CHAPTER 13

Conceptual framework:

Introduction
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INTRODUCTION

Industrial development and industrialization are very important steps a country has to come across whereas there can be many problems arising from the solutions. As a means to overcome poverty, industrialization in its turn has not failed to create its own problems like the increasing social and economic inequalities, regional disparities, widespread waste of resources, periodic balance of payment crisis, dependence on aid and so on.

The processes of industrialization of developing countries are still in their infancy while some countries have been longer at it than others, all of them have far to go before being industrialized. According to Jalan (1975, p. 29-45), there are still some questions which have not yet received convincing answers, such as:

1. How to speed up the process of industrialization?
2. What kind of industries to be promoted?
3. In what time sequence, and
4. With what kind of instruments.

Besides the above questions, another very important question which have been the headache of Economists and Geographers is the locational aspect as to where small an industrial establishment would be located. There is still a need for comprehensive framework of reference specifically for industrial location analysis. Every industrial establishment has a location. Each factory occupies a portion of the earth's
Industrial location analysis may be defined as the study of the spatial arrangement of industrial activities. The term industrial location analysis is preferred to the more conventional expressions of 'industrial geography', or the 'geography of manufacturing'. The location of an industrial establishment is always determined by certain elements or circumstances prevailing within a given time and space.

The elements that make up the industrial world may be categorized in different ways, suggestive of different possible levels of analysis. The basic unit of observation is the plant or the factory or a single 'industrial establishment'. An industry consists of plants and/or industrial organization engaged in the same activity. An industrial organization comprises of an administrative or managerial structure responsible for the operation of one or more industrial establishments such as privately owned industrial corporation having branches or subsidiary branches or a state agency responsible for a specific line of production. A broader category still is that of the industrial system, which Hamilton and Linge (1979, p. 6) defined as comprising operating units of different types, (production units, associated facilities such as offices and laboratories and suppliers of materials, transportation services, etc.), bound together by functional relationship and interacting with an environment external to
the system. This 'system' view of integrated approach of industrial setup has to become particularly influential in recent years as a means of emphasizing the interdependence of the individual participants:

"the firm or industry is seen as only one element in the total system or Milieu, and the industry is viewed as related to all other elements in the system" (Heraska 1978, pp. 30-36).

Such system may be defined spatially as a territorial industrial system, of which the Ruhr in Germany or the major manufacturing belt of the United States may be examples. The kind of empirical investigations usually conducted in industrial geography may be divided into two categories. (Smith 1981, p. 6) First, there are systematic studies of the location of a single set of a spatially distributed phenomena such as participants in a particular industry or employees engaged in a given activity. These studies can be on a world, national, regional, or local scale. Secondly, there are areal studies concerned with the industrial character of specific places and how they differ from one another. A comparison between the employment structure of a group of cities or counties would come under this heading. "There are also investigations that focus on change, in either a systematic or an areal context. And there are some that are concerned with specific industrial problems such as local employment opportunity, the feasibility of development in a particular location, and/or the impact of a new plant on an area's economy and environment. The essence of industrial activity is the
transformation of matter, by physically or chemical means, into something with greater utility or value. Certain inputs are required in the form of materials and of various kind of labour and capital necessary to undertake the processes of manufacture. The materials are converted into a finished product or output, which is subsequently shipped to the consumers. Thus, the function of transportation enters the picture both at the stage of material assembly and for the distribution of the finished products.

Thus, the industrial activity or the manufacturing involves immense factors or elements. In this regard, Smith (1901) advocated that a manufacturer, while setting up a factory, must make three crucial decisions, or sets of decisions, once the nature of the product has been determined. These are:

1. The scale of operations, including how much is to be produced and at what price it is to be offered to the consumers.
2. The technique to be adopted which involves the selection of the appropriate combination of inputs, and
3. The location of the factory.

To be able to make concrete decisions on the above factors, an entrepreneur has to possess certain qualities that can make him to be a promising industrialist. In this regard, Gupta (1992, p. 3) suggested that an industrial entrepreneur has to possess maximum characteristics of: (1) Innovative, (2) Calculated risk taking, (3) Hard working, (4) Goal oriented, (5) Self confidence, (6) Integrity of character, (7)

Due to the difficult task of an industrialist and the complex nature of industrial geography, care must be taken while studying and examining industrial characteristics either in areal or systematir perspectives. In fact, the study for industrial development of an area can be pursued on the following aspects:

(a) Sectoral aspect.
(b) Locational aspect, and
(c) Integrated aspect.

