scale industries has gone up from Rs.48.39 lakh to Rs.599.90 lakh, showing ~~the increas- of~~ 12 fold increase during the period (1963-76). Again if we take care of inflation, the increase in production accounts

to only four fold increase. The employment has also shown eight fold increase during the last 14 years. It has gone from 822 in 1963 to 5213 persons in 1976.

The trend lines in respect of number of units, investment, production and employment (Fig.6.1, 6.2, 6.3 and 6.4), show a continuous increase, with respect to time. Here the figures ~~will also~~ indicates the steep increase during the seventies compared to sixties period. This reflects the speedy development of SSI in the area, during seventies, compared to sixties.

The analysis shows ~~that~~ the average per unit increase in investment, production and employment during the period (1963-76) that average per unit production and investment is showing steady rise in late seventies (Fig.6.5 and 6.6), but the figure 6.7 shows a regular decline in average per unit employment. This analysis show the trend of mechanisation in small scale industries in the area, where the labour is being replaced by the capital. Because, inspite of sharp increase in average per unit investment, the average per unit employment is declining. It reflects the tendency of increasing capital intensity in small scale industries in the area. The use of better technology compared to early sixties is observed by the analysis.

Ratio Analysis

While considering the various ratios and their trend during the last fourteen years we found the increasing

trend of capital-labour and labour-output ratio. The efficiency of capital output ratio also show the higher trend on an average, compared to early sixties.

The trend in capital output ratio (Fig.6.8) show an decrease from 1:2.8 in 1963 to 1:1.60 in 1976. This reflects the increasing importance of raw material and mechanical equipments in the small scale industries of the area. The capital labour ratio also shows increasing trend (Fig.6.9) during the period. This shows higher capital ~~instrument~~ investment per worker in the last one and half decade. This increasing tendency of capital intensity in the small scale industries again reflects the increasing utilisation of capital intensive techniques of production.

We may conclude the finding in few lines, defining that the turn of last one and half decade has shown a increasing trend of capital intensity, labour productivity ~~and capital efficiency~~ in the small scale industries of the area. This reflects the increasing use of capital intensive technique or modern techniques of production by the small scale industries of the area.

Further after studying the small scale industries as a whole, we shall confine our study in respect of engineering industries and other groups of industries in the area. Here the place and growth pattern of small scale engineering industries compared to other groups of industries in the area will be covered. This will lead to add to ~~increasing~~ our

understanding regarding the engineering industries in respect of their economic importance.

6.3 PLACE OF S.S.ENGINEERING INDUSTRIES IN THE AREA

The place of small scale engineering industries in the industrial structure of the district is very vital. It constitutes one of the largest section of small scale industries in the area. The growth of small scale engineering industries in the area is more than satisfactory by all the means as compared to other groups of industries. The engineering industries constitute 31% of the total small scale industries in the district, compared to Agro (26%), Forest (18%), Animal (19%), Chemical (10%), ceramic based (1%) and others (4%) during 1975-76. The following table shows the categorywise distribution of total small scale industries in the area of study and also their percentage distribution.

After analysing the table it is found that except of two years (1962-63, and 1965-66) the contribution of small scale engineering industries remains the highest compared to other sections (table 6.2). Also its share is increasing regularly i.e. from 22% in 1962-63 to 31% in 1975-76, while compared to this, the share of other groups of industries are decreasing constantly. The Agro has gone down from 30% to 26%, forest from 19% to 18%, with the exception in few years, animal base from 23% to 9% during the period (1962-63 to 1975-76). Contrary to this

Table 6.2 CATEGORY WISE DISTRIBUTION OF SSI

	Engg.	Agro	Forest	Animal	Chemical	Textile	Ceramic	Bld.	Other	Total
63	40 (22)	55 (30)	35 (19)	42 (23)	01 (-)	05 (3)	01 (-)	- -	01 (-)	180 (100)
66	65 (26)	69 (27)	49 (19)	51 (21)	05 (2)	06 (3)	01 (-)	-	05 (2)	252 (100)
70	120 (28)	116 (27)	91 (21)	64 (15)	64 (15)	08 (12)	03 (1)	01 (-)	13 (3)	423 (100)
71	158 (30)	132 (25)	106 (20)	81 (15)	87 (15)	11 (2)	05 (1)	01 (-)	12 (2)	524 (100)
72	202 (30)	172 (25)	124 (18)	87 (13)	87 (13)	19 (3)	10 (1)	03 (-)	16 (2)	676 (100)
73	242 (30)	300 (25)	153 (19)	89 (11)	89 (11)	22 (3)	12 (2)	03 (-)	17 (2)	793 (100)
74	271 (30)	234 (26)	165 (18)	92 (10)	92 (10)	22 (2)	17 (2)	03 (-)	22 (3)	895 (100)
75	300 (31)	255 (76)	165 (17)	92 (10)	92 (10)	NA	15 (2)	04 (-)	28 (3)	867 (100)
76	320 (31)	265 (26)	191 (18)	97 (9)	97 (9)	NA	15 (1)	05 (-)	40 (4)	1036 (100)

: Deputy Director of Industries, Saharanpur

Figures in parenthesis show the percentage of total

N.A.: The textile industries dileted deleted due to establishment of separate directorate in 1974-75.

the chemical industry has shown a very sharp increase in the form of number of units upto 1969-70 which has raised upto 15% compared to only 2% in 1965-66. But after that upto 1975-76 it remains only 9% of the total units. On the other hand the ceramic based, building material, and others groups of industries have shown very negligible impact on the total small scale industries in the area.

6.4 GROWTH TREND IN ENGINEERING INDUSTRIES (A Comparative Analysis)

The trend of growth for small scale industries in the area is very much satisfactory by all means. With the rise in number of units, it reveals a good increase in the value of investment, production and employment generating capacity (E.G.C.). The small scale engineering industries have shown a good trend of growth, in the form of investment production and employment generating capacity, compared to other groups of industries.

The following analysis throws light on the trend of development in small scale sector during the period 1971-72 to 1975-76, in respect of their number of units, investment, production and employment generating capacity. In this section of study an effort is made to calculate the total percentage of growth during the period of 1971-72 to 1975-76 in respect of number of units, investment, employment and production.*

* Due to the limitation of data the analysis is restricted only for 1971-72 to 1975-76 period.

INCREASE IN NUMBER OF UNITS: The following table shows the growth of small scale sector in the area during the period 1971-76.

Table 6.3 GROWTH IN NUMBER OF UNITS (1971-76)

S.No.	Category	Increase in units	Total percent increase
1.	Engineering	118	58
2.	Agro	93	54
3.	Forest	67	54
4.	Animal	10	11
5.	Chemical	60	139
6.	Others	12	25

The table reveals that small scale engineering industries has shown a maximum growth during the period (1971-76) in respect of number of units, compared to minimum in Animal based industry group, which show the total growth of 11% in the same period. If we see the total percent growth in the respect of total industries it goes to 53% during the period. Contrary of all these the chemical industry has shown a highest growth of 139% during the period.

ANALYSIS FOR GROWTH RATE IN NUMBER OF UNITS

The regression analysis shows the trend of increase in number of units with respect to time also gives very

interesting figures to us. The bird eye view on the following regression equations reveals that there is a highest increase in the number of unit with the change of time, in engineering industries compared to other groups of industries. This trend equation confirms our belief that engineering sector is the most fast increasing group of industries compared to other.

The trend equation show the increase of 29.4 engineering units with the change of year, while other groups show lesser rate of growth. The analysis reveals that the total increase of 89.4 units per year, comes from engineering (29.4), Agro (24.1), Forest (16.6), Animal (2.3), chemical (15.1) and others (1.9), group of industries.

Regression equations:

where X = Time in years
Y = No. of units

Table 6.4 Regression Equations
(No. of units)

S.No	Category	Regression equations
1.	Engineering	Y = 178.2+29.4 X
2.	Agro	Y = 152.9 + 24.1 X
3.	Forest	Y = 113.8 + 16.6 X
4.	Animal	Y = 84.5 + 2.3 X
5.	Chemical	Y = 25.9 + 15.1 X
6.	Misc.	Y = 49.3 + 1.9 X
7.	Total industries	Y = 605.2 + 89.4 X

INCREASE IN INVESTMENT:

The following table shows the increase in investment figures in different groups of industries during the period 1971-76. The table reveals the total increase in investment of Rs.212.32 lakh during the period in all groups of industries i.e. total 133% increase in investment over the period of

Table 6.5 Growth in Investment (1971-76)

(Rs. Lakh)

S.No.	Category	Increase in investment	Total Percent increase
1.	Engineering	43.26	89
2.	Agro	102.75	122
3.	Forest	8.01	212
4.	Animal	0.36	09
5.	Chemical	42.10	817
6.	Others	15.84	202
7.	Total Industries	212.32	133

time. In table 6.5 we ~~will~~ find that chemical industries group represents the highest total percentage increase in investment i.e. 817% compared to Forest (212%), misc. (202%), Agro (122%), engg. (89%) and Animal (09%). But this analysis did not show the exact rate of growth in different group of industries, it only shows the total increase during the period irrespective of their position at that time.

ANALYSIS FOR THE GROWTH RATE IN INVESTMENT

The regression analysis shows the exact picture in respect of the trend of growth in investment of various groups of industry. The following table shows the various regression equations.

Table 6.6 REGRESSION EQUATIONS

(INVESTMENTS)

S.No.	Category	Regression equations
1.	Engg.	Y = 34.96 + 11.20 X
2.	Agro	Y = 48.79+29.59 X
3.	Forest	Y = 8.29 + 1.99 X
4.	Animal	Y = 4.00 + 0.07 X
5.	Chemical	Y = -9.36 + 10.79 X
6.	Others	Y = 3.52 + 4.30 X
7.	Total Industries	Y = 93.39 + 56.86 X

where X = time in years
Y = Investment in lakh rupees.

The trend equations reveals the increase in investment by the rate of Rs.56.86 lakh per year. Compared to this the effect of time on investment in engineering is Rs.11.2 lakh per year. The engineering industries show the highest rate of increase in investment among various groups of industries with the exception of Agro based industries, which reveals

the change of 29.59 times in a year. While Animal based industries show minimum rate of change in investment over time.

INCREASE IN OUTPUT

The table shows the increase in production in various groups of industries during the period 1971-76.

Table 6.7 GROWTH IN OUTPUT (1971-76.

lakh rupees

S.No.	Category	Increase in output	Total percent increase
1.	Engineering	70.83	127
2.	Agro	130.36	102
3.	Forest	16.68	101
4.	Animal	0.71	11
5.	Chemical	25.28	373
6.	Other	26.38	318
7.	Total Industries	270.23	122

The data in the table reveals the total increase of Rs.270.23 lakh in production of all groups of industries during the period. It shows a growth of 122% in production in all industries, compared to 373% in chemical, 318% in others and 127% in engineering, 102% in Agro, 101% in forest and 11% in animal based industries. If we compare the growth of engineering sector with total industries, we find

the steady growth in output of this sector.

ANALYSIS FOR THE GROWTH RATE IN OUTPUT

The regression analysis shows the trend of growth of production in various group of industries during the period 1971-76. It reveals that with the change of time the output for total industries changes by 68.02 times. Compared to this the output in engineering sector shows the change of only 17.07 times with respect to change in time per year.

Table 6.8 REGRESSION EQUATIONS
(output)

S.No.	Category	Regression equation
1.	Engineering	Y = 38.08 + 17.07 X
2.	Agro	Y = 97.63 + 33.99 X
3.	Forest	Y = 17.34 + 3.69 X
4.	Animal	Y = 6.27 + 0.71 X
5.	Chemical	Y = 0.81 + 5.91 X
6.	Others	Y = 1.00 + 7.20 X
7.	Total Industries	Y = 159.23 + 68.02 X

where: X = time in years
Y = Production in lakh rupees

While the change in production in Agro based industries is maximum compared to other group of industries. The Animal base industries shows minimum change in production over the period of time.

INCREASE IN EMPLOYMENT GENERATING CAPACITY

If we analyse the data we find that employment generating capacity (E.G.C., of small scale industries has increased by 68%. during the period 1971-76. Compared to this the engineering industries show an increase in employment by 62%. during the period. The employment generating capacity in Agro is 85% , forest 38%., Animal 8%., chemical 187%. and others 65%. during the period of time. Here we may conclude that chemical industries has shown a maximum percent

Table 6.9 GROWTH OF EMPLOYMENT (1971-76)

(Nos)

S.No.	Category	Increase in employment	Total percentage increase
1.	Engineering	457	62
2.	Agro	997	85
3.	Forest	212	38
4.	Animal	20	8
5.	Chemical	264	187
6.	Others	159	65
7.	Total industries	210.9	68

increase in E.G.C. during the period. Contrary to this the animal based industries has shown a minimum E.G.C. during the period.

ANALYSIS FOR THE GROWTH RATE IN EMPLOYMENT GENERATING CAPACITY

The regression analysis shows the rate of growth in employment generating capacity of small scale industries in the area during the period 1971-76.

Table 6.10 REGRESSION EQUATIONS (Employment)

S.No.	Category	Regression analsysis
1.	Engg.	Y = 617.6 + 116.0 X
2.	Agro	Y = 908.7 + 266.7 X
3.	Forest	Y = 529.2 + 52.6 X
4.	Animal	Y = 248.4 + 4.6 X
5.	Chemical	Y = 55.9 + 66.9 X
6.	Others	Y = 207.2 + 40.2 X
7.	Total Industries	Y = 2567 + 547 X

where: X = time in year,

Y = employment.

The analysis again proves the importance of engineering industries in the term of their employment generating capacity. This shows the highest E.G.E. compared to other group of industries, with the exception of Agro based industries. The table shows the increase of total employment by 547 with the change in number of years compared to this the engineering industries show that the employment increases

by 116 for each year. While Agro shows the highest increase of 266.7 degree in employment with the change of year.

AVERAGE YEARLY GROWTH RATE

In this section of study an attempt is made to calculate the average percentage growth per year in respect of number of units, investment, output and employment, during the period 1971-76. The following table reveals the average percentage growth rate per year.

Table 6.11 AVERAGE YEARLY GROWTH RATE

(Percent)

S.No.	Category	No. of units	Investment	Production	Employment
1.	Engineering	11.6	17.8	25.4	12.4
2.	Agro	10.8	24.4	20.4	17.0
3.	Forest	10.8	16.8	20.2	7.6
4.	Animal	2.2	1.8	2.2	1.6
5.	Chemical	27.8	163.4	74.6	37.4
6.	Miscellaneous	5.0	8.08	63.7	12.9
7.	Total Industries	11.6	26.8	24.6	14.0

The data reveals that engineering industries show Higher average yearly growth rate in number of units (11.6%.) investment (17.8%.), production (25.4%.) and employment (12.4, compared to the average yearly growth rate for total industries in number of units (11.6%.), investment

(26.8%), production (24.6%) and employment (14.0%).

We may summarise the whole analysis and discussions held in this chapter. A comparative analysis of small scale engineering and other groups of industries reveals that the engineering sector is most fast growing and stable sector of small scale industries in the area. It shows the better labour and capital productivity compared to other groups of small scale industries. This section of small scale industries also reflect the better use of capital intensive techniques of production. This confirms our belief that engineering sector is the fast growing sector compared to other groups and have an important bearing on the small scale industries in the area.

COMPARISON OF EFFICIENCY

If we compare the efficiency of all three economic variables among the various groups of industries, we may conclude the following:

(i) the engineering industries are capital intensive compared to other groups of industries in general,

(ii) the engineering industries are more productive compared to other group of industries,

(iii) the employment generating capacity in engineering industries is second highest compared to other groups of industries, i.e. it reveals the higher

labour intensive nature of engineering industries.

(iv) Comparing the overall performance of all groups of industries we find the engineering industries as the most (Sound) appropriate sector, among all other groups, by all means of estimates.

ANALYSIS OF RELATIVE DISPERSION (Coefficient of Variation)

The analysis of relative dispersion is made to reveal the relative variation in number of units, investment, production and employment of various industries. The following table gives figure showing coefficient of variation for number of units, investment, production and employment.

Table 6.12 COEFFICIENTS OF VARIATION

S.No.	Category	No. of units	Invest-ment	Produc-tion	Employ-ment
1.	Engineering	15.68	23.06	27.23	17.00
2.	Agro	15.40	30.05	24.37	22.34
3.	Forest	14.70	20.36	21.68	11.11
4.	Animal	3.70	2.78	3.72	2.61
5.	Chemical	30.07	67.65	45.71	32.25
6.	Misc.	11.27	37.54	50.36	18.19
7.	Total Industries	14.58	30.76	26.56	18.46

Number of Units

The relative variation in number of units is higher for

chemical industries (30.07), compared to engineering (15.68), Agro (15.40), Forest (14.70), Misc. ind.(11.27) and lowest in Animal based (3.70) industries. The engineering industries show the second degree of relative variation. This represents that there was a higher level of variation in number of units in engineering industries compared to other group of industries.

Investment

Similarly ~~earlier~~, the chemical industry shows the highest relative variation in investment (67.65) compared to Misc.(37.54), Agro (30.05), engineering (23.06), Forest (20.36), Animal based (2.78) industries. It did not show the higher level of relative variation in investment in engineering industry compared to other groups.

Production

The miscellaneous industries show a higher level of relative variation in production (50.36) compared to chemical (45.71), engineering (27.23), Agro(24.37), Forest (21.68) and Animal based (3.72) industries. The variation in production is being reflected by these figures.

EMPLOYMENT

It is apparent from the table that the relative variation in employment varies from 37.25 (chemical) to 2.61 (animal). The engineering industry show the relative variation (17.00) close to the miscellaneous (18.19).

We may summarise the main points of discussions in a way that engineering industries have shown a tendency of remaining near to the relative variation of total industries, in the case of all variables.

6.5 RATIO ANALYSIS

Before we conclude about the efficiency and growth pattern of these small scale industries in the area, it may be pointed out that these discussions will be inconclusive without the reference to the various derived ratios, which form the basis of any assessment of the relative role of small scale industries in any economy and more in a planned economy like ours. In the following pages an attempt is made to study the various sets of derived ratios. The ratios studied in this reference are capital-output, capital-labour and labour-output ratios.

The 'Derived Ratios' are used to express the mutual

relationship that exists among capital, labour and output and they seek to assess the relative contribution or efficiency of the various inputs that combine in production.

CAPITAL-OUTPUT RATIO

The capital-output ratio gives an indication of the efficiency of capital inputs in an industry as well as a measure of investment required for producing a given output.

CAPITAL-LABOUR RATIO

While the capital labour ratio provides some measure of the capital intensity in an industry, ideas as to whether a particular industry is capital-intensive or capital light and labour-intensive become firmer when an estimate of capital-labour ratio is made. As stated earlier, the ratio provides a measure of the magnitude of investment required to employ a unit of labour, and indirectly it also gives an indication of the employment potential in a given industry.

LABOUR-OUTPUT RATIO

The labour output ratio indicates the level of productivity of labour in a given industry. The ratio indicates the amount of output per worker employed in a particular industry, when the other factors remain unchanged.