(a) Sectoral Aspect:

There are numerous studies on the sectoral aspects of industrial development. The works of economists and geographers are recognizable on these aspects. For detail the industrial sector is divided into various categories in order of large scale, medium scale, cottage and traditional industrial setup. In fact, such studies follow the wholeistic approach by which the structural components of the industrial setup are interpreted and analysed by applying various methods. Therefore, input-output analysis of the firms, the forward and backward linkages and the scales of industrial economies are studied. The individual units can, therefore, be studied precisely with regards to employment, investment in plant and machinery, production capacities and growth trends.
(b) Locational Aspects:

As every industrial establishment has a location or in other word, an industrial establishment or factory has to occupy a certain plot of land, the location of a particular industrial establishment at a particular location or space is determined by many factors. It is also understood that certain crops are grown in a particular season of the year because that season favours the growth of those crops. Similarly, we find that different regions are covered by typical vegetations and so on. Industrial establishment may grow together in a particular city or region or centre depending upon the favourability of the local conditions for such industrial growth. Therefore, the locational aspects of industrial establishments also count a significant role as to the development and growth of industrial units as well as complex nature of establishments.

Thus, the geographical personality of an area or region, availability of raw materials within the regions and degree of availability, availability of human resources, either skilled or unskilled and nearness to the consuming areas, etc. have to be taken into consideration with care.

(c) Integrated Aspects:

An overall industrial development of an area or a region is not based only on the development of each sectors of the manufacturing units. But it also require proper study of the factors, location and interrelationships of the components of a
firm with other firms operating in the same centre or other firms or centres of the region. Thus, the spatial behaviour of the inter linkages with respect to the geographical factors and operation of production processes are to be the major aspects of the study in industrial development. Therefore, systematic approach which leads to the study by establishing the relationships of production and productivity with the production factors in its integrated manners, is more appropriate and useful for the self-sustained growth of industrial production. For the same, a cyclic model, which shows proper integration of the manufacturing activities with the components of the system and factors, is prepared and the same views are applied here in the present research for the Industrial Development of Mizoram. The cyclic model, as suggested here (Fig. 2.1) would be discussed in detail in other part of this Chapter.

Regarding the studies of Industrial Geography, economists and geographers have propounded a good number of concepts and theories. Geographers and economists never stop searching for the models, concepts and theories in this field.

So far as the conceptual frame of the study is concerned, there are many theories (a system of knowledge which relates things to each other in a meaningful way, making unexpected, expected or at least less of a surprise (Smith 1981, p. 14) propounded by economists and geographers. The works of economists are recognizable on the sectoral aspects of
Industries specially done in India during the last 40 years of planned economy in the country. Regional economists and geographers have also done intensive works on the locational aspects and provided new dimensions to the subject. The methodological aspects of the science of the industrial studies can be interpreted to classify the related materials into the sectoral and locational aspects.

1) The studies done on sectoral aspects of industries with relation to:
   a) Input-Output Analysis,
   b) Unit, Employment and Investment,
   c) Analysis and interpretation of structural aspects, and
   d) Analysis on Industrial Linkages.

2) The studies done on locational aspects of industries in relation to:
   a) Location as a geographical phenomena,
   b) Location as based on raw materials,
   c) Availability of raw materials, its distribution and spatial behaviour, and
   d) Location-allocation for future development.

The birth of industrial location theory is generally dated at 1909 (Smith 1981, p. 69) when the German economist Alfred Weber published his book Über den standort der Industrien in 1909. Even though certain other Germans had written on the subject like Launhardt (1885, pp. 106-115) who attempted to show how the optimum location could be found in a simple situation with two sources of materials and a market represented by the corners of a triangle and also developed an approach based on the concept of market areas, and other Launhardt’s contemporaries propounded other theories, still the Weber’s book (translated into English in 1929) gave it a much
wider reading. Even though Weber had limited his inquiry to manufacturing, it was the first attempt to construct a general theory of the location of all economic activity (Isard 1956, pp. 27-28).

The next major contribution to industrial location theory came from a Swedish economist, Tord Polender, who published *Beitrage zur standorts theorie* in 1935 (Smith 1901, p. 75). Polender was concerned about the difficulty of adequately considering industrial location within conventional general equilibrium theory, in which everything was assumed to happen at one point of time.

Hoover's early work on industrial location is still among the most useful in this field particularly for those who seek a clue to the general nature of the location problem without a high degree of abstraction and complex economic theory. In 1937, he published a study of the shoe and leather industries and, in 1948, a more general work, 'the Location of Economic Activities', (Smith 1981, pp. 79-80). Hoover's first theoretical statement (1937) was greatly influenced by Polander and helped to give a wider exposure to some of the ideas in Polander's *Beitrage zur standorts theorie*.

In 1940, August Losch produced the first-general theory of location with demand as the major variable. In 1954, Losch's *Die raumliche ordnung der Wirtschaft* was available in English and that has probably aroused more interest than any other
single contribution to location theory (Smith 1981, p. 05). Losch (1954, pp. 94-97) said that to achieve equilibrium, the space economy must satisfy the following conditions:

1. The location of every individual must be as advantageous as possible, in terms of profits for the producers and gains from the consumers.

2. The production location must be so numerous that the entire space is occupied (that is, there are no areas where the absence of a source of supply might attract a new firm).

3. The activities open to everyone there are no abnormal profits, for they will be competed away by the entry of a new firm.

4. The areas of supply, production, and sales must be as small as possible, since only then has the number of enterprises that can survive reached its maximum.

5. At the boundaries of market areas, consumers are indifferent as to which of two neighbouring producing locations they get their supply from.

The validity of certain aspects of Loschian concept of space economy has been questioned on other grounds by Beckmann (1955, N2-N8), Vahl Davis (1955, pp. 637-644), Robinson (1956, pp. 81-84), Greenhut (1963, pp. 174-175, 103-105), and Richardson (1969, pp. 72-77, 107-108). These Scholars argued that Loschian theory was based on a particular type of economy, characterized by agriculture spatially distributed but producing for a punctiform market and industrial punctiform in location but producing for a market of areal extent. This contains elements of real world whereas such a rigid distinction between the spatial expression of agriculture and industry is seldom found in practice.
Thus, the Principal weakness of Loschian theory, what should take place was based on limited technical criteria, was questioned by his contemporaries. Thus, there come changes in the theoretical aspects, propounded by different authors since 1950’s. By 1950’s two largely independent schools had emerged, embracing respectively the traditional least-cost approach and a view that emphasized the locational interdependence of firms (Smith 1981, p. 91).

The first major attempt to integrate the least-cost and locational interdependence was made by Melvin Greenhut. In 1956, his Plant location in theory and in practice brought together ideas from a number of his papers (Greenhut 1952a, pp. 526-538, 1952b, pp. 37-50 and 1955, pp. 59-72), and in his second book, Microeconomics and the space economy (1963), he took a further look at the effect of space on conventional theory. This work, together with a number of other papers in the fields of spatial economics (Greenhut 1957, pp. 61-88, 1959, pp. 267-280, 1960, pp. 172-182, 1964, pp. 175-184 & 1967, pp. 151-160) made his contribution to the industrial location very important and significant as well.

Greenhut’s theory, integrating the least-cost and locational interdependence was based on maximization of revenue as the criterion for optimal location. His theory of industrial location includes the following factors:
(a) Cost factors of location (Transportation, labour, and processing costs),

(b) Demand factors of location (locational interdependence of firms, or attempts to monopolize certain market segments),

(c) Cost-reducing factors,

(d) Revenue-increasing factors,

(e) Personal cost-reducing factors,

(f) Personal revenue-increasing factors, and

(g) Purely personal considerations.

During the last part of 1950's and early 1960's the locational theory was again produced by Isard (1956) who followed the method of regional Analysis. Isard gave much attention to transport factor. He considered transport inputs as important as the four conventional recognized factors of production, Land, Labour, Capital and Organization, as a requirements of the productive process (Isard 1956, p. 90).

The theories and models, so far are based on studies made for the developed economies where a large share of its workforce involved in the industrial sector with high productivity resulting into high per capita income. Therefore, these theories and models always prove invalid or inapplicable in the case of underdeveloped or developing countries where the share of workforce is always very low in industrial sector. This is mainly because people are not having settled occupation. If there is more injection of technology in industrial activities, that will cost less labour requirement resulting into unemployment problems. Since the case is
peculiar with underdeveloped and developing economies, the practical aspect and validity of the models and theories propounded by these scholars is challenged by the system itself in such a case.

In underdeveloped or third world countries where there cannot be any punctiform of growth or development, the initiative of government and the policies always play vital role in the lines of development. This fact is revealed by studies made by Jalan in 1975 with the case of some developing countries discussed in the following pages.

Looking into the practical aspects of the problems of industrial development in the developing nations, the studies carried out by certain scholars can be cited.

Jalan (1975, pp. 43-45) while discussing of a programme for development policy argued that it is obvious that there are not, or even difficult universal answers to the problems of industrialization. It is also likely that whatever one does, the course of development will never run smooth. He, however, suggested some more rational industrial policies that is neutral with respect to value judgments or "political systems" such as:

First, there is the need for consistency in decision making in planning for development. Effects of development activities or policies have to be judged as a whole rather
than piecemeal in terms of the effect of each policy or activity on this or that laudable objective. One policy may be justified because it promotes equality, other activities because they create employment or investment or exports or import substitutions; yet taken together, the programme may help neither equality nor growth nor economic independence. Individual decisions are necessarily made at various levels and in various departments and in order for these to be mutually consistent, it is necessary that development activities are articulated rather more specifically than desire for 'full employment' or 'social equality' or 'important substitution'. For example, an employment-oriented programme does not necessarily mean that a country will adopt any project which will employ more people, it may only mean that such projects will be given some preference over others. How much preference, and at what cost to other objectives are not matters of technical analysis but political judgment, which only the leadership of the country can and must decide.