After taking into account the various ~~derived~~ ratios, attempt had been made to estimate capital-output and other ratios for the various groups of small scale industries

included in the present study. The ratios for the various industries are summarized below in the table.

It will be seen from the table that the capital-output ratio appears higher (1:1.38) in the case of engineering industries than ceramic (1:2.05), Forest (1:1.89), animal (1:1.62) and others industries (1:1.39) because the latter industries are labour intensive and capital saving.

Table :6.13 SALIENT DERIVED RATIOS
(1975-76)

S.No.	Category	Capital Output Ratio	Capital Labour Ratio	Labour Output Ratio
1.	Engineering	1:1.38	7,733	10,651
2.	Agro	1:1.37	8,639	11,879
3.	Forest	1:1.89	2,272	4,286
4.	Animal	1:1.62	1,620	2,624
5.	Chemical	1:0.68	1,167	7,913
6.	Ceramics	1:2.05	6,902	14,137
7.	Building Material	1:1.08	5,906	6,375
8.	Others	1:1.39	5,674	7,891
9.	Total Industries	1.32	7,138	9.421

Equipments employed are also simple as against the greater importance of raw material and mechanical equipment used for producing engineering products. The chemical industry shows the lowest capital-output ratio (1:0.68).

A study of the data in the table shows that the lowest capital-labour ratio or investment per worker is found among chemical (1167), animal (1620), forest (2,272), building material (5,906), ceramic (6,902) and Miscellaneous (5674) in the small scale industries in the area. Some of the higher ratios occur among Agro based (8639) and engineering (7733). These contrasts emphasize the relatively costlier equipment used among the engineering and Agro based industries as against the simple and antiquated implements and tools used by remaining industries.

The labour output ratio or output per worker is meant to indicate the productivity of labour input in a particular industry. A study of the relevant ratios in the table shows that the highest occur in the Agro based (11,879) and engineering industry (10,651). While the other industrial groups show a lower value of output per worker. The contrast between the two sectors illustrates the obvious tendency of productivity of labour to increase with the use of mechanized methods of production and power oprated equipment as against the hand operated or less mechanized equipments in Animal based, Forest based, Building material etc.

We may now summarize the main findings of the ratio analysis. The ratio analysis for engineering and other groups of industries brings out clearly the contrast between the engineering and remaining group of industries. It shows the higher degree of capital intensity, labour productivity and capital productivity in engineering industries compared to other groups of small scale industries.