Secondly, it needs to be recognized that whatever one wishes to do, one should try to ensure that expected benefits are larger than costs. For this, a measure of social activities is essential. The developing countries have generally neglected this aspect and fill the lacuna in project selection, rather than levels of protection, that probably explains why many food projects are technically and economically 'inefficient'. No amount of nationalism or inward-looking strategy can justify an industrial project which
consumes more in real terms than it produces. Yet many countries have at least a few projects which are precisely of this nature. It must be emphasized that social cost-benefit analysis of projects has nothing to do with the controversy over public or private sectors or controls or the extent of planning. All economic activities yield certain costs and benefits to society and is essential to quantify their social values in order to determine whether the cost are worth the benefits.

Thirdly, whatever views one might have on the allocative efficiency of price mechanism or controls, productive efficiency in the use of resources is a must. Once the decision to produce a commodity has been taken, it does not make sense to use more resources than required to produce a unit of output unless one can justify the additional cost in terms of corresponding gain in some other objectives. For example, some countries encourage and sometimes insist on the establishment of numerous units of production even in cases where the market is large enough only for one plant. A number of plants, each below optimum capacity, may be vaguely justified in terms of some other objectives such as regional equality or dispersal of ownership. However, on closer examination, it may be found that other benefits are largely imaginary since all the plants are located in the more advanced regions and owned by the same group of industrialists or that the excess cost of sub-optimum plants far outweigh the social gain.
Finally, in many developing countries, there is certainly a need for rationalisation of administrative controls. Rationalisation need not necessarily mean a decrease in the average level of government or public control of economic activities; it means that the system of controls should be internally consistent and that individual controls should produce demonstrable benefits in terms of the country's objectives. Administrative ability, no less than material resources, is scarce in the developing countries and it is necessary that it be efficiently allocated. There is really no point in having three controls where one will do or in continuing with controls that, however regretfully, cannot be administered.

These suggestions add up to a plea for rationality and cost consciousness in the pursuit of development objectives, and if adopted, are likely to avoid many of the inefficiencies in resource use that the Organisation of Economic Cooperation and Development (OECD) volumes have so forcefully brought out (Jalan 1975, pp. 43-45).

The development Centre of the O.C.E.C.D. had a survey of industrialization policies in early sixties (1964) under the leadership of Ian Little. The team studied the industrialization and trade policies of the developing countries like Argentina, Brazil, Mexico, India, Pakistan, Taiwan, and Philippines.
Their studies revealed some of the ill-effects of industrialization policies. They found that a number of countries, including India, have established industries whose value-added at world prices is negative. This means that to operate these industries requires imports whose value, in foreign exchange, exceed the price at which their output could be imported from abroad ready-made. They are thus both a direct loser of foreign exchange and a drain on national income. In India, leather goods, bicycles and non-ferrous metals; and in Pakistan, motor vehicles, edible oils, and sugar refining; in Philippines, refrigerators, air-conditioners and TV sets as well as several food products are being treated like that (Jalan 1975, pp. 36-37).

These studies revealed that the three countries, Mexico, Pakistan, and Brazil have been relatively successful. Mexico achieved a growth rate of 6% per annum for the last 30 years (i.e. before 1964); Brazil grew at an average rate of 6% until the early sixties; and Pakistan, after a decade of stagnation in the fifties, grew by about 5% per annum in the sixties. Policy instruments have also been remarkably similar— all of these have emphasized import substitution behind high protective barriers with a certain bias against export and agriculture.

Joel Bergman (1975, p. 9) while studying and analyzing the Brazilian experience in the process of industrialization made certain interesting points. He (Bergman) said that industrial
efficiency often depends on being industrialized. He (Bergman) said,

"It would indeed be lovely to have all those factors (preconditions of growth) appear first and induce industrial development which would be internationally competitive right from the start. Unfortunately, for LDC's these resources appear today as the results of industrialization as much as it causes".

This means that a more rapid rate of industrialization itself increases the capacity for economic growth by promoting the development of both the financial and the human resources base of the economy. Industrialization breeds further industrialization whereas backwardness breeds inefficiency which makes progress difficult. Perhaps this is one of the reasons why all countries have backward areas, and despite efforts they remain backward. In fact there is nothing infant industries or infant economists, exploitation by advanced countries, patriotic or Military consideration that alters the fact that it does not pay to produce for ever at higher costs than you can buy for.

Stephen R Lewis Jr. (1975, p. 33) who studied the case of Pakistan found that the country in the sixties have shown a considerable growth while the exports of new manufactures had registered increase of 20-25 percent per year in the sixties, the principal tools behind were exchange control, high protection, import licencing, and export subsidies which transferred large amount of resources from agricultural sector and from urban consumers to the new industrialists. He (Lewis)
said that, even though inefficiencies in the allocation of resources were inevitable, but the policy on the whole, was highly successful in achieving a high rate of manufacturing production.

Lewis, in his study also found that the most significant single determinant of the extent to which an industry produced a large proportion of total supply domestically was the extent to which it depended on domestically produced, rather than imported raw materials.

Lewis devoted his studies with the theory of effective protection and the effect of Tariffs on Pakistan’s industries. The measure of effective protection as a guide to comparative costs and industrial efficiency has totally became fashionable among economists, and Lewis findings for Pakistan should be of general interest. Two of his conclusions seem to cast some doubt on the efficiency of his measure as a guide to comparative advantage. These are:

(1) Rate of effective protection may out state the loss in production efficiency. This is because protection may yield high profits to import competing domestic industries rather than result in higher real costs of production through improper choice of techniques, factor proportion or input mix, and

(2) Prices do not reflect marginal costs, and tariffs may be a misleading guide to relative prices. In several industries, unit cost of production was lower than implied by tariff. But high domestic indirect taxes had pushed domestic prices above foreign prices, net of tax.
Timothy King (1975, pp. 35-151) while studying Mexico case thanked to pragmatism and flexibility in government policies and that the resources of the economy have been used to optimum at most points. Timothy King believes that subsidies would perhaps have been a better policy instrument than protection, and suggests that import substitution in Mexico may have been carried too far at the expense of export promotion. Excessive emphasis on protection may have also led to the establishment of industries whose social benefits were extremely small. Timothy King concluded his studies on the case of Mexico that, in comparing Mexico with less successful countries, following the same pattern of industrial development, the most distinctive feature of her economic success have been her agricultural and financial policies and performance.

Meaning of Industry:

Industry means the process of making things or goods. The primary products of nature or human product always need to be changed in one way or the other form to be consumed or used. To change or transform the original form into new form involves processing and manufacturing. This process of manufacturing to produce secondary commodities and goods/materials require hard labour, both mental and physical skills and other tools etc. This phenomena of manufacturing is literally understood as industry. I presume here that I shall not be exaggerating in telling that the word 'Industry' as an abbreviation whereas each letters in it has meaning as.
I innovate,
N - new,
D - development by,
U - using the,
S - specialised,
T - technology with,
R - resources available to,
Y - you, and

It implies, "Innovate New Development by Using the Specialised Technology with Resources available to You".

The Small Scale Industrial Sector has emerged as a dynamic and vibrant sector of the national economy during the eighties. At the end of the Seventh Five Year Plan period, it accounted for nearly 35 percent of total gross value of output in the manufacturing sector and over 40 percent of the total exports from the country. It also provides employment opportunities to around 12 million people.

The primary objective of the Small Scale Industrial Policy, declared on August 6, 1991, by Ministry of Industries, Government of India, during the Nineties would be to impart more vitality and growth impetus to the sector to enable it to contribute its mitefully to the economy. Particularly in terms of growth of output, employment and exports, the Sector has been substantially delicensed. Further efforts would be made to deregulate and debureaucratize the sector with a view to remove
Right from the implementation of the Small Industries Development Programme at the National Level, in 1954, the definition as to Small Scale Industrial units has been changing. In the year 1955, Small Scale Industries were defined as those units which employed less than 50 workers when working with power and less than 100 workers when working without power and also having fixed investment less than Rs. 5 lakhs. However, in 1962, the employment criteria was discarded and only investment ceiling was retained. Since then Small Scale Industries have been defined in terms of the upper ceiling of investment in plant and machinery (original value) alone. In 1966, the investment ceiling in plant and machinery (original value) was enhanced to Rs. 7.5 lakhs in case of SSI units and Rs. 10 lakh for ancillary units (Hand Book of Statistics 1989, p. 15).

The investment ceiling for plant and machinery (original value) which was fixed in 1966 at Rs. 7.5 lakhs in the case of SSI units and Rs. 10 lakhs for ancillary units have been revised upwards four times thereafter as detailed below:
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The investment ceiling for plant and machinery (original value) which was fixed in 1966 at Rs. 7.5 lakhs in the case of SSI units and Rs. 10 lakhs for ancillary units have been revised upwards four times thereafter as detailed below:
Table 2.1 : Changing Investment and Ceiling in Plant and Machinery

(Figures in Lakh Rs.)