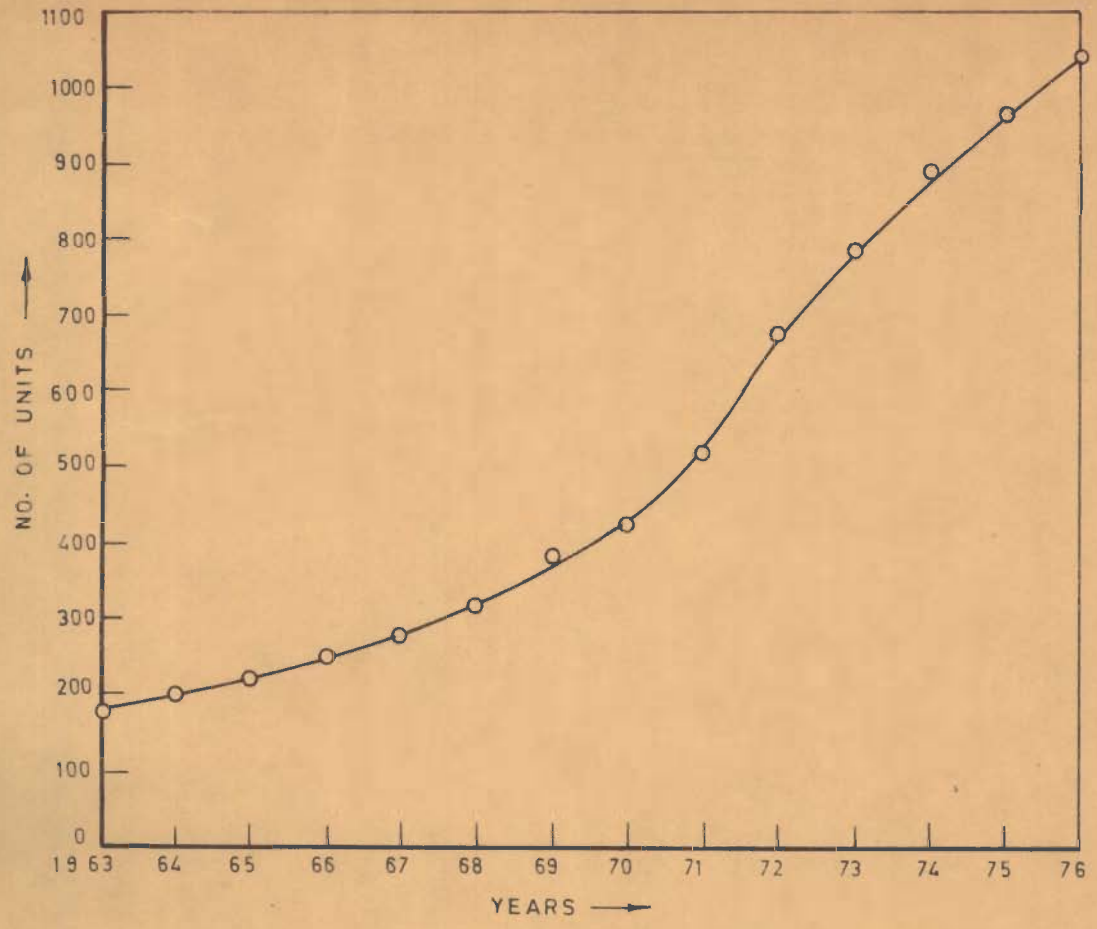

FIG. 6.1_ INCREASE IN NO. OF UNITS

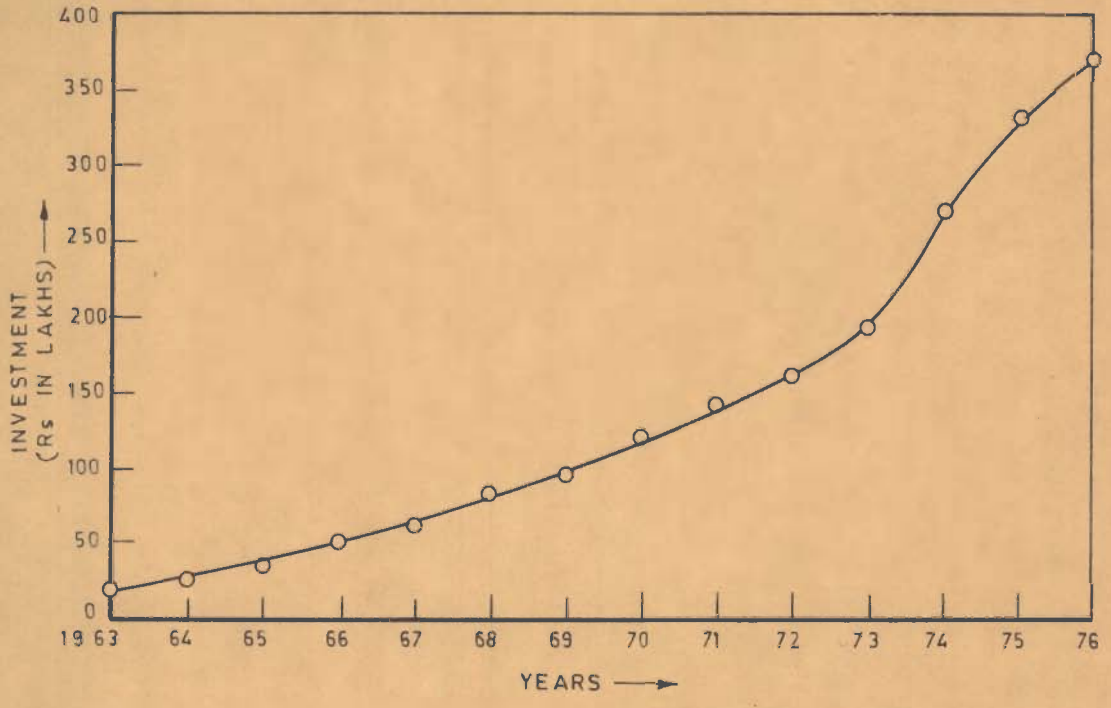

FIG. 6.2_ INCREASE IN INVESTMENT

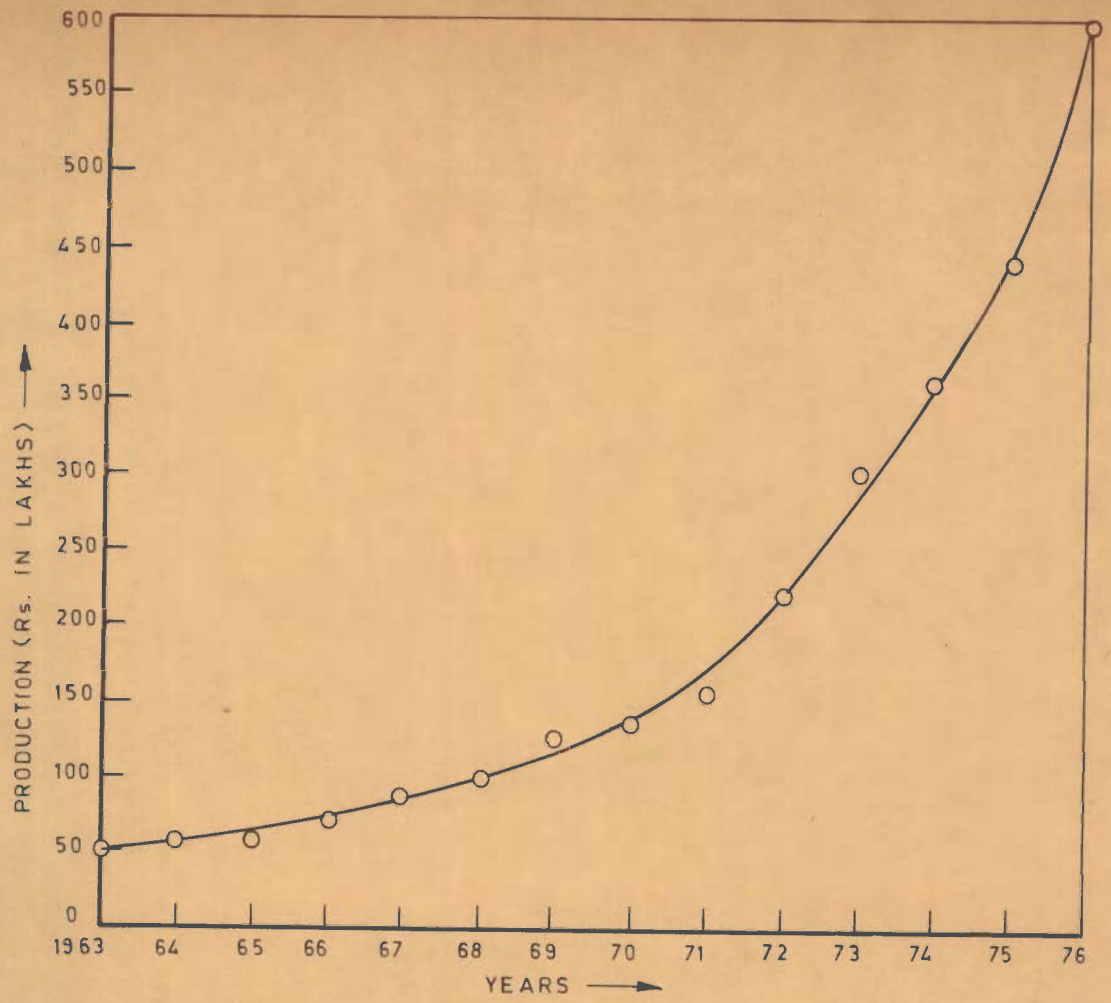

FIG. 6.3 _ INCREASE IN PRODUCTION

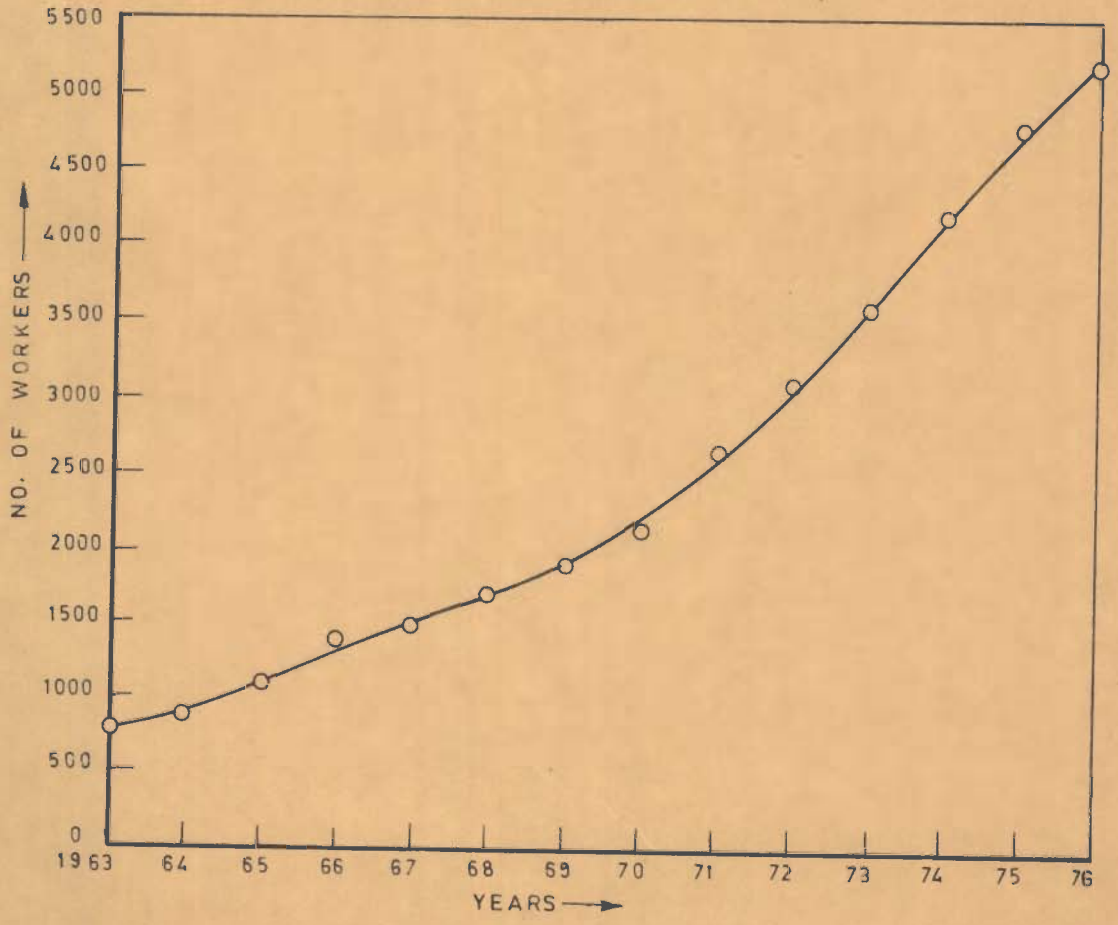

FIG. 6.4 _ INCREASE IN EMPLOYMENT

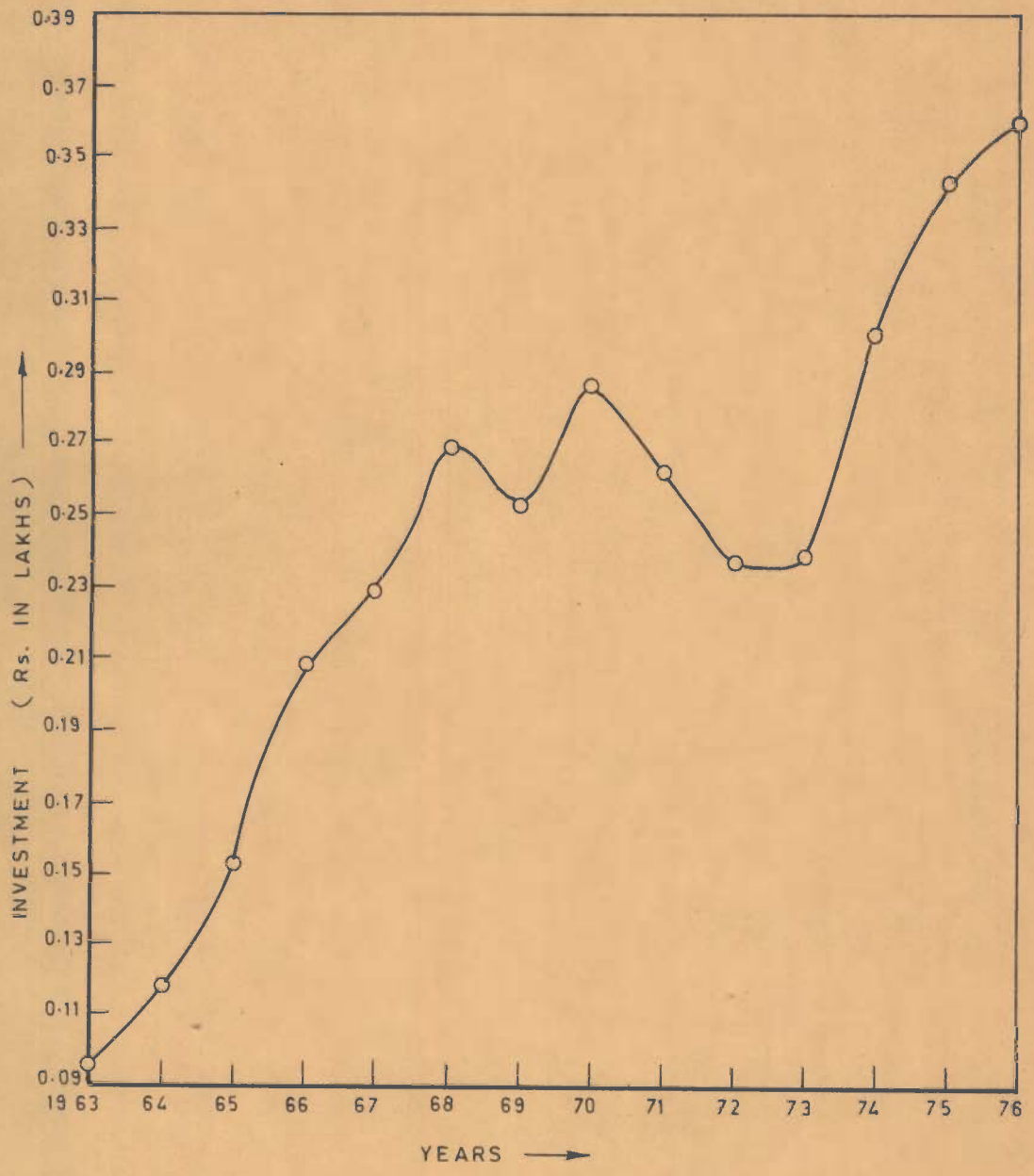

FIG. 6.5 _ TREND IN AVERAGE PER UNIT INVESTMENT

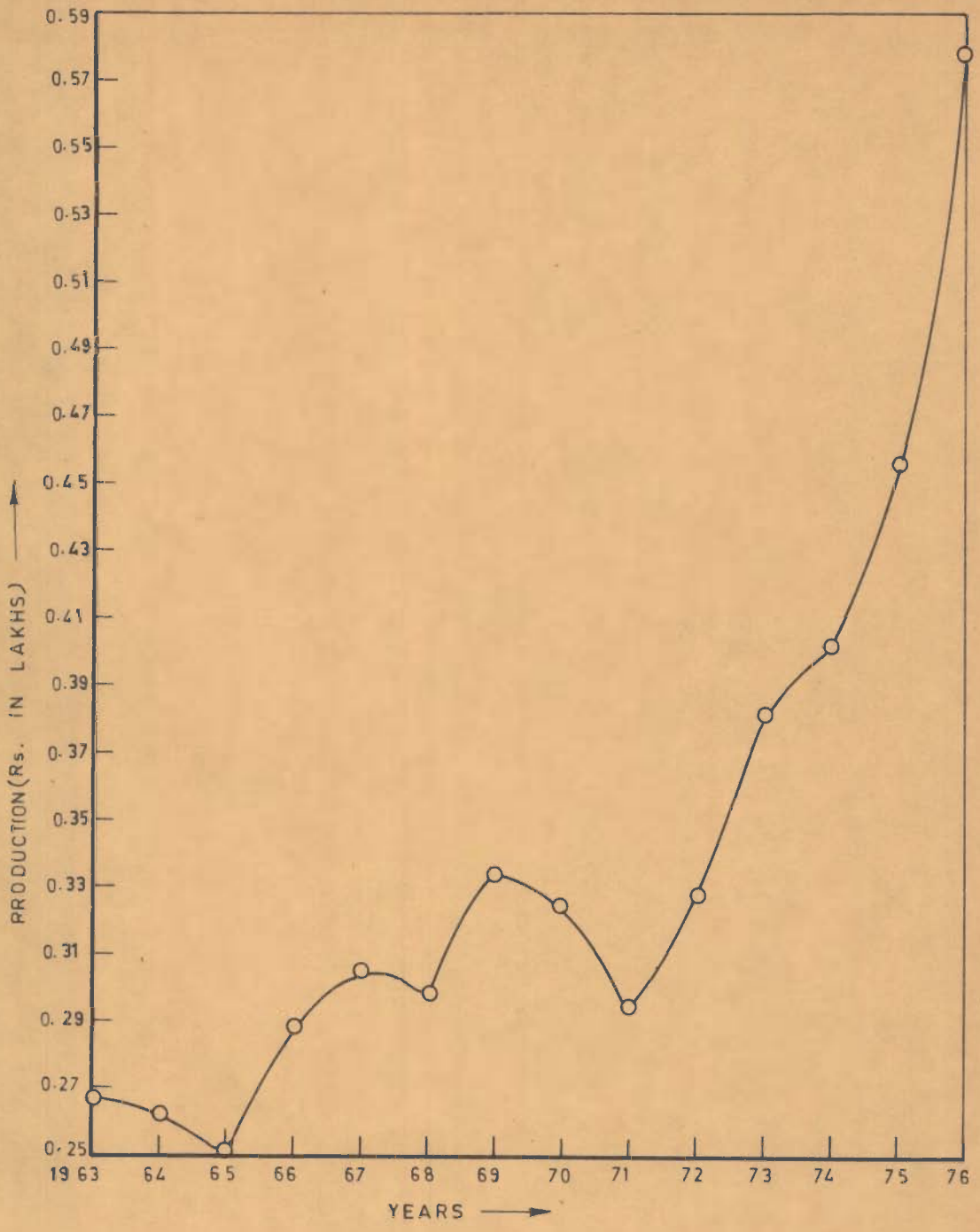

FIG. 6.6 _ TREND IN AVERAGE PER UNIT PRODUCTION

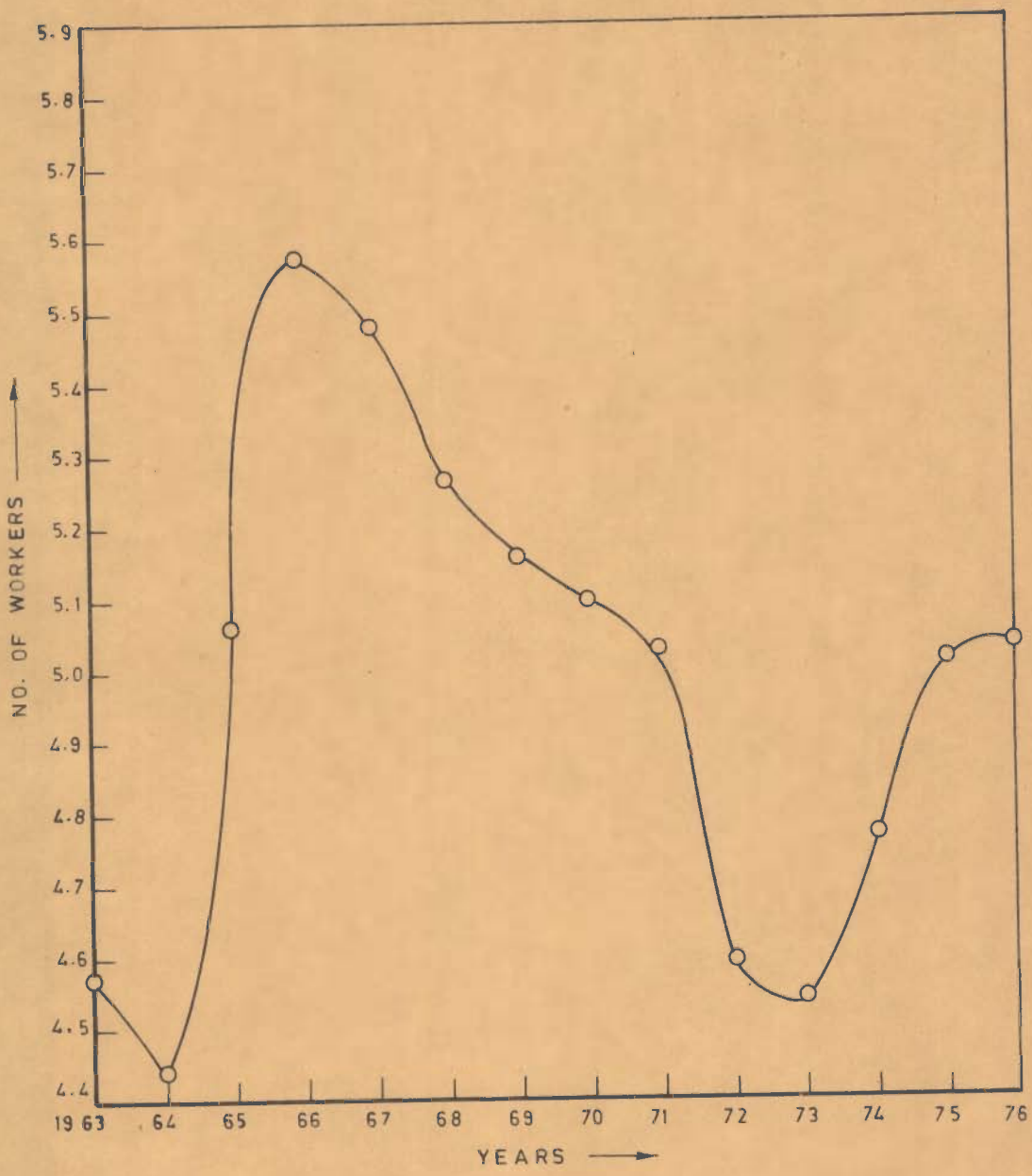

FIG. 6.7_ TREND IN AVERAGE PER UNIT EMPLOYMENT

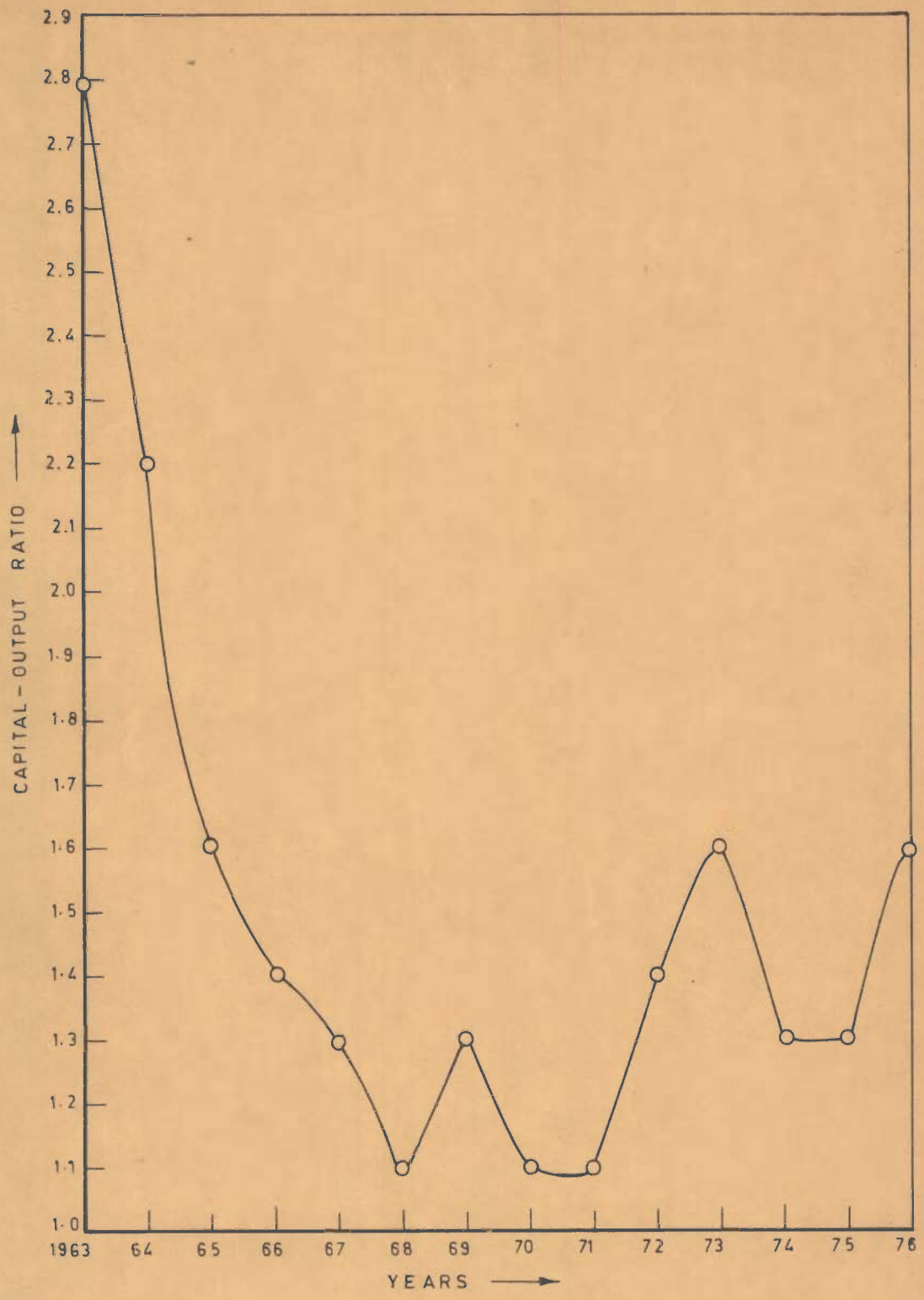

FIG. 6.8 _ TREND IN CAPITAL-OUTPUT RATIO

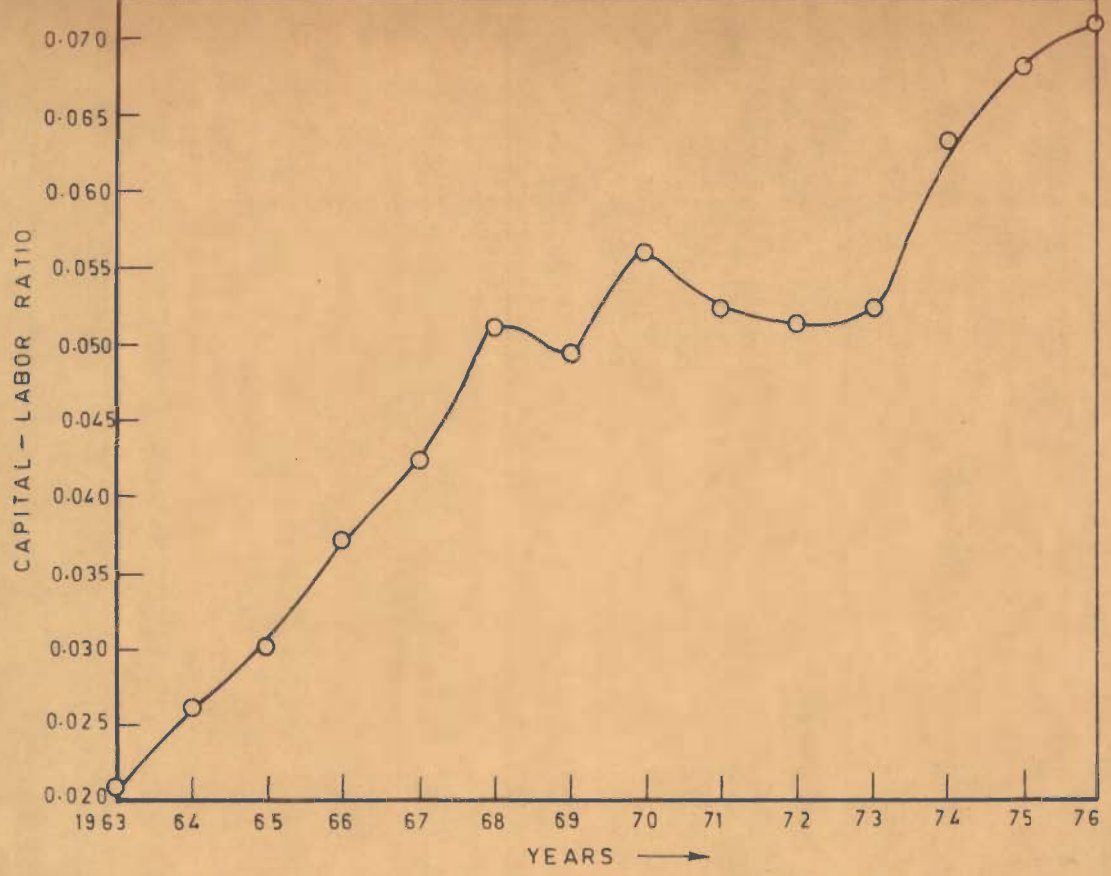

FIG. 6.9 _ TREND IN CAPITAL - LABOUR RATIO

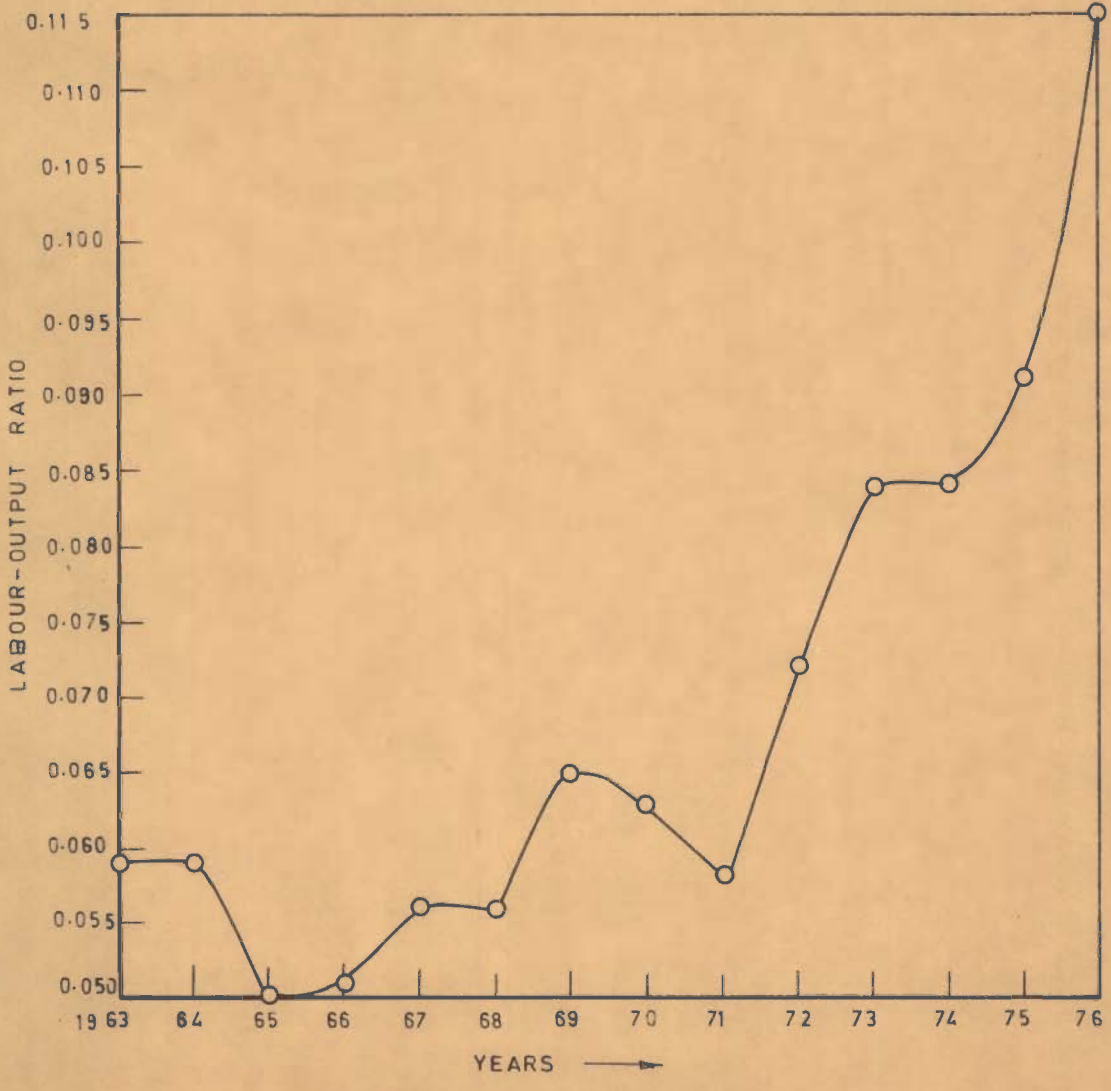

FIG. 6.10 _ TREND IN LABOUR-OUTPUT RATIO

CHAPTER VII

SMALL SCALE ENGINEERING INDUSTRIES ANALYSIS

In ~~earlier~~ chapter VI the study covers the place and growth of small scale industries in the district, with a view to assess the importance of small scale engineering industries in the district. In this chapter an attempt is made to 'assess and analyse' the internal structure of the small scale engineering industries in the district. Among the aspects discussed in this chapter may be mentioned those concerning the average size of the unit, general characteristics, investment characteristics, output characteristics and employment characteristics and derived ratios.