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<td>Small Scale Industries</td>
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<td>2</td>
<td>Ancillary Industries</td>
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<td>3</td>
<td>Small Service Establishment</td>
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<td>4</td>
<td>Export Oriented Small Scale Industries</td>
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<td>5</td>
<td>Small Scale Service &amp; Business Industry related</td>
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<td>Enterprises (SSSBE)</td>
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Note: * Located in rural areas and Towns with Population of 5 lakhs.

Source: Second All Indian Census of Small Scale Industrial units (Regd upto 31st March 1988), 1992 p. 3.

The detailed version of the present definition notified on the 2nd April 1991 are given below:

1. Small Scale Industrial Undertakings:

(a) An industrial undertaking in which the investment in fixed assets in plant and machinery, whether held on ownership terms or Hire-Purchase, does not exceed Rs. Sixty lakhs.

(b) In case of an industrial undertaking referred to in (a) above, the limit of investment in fixed assets in plant and machinery shall be Rs. 75 lakhs, provided the unit undertakes to export at least 30 percent of the annual production by the end of 3rd year from the date of its commencing production.
2. Ancillary Industrial Undertakings:

Industrial undertakings which are engaged or proposed to be engaged in the manufacture or production of parts, components, sub-assemblies, tooling or intermediates or rendering services and the undertaking supplies or renders or proposes to supply or render not more than 50 percent of its production or services, as the case may be to one or more other industrial undertakings and whose investment in fixed assets in plant and machinery whether held on ownership terms or on lease, or on hire-purchase, does not exceed Rs. 75 lakhs (No Small Scale or Ancillary industrial undertaking referred to above, shall be subsidiary of or owned or controlled by any other industrial undertakings.

3. Tiny Enterprises and Industry-Related Service/Business Enterprises:

The 'Tiny' concept was introduced in 1977. As a follow up on 'policy measures for promoting and strengthening small, Tiny and Village Enterprises' laid in Parliament on 6th August, 1991, the limit for 'Tiny Enterprises' was enhanced from Rs. 2 lakhs to Rs. 5 lakhs, irrespective of location of the unit. The Small Scale Service & Business (Industry related) Enterprises (SSSBE) with investment in fixed assets excluding land & building upto Rs. 5 lakhs, are also eligible for benefits as available to Tiny units (Second All-India Census 1992, pp.3-4).
4. Small Scale Service Establishments:

Service-Oriented enterprises having investment in plant and machinery does not exceed Rs. 2 lakhs and are located in rural areas and towns with a maximum population of up to 5 lakhs persons (Development Commissioner, SSI 1990, p. 3).

5. Reservation of Items for Small Scale Sector:

One of the measures of policy support for promoting Small Scale Industries is the policy of reservation to economically viable and technically feasible items for exclusive manufacture in the Small Scale Sector. The policy of reservation was initiated primarily as a promotional and protective measure vis-a-vis the large scale sector. Reservation grants protection to Small Scale Units by preventing fresh capacities being created in the Large Scale Sector in the areas which are techno-economically highly suitable for being taken up in the Small Scale Sector, the only exception being the case of large units which undertaken minimum level of exports as a percentage share to the total production.

The Medium or Large Scale Units which may be in existence at the time when an item is reserved are allowed to continue their manufacturing activities, but their capacities are foreseen with reference to a specific date. During the Second All India Census of Small Scale Industrial units (i.e. upto 31-3-1988) the reserved items came to 846 items (Table 2.2).
The policy of reservation of industries for exclusive manufacture in the Small Scale Sector in areas which are highly suitable both economically and technically for further development has been in existence for well over two decades. This policy was initiated in 1967 with 47 reserved items. After the introduction of the National Industrial Classification (NIC) Codes, a decision was taken in 1978 to recast the reserved list by assigning NIC codes to items. As a result, the list of reserved items expanded from 304 to 807 items in 1978. As on 31-3-88, 846 items are already reserved for exclusive manufacture in the Small Scale Sector. (Second All India Census report 1972, p. 109).

The classification of units manufacturing reserved items at 2-digit industry group as per the census report is provided in Table 2.2. It is seen from the Table 2.2 that 20,2377 units manufacturing reserved items were having the total installed capacity of Rs. 24904 crores in regard of reserved items, with a capacity installation of 47.73 percent. The capacity utilization was maximum (72.22%) for the industry group Beverages, Tobacco and tobacco products followed by apparel and Garments (60%). It may be observed that the maximum number of reserved items (156) were under the industry group Chemical and Chemical products. The maximum production of Rs. 19.34 crores was contributed by only 17 reserved items in the food products industry group (Table 2.2).
Table 2.2: Classification of Units Manufacturing Reserved Items at 2-Digit Industry Group (Regd. Upto 31-3-1989)

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<th>Sl. No.</th>
<th>2-Digit NIC Code</th>
<th>Description</th>
<th>No. of Items</th>
<th>Total Capacity (Rs. lakh)</th>
<th>Production Capacity (Rs. lakh)</th>
<th>Utilisation on (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20+21</td>
<td>Food Products</td>
<td>17</td>
<td>34818</td>
<td>781732</td>
<td>33551</td>
</tr>
<tr>
<td>2</td>
<td>22</td>
<td>Beverages, Tobacco &amp; Tobacco Products</td>
<td>1</td>
<td>40</td>
<td>128</td>
<td>9%</td>
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<tr>
<td>3</td>
<td>26</td>
<td>Hosiery &amp; Germents</td>
<td>31</td>
<td>26242</td>
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<tr>
<td>4</td>
<td>27</td>
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<td>14</td>
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<tr>
<td>5</td>
<td>28</td>
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<td>30</td>
<td>5216</td>
<td>58867</td>
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<tr>
<td>6</td>
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<tr>
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<td>30</td>
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<td>99</td>
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<tr>
<td>8</td>
<td>31</td>
<td>Chemical &amp; Technical Products</td>
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<td>154334</td>
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<td>9</td>
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<td>Non metallic mineral products</td>
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<tr>
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<tr>
<td>14</td>
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<tr>
<td>15</td>
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<td>68</td>
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Source: Second All India Census Report 1992, p. 111.
Many developing countries have devoted considerable efforts to formulating comprehensive and consistent industrial development programmes but have failed to devote similar efforts to carry out their programmes. With the result that many countries have failed to attain their industrial development goals. Thus, experiences have shown that a developing country encounters various obstacles in its efforts to implement industrial projects, some of which are beyond its control. Bearing this in mind, the United Nations Industrial Development Organization, (UNIDO) had initiated a series of publications entitled "Industrial Implementation System" dealing with problems encountered in the implementation and follow-up of industrial programmes and projects.

Experts of the United Nations Development Programme and other international Advisers have reported that the lack of programming and control of implementation of industrial projects is one of the most important of various factors contributing to the implementation shortcomings. In most developing countries, no formal techniques or procedures for such programming have been available. In the absence of this, it has not been possible to draw up successful plans of operation or effective implementation schedule. Thus, the projects have been hampered by delays, costs have exceeded the estimates, and then the project implementation has fallen short of expectations.
Therefore, it is felt that the State Government on whose shoulder the future industrial development of the state lies, is very much concerned with the operational techniques for programming as well as control of the implementation of its industrial projects. So that the ideas expressed in its Industrial policy may reach Technical assistance, Experts, Planners, Programmers, resulting into proper implementation of the project with proper follow up in developing the state's economy. Accordingly, the present Cycle model, with its careful implementation is suggested.

(1) A Model for Industrial Development in Mizoram:

Any scheme or plan for development of any sector of the economy should be precise and proper. When implementation of any existing scheme of plan is not successful as per expectation, the blame may go to workers or responsible persons; but we should also keep in mind that the poor achievement may also be due to the defective scheme itself. Therefore, in order to have a very proper and precise development plan and scheme, the planners should have proper knowledge of the subject assigned to them. At the same time, even a good scheme is prepared but the implementation is still poor, the result will not be positive. Thus, for proper development, proper and precise plan and good implementation are equally needed.

The Indian Science Congress at Wallaur in 1972, discussed that why is percentage of poverty in India cannot come below
49 percent while Government of India implemented the poverty elevation scheme right from the first Five Year plan in 1951-52. They therefore created a working group and the working group found 3 principal causes of the failure of the scheme such as (1) Lack of good monitoring body. (2) Lack of capital among the poor and 3) Lack of own site to start establishment. (Lalanglaihan 1990, p. 4). Therefore, any scheme, plan or project plan needs proper monitoring and evaluation for its proper implementation and achievement of goals.

In a very young state like Mizoram, most of the developmental activities are initiated by the Central or State Governments. Due to this, it seems till today that when people think of development their inclination is towards the state government and not shouldering upon themselves. At the same time, many of the department in such a young state seem to be having not proper plans and schemes. Looking into the Annual Plan and Five Year Plan documents of some department they look like charter of demands and not plans as such. Therefore, without proper plan, it is difficult to achieve development.