The primary data collected from the 55 small scale units is being analysed in this section of study.

7.1 AVERAGE SIZE OF THE UNIT

With the view to obtain a general picture of the various groups of industries under study, it is essential to have at the outset, an idea about the average size of units prevalent in each of the industries under study. Among others, this may throw light on the magnitude of the resources structure of the small scale engineering industries surveyed. Besides, it would provide the proper background for a correct appreciation of the various problems confronted by these industries, because in the ultimate analysis the specific

problems encountered by units vary both in type as well as in magnitude, according to the size of the unit concerned.

However, it is essential to bear in mind that where variation in the characteristics of units are keen and pronounced mere statistical average of capital, output and employment for an industry may not reflect the normal size of the industry prevalent in the area. But since the units belonging to industries under study relate to one specific area and the variations in their size is not pronounced, it is hoped that the per unit average worked out in respect of capital, employment and output characteristics will more or less indicate the normal (if not representative) unit size among various industries under study.

7.1.1 Average Capital

The average size of units under the various small scale industries varies according to the type of industry and its degree of mechanisation. For example, the average investment in the mechanical industries was Rs.2 87 lakhs while in

Table 7.1: SHOWING AVERAGE PRODUCTIVE CAPITAL OUTPUT AND EMPLOYMENT

S.No.	NAME OF INDUSTRY	Productive Capital			Value of output	Employment (persons)
		Fixed	Working	Total		
1.	Mechanical Industries	1.58	1.29	2.87	3.58	19
2.	Drawing, Surveying and Mathematical Instrument industry.	0.34	0.92	1.26	2.29	09
3.	Agriculture implements	0.20	0.21	0.41	1.06	08
4.	General Engineering	0.19	0.62	0.81	1.68	09

Source: Field Investigation

relatively labour intensive industry such as the agricultural implements industry the average total capital amounted to Rs.0.41 lakhs per unit. The nature of investment could also be seen in other type of industries, relating to their mechanisation. In the table 7.1 the average of total capital, output and employment for small scale industries ~~could be~~ is seen. The table 7.1 also reveals that due to high level of mechanisation in mechanical industries, the fixed capital employment in Mech.industries is very high compared to other group of industries under study.

7.1.2 Average Output

The average annual value of output per unit of different industries varies between Rs.3.58 lakhs for mechanical and Rs.1.06 lakhs for agriculture implements industry. The higher average output in mechanical industries compared to other groups of industries is obvious in accordance with their capital intensity. The mechanical industry shows higher rate of output, also because, most industries covered in the section are of ancillary in nature and use modern machines and techniques compared to other groups.

7.1.3 Average Employment

Similarly the average employment per unit shows a significant difference in mechanical industries while in other group of industries any significant difference does not appear. Except in the mechanical industries, which show an average

employment of nearly 19 persons per unit, all other industries employed 8 or 9 persons.

7.1.4 Relative Disperson

The following table 7.2 show the coefficient of variations in different industrial groups of productive capital,

Table 7.2 COEFFICIENT OF VARIATION OF PRODUCTIVE CAPITAL OUTPUT AND EMPLOYMENT

S.No.	Category	Fixed capital	Working Capital	Total Output	Production	Employment[a]
1.	Mechanical	1.46	1.00	1.16	1.03	0.93
2.	DSMI	0.59	0.78	0.53	0.58	0.35
3.	Agricultural	0.64	0.70	0.57	0.60	0.42
4.	General Engg.	0.94	0.92	0.89	0.75	0.53

Source. Field Investigation.

output and employment. It is very clear from the table that mechanical industries show maximum relative variation in Fixed Capital (1.46), compared to 0.59 in DSMI, working capital 1.00 compared to 0.70 in agriculture and coefficient of variation of total productive capital 1.16 compared to minimum in DSMI 0.53.Similarly in output it shows the 1.03 compared to 0.58 in DSMI and in employment it goes to 0.93 compared to 0.35 in DSMI.

It is very clear from the above table that there is

maximum coefficient of variation or relative dispersion in mechanical engineering industries, while it shows minimum in drawing instrument industries in almost every case. This shows the presence of industries with heterogeneous size in respect of capital and output values, in mechanical industries, while DSMI industry show the presence of almost uniform type of units in size. Again general engineering industry group also shows a higher dispersion in size of industries covered under this section compared to agriculture and DSMI industry.

7.2 GENERAL CHARACTERISTICS

Earlier we have noted the general magnitude of the average resource structure of various industries under study, it is now proposed to examine certain general characteristics of these industries. This may enable a meaningful interpretation of the subsequent analysis. These characteristics pertain to such aspects as pattern of ownership, mode of acquisition, nature of industrial activity, factor of location etc.

7.2.1 Pattern of Ownership

The organisation of small scale industries is based mostly on individual proprietorship and joint family partnership. The table 7.3 gives the breakdown of the type of ownership prevalent in the area among the small scale industries.

Table 7.3: PATTERN OF OWNERSHIP

(Percent)

S.No.	Name of Industry.	Proprietor-ship	Joint Family Partner-ship.	Partner-ship	Cooperative
1.	Mechanical	63.0	12.0	25.0	-
2.	DSMI	29.0	57.0	7.0	7.0
3.	Agriculture	50.0	33.0	17.0	-
4.	Gen.Engg.	30.0	60.0	10.0	-

Source: Field Investigation

The mechanical industries show the high percent of proprietor-ship compared to other group of industries. Though general engineering group and DSMI industries show a high level of joint family, partnership pattern of ownership. The DSMI industry also show presence of some cooperative units.

Though such a pattern of ownership among industries under survey more or less confirms to the generally known forms of ownership prevalent in India, the implication of such a pattern of ownership, especially in respect of the ability of individual units to muster financial resources, is obvious enough. It is generally accepted fact that the overall success which the individually owned units and joint family partnership could achieve is greatly determined by the efficiency of the proprietor and his resourcefulness. The high number of joint family- partnership concerns could

be supported by the argument that in the problem of fulfilling their requirements of loans through the organized markets or institution, they usually rely for such funds upon their relations.

7.2.2 Mode of Acquisition

Among the small scale industries the general mode of acquisition reported is one of 'Self-Started'. The table 7.4 provides the industrywise details of the Mode of acquisition in small scale industries.

Table 7.4 MODE OF ACQUISITION

(Percent)

S.No.	Industry	Inherited	Purchased	Self-Started
1.	Mechanical,	8	4	88
2.	DSMI,	57	-	43
3.	Agriculture	8	8	84
4.	.General Engg.	..	-	100

Source: Field Investigation

It may thus be seen that the general mode of acquisition observed among the small scale industries surveyed is one of 'Self-started'. Though the drawing & surveying instrument industries, contrary to others, show a high number of 'inherited' unit. It goes to 57% compared to very less in mechanical (8%) and agriculture implements industry (8%). The general engineering unit show nil contribution in this

section. The higher number of 'inherited' units in DSMI unit is because of its historical and very old representation in Roorkee. As we know that these units started their contribution since 1847 and since then it is going on producing the sophisticated instruments. So most of them are inherited in nature, means that the unit earlier started by their fathers and grandfathers, are now being taken up by their children. The very low level of 'purchased' system is clear from the table. Agricultural unit has shown the maximum 8% purchased unit compared to 4% in mechanical group. Though DSMI and general engineering group has not shown any representation in the section. This confirms the idea that the instrument industry is being taken up by the coming generation of the family as it may be giving a good returns. Though in general engineering group it has the newly started unit which till now did not feel the need of selling their unit because of any factors.

7.2.3 Location Factors

The following table 7.5 reveals the data on the factors affecting the establishment of unit in Saharanpur. The number of factors are taken up as the factors which cause the establishment of firm at Saharanpur. Among them the 'Home Place' of the owner was the most common factor which was reported by the unit. In all the industrial groups the high number of entrepreneurs reported this factor most important for establishing their unit in Saharanpur. Second 'Access of Market' and 'Site

and Service' has been reported as the important factors effecting the establishment of the unit in Saharanpur. Very less number of unit in general engineering industry, has also shown the 'Raw-material' and 'labour' and 'others' as the factors affecting the establishment. Only in few cases the 'finance' was reported as the factor affecting the establishment in Saharanpur.

Table 7.5- LOCATION FACTORS (Percent)

S.No.	Industry	Home place	Acess of Market	Site Services	Raw Mat.	Labour	Finance	Others
1.	Mechanical	63.0		37.0	-	-	-	-
2.	DSMI	28.0	36.0	36.0	-	-	-	-
3.	Agriculture	34.0	50.0	-	-	-	-	-
4.	General Engg.	60.0	-	-	20.0	5	5	5

Source: Field Investigation

7.2.4 Duration of Working Period

Except the general engineering industry all other sections had a substantial proportion of the units working seasonally. However, in the case of DSMI industries almost all the units reported seasonal ~~in~~ operation. Out of total in DSMI group 97% units reported seasonal operation. The details of the working of industries ~~could be~~ seen from the table 7.6.

Table 7.6- DURATION OF WORKING PERIOD (percent)

S.No.	Category	Perennial	Seasonal
1.	M chanical	83	17
2.	DSMI	7	93
3.	Agriculture	33	67
4.	General Engg.	100	-

Source: Field Investigation

It is very much clear from the table that DSMI industry and agriculture implement industry show a substantial number of seasonal operation. In the case of agriculture implements industry during the period of crop harvesting these products are more demanded. The table 7.7 shows the general working period and average number of months worked by the seasonally operated units.

Table 7.7 AVERAGE NUMBER OF WORKING MONTHS

S. No.	Industry	Normal Working Months From	To	Average number of months worked
1.	Mechanical	Oct.	June	10
2.	DSMI	Dec.	April	7
3.	Agriculture Implements	Oct.	April	9

Source: Field Investigation

The majority of industries show a slack season corresponding with the rainy season (mansoon). In the case of DSMI industry the allocation of budgetary funds to govt. department (who are major purchasers), during March-April of every year, is the major reason behind this.

7.2.5 Nature of Industrial Activity

Here the nature of industrial activity as a primary or a secondary source of income to the owner or owners has been analysed. The details of their nature is illustrated in the table 7.8. Among the small scale industri s surveyed most of the entreprenuers reported the small unit as a primary source of income to them.

Table 7.8- NATURE OF INDUSTRIAL ACTIVITY

Percent

S.No.	Industry	Primary source	Secondary source
1.	Mechanical	87	13
2.	DSMI	93	7
3.	Agriculture	100	Nil
4.	Gen. Engg.	100	Nil

Source: Field Investigation

Out of four industrial groups, two viz.,agriculture and general engineering has exclusively shown (100%.) their nature as a primary source of income to their owners. While

the rest two industry groups also reported very low percentage of such activity. This high level of dependence of entrepreneur on their business confirms the generally known pattern, present in Indian Small Scale industries. If we compare these figures with average size of the unit (Table 7.1) it may be found that as the average size of the unit is increasing the nature of industrial activity is moving towards the 'secondary source'of activity. This confirms the nature of involvement of rich entrepreneurs in many businesses simultaneously.

7.2.6 Other particulars:

Other ~~particulars~~ factors relating to the general characteristics of these small units are whether located in rural area (RIP) and whether registered under Factories Act. The details could be seen in the following table 7.9.

Table 7.9- Other Particulars

S.No.	Industry	RIP units (Percent)	Reg.Fact.Act (Percent)
1.	Mechanical	--	38
2.	DSMI	--	36
3.	Agriculture	60	25
4.	Gen.Engg.	20	37

Source: Field Investigation

The table reveals that among the small scale units

the agriculture industry, show a higher level of RIP units in the area, second comes to general engineering group while mechanical and DSMI show nil units situated under RIP area. The nature of product manufactured by these units confirm this characteristics of agriculture and general engineering industrial groups. The analysis of data reveals the higher co-relation ($r = 0.66$) among average size of the unit and number of units registered under Factories Act.

7.3 STUDY OF INVESTMENT PATTERN

After studying the general magnitude of the average resource structure and general characteristics of various industries under study, it is now proposed to attempt an analysis of the various aspects of the investment characteristics of the industries under study. Among the factors studied ~~may be mentioned those of~~ are an analysis of the range of total capital employed, the structure of total capital and the composition of fixed capital and working capital etc.

7.3.1 Total Productive Capital

An idea about the relative position of the fixed and working capital in the total capital can be had from the ~~following~~ table 7.10, for various industries under study, given on the next page.

Table 7.10 COMPOSITION OF TOTAL CAPITAL

(Lacs Rs.)

S. No.	Name of Industry	Total Capital	Fixed Capital	F.C. % of T.C.	Working capital	W.C. % of T.C.
1.	Mechanical	40.24 (2.87)	22.20 (1.58)	55	18.04 (1.29)	45
2.	DSMI	16.44 (1.26)	4.44 (0.34)	27	12.00 (0.92)	73
3.	Agricultural	4.90 (0.41)	2.42 (0.20)	49	2.48 (0.21)	51
4.	General Engg.	13.03 (0.81)	3.08 (0.19)	24	9.95 (0.62)	76

Source : Field Investigation

Note : Figures in Parenthesis are average per unit.

The variation among various industries (and within units in the same industry) in total productive capital and its

composition depends on the nature and type of industry on the one hand and on the overall resources commanded by the owner of the unit concerned on the other.

Thus generally speaking, it was found that industries which depend mainly on mechanical jobs and fabrications, undertaking the specialised jobs and services like mechanical and DSMI industries, have relatively larger amount of fixed capital. The average fixed capital per unit in mechanical industry goes to about seven times of general engineering and agriculture industry. In the case of DSMI industry it is almost double. Though in the case of instrument industry the proportion of fixed capital in total assets is lesser because the cost of basic raw material used by this industry is comparatively high, thus the share of working capital in total asset is relatively more. The scarcity of fixed capital in DSMI and general engineering industires reflects the extent of technological standard used by these small industries. It shows that how the industry is starved of better and sophisticated machines in general.

The scarcity of working capital in most of the cases has been reported, though as the commercial success of any unit depends more on their ability to store raw material and finished goods and/or hold stocks of the finished products against seasonal market fluctuations and to ensure against the exploitation of the middleman. In the case of instrument industry there is a regular 'Plan-to-market' existence since

scarcity of financial resources neither allows them to choose their dealers and bargain for a 'fair' price nor to employ a sufficiently organized and dependable marketing agency and organisation of their own. What is manufactured by these industries has to be disposed-of soon and from the proceedings of the day's sales the raw material for the to-morrow's production has to be fetched.

Finally, the composition of total capital among the small industries under study reveals that excepting a few industries, most of them are under-capitalized and ill equipped. In some cases the proportion of fixed capital to total capital is relatively higher, indicating not so much the soundness or adequacy of their productive apparatus, as an utter shortage of working capital resources.

This can further be corroborated by an analysis of the range of fixed capital, working capital and total capital employed by units in the different industries as also their constituents.

7.3.2 Distribution of Units by Size of Productive Capital

The relatively clear picture of the difference in capital size not only as between industries but also within individual industries themselves can be had from a distribution of units according to range of productive capital employed.

The dispersion of industries as depicted in the ~~following~~

table 7.11 is illustrative of the difference in capital size as between industries and also among units in a particular industry.

Table 7.11 Percentage Distribution of units by size of productive capital

S. No.	Name of Industry	% units in stated capital range					
		Less than 0.25 lacs	0.25-0.50 lacs	0.50-0.75 lacs	0.75-1.00 lacs	1.0-2.0 lacs	2.0 and above
1.	Mechanical	7	14	36	7	-	36
2.	SSI	-	15	15	15	38	15
3.	Agriculture	33	25	33	8	-	-
4.	General Engg.	12	44	12	-	12	19

Source: Field Investigation

It can be seen from the table, that by concentration of units in specific size-groups, there appears to be a fairly well defined dispersion of units in one or the other of individual size groups for industries. The two size-classes of '0.25-0.5' and '0.50-0.75' show a fairly high concentration of industries as well as number of units under each industry.

The general dispersion of units in different industries under the various size class as shown in table 7.11 with those of the average of productive capital provided in table 7.1, a fair degree of correlation can be established.

Thus, the low per unit averages of productive capital for the agriculture and general engineering industry is corroborated by the high percentage of units in these two industries below 0.50 lacs. Likewise, a relatively higher per unit averages of the mechanical and DSMI industry is born out by a relatively higher percentage of units in these two industries concentrated under the size above Rs.1.00 lacs.

It may however, be concluded that almost all the industries under study have their higher concentration under the size-class Rs.0.25-0.50 and Rs.0.50 - 0.75 lacs.

7.3.2.1 Distribution of units by size of Fixed Capital

The overall picture of the relative position of the fixed capital and working capital resources commanded by the various industries can be subjected to a further and close scrutiny by studying the range of existing investment under these heads individually.

Excluding the land and building, the fixed assets of the industries under study comprise mainly machinery and equipment being used by these small units. Table 7.12 provides the percentage distribution of units in various industries by fixed assets.

The least capitalized among the small industries under study, judging by the capital asset possessed, is General Engineering industry where as many as 81 percent of the sample units possessed fixed capital value below Rs.0.25 lacs.

Table 7.12: PERCENTAGE DISTRIBUTION OF UNITS BY SIZE OF FIXED CAPITAL

S. No.	Name of Industry	% of units in stated fixed capital range.					
		Less than Rs. 0.25 lacs	0.25-0.50 lacs	0.50-0.75 lacs	0.75-1.00 lacs	1.00-2.00 lacs	2.00 and above
1.	Mechanical	50	14	7	-	-	29
2.	DSMI	54	23	23	-	-	-
3.	Agriculture	75	25	-	-	-	-
4.	Gen.Engg.	81	6	13	-	-	-

Source : Field investigation

Similarly the majority of industries had a sizeable proportion of units under the capital groups upto Rs.0.50 lacs. Though in the case of mechanical industry, which shows a most capitalized character, about 29 perent units lies under the highest size-class (Rs.2.00 lacs and over).

7.3.2.2 Distribution of units by Size of Working Capital

The table 7.13 given on the next pages reveals the percentage distribution of unit in the various industries according to the range of working capital employed.

The most less capital intensive group of industry among the small scale units is Agriculture industry. It shows 75% of the sampled units ~~unde~~ in the size class below Rs.0.25 lacs.

Table 7.13- PERCENTAGE DISTRIBUTION OF UNITS BY SIZE OF WORKING CAPITAL

S. No.	Name of Industry	% of units in stated capital range					
		below 0.25	0.25-0.50	0.50-0.75	0.75-1.00	1.00-2.00	2.00 and above
1.	Mech.	14	50	-	-	-	36
2.	DSMI	8	31	8	31	15	8
3.	Agriculture	75	25	-	-	-	-
4.	Gen.Engg.	37	25	6	6	25	-

Source: Field Investigation

However, the mechanical industry show a significant proportion of the units under the range Rs.2.0 lacs and more. This dispersion of mechanical industry limits in highly capital intensive size-class show a fair correlation with the dispersion shown in Table 7.2 .. Thus the higher fixed capital employed in mechanical industry is corrobroated by the higher working capital employed in this industry.

7.4 STUDY OF OUTPUT AND OUTPUT CAPACITY

In this section we ~~may now~~ have attempted an analysis of output characteristics of the various industries under study. Among the aspects examined in this section, ~~mention may be made of the following~~ are as follows: value of annual output, maximum capacity, capacity utilisation and extent of idle capacity, and important reason for keeping idle capacity, composition of gross value of output and composition of 'input' items.

7.4.1 Value of output.

In the following table the value of total output presented and analysed for various industries under study include the aggregate of the gross value of commodities produced during the year at ex-factory prices plus the remunerations earned during that period.

Table 7.14 GROSS VALUE OF OUTPUT (Annual)

(Rs.lakh)

S.No.	Name of Industry	Total Number of units	Annual Output	
			Total output	Average per unit
1.	Mechanical	14	50.15	3.58
2.	DSMI	13	29.75	2.29
3.	Agriculture	12	12.72	1.06
4.	General Engineering	16	26.95	1.68

Source: Field investigation

The variation in the average gross output (annual) per unit will be intelligible when studied in conjunction with other variables such as productive capital, extent of utilization of existing capacity, employment and so on.

7.4.2 Utilization of Existing Capacity

As pointed out in previous lines, the volume of actual production, for the various industries can be better studied in the context of the existing maximum capacity among

units in various industries. This section involves the study of (1, Maximum capacity, (2, Capacity utilised, and (3, Idle capacity.

7.4.2.1 Utilized Capacity

A study of the figures of average utilised capacity for the various industries, as shown in table 7.15 reveals that in most of the industries the utilized capacity was found to be substantially low. The ~~case of~~ mechanical industry

Table 7.15- MAXIMUM UTILISED AND IDLE CAPACITY IN VARIOUS INDUSTRIES

S.No.	Name of Industry	Max. Cap. in value (lacs Rs.)	Actual output in value lacs Rs.)	Idle Capacity (Percent) Range		Av.Per Unit		
				Min.	Max.	Utilized capacity	Idle Capacity	Total max. capacity
1.	Mechanical	121.90	50.15	20	77	41	59	100
2.	DSMI	51.85	29.75	21	68	57	43	100
3.	Agriculture	19.15	12.72	22	60	66	34	100
4.	Gen.Engg.	39.00	26.95	10	65	69	31	100

Source: Field Investigation

~~which~~ shows a maximum idle capacity inspite of better capital conditions. The maximum capacity was utilised by the general engineering industry among the industries under study. Above table depict that the industry with a high average capital per unit presents a lesser utilized capacity. This study shows

that in the industries under study, the exploitation of technical and financial resources was not proper. The machines and capital employed with these small units are not properly being exploited.

7.4.2.2 Idle Capacity

Idle capacity obviously varies inversely with utilized capacity. To study the level of idle capacity prevailing in various industrial groups it would be better to find out the range of its distribution. As can be seen from the table 7.16 that intra industry variation of idle-capacity is disperse and pronounced. The intra-industry minimum and maximum range is much more pronounced in the case of mechanical industry. This group of industry reveals the maximum idle capacity compared to other group of industries under study. Though agriculture industry reveals minimum level and dispersion of idle capacity compare to other groups.

Here it again confirms the previous finding that industries with higher average capital per unit show the higher level of idle capacity or unutilized capacity.

7.4.2.3 Reasons for Idle Capacity

The reasons for the presence of idle capacity in the industries under study are too many. By far the most important among these may be mentioned (1) lack of demand, (2) technical

Table 7.16 PERCENTAGE DISTRIBUTION OF UNIT BY RANGE OF IDLE CAPACITY

S.No.	Name of Industry	Percentage of unit reporting idle					Percent of unit reports Idle Cap.
		below 40	31-40	40-50	51-60	61 and above	
1.	Mech.	14	7	36	14	29	100
2.	DSMI	23	15	38	-	23	100
3.	Ag.	50	17	25	8	-	100
4.	Gen.Engg.	38	12	38	6	6	100

Source: Field Investigation

reasons (3) shortage of raw material and (4) power shortage. Besides these there are other reasons also. The relative importance of various factors, can be assessed from the table 7.17 given below.

Table 7.17 REASONS FOR IDLE CAPACITY

S.No.	Name of Industry	Percentage of units reporting stated factor for idle capactiy						
		Lack of Dem-and	Mar-ket deff.	Labour	Tech-nical	Power	Lack of Cap.	Raw
1.	Mech.	20	37	37	44	56	56	25
2.	DSMI	57	57	22	50	64	80	80
3.	AG.	60	60	17	17	60	50	17
4.	General Engg.	20	45	40	35	70	35	45

Source: Field Investigation.

7.4.2.4 Lack of Demand :

The DSMI industry and Agriculture industry have shown a substantial percentage of units reporting lack of demand for their products. The lack of demand for agriculture industry products are reported because of improper and defective sales tax policy of the State. The products manufactured in the State or district cost much higher as compared to the products purchased from adjoining State like Haryana and Punjab because of differential tax policy. It is found much economic to purchase certain products for sale from adjoining States. ~~inspite of manufacturing them in State.~~

7.4.2.5 Market difficulties :

Difficulties of marketing is yet another reason complained ~~of~~ by ~~a~~ majority of the industries. Similar to the previous one this reason is also reported by Agriculture industry in abundance. From the table, it is clear that these two lack of demand and Marketing difficulties, are correlated with each other.

7.4.2.6 Labour problem :

It ~~go~~ is significantly high in the case of mechanical and General engineering industry, using or requiring a high level of skilled labour compared to other. The problem of skilled labour is reported in certain cases. The problem of absentism is most significant among the labour~~er~~ in small industry.

7.4.2.7 Technical factors :

This is another important factor reported by the small units. The technical factors comprise the break-down in machinery and equipment, lack of proper handling technique in

workers and lack of proper machines required by the unit. Though this last problem relates to other problem also as - lack of capital resources and lack of demand etc.

The unit with higher average capital per unit has shown higher level of such problem. Again the presence of such problems in certain industries reveals or confirms its higher level of technology compared to others.

7.4.2.8 Power Shortage :

It is well known factor causing the high level of idle capacity in small units. The General engineering group of industry has shown a significant level of power shortage. As these units are having more machinised job to do compared to other.

7.4.2.9 Lack of capital :

It is a most important factor responsible for the prevalence of huge idle capacity. Among the SSI visited for study most of them has reported the lack of capital. The DSMI has shown a significant level of capital scarcity, because this industry is mainly operated by the skilled workers themselves instead of capital owners.

7.4.2.10 Raw Material Difficulty :

Difficulties in procuring the right type of raw material at reasonable rates and in ~~good~~ time is also an important reason reported by most of the industries under study. Among the SSI, DSMI industry has reported the high level of raw material problem. This group of industry has shown a problem of getting

virgin raw material at reasonable rates. In the absence of Govt. quota allotment they have to pay the exhorbitant prices for raw material in open market.

7.4.3 Break up of Output :

In this section the structural break up of the gross value of output for various industries into their individual components and to find out the relative importance of each of the individual components in the gross value of output has been made.

The following table 7.18 provides a comparative picture of the components in the total value of output for the different industries under study. The table depicts that Agriculture industry have a greater proportion of input content in the gross value of output. The Mechanical industry have a relatively larger proportion of wages and salary compared to other groups of industries. The comparatively higher proportion of wages and

Table 7.18 COMPOSITION OF GROSS VALUE OF ANNUAL OUTPUT

(Rs. Lakh)

S.N	Name of Industry	Total Inputs	Total wages salaries	Total other cost	Gross surplus	Total value of output
1	Mechanical	25.57 (51)	9.35 (19)	4.89 (09)	10.34 (21)	50.15 (100)
2	DSMI	14.38 (48)	4.32 (15)	2.62 (09)	8.43 (28)	29.75 (100)
3	Agriculture	8.17 (65)	1.97 (15)	0.68 (05)	1.90 (15)	12.72 (100)
4	Gen.Engg.	15.39 (57)	4.21 (16)	1.41 (05)	5.94 (22)	26.95 (100)

Source : Field investigation
Note : Figures in brackets show percentages

salary in mechanical industry is found among the small scale industries under study. The high no. of technically qualified and better paid workers are the main characteristics of this mechanical industry. Thus, it reveals higher level of wages and salary paid. In the next section of study the composition of type of workers employed in different industrial groups confirm this finding.

The composition of other costs includes all other input values like, rent and overhead cost etc. It reveals that Mechanical and DSMI industry has a uniform constituent of ~~this~~ these cost. The gross surplus in various group of industries show higher level in DSMI industry compared to other industries. The minimum level of gross surplus was observed in Agriculture industry. This analysis depicts that as the average size of the unit increases the value of gross surplus also increases simultaneously.

7.5 STUDY OF EMPLOYMENT POTENTIAL :

In this section it is proposed to study the various aspects of employment potential of the industries under study. In this study the important points taken up for study are general pattern of employment, the type and degree of skill possessed and manner and mode of payment of wages and salaries etc.

7.5.1 Composition of total employment :

In this section the total employment is considered of two type - (1) the family members and (2) hired workers. Among the small scale industries under study, a relatively higher proportion of hired workers is found . The extent of hired workers varies from industry to industry. The table 7.19 shows the break up of employment.

Table 7.19 : COMPOSITION OF TOTAL EMPLOYMENT BY FAMILY AND HIRED LABOUR

(Nos)

S.No.	Name of Industry	Total persons employed		
		Family (Incld. prop.)	Hired	Total
1	Mechanical	18 (7)	249 (93)	267 (100)
2	DSMI	20 (17)	97 (83)	117 (100)
3	Agriculture	28 (30)	66 (70)	94 (100)
4	Gen. Engg.	18 (13)	124 (87)	142 (100)

Source: Field investigation

Note: Figures in bracket are percentage.

It is seen from the above analysis that extent of family worker go very high in the case of Agriculture industry. The reason for the non-employment of ~~much~~ hired labour by the agriculture industry is as follows. Since in this industry the high degree of sophistication is not required, the process of production involved in this industry is such that one or two adult family members attending to specialized processes are helped by other unskilled family members and some hired workers. In this industry to employ the outside labour is neither found feasible nor profitable.

In the case of Mechanical industry, it was found that lesser number of family workers are employed as compared to other group of industries under study. Here, if these compared with the average size of the unit (Table 7.1) the relation may be observed in size of the unit and hired workers employed. As the size of the industry increases the composition of hired workers also increases in total employment.

For further analysis the total employment has been divided in five categories to have a better understanding regarding the employment pattern prevailing in the small scale industries under study. The total employment potential has been divided in following five categories -

(1) Skilled

(2) Unskilled

(3) Technical

(4) Managerial and family, and

(5) Supervisory

A skilled worker for the study is tentatively defined for this purpose as one who attends to or is equipped to attend to a process of manufacture, requiring certain degree of dexterity and level of training, both of which may have been acquired through experience. The technical worker includes the persons having and technical degree, diploma or certificate. Further the manage means the proprietor and other family or outside persons engaged in management activities. The supervisory are those who exclusively look after supervision of activities such as, purchase of stores, control of workers, etc.

The following table provides a break up of total employment engaged in production process.

Table 7.20 TYPE OF EMPLOYMENT (Nos)

S. No.	Type of Industry	Employment					
		SK	UNSK	TECH	MAN.& FAM.	SUP.	TOTAL
1.	Mechanical	111 (42)	65 (24)	31 (12)	28 (10)	32 (12)	267 (100)
2.	DSMI	67 (57)	24 (20)	2 (02)	21 (18)	3 (03)	117 (100)
3.	Agriculture	51 (54)	14 (15)	-	28 (30)	1 (01)	94 (100)
4.	Gen. Engg.	87 (61)	35 (25)	-	18 (13)	2 (01)	142 (100)

Source : Field investigation

Note : Figures in bracket are percentage

The table 7.20 reveals very interesting results. The labour employed in small scale industry show a preponderance

of skilled labour, of course, the relative proportion of skilled and trained labour employed by each of the small industry vary considerably. The highest level of skilled workers are shown by General Engineering industry. It has obvious factors to justify the predominance of skilled workers. As these units take over specialized job like fabrication, machining etc., so the need of skilled workers is justified in this case. Though the mechanical industry show a lesser level of skilled workers employed inspite of its capital intensive nature. ~~But here if one see~~ The table ~~it could be~~ Shows that in the case of mechanical industry, the composition of technical labour is very high. It goes to 12 percent of the total employment force. If this technical labour is also summed up with skilled workers, we found a comfortably good position of this industry. Unlike the other small industries in the study the mechanical industry use comparatively sophisticated machines and equipments in their production process. Even in some unit the graduate Engineers are employed to take up the specialized jobs. Instrument industry also show employment of technical worker in two cases only.

The next section show the predominance of Managerial and family workers in the case of agriculture industry. In the Agricultural industry the high level of family member envolved in manufacturing process cause this predominance. In the case of supervisory person it show a significant portion in Mechanical industry. It goes to 12 percent in Mechanical industry compared to only one percent in Agriculture and general engineering industry. This confirms the higher level of organisational activities in mechanical industry. It is again obvious enough

if look into size of this industry.

7.6 INVESTMENT AND OUTPUT STUDY: (DERIVED RATIOS)

As a further study of investment and output aspects of the small scale industries, this section presents various sets of derived ratios compiled from the data collected during the survey.

Derived ratios are used to express the ~~mutual~~ relationship that exists among capital, labour and output. They seek to assess the relative contribution or efficiency of the various inputs that combine in production. Mainly three type of ratios are computed:

(i) Capital output ratio,

(ii) Capital labour ratio or capital investment per worker,

(iii) Labour output ratio or output per worker.

SIGNIFICANCE OF RATIOS :

As discussed earlier also these ratios are used to express the mutual relationship that exists among capital, labour and output. These are useful tools in the hands of planners for factor allocation among the most productive uses so that maximization of output is attained within a given period of time.

These ratios can be computed in two ways -(a)average ratio where-in some common basis is found to aggregate and relate the relevant items, (b) marginal ratios wherein changes or additions in one item are compared to the changes or additions in the relevant other inputs,assuming that they can be increased as required.

In this study the marginal ratios have not been worked out due to the limitation of data collected. The average ratios have been computed and analysed on the basis of data collected. The discussion regarding the meaning of these ratios had already been discussed in Chapter VI. It will not be worthwhile to repeat it here.

In order to achieve higher rate of growth of output in our country, it will be necessary to work on two points :

(i) to step up the rate of investment, and

(ii) to generate forces which would affect the capital coefficient favourably.

The lower the capital-output and capital-labour ratios the higher will be the rate of growth of output with the given investment. Therefore the achievement of a low capital-output and capital-labour ratios is as vital as capital accumulation in the process of development.

An assessment of the significance of small-scale industries in a developing economy may be based on a study of the derived ratio or production coefficients. However, an attempt at interpretation of such ratios should not ignore the problems involved in their formation and limitations to which these ratios are subjected.

LIMITATIONS:

In the ratio analysis, the term 'capital investment' is used in a peculiar sense. It includes two type of capital-fixed capital and working capital. As working capital is also an essential element of cost of production, it is argued, that

the working capital should be included in the term capital.

Output value may be regarded as equivalent to or near-equivalent to the capacity of production of an industrial unit. The figure of actual output (gross value in rupees of the goods produced irrespective to their sales position) in a given period may also be used. In the study the capital output ratio has been calculated taking into account the actual output during the year marked for the survey.

As regards labour inputs, calculation of total number of workers employed have been counted. The problem, however, remains how to express different kinds of labour in homogeneous units. It has already been shown that skilled, unskilled workers and office workers were in different proportion in different industries and different units in the same industry. While calculating the capital-labour and labour-output ratios, all workers have been lumped together without giving weightage to the skilled workers.

After reviewing the significance and limitations of derived ratios, an attempt has been made inthe next pages to study the relationship between capital, output and labour in the small scale engineering industries surveyed.

For the purpose of study, units have been divided in the following categories :

Category I - units with capital investment upto Rs. 50,000

Category II - Units with capital investment between Rs.50,000 to Rs.75,000

Category III - Units with capital investment between Rs.75,000 to Rs.1,00,000

Category IV - Units with capital investment between Rs.1,00,000 to Rs.2,00,000

Category V - Units with capital investment of and above Rs.2,00,000

7.6.1 CAPITAL OUTPUT RATIO :

The capital output ratio in respect of the data covering small scale engineering industries survey are given below:

Table 7.21 CAPITAL OUTPUT RATIO

S. No.	Categories per capital investment	FCOR	WCOR	COR
1.	I	6.23	4.23	2.52
2.	II	6.14	3.21	2.11
3.	III	4.54	2.23	1.50
4.	IV	6.95	2.91	2.05
5.	V	2.63	2.49	1.28

Source : Field investigation

Abbrevations used :

FCOR = Fixed capital output ratio

WCOR = Working capital output ratio

COR = Capital Output ratio

The data collected show that output per unit of fixed capital decreased as the size of industrial unit measured in terms of capital investment increased. It would be seen that

output per unit of working capital and per unit of total capital decreased in certain categories as the size of the industry increased.

CAPITAL OUTPUT RATIOS AND NATURE OF INDUSTRY :

When capital output ratios were calculated in different industries, it was seen that the ratio had importance from the view point of nature of industry.

Table 7.22 INDUSTRYWISE CAPITAL OUTPUT RATIO

S.No.	Type of Industry	FCOR	WCOR	COR
1.	Mechanical	2.26	2.78	1.25
2.	DSMI	6.70	2.48	1.81
3.	Agricultural	5.26	5.13	2.59
4.	General Engg.	8.75	2.71	2.07

Source : Field investigation

The analysis reveals that the Agricultural and General engineering industries offered a more output per unit of capital than Mechanical and DSMI industries. The capital-output ratio appears higher in the case of mechanical (1:1.25) and DSMI (1:1.81) industry than General engineering (1:2.07) and Agricultural implements (1:2.59) industry because the latter is mainly a servicing industry and the capital equipment is also simple as against the greater importance of raw material and mechanical equipment used in the making of engineering products.

Here this study again confirms our old belief that as the size of the industry increases, the efficiency also

increases. We may also conclude that the efficiency of capital (capital-output ratio) depends on the level of mechanisation in that particular industry. The higher level of mechanisation represents the greater level of efficiency of capital.

7.6.2 CAPITAL LABOUR RATIO :

First, the relationship between capital invested and the employment provided to the workers was studied. The ratio calculated are shown below :

Table 7.23 CAPITAL LABOUR RATIO

(Rs.)

S.No.	Categories as per capital investment	Fixed capital per employee	Working capital per employee	Total capital per employee
1.	I	2,062	3,039	5,101
2.	II	2,631	5,029	7,660
3.	III	3,588	7,294	10,882
4.	IV	3,488	8,321	11,809
5.	V	8,378	8,852	17,230

Source : Field investigation

The ratios indicate that as the size of the small scale engineering industries (measured in terms of its capital investment) increased, the fixed capital and working capital per employee increased. The analysis reveals that small factories employed more workers per unit of working capital and per unit of fixed capital. When the ratios were calculated industrywise, it was noted that the ratio differed with the nature of industry also.

Table 7.24 INDUSTRIWISE CAPITAL-LABOUR RATIO

(Rs.)

S.No.	Name of Industry	Fixed capital per employee	Working capital per employee	Total capital per employee
1.	Mechanical	8,314	6,756	15,021
2.	DSMI	3,795	10,256	14,051
3.	Agricultural	2,574	2,638	5,213
4.	Gen.Engg.	2,169	7,007	9,176

Source : Field investigation

It may be noted from the above data that capital per employee not only changed with the size of the industrial unit, but it also changed with the nature of industry. The study of the data in the table show that the lowest capital-labour ratio or investment per worker is found among Agricultural implement (Rs. 5,213) and General Engineering (Rs. 9,176) than DSMI (Rs.14,05 and Mechanical (Rs. 15,071) industry. These contrasts emphasize the relatively costlier equipment used among the mechanized, factory type small industries as against the simple and antiquated implements and tools used by tiny units. If we see the fixed capital employed per worker we will find highest in the case of Mechanical (Rs. 8,314) industry compared to DSMI (Rs. 3,795), Agricultural implement (Rs. 2,574) and General Engineering(Rs.2,169) industry. This confirms the highest level of mechanisation in mechanical industry. While considering the working capital per employee the DSMI industry show the highest (Rs.10,256) level among General engineering (Rs.7,007), Mechanical (Rs. 6,756) and Agriculture implements (Rs.2,638). This show the need and amount involved

as working capital in particular industry.

Finally, it may be stated that employment potential was more in the Agricultural implements industry as this require less capital per employee than the Mechanical, DSMI and general engineering industry. This has immense importance from the view point of formulating a policy for creation of employment in the areas which have large unemployed and under employed force and shortage of other resources.

7.6.3 LABOUR OUTPUT RATIO :

In order to find out the relationship between the output and number of workers employed to produce that output, the labour output ratios were calculated.

It would appear that there was positive correlation between the size of an industrial unit measured in terms of capital investment and output per employee. Following is the table showing actual output per employee in the sizewise categories:

Table 7.25 LABOUR OUTPUT RATIO (Rs.)

S.No.	Categories as per capital investment	Actual output per employee (Rs.)
1.	I	12,852
2.	II	16,146
3.	III	16,294
4.	IV	24,250
5.	V	22,018

Source : Field investigation

It is noted that output per employee increases as the size of the industry increases. The data conclusively support the proposition that productivity of labour goes up with increase in the size of the unit.

The labour output ratios calculated industrywise are given below :

Table 7.26 INDUSTRYWISE LABOUR OUTPUT RATIO (Rs.)

S.No.	Name of Industry	Output per employee
1.	Mechanical	18,782
2.	DSMI	25,427
3.	Agricultural implements	13 ,532
4.	General Engg.	18,979

Source : Field investigation

The study of the labour output ratio show that the highest output per employee occurs in the DSMI (Rs.25,427) industry followed by General engineering (Rs. 18,979), Mechanical (Rs.18,782) and Agricultural implements (Rs.13,532) industry. The contrast between the productivity of labour show the increase with the use of mechanized methods of production with the exception of DSMI industry. As these ratios are based on gross output, an examination of the ratios based on gross value added by manufacture per worker will convey a more correct idea of the contrast.

7.6.4 GROSS VALUE ADDED :

The following table show the amount of gross value added by per unit and per worker :

Table 7.27 GROSS VALUE ADDED

S.No.	Name of Industry	Gross value added (Rs.in lakh)	Gross value added	
			Per unit (Rs.)	Per worker (Rs.)
1.	Mechanical	24.58	1,75,571	9,205
2.	DSMI	15.37	1,18,231	13,136
3.	Agricultural Implements.	4.55	37,916	4,840
4.	General Engg.	11.56	72,250	8,140

Source : Field investigation

It ~~will be~~ is seen that ~~some of~~ the highest gross value added per worker amounts to Rs.13,136 in the case of DSMI industry, Rs.9,205 in the case of Mechanical, Rs.8,140 in the case of General engineering, and Rs, 4,840 in the case of Agricultural implements industry. It confirms the preassumption we had drawn earlier in the case of labour-output ratio. Though the Gross value added per unit goes higher in Mechanical (Rs. 1.75 lakh), than DSMI (Rs.1.18 lakh), General engineering (Rs. 0.72 lakh) and Agricultural implements (Rs. 0.38 lakh) industry respectively.

7.6.5 LEVEL OF TECHNOLOGY :

To consider the level of technology in the units operating in the area, there may be two type of measures. First, to collect the data eliciting the information regarding the type and quality of machines and equipments used by various groups of industries. Secondly, to consider it statistically, the amount of labour intensity, capital intensity and labour productivity could be collected and compared. Some variables like amount of power consumption in the unit labour employed, fixed capital employed

etc. may also be useful for assessing the level of technology in particular industry. All the variables and methods of assessing the level of technology in a particular group of industry has their own merits and demerits. But out of ~~all~~ these, the most representing method of calculating this, may be the assessment of their capital intensity, because, the level of technology ~~word~~ denotes the efficiency of the industry. We mean, that level of technology is a parameter for assessing the efficiency of an industry, as we have seen in the foregone pages.

If we consider the capital intensity as a parameter for representing the level of technology in a particular industry, it will be much more correct to consider the fixed capital instead of total capital. The capital-labour ratio which denotes the capital intensity in an industry, ~~is formed~~ forms the most appropriate tool for assessing the level of technology in an industry. If we go through the table 7.24, we will find the higher capital invested per worker in Mechanical (Rs.15,071) industry compared to DSMI (Rs.14,051), General engineering (Rs.9,176) and Agricultural implements (Rs.5,213) industry. The fixed capital per worker in a Mechanical industry show a ~~big~~ marked difference (Rs.8,314) compared to DSMI (Rs.3,795), Agricultural implements (Rs.2,574) and General engineering (Rs.2,169) industry. This shows the highest level of fixed capital per worker or highest level of technology used in Mechanical industry compared to other groups of industry.

Conclusively we may say that Mechanical industry in the area have a highest level of technology compared to other

groups. The next number in sequence goes to DSMI industry, then third to Agriculture implements industry and the lowest level of technology is shown by General engineering industry in the area. No doubt, this study is representing ~~under~~ some limitations which have bearing with the study.

7.7 SUMMARY OF FINDINGS :

We may like to summarize the main features of the discussions ~~made~~ in this Chapter. A comparison of the average capital and employment characteristics for various groups of industries indicated that while the variation in the average productive capital was wide, these of average employment was not pronounced except Mechanical industry. In respect of pattern of ownership the proprietory types of units were found predominant in Mechanical and Agricultural implements industry, while joint family partnership for remaining two groups, viz. DSMI and General engineering. While newly initiated' as a form of mode of acquisition predominated in all groups except DSMI industry, where 'inherited' predominated. The location factor shows a main concentration towards 'Home place' as a factor of establishing the unit in the area. The nature of industrial activity shows the majority towards 'primary source' of income. ~~The~~ Most of the unit are found registered under factories Act and having seasonal operation.

Regarding the total capital structure among various industries, a ~~fare~~ fair degree of intra-industry and inter-industry variations in capital structure of small scale industries was observed. The variation in the figures of total productive capital as well as its components as between industries, depended

as much on the nature and type of industry as on the overall resources commanded by the owner of the unit concerned. Generally it was found that the proportion of working capital to total capital was quite high, compared to fixed capital. The constituents of working capital for various industries show that the items of raw material and fuel together with those of stocks of finished products accounted for the largest bulk of the total working capital for all industries.

The general dispersion of unit in different industries under various size class according to total capital show a fair degree of concentration under the size class Rs.0.25 - 0.50 lakh and 0.50 - 0.75 lakh. The fixed capital assets also show a higher degree of concentration of units in first two size categories. In the case of Mechanical industry 29% of the units had shown their fixed capital investment of the value more than Rs. 20 lakh. Similarly the working capital assets also show a higher degree of concentration of units in first two size categories. Some dispersion from this may also be observed in the case of mechanical industry.

An examination of the value of output indicates a pronounced variation between various industrial groups. Moreover a study of the figures of idle capacity revealed that it was more pronounced in the case of mechanical industry compared to other groups. Among the important reasons for the existence of idle capacity are scarcity of capital resources, raw material difficulties, lack of demand, marketing difficulties, labour problems etc. An overwhelming proportion of the total value

of output for all industries is accounted for by the two items, viz., "inputs" and the "gross surplus". Next in importance are wages and rent. Among the "input" items, again, basic raw materi formed the important items. The analysis reveals that industrie with higher average capital per unit present a lesser utilized capacity or higher idle capacity. It shows the improper exploitation of technical and financial resources in these industries.

The employment structure in the small scale industries revealed that majority of small scale units employ hired workers. The labour employed by small scale industries was non-specialized. The largest proportion of skilled workers was drawn from those of "hired labour". The Agricultural implements industry show a higher no. of family workers engaged in production process. This shows the relation ~~The positive correlation has been established~~ between size of the industry and no. of hired workers employed. Similarly the greater no.of skilled and technical workers are observed in mechanical industries.

The analysis of the ratios for various groups of small scale engineering industries brings out clearly contras and clearity between the various groups, and also shows that efforts to calculate such ratios are likely to be more fruitful in the case of some of the well organized and mechanized small scale industries.

CHAPTER VIII

THE PROBLEMS OF SMALL SCALE ENGINEERING INDUSTRIES

Having observed at length the structure and basic characteristics of the various small scale industries, it is proposed in this section to delve into the specific problems which these industries have to contend with. The problems discussed in this chapter relate to such aspects as the marketing and sales, Finance and credit, raw material, competitions and technological improvements.

A quick glance at the replies to our questionnaire reveals ~~the~~ primarily of input-impediments. The majority of units complain about troubles in procuring the desired amount of raw materials and finance. The following table sums up the findings The table shows the combinations of various problems, faced by small scale industries in the area. To assess the ~~clearity~~ clarity and weight of every problem such combinations have been developed. Here only four major problems have been taken up for analysis.

Table 8.1 MAJOR INPUT - IMPEDIMENTS

S.No.	Major problems	Percentage of total units
1.	Finance	80
2.	Production	50
3.	Raw materials	43
4.	Training facilities	71
5.	Training facilities and Finance	71
6.	Training facilities and raw material	43

7.	Training facilities and Production	43
8.	Finance and Production	43
9.	Raw material and production	30
10.	Finance, raw material and production.	22

Source : Field investigation

The problem of finance among various combination of problems was the single largest factor effecting the growth of small scale industries. The absence of training facilities has also been considered the major bottleneck. The data shows that 80 % of the total units survey reported the finance as a major problem. The problem of training facilities was reported by 71 % of the total small scale units. Similarly the production and raw material counts to 50 % and 43 % respectively.

Further on the basis of,more than one problem reported by single unit, the groups of problems has been computed which reflects the weight of every problem faced by small scale industries. The data reveals that the group of finance and training facilities stood first among various combinations (71 %). Similarly the combination for three problems - finance, raw material and production, was reported by 22 % of the total units.

The above discussion gives us general idea about the type of problems faced by small scale industries in the area, and simultaneously also assess the weightage of every problem. Now the problem will be discussed individually.

8.1 FINANCE PROBLEMS :

Adequate access to capital and credit a key requirement of any programme of small industry development. Lack of finance has been a major problem for the small industrialists in this country. India has experimented with an "unusually wide variety of financing measures of small industry"[1] through specialized agencies. The Financial assistance programme of the Govt.of India has two broad objectives viz., (a) to increase the total availability of credit to small scale units at reasonable rates of interest and in time and (b) to gradually institutionalise the flow of finance to the sector[2]. The institutions engaged in extending the finance facilities to small scale units are :

1. Direct loan by the State Government.
2. State financial corporation.
3. National small Industries corporation (NSIC).
4. State Bank of India, and
5. Other banks

Here if we assess the performance of these agencies in the area, we find that they lagged behind in offering an effective finance facilities to small entreprenuers. Of the total (55 units) units surveyed, 80 % reported the problem of finance (table 8.1). The major problems in this way are (i) non-availability of adequate finance, (ii) non-availability of finance in time, (iii) the high interest rate, and (iv) unacceptable terms. The

---

1. Robert W. Davenport, Financing the Small Manufactures in Developing countries, McGraw Hill,N.Y. 1967, p.21.
2. Report of the Sub-group on Small Scale Industries : Working group on Small Scale Industries, New Delhi (Ministry of Industry), 1965, p.201

following table gives an idea of various problems connected with the finance securing problems :

Table 8.2 PROBLEMS CONNECTING WITH PROCURING THE FINANCE

S.N	Category	Percentage of units reporting stated problem			
		Inadequate finance	Not available in time	High interest	Unacceptable terms
1.	Mechanical	60	45	40	20
2.	DSMI	40	75	60	30
3.	Agricultural	25	80	73	15
4.	General Engg.	32	65	55	25

Source : Field investigation

8.1.1 INADEQUATE FINANCE :

The table reveals high percentage of complaints regarding the non-availability of adequate finance. The mechanical industry (60 %) group reported greater ~~the~~ problem of inadequate finance compared to Agricultural (25 %) and general engineering(32%) industry. This reflects that as the size of an industry increase the problem of adequate finance increases.

8.1.2 NON AVAILABILITY IN TIME :

The entreprenuers in this regard speak that "though credit can be had, but the requirements of the lending agency and the procedures involved thereon, are lengthy and involved". The time lag between request for financial accomodation and the actual receipt of the same is invariably protracted. In the reference we find interesting data (table 8.2). In Agriculture implements the highest no. of entreprenuers (80 %)

reported this problem compared to lowest in mechanical industry (45 %). This reflects that as the size of industry increase this problem decrease. We may also say, that higher level of literacy and conciousness regarding the Goverrment procedures is seen in entreprenuers engaged in Mechanical industry compared to Agricultural implements. ~~It is obvious, our analysis shows the higher level of well educated and technical entreprenuers in mechanical group.~~ The DSMI and General engineering industry also represent the higher response in this regard.

8.1.3 HIGH INTEREST RATE :

The sizable proportion of small units complained, of the excessive rate of interest to be paid. This response goes very high in the case of Agricultural implements (73 %) industry compared to Mechanical (40 %), General engineering (55 %) and DSMI industry (60 %). This analysis reflects the -ve correlation between the size of industry and the extent of this problem.

8.1.4 UNACCEPTABLE TERMS :

Compared to the other problems, the lesser no.of units reported the problem of 'unacceptable terms'. The 'unacceptable terms' includes various formalities and regulations adopted by Govt. agencies while lending the money. The DSMI industry has shown a highest response in this way (30 %).

It may be observed here that the above list is not at all exhaustive. Even so, it is illustrative of the general set of problems encountered by those industries in procuring credit.

8.2 RAW MATERIAL PROBLEMS :

In this section it is proposed to attempt an analysis of the various problems connected with the procuring of raw material by the small scale industries in the area. The problems here are as complex as they are numerous. It is not only one of non-availability of raw material there are other equally important problems pertaining to such allied matters as lack of finance for making bulk purchase, non-availability of virgin raw materials, exhorbitant prices, and so on. Most of these problems are so interlinked that it is rather difficult to state as to which one among these problems is more pressing and which one of minor significance.

However, the following table gives an idea about the seriousness of particular problem.

Table 8.3 PROBLEMS CONNECTING WITH PROCURING THE RAW MATERIAL

S.No	Category	Percentage of units indicating stated problems			
		Lack of finance	Shortage of virgin raw material	High market price	Others
1.	Mechanical	30	20	30	10
2.	DSMI	65	80	85	20
3.	Agricultural	45	10	15	15
4.	General Engg.	40	35	20	15

Source : Field investigation

8.2.1 LACK OF FINANCE :

Inadequate finance resources for purchase of raw material in bulk and at seasons when such materials are readily

available is one of the important problems mentioned by a majority of units. Particularly, in the case of DSMI industry where the raw material is required in bulk and unit had to keep stock of finished goods for seasonal demand, this problem is much serious (65 %), compared to this Mechanical (30 %), Agricultural implements (45 %), and General engineering (40 %) industries reported in lesser.

8.2.2 NON-AVAILABILITY OF RAW MATERIAL :

As the case can be seen from table 8.3, the DSMI industry reportedin highest the problem of virgin raw material (80%) compared to other groups of industries. It may be noted here that DSMI industry which require the high level of quality raw material for producing the quality and precision instrument is the most sufferer in this regard. In the absence of quality raw material, they have to consume scrap and sub-standard raw material. This effects the quality of products which they are producing.

8.2.3 HIGH MARKET RATES :

Inability to effect bulk purchase of raw material and non-availability of raw material of good quality as and when required by the consuming unit, entails the payment at relatively higher prices. The data analysis reveals the presence of direct correlation among these factors. It shows the highest in the case of DSMI (85 %) industry compared to 30 % in Mechanical, 20 % in General engineering and 15 % in Agricultural implements industry.

8.2.4 MISCELLANEOUS PROBLEMS :

"Other problems" complained of in matter of

procuring raw material include lack of storage facilities, the non-availability of quota or licences for raw material etc.

8.3 TRAINING FACILITIES PROBLEMS :

Now the task of assessing the various problems connected with the training facilities will be considered. The problems connected with the need of technical training relate essentially to the lack of the requisite training facilities. The lack of necessary awareness on the part of ~~significance of technical training~~ entrepreneurs is also one of the problems in this respect.

In the case of Drawing, Surveying and Mathematical instrument industry, the importance of providing easy facilities of training to the workers in order to bring about a gradual adaptation of modern techniques of production and use of precise machine was emphasized by most of the units. The lack of knowledge regarding modern trends in production processes in workers engaged in production process, leads in poor performance of these industrial units. ~~The~~ higher no. of units reports the problem regarding the training facilities ~~was reported~~ (71 %) during the course of survey.

The following table (8.4) gives at the outset, the idea regarding the units desirous of undergoing the training facilities in various groups.

Table 8.4 UNITS DESIROUS OF UNDERGOING TRAINING

S.No.	Category	Units desirous of undergoing training (percentage)
1.	Mechanical	40
2.	DSMI	76
3.	Agriculture	20
4.	General engineering	55

Source : Field investigation

This table reveals higher no. of units desirous of undergoing ~~under~~ training in DSMI (76 %) industry compared to General engineering (55 %), Mechanical (40 %) and Agricultural implements(20% industry.

8.4 PRODUCTION PROBLEMS :

This section takes care of problems relating to the acceptance and adoption of technical and technological improvement by the small scale engineering industries. The small units suffer from the general inferiority of their technical equipments. The problems in respect of production are as follows :

1. the absence of sophisticated machines and equipments
2. the lack of testing equipments, and
3. the lack of technical awareness.

The absence of good machines and technical expertise results in the lack of good quality products and interchangeability of the parts. The need of technological improve-

ments constitute a most important factor in the future development of small scale industries. It forms the sine qua non for the survival of the traditional skill. The following table gives the picture regarding the no. of units desiring technological improvements in their production processes. The technological improvements may of following nature :

i) replacement of old machines,

ii) improvement in plant layout,

iii) production, planning and control, and

iv) addition of testing equipments etc.

Table 8.5 UNITS DESIROUS OF TECHNICAL IMPROVEMENTS

S.No.	Category	Percentage of units desirous of technical improvement
1.	Mechanical	40
2.	DSMI	95
3.	Agricultural	60
4.	General engineering	65

Source : Field investigation.

The above table reveals the interesting results. The DSMI industry shows a higher level of need of technical improvement (95 %) compared to other groups of industries. Because in the absence of latest technical knowledge and modern equipment it is found difficult to keep pace with the modern developments in instrument industry, because it is ~~most~~ fast growing sector of engineering industry. Secondly, the units engaged in production process of

instruments are very old and using old techniques of productions, because of financial and other problems.

The further analysis gives an idea regarding the problems, units finding in adopting the modern technology. The problem of adopting the improved technology may be divided in the following :

(i) technical help,

(ii) financial help, and

(iii) machinery and equipments.

The table 8.6 gives details of problems in regard with the adoption of modern technological improvements:

Table 8.6 UNITS DESIROUS OF SEEKING SPECIFIC ASSISTANCE

S.No.	Category	Percentage of units seeking stated help		
		Technical	Financial	Machinery and equipment
1.	Mechanical	50	100	80
2.	DSMI	45	100	75
3.	Agriculture	20	100	40
4.	General Engineering	30	100	65

Source : Field investigation

8.4.1 TECHNICAL HELP :

The nature of technical help sought by units mainly relates to an initial training in the operation of the new machinery and equipment. Besides, operation of new machinery and equipment. Several units also desired some elementary knowledge about the type of technical improvements could be made in their

unit. The highest percentage of units in Mechanical (50 %) industry desiring the technical help in adopting improved technology compared to 45 % in DSMI, 30 % in general engineering and 20% in Agricultural implements industry.

8.4.2 FINANCIAL HELP :

The financial help sought by the units in different industries is both for the purpose of purchasing machinery and equipments and also for purpose of working capital requirements. The data in this respect reveals (table 8.6) that all the units desirous of introducing improved technology has shown the problem of finance in implementing the scheme. In few cases the requirements of land and building was also mentioned.

8.4.3 MACHINERY AND EQUIPMENTS :

Next to financial assistance may be mentioned, machinery and equipment. Here it means that the units are desirous of getting assistance in procuring the requisite type of machinery and equipment which they themselves are not in a position to obtain. In this regard the mechanical industry stood first (80%) compared to DSMI (75%), general engineering (65%), and Agricultural implements (40%) industry.

8.5 MARKETING PROBLEMS :

The DSMI industry in particular has shown the problems of marketing. Though other group of industries have also an effective bearing with the problem, but they confined only to the local market. In the case of DSMI industry the marketing is the main problem, because this industry serves almost all the parts of India.

The small scale units engaged in this industry are poorly placed for assessing trends in market condition, and changes in consumers' tastes and requirements. They have difficulty in establishing contacts with potential customers at a distance or in building up national or international markets, because of varied limitations. They are also unable to adopt sales-promotion measures such as advertising etc. In the absence of marketing facilities the small entreprenuer has to depend on retailers, wholesellers and commission agents. The following table gives a comparative idea of the channels of distribution of their products:

Table 8.7 CHANNELS OF DISTRIBUTIONS

S.No.	Category	Channels of distribution in %			
		Retailers	Wholesellers	Consumers	Govt.
1.	Mechanical	10	-	90	-
2.	DSMI	05	60	05	30
3.	Agricultural	30	-	70	-
4.	General Engg.	20	10	70	-

Source : Field investigation

The table reveals very interesting data in this respect. It shows that DSMI industry is marketing their products mainly with the help of whole sellers (60%) compared ~~to very limited quantity~~ to consumers (5%) and through Retailers (5%). About 30% of their production is being supplied directly to the Government Departments. Though the major consumer of their

products are Govt. agencies, and research institutions, but out of their total supplies, only 30% they could directly market to the Government agencies and remaining through whole-sellers and retailers. In other groups of industries the products are mainly marketed directly to consumer, compared to very small amount through retailers and wholesellers.

8.6 DSMI INDUSTRY :

In the chapter we have discussed the major problems faced by engineering industries in the area as a whole. Now an attempt has been made to discuss the problem of DSMI industry in specific. The historical importance of DSMI industry has resulted in the heavy concentration of DSMI industries in the area. The heavy concentration of one particular industry in the area has created many problems for the small entreprenuers engaged in manufacturing these products. An attempt to discuss the problems in specific with DSMI industry has been made in the following lines :

8.6.1 SPECIFIC PROBLEMS OF DSMI INDUSTRY :

Prior to independence Drawing Surveying and mathematical instruments (DSMI) were being imported from England. But, after independence Roorkee Instrument Industry fulfilled almost the entire requirements of the country which in the last 2 decades has increased at a fast rate. Most of the dams and projects are being completed with the aid of Indian Instruments and foreign exchange worth million of rupees is being saved. The history of instrument industry at Roorkee is about 145 years old. Its origin is linked to the mathematical instruments

office at Calcutta, which was established in 1830 by Sir George Everest, the then Surveyor General of India, for repairing the instruments procured from England. In 1833, this office was reorganised into two central depots for Scientific instruments, located at Calcutta and Roorkee. Since then the excellent traditions have been carried out from one generation to next. The actual manufacturing of Drawing and Surveying instruments at Roorkee started in 1847, with foundation of the Thomason College of Civil Engineering now University of Roorkee. At present there are in all about 200 Cottage and 100 small scale units, which are concentrated within 12 kms. radius of Roorkee, employing about 1500 persons and producing goods worth Rs. 7 million per annum.

In addition to Roorkee instrument industry, some other industries also started operating at Calcutta (National Instruments Ltd.), Hyderabad and Varanasi. But more than 75% of the total demand is fulfilled alone by Roorkee instrument industry. This Industry supplies all types of precise and sophisticated instruments which are being used all over the country in different governmental departments and engineering educational institutions for the training of technical persons and to meet the day to day requirements of these ~~very~~ trained peoples. Inspite of a century of its establishment, the Roorkee instrument industry still is in the form of cottage and small scale industry. The majority of the manufacturers are not fully equipped with sophisticated machines and still follows manual methods with little capital. The absence of good machines with them results in the lack of good quality instruments and also with the absence of modern

techniques it is being difficult to keep pace with modern development in instrumentations. It is only their old and traditional skill which is helping them in keeping pace with modern developments to some extent. Since 1947, the indegeneous products have replaced almost all the items of DSMI which were imported from abroad. Thus Roorkee instrument industry is playing an important role in import substitution by saving the foreign exchange.

The problems of this small scale industry could be classified as follows:

8.6.1.1 Unstable Demand :

For a survival of any industry and more so in the case of small scale industries working on extremely limited resources of working capital, regularity of order is of vital importance. In this case, all the manufacturers reported the presence of unstable and seasonal demand. The high demand of the surveying instruments could only be noticed during January to March every year, because, unlike others this industry mainly depends on the orders from Government departments and research institutions which usually place their orders during January to March, because they receive the sanctions of their funds very late and usually in the months of November - December every year.

The demand of these instruments could broadly be divided in two categories :

(1) Demand of drawing instruments by educational and research institutions,

(2) Demand of surveying instruments by Government Departments.

The demand of the drawing instruments by educational and research institutions, ~~This demand is mostly~~ is found uniform throughout the year, because these instruments are mainly used by students and are also not very costly. The demand of surveying instruments by government departments. This demand is mostly seasonal because of aforesaid reasons. The ratio in the demand of Drawing instruments and Surveying instruments is about 40:60, because the surveying instruments constitute a major part and are consumed in larger quantity by Govt. departments all over the India and are also costly compared to drawing instruments. Thus only 40% of the total demand is regular demand and remaining 60% is seasonal. Therefore, for 9 months in a year these units have to operate on less than their 50% of the capacity and for remaining 3 months, to meet the complete demand of instruments, they have to operate on double of their capacity. But due to the limited resources and primitive techniques it is not possible to operate on double of their capacity, and small manufacturers therefore, supply a poor quality of products to meet the complete demand in limited time. Although it is not in their interest to refuse the supply but sometime being unable to meet the demand of a good standard, they have to refuse to fulfil the supply in such a short period in order to maintain their reputation.

It is also very much uneconomical and risky to stock the finished products, whole year in the hope of seasonal demand inspite of knowing the prices and nature of demand. The heterogeneous nature of products i.e., hundreds types of instruments with different specifications is another hurdle in the

way of keeping the stock. Another it is also found very much difficult in the presence of heterogenous products, to forecast the nature of demand, even very old and experienced manufacturers find themselves unable to forecast the nature of demand of these instruments on the basis of their past experience and demand trends

It is clear that the presence of unstable demand results into firstly the unit to operate below their capacity for most of the time and secondly, to discourage the entreprenuer for putting more capital in their business for its developments.

8.6.1.2 Unhealthy competition :

Another problem reported by the 80% of the total sampled units were the presence of unhealthy competition. This problem could directly be related with the presence of unstable demand in the market. As a fear of uncertain demand, the manufacturers try to take as much supply orders as they can and even at lower prices in comparison to other manufacturers. The tendency of selling products at very low prices, naturally affects the quality of the product, and increases unhealthy competition in the market. On the other hand buyer himself indirectly or directly encourages this practice by purchasing the instrument on lowest price basis rather than on quality basis. Thus, in the presence of unhealthy competition, most of the manufacturers in themselves are unable to produce a good quality, although it is very much required for these instruments. Contrary to this, very few manufacturers who compete on quality basis have found negligible effect of unhealthy competition upon their business although it costs much higher and even some time double than that

of market price. The goods are sold to those customers, who purchase quality goods only and also these are being exported. but their number is very small.

8.6.1.3 Quality Problems :

To produce a good quality of the products the complete knowledge about the components and working methods are very necessary for manufacturers. Most of the manufacturers produce their products without knowing much about its technical detail and the functioning of the instruments. Thus, it results in poor quality of the products and even manufacturers found themselves unable to check the accuracy of the instrument. During the course of survey of these units, it was observed that most of the manufacturers were not well equipped with the requisite technical skill and management techniques. It is interesting to note that, most of the entreprenuers reported their ignorance about the functional mechanism of most of the instruments, which they are producing for the last many years. It is only their old dexterity and experience, on the basis of which they are producing these instruments. Most of them were also not aware of the institution al facilities available for helping the small units in this respect. But general feeling expressed by entreprenuer was that these institutions failed to provide required technical help for the different type of operations. There is also lack of such facilities in the region itself.

8.6.1.4 Marketing facilities :

Marketing management is a specialized job involving techniques of demand creation and sales promotion. A

limited size of operation and financial resources make small units unable to hire specialized services for sales promotion. It was also reported that the buyers did not show a preferred treatment to the small units in placing orders, in granting the price preferences and also in respect of their payments. As it is known that major purchaser of their products are Government departments and research institutions. And usually, these buyers place the orders on lowest quotation basis, in which they do not try to be much more specific about the quality of the products. The delay in their payments has been found in almost all the cases. Due to the presence of limited capital resources in hand, it is difficult for small manufacturers to block their capital for a long time, hence a majority of small manufacturers are forced to hand over their production to suppliers at comparatively very low prices. These suppliers are having good amount of capital in hand to supply the products to consumers for a long credit because they do not have to employ their money in manufacturing processes and they market these products, taken from manufacturers, in their own brand name and simultaneously also avail all the facilities of manufacturers provided by Government.

Secondly, it is also difficult for manufacturers to spare and spend much time in moving from place to place to secure the orders in the absence of proper marketing facilities, and in such circumstances they had to sold their products to/through suppliers. On the other hand, suppliers have all the time to spend on marketing, because they do not have to look after the manufacturing process, and in such situation they are more

capable in securing the high number of orders from consumers and indirectly or directly compelling the small manufacturers to sell their products to them at low prices.

This involvement of supplier in the marketing shows many-fold defects. First, it increases the cost of production. Secondly, it exploits the manufacturers, and thirdly, it keeps consumers far away from the manufacturers, which indirectly or directly effects the quality of products. However, the need of proper marketing facilities are extremely needed every time by the small manufacturers for their survival in the industry.

8.6.1.5 Finance :

Another important problem compared to marketing problems is inadequate credit facilities, and other operational problems in securing credit from Government and different financial institutions. Due to the lack of finance, the entreprenuers are not able to use modern techniques of production, to produce precise instruments which has it significance for this industry, and help to compete others in the field and also to keep ~~the~~ pace with other technological developments in the field. The problem of procuring the working capital was very much emphasized by the entreprenuers. Th problem of inadequate credit facilities become much more acute in the case of small units, working on limited resources and under poor marketing conditions and other problems. Most of them reported about various procedural formalities, the inordinate delay in getting loans sanctioned and allocation of inadequate amount of capital by banks and other financial institutions.

On the other hand the financial institutions and Bank officials reported that in most of the cases, the problem of finance allocation arose due to poorly documented applications. During the course of survey it was found that only few units could obtain as much assistance as they needed from the banks and other agencies, as long as they are able to fulfil the formalities of these institutions. Generally these financial institutions ~~had~~ have to show their ~~inhelpness~~ helplessness and to reject the application because the entreprenuers were unable to fulfil the requirements of the banks and are also not very much able to convince the bank about the viability of their project or were not able to produce a good project plan to the bank because of their lack of knowledge. Most of the Entreprenuers had also shown their lack of awareness about the institutional facilities available to assist them, because of their illiteracy and lack of proper advertisement about these facilities also.

8.6.1.6 Raw-material :

To ensure regularity of supplies against orders, it may become necessary to make available essential raw material to small units. The extent of availability of raw-material varied from industry to industry, but it was reported that inadequate supply and allotment of raw-material was the most important bottleneck in most of the cases. The basic problem relates to the non-availability of the raw-material in time, in required quantity and quality from Government quota control market. The procedure of raw material allotment is very long and time consuming, it takes a long time in getting the allotment of raw -

material quota. Simultaneously, to take a big assignment of raw material from Government is only beneficial for big manufacturers but it is very difficult for small units to take such a big assignment at a time because of their limited resources. They need a small amount of raw-material from time to time.

In the absence of such facilities the small units have to pay exhorbitant rate for the purchase of raw-material from the open-market, as their working capital resources are meagre and they do not also have the organisational machinery to make economic purchases. These problems naturally force the unit to operate at low capacity and low profit.

8.6.1.7 Production :

The small unit suffers from the general inferiority of their technical equipments. Similarly, in the case of instrument industry the problem in respect of production are as follows:

1. The lack of testing equipments,
2. The absence of sophisticated machines and dividing, graduating and milling machines,
3. The absence of heat treatment facilities.

The absence of good machines and production techniques results in the lack of good quality of products and interchangeability of the parts. In the absence of such sophisticated machines these small manufacturers found themselves unable to produce ~~a first~~ standard goods. To produce first mark goods, the need of sophisticated machines and technical training is felt very much. Although 'QM' (Quality Certificate mark Scheme of U.P.Government) standards are which they are following but this

standard is not widely acceptable or accepted. In the absence of such standards it was found difficult to replace the broken and worn out parts, easily. It is only the inherited skill and dexterity which compensates to a certain extent the deficiency of modern equipment.

CHAPTER IX

RECOMMENDATIONS

In this concluding chapter, attempt has been made to weave together some of the important threads spread over in the previous chapters of the present study. It may be recalled that for the purpose of this study, a sample of 55 small scale engineering units was selected for analysing their problems. In the survey the information of a qualitative and quantitative nature was collected. The qualitative information was in the form of an opinion survey which were collected from entrepreneurs-managers besides, personal discussions. The remarks presented in this chapter are based on the information collected during the survey. However, the remarks have validity as far as the area of enquiry is concerned but many of suggestions are likely to have relevance at the national level also.

Economic planning in India has brought a number of changes in Indian Economy during the last thirty years, but so far we have miserably failed to absorb the increasing labour force. This failure has culminated in growing discontent on account of imbalances and economic disparities. One of the World Bank report recently published, has mentioned that two out of every three job seekers are moving to urban areas in search of gainful employment. Our policy makers thought that the development of small scale industries which are labour-intensive would solve this problem and generate employment for the people in their own areas. But the Government policy in order to protect the

interests of small scale industries to ensure self-employment in large number, is far from satisfactory.

Various State Governments and public sector agencies are showing their interest in providing all sort of facilities to small entreprenuers. But while new units continue to come up, the performance of many those already set up are unsatisfactory. The follow up study reports by financial institutions, highlight a disturbing factor that a large number of small scale industries at present are in serious difficulties and this has a demoralising effect on the entreprenuers.

While the object of setting up more and more small scale industries is laudable and in the best interest of the nation's economic growth, the approach in this direction will have to be more realistic and effective. Here efforts are being made to present some recommendations which may be considered by the experts for whatever worth they are.

9.1 PRODUCTWISE CONSORTIUM :

Small scale industries in the area suffered from many major problems, effecting the growth of small scale industries Out of various problems, the problem of marketing was emphasized time to time. as discussed in earlier chapter ~~that~~ SSI cannot afford the costly system of marketing. ~~In this reference~~ here it is found necessary to suggest same method for marketing of their products. In this problem the method of developing a productwise consortium could be advised. Specially, to deal with the marketing problems of DSMI industry, the State Government could promote a

Consortia, develop a common brand name and push on the products of DSMI units into the market. The proper arrangement for quality control of these products should be done by Consortium, instead of individual units. There should be a sales team, consisting of sales-representatives with Consortium. The sales representatives should be employed on salary-cum-commission basis, this will promote them to work hard to achieve their results.

This consortium system will help the small entreprenuer engagedinmanufacturing DSMI, in marketing their products more easily and at fair prices. This system will also help in eliminating the unhealthy competition prevailing in the industry. The producers would concentrate on production and its quality instead of wasting time in running from place to place in search of market.

9.2 INTEGRATED FINANCIAL SCHEME :

The problem of finance with small entreprenuers are well known. Quite often the entreprenuers complain about the problem, while on the other hand bankers claim that they hardly reject any bankable proposal. It was also observed that entreprenuers prepare the feasibility reports mainly in order to satisfy the procedural formalities required by the bank without any actual/realistic analysis of the relevent Econ. indicators. Also the incompetency of officers at Branch level, to evaluate these reports could not be denied.

To meet with the financial problems of small entreprenuers, a simplified procedure should be implemented. The I.C.Puri Committee which was set up recently has also

recommended simplified applications and appraisal forms be adopted by all bankers for finance upto Rs. 25,000 and advances between Rs.25,000 and Rs, 2 lakh. To deal with the finance problem of small entreprenuers in the area the following suggestions could be made.

Beside implementing the simplified applications forms, the Banks should not ask for third party guarantee and should accept equitable mortgage. The repayment of loans should be based on realistic assessment and instalments should be collected after the unit starts operating in surplus. To avoid the problem of inordinate delay, more discretionary powers should be given to local Banks managers and the time ~~limit~~ amount should be laid down for disposing off the credit applications within the period of four weeks from the date of receipt.

At the time of financing the unit the "economic viability" of the project should be considered instead of "credit worthyness" worthiness of the unit. This will help in coming up the prospective entreprenuers with good project reports. This will also help in rural industrialisation directly or indirectly. The department of Industries, U.P. should take more active interest in financing these industries.

9.3 TECHNOLOGICAL IMPROVEMENT :

The problem of production relates with the need of technological improvement in small scale industries. The absence of good machines and proper testing facilities are the major problem of this sector. In this ~~reference~~ connection the following are suggested :

9.3.1 Establishment of Instrument Complex :

To deal with the specialised technical services required by small scale engineering industries in the area, an instrument complex should be developed. This instrument complex should be equipped with modern machines and equipment for providing specialised jobs and testing facilities to the small entreprenuer. These complexes should be established on industrywise requirements. The facilities of instrument complex will lead to improve the quality control of their products. In the absence of such testing facilities the small units are not able to control quality of their products. With specific need to DSMI industry one Heat treatment plant should also be established. ~~This will add in the better achievement of their quality.~~

9.3.2 Technical consultancy :

It can be emphatically stated that one of the most important and effective service that could be provided to the small scale industrialists, is to make available to them the technical expert services. In the absence of such technical consultancy service directly or indirectly, the units are forced to operate below their capacities.

In this regard, the expert technical consultant should visit the unit to study their individual problem on the spot and render advice and assistance to the entreprenuers. If such a service is made available properly and adequately, it would help in achieving more far-reaching results in individual small scale industrial unit than any other non-official service. The field survey in the area had also revealed the non-awareness

about the better techniques of production among small entreprenuers. Such extension services will help the small entreprenuers in increasing their productivity, reducing the cost, increasing the profitability and better quality control.

9.4 MANAGEMENT TRAINING FOR ENTREPRENUERS :

It may be considered the next important aspect to be discussed in this reference. The need of proper training facilities to entreprenuers, will help small industrialists in managing their small unit much more effectively. Secondly, it would help in training the workers in some specialized job. The training to small entreprenuers may be of value to the whole range of management problems, including problems of production and technology, costing, buying and selling, finance and labour management. In this ~~reference~~ connection the following type of training should be extended.

To improve the lack of management knowledge in small entreprenuer the management courses should be organised in the area, keeping the following objectives in mind :

1. to provide management knowledge, to help them in achieving short-term results in the form of lower cost or a larger volume of sales,
2. to increase the knowledge required for effecting basic changes in the firm's structure or policy, resulting in long-term benefits.

It is fortunate that Roorkee has a technical Institute of International repute with all sort of expertise in education and training, it will therefore not be out of place that the Department of Industries should form some sort of liaison with the University of Roorkee and arrange to organise short term training courses for entreprenuers. The factory owners should be made to realise that the expenses on training would raise their skill of managers and workers and, therefore, it is sound investment which has good returns. Some courses could be suggested like problem of technical know-how, Marketing management, Sales promotion, Export prospects, Cost and Accounts, Management, labour relations, quality control, application of modern management technique to SSI etc.etc. A discussion with the concerned department of University of Roorkee and authorities revealed that the University will be glad to offer such facilities. Though some Government institutions are busy in organising such type of entreprenuer development programmes at various places. But since long no such programme has been organised at district Saharanpur to train the small entreprenuers. It is also not understandable that why Department of Industries, U.P. is not taking any initiative to organise such training programmes at Saharanpur or adjoining areas. In organising such programmes Industries Department could persuate University of Roorkee to establish some permanent laison of this sort so that even the class room education becomes realistic and meaningful. This would ultimately result in the training in entreprenuership which in turn will

bring young engineers into entreprenuer.

In each specific area there should be required to assign a batch of 15-20 trainees. It is further suggested to organise such training courses during the off-season of these industries. During the off-season, the entreprenuers would be able to spare much time in attending such courses. The course may be designed for 2-3 weeks.

9.5 MACHINE SHOP TRAINING FOR WORKERS :

For improving the skill of workers and their technical knowledge the arrangements for training the workers on specialised machines, should also be made from time to time in the area. In arranging such training courses the University of Roorkee could again play a vital role. The batch of 10-15 workers could be trained for 6-8 weeks during the evening hours. The security of their job should be assured by Industries department and some stipend may also be given to trainees. Such courses may be arranged keeping the technical need of particular industry in that local area in mind.

9.6 ARRANGEMENT OF RAW MATERIAL :

A set-up of 'raw-material Depot' in the area, to fulfil the raw material need of small entreprenuers is advisable. The state Government should come forward to establishing one raw-material depot which will cater from time to time requirements of the small units at fair prices. The depot should be well equipped with all sort of scarce raw-material needed by small units of the area. This will help the small sector in making fair purchases. The Consortium suggested above would also deal

with the problem of purchasing raw material at a reasonable price and at a proper time. The Consortium with the help of Government and Bank can easily manage credit purchases on reasonable terms. It would also be possible for the Consortium to collect their periodical demand of a particular type of raw material and make whole sale purchase. This would bring down the prices at which raw material is procured, as it would enable to reap internal as well as external economics of the sale of production.

9.7 ESTABLISHMENT OF INDUSTRIAL ESTATE :

Looking forward the increasing trend of small scale industries in Saharanpur proper the establishment of one Industrial Estate is proposed. The establishment of such estate in Saharanpur will help in removing the congestion from the industry and also lead in providing proper infra-structural facilities to small units which they are lacking. The establishment of Industrial Estate at Saharanpur will also help the prospective entreprenuers coming from rural areas to set up their unit.

The study made in this line resulted in the selection of two proper industrial estate sites - (i) Nazirpura site, and (ii) Delhi road site. The Central Government study team has also proposed the establishment of industrial estate at such places.

1. Nazirpura Site : This site comprises of a plot of land which measures 44.9 acres lying at the distance of 200 metres from the clock tower - star paper mill road. It is about 3 Km. from Saharanpur railway station. The land is barren and belongs to the railway department. It is also reported that Railway

department could release the land in favour of Industries department. The 132 KVA power station functioning in the compound of star paper mill, would be able to meet the electric requirements of Industrial estate.

2. Delhi road site : It is situated on the Saharanpur-Delhi road and is well connected by metalled road. It is situated at the distance of 5 Kms. from the Saharanpur railway station. It is bounded by Saharanpur-Delhi road in the east, the dismantled metre guage line in the west, ITI in the north and agriculture farms inthe south. At present the land is under cultivation but has shown as Industrial area in the master plan of Saharanpur. The power requirement of Industrial estate could be met by 11 KVA sub-power station situated in the ITI campus. (Fig.9.1)

Our estimate leads us to the conclusion that atleast 100 sheds should be developed of type 1 and 2 to cater the need of tiny units in the area. It should not be forgotten that establishment of such estate, would result in to the no. of 'group benefits' which would be beneficial for all the concern and would bring down their production, selling and operational cost. The concept of consortium and integrated finance would be more meaningful when industries are concentrated at one place. This would enable them to have group advertisement, and taking up of group research project for some specific problems and bring out some joint trade journal or invite specialists. This would also enable to give a practical shape to our conclusion regarding the establishment of more intimate contact of institute

of training and Industries department or Banks. In the reference of estate at consortium, it would be very difficult rather impossible to give practical shape to what has been narrated in the above paragraphs.

The above is the brief account of the humble recommendations made based on our observations and study. It is felt that if the necessary efforts are made on the above line, then SS Engg. Industry in the area would acquire a more respectable status in the structure of the Industrial Economy of the district. It is hoped that this study though not completely exhaustive and without limitation would open up scope of similar studies. We do not claim finality or infaliability or the perfection in the conclusion arrived at. We simply hope that a new ground has been opened up.

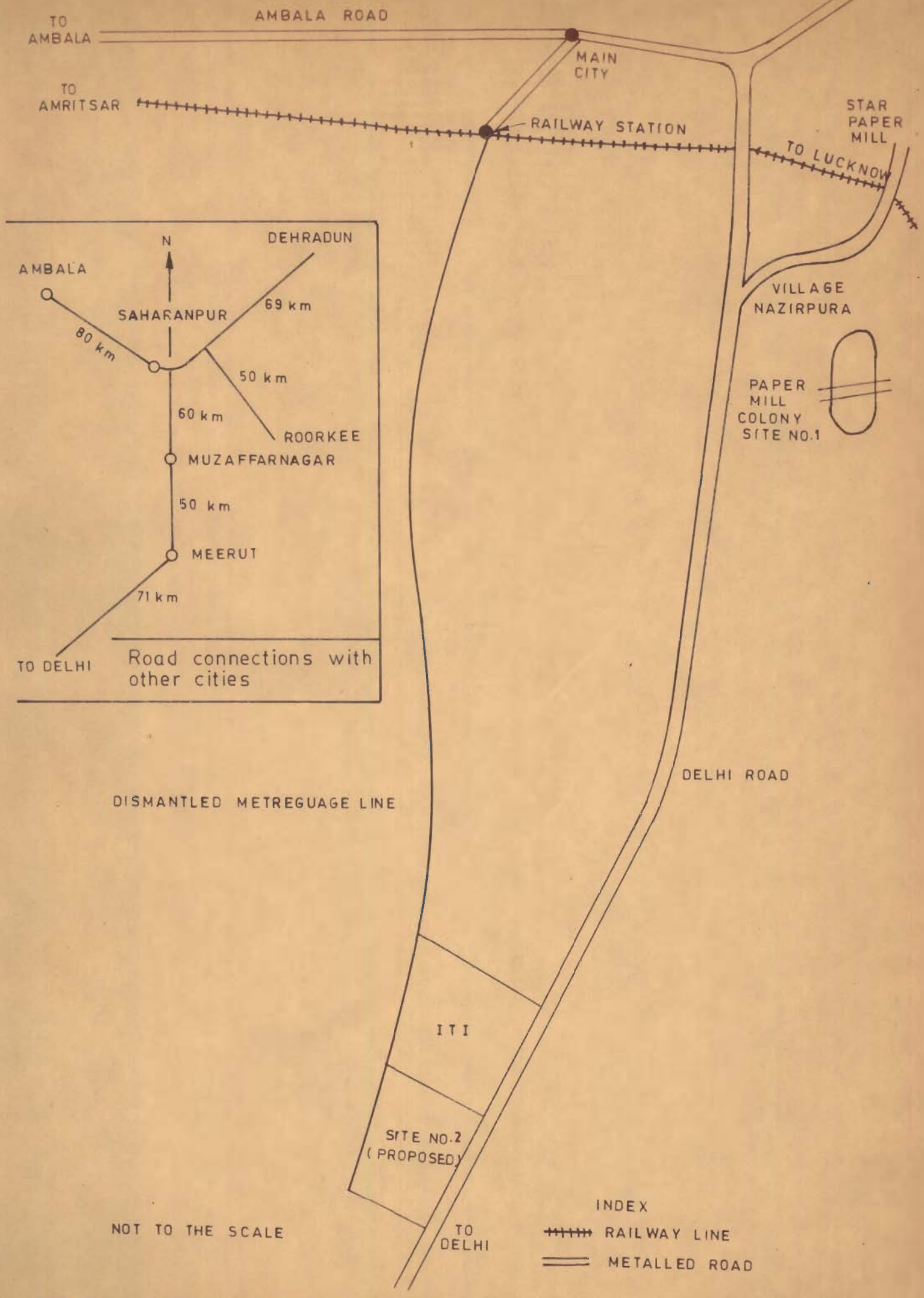

FIG. 9.1 - SKETCH MAP OF PROPOSED INDUSTRIAL ESTATE SITES AT SAHARANPUR

APPENDIX

QUESTIONNAIRE

1. Name of Establishment :
2. Group of Classification :
3. Location :
4. Sample No:
5. Nature of industrial activities : (CIRCLE ONE CODE)

   1. Manufacturer, 2. Supplier, 3. Job work, 4. Assembly,

   5. Repair/Servicing, 6. Ancillary, 7. Any other(SPECIFICY).....

6. Type of Establishment (CIRCLE ONE CODE)

   1. Individual Proprietorship, 2. Partnership: Joint Family,

   3. Partnership: Others, 4. Cooperative Society,

   5. Any other (SPECIFY) .....

7. Year of Establishment :
8. How was the Industry Established? (Circle one code)

   1. Inherited, 2. Purchased, 3. Self started.

9. Why you established your firm at this place? (CIRCLE ONE CODE) due to the factor of:-

   1. Raw material, 2. Labour, 3. Access of Market, 4. Site and service, 5. Finance, 6. Home place of owner, 7. Any other (SPECIFY).....,9. NA/DK

10. Is the industrial activity a primary or a secondary source of income to the owner or owners? (CIRCLE ONE CODE)

    1. Primary 2. Secondary.

11. Is production perennial or seasonal? (CIRCLE ONE CODE)

    1. Perennial, 2. Seasonal.

12. If seasonal, circle codes for all months of operation:

    1. January, 2. February, 3. March, 4. April, 5. May,

    6. June, 7. July, 8. August, 9.September, 10. October,

    11.November, 12. December, 98. Not app. 99. NA/DK.

13. Number of shifts normally worked:

14. Number of days worked in 1976/last accounting year:

15. Other particulars (CIRCLE ONE CODE)

1. Whether located in backward areas	1. Yes 2.No.
2. Whether located in R.I.P. area	1. Yes 2.No.
3. Whether registered under Factories Act.	1. Yes 2.No
4. Whether registered under Govt. store purchase programme.	1. Yes 2.No
5. Whether having machines on hire purchase from NSIC/SSIC or any other (SPECIFY).....	1. Yes 2.No
6. Whether product confirm to ISI/QM std.	1. Yes 2.No

16. Details of machines/equipment installed:

Sl. No.	Name of mach/Equip.installed	Year of purchase	1. Indian or 2. Imported
1	2.	3.	4.
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			

17. Products and Production Structure:

Sl. no.	Items	Code	Unit of Quantity	Production 1974-75 Qty.	Production 1974-75 Value	Production 1975-76 Qty.	Production 1975-76 Value	Max. Cap.
1.	2.	3.	4.	5.	6.	7.	8.	9.
1.								
2.	MAIN PRODUCTS							
3.								
4.								
5.								
6.								
7.	Sub-total (1 to 6)							
8.								
9.	BY-PRODUCTS							
10								
11.	Sub-total(8 to 10)							
12.	Repair & maintenance							
13.	Other							
14.	Total(7+11 to 13)							

18. Employment and Wage Structure:

Sl. no.	Categories	Average Emp.	No. more reqd.	Av. wage per month	Bonus etc.	Total annual eml. 74-75	Total annual eml. 75-76
1.	2.	3.	4.	5.	6.	7.	8.
1.	Unskilled						
2.	Skilled						
3.	ITI/Tech.						
4.	Sub-total(1 to 3)						
5.	Owners family mem.						
6.	Managerial						
7.	Supervisor/Clerical						
8.	Total(5 to 7)						

19. Capital Structure:

(a) Fixed Assets				(b) Working Assets			
Sl. no.	Items	Value	Amount more req.	Sl. No.	Items	Value	Amount more req.
1.	2.	3.	4.	5.	6.	7.	8.
1. Land Annual lease Amt. Rs.____				1. Material Fuels etc.			
2. Building Monthly rent Amount Rs.____				2. Semi-finished goods in stock			
				3. Pro uct by-prod.			
3. Sub-total(1+2)				4. Cash			
				5. Receivable(+)			
4. Machinery equip.				6. Payab e(-)			
5. Tools							
6. Other fixed assets							
Total(3 to 6)				Total(1 to 5)			

20. Cost structure: Raw Material Consumed.

Sl. no.	Name of raw material	Code	Unit of Qty.	Consumed 1974-75 Qty.	Consumed 1974-75 Value	Consumed 1975-76 Qty.	Consumed 1975-76 Value	Easily available 1.Yes 2.No
1.	2.	3.	4.	5.	6.	7.	8.	9.
A.	IMPORTED							
1.								
2.								
3.								
	Sub-total(1 to 2)							
B.	INDIGENEOUS							
4.								
5.								
6.								
7.								
8.	Sub-total(4 to 7)							
9.	Packaging Material							
	Total (3+8+9)							

21. Cost structure contd: Fuel, electricity and other costs

Sl. No.	Item	Value
1.	2.	3.
1.	Fuels	
2.	Electricity	
3.	Water	
4.	Other costs:	
	a) Advertisement	
	b) Transport	
	c) Insurance	
	d) Sales Tax	
	e) Income Tax	
	f) Depreciation	
	g) Unaccounted	
	TOTAL	

22. Market structure : Give percentage of supply.

1. To whole-seller_____ 2. To retailer_____

3. To consumer_____ 4. To Government_____

5. To export _____ 6. On order _____

7. Any other (SPECIFY)_____

23. Is there any better method of manufacturing available for your products?

1. Yes 2. No

If yes, what problems are there in adopting it (CIRCLE ONE CODE)

1. Financial, 2. Skill, 3. Risk, 4. Enterpreneural difficulties, 5. Any other (SPECIFY)_____

8. Not applicable 9. NA/DK

24. If your production capacity is not fully utilised give reason why? Due to the lack of -

1. Finance, 2. Raw material, 3. Technical know-how

4. Demand, 5. Skilled labour, 6. Any other (SPECIFY)_____

8. Not applicable, 9. NA/DK

25. Problems: Do you face the problem of:-

(a) Unstable demand? 1. Yes 2. No 9. NA/DK

If yes, (EXPLAIN) _____

(b) Unhealthy competition 1. Yes 2. No 9. NA/DK

If yes, (EXPLAIN) _____

(c) Training programme 1. Yes 2. No 9. NA/DK

If yes, (EXPLAIN) _____

(d) Marketing facilities. 1. Yes 2. No 9. NA/DK

If yes, (EXPLAIN)

(e) Labour migration 1. Yes 2. No 9. NA/DK

If yes, (EXPLAIN) _____

(f) Red tapism in Govt. offices. 1. Yes 2. No 9. NA/DK

If yes, (EXPLAIN) _____

(g) Raw material 1. Yes 2. No 9. NA/DK

If yes (EXPLAIN) _____

(h) Power shortage 1. Yes 2. No 9. NA/DK

If yes (EXPLAIN) _____

(i) Finances 1. Yes 2. No 9. NA/DK

If yes (EXPLAIN) _____

(j) Production 1. Yes 2.No 9. NA/DK

If yes, (EXPLAIN) _____