So far as Industrial Development in Mizoram is concerned, it is observed that Mizoram is just a beginner. Although efforts have been made and certain facilities being given to entrepreneurs and the government being following certain line of development, it is learned that the State Government could pronounce its Industrial policy only since 1999, to be implemented from the 8th Five Year Plan which commence only
from 1992. Therefore, it is presumed that the state is at least 30 years behind its neighbouring states. It has to be very carefully look into the present and future of industrial development potentials. At the same time, it has to make the people aware of their duties and responsibilities towards industrialisation of the State. Looking into the present conditions, a cyclic model for industrial development given in Fig. 2.1 is thus suggested.

(2) Cyclic Model for Industrial Development:

At present situation, the State Government undertakes certain factories under its corporate bodies producing similar commodities that the private entrepreneurs can produce or are producing. In those cases, the competition is between private entrepreneur and the State Government where the survival is sure to be with the State Government. An example of such a case is with the Passion Fruit Juice. Passion Fruit Juice is produced by both private entrepreneurs and MILCO (a Government of Mizoram Undertaking). In this case, it is learned that while the passion fruit growers in Champhai Zote are willing to sell their fruits at Rs. 2.50-3.00 per kg. to the private entrepreneurs; MILCO offer Rs. 5.00 per kg, which is sure to survive but putting the private entrepreneur nowhere. Moreover, State Government through its corporate bodies seems to monopolise the production of certain commodities like bamboo canned tin, etc. All these ugly faces of industrial development at this initial stage of its industrial development seem to be improper and lack of identified goals due to lack of proper model.
It is believed, therefore, that towards industrial development, the State Government and the private entrepreneurs have their respective role and responsibilities. But at this stage, where most of the private industrial entrepreneurs are seeking help from government or acting like a toddling child and the state government as its parents, it is the duty of the state to formulate the model and help the entrepreneurs first not much involving itself in commodity productions.

In the initial stage, the first assignment suggested here is the identification of the major activities within the existing industrial establishments. As is well known, every region or area is provided by nature with certain riches and people with certain traditional skills, it is therefore presumed that the major industrial activities in an area or a region are always guided by the above two factors. Therefore, identification of the major activities will help the concerned authority to see the prospects within the existing units or categories and also further helps to see where to start and how to start.

Second Cycle, whenever a plan is going to be formulated the planner is required to know the available resources where he can formulate the plan. Identification of available resources where the state has superiority over other regions or states is very important here. It is obvious that no region has all the resources and the resources are never distributed
equally over different regions. Rather, certain regions have abundance of some resources while it is lacking some and vice versa. Therefore, inventory of resources upon which the state is superior to other states will be important for plan formulation. Next it is necessary to identify the commodities which are not manufactured within the state but highly consumed by the local people. After identification of such items, the question arising is whether it is possible to manufacture those items locally (Fig. 2.1).

Identification or inventory of reserve resources which are not yet properly exploited and the industries which can be established on the basis of those items or resources will be important too (Fig. 2.1). For example, Mizoram has abundant of Bamboos, but still not even a single paper mill in the state. Mizoram has so many swift flowing rivers which are very good for Hydro Power Generation but it still imports power from neighboring states. Tea and coffee can be grown very well in Mizoram, but commercial plantation is not yet done because there is no factory in the state. Likewise there are so many Horticultural Crops, which grow well in the state. Literacy is very high (66-97% including children below 5 years of age) but technically skilled persons are hardly available. So, Human resources is also needing a proper exploitation within itself. Therefore, the inventory of resources is to be given minor importance.
CYCLIC MODEL FOR INDUSTRIAL DEVELOPMENT OF MIZORAM

FIG. 2.1
When the resources are inventoried and the items that are highly consumed are identified, the state will realize how to exploit and accordingly look for the training facilities. Training the local people in different technical fields within and outside the state will surely result into systematic growth and development. In order to have right person in the right place, training of persons in the right and required trade would be needed. Taking one example, during the course of collecting primary data from entrepreneurs (1992-93), among the many motor vehicle workshop owners in Aizawl, unfortunately, no proprietor was found to have undergone proper training in a recognized motor mechanic training centre. In such a case, it is not possible to expect good and prestigious automobile repairing and servicing workshop. Therefore, state government has to see the ground realities of these and take appropriate action.

In the third circle of the model, state government with specific and concrete ideas based on the study team report is now supposed to be able to create public support through institutions with regards to financial, raw materials, transportation and subsidies, procurement of tools and machines etc. Motivation programmes, awareness campaigns, publicities and public guidances have to be created so as to lead the state in a specific way and sustain in special dimension. If the state is sure of its own policies and programmes, industrial development is guaranteed.
Fourth circle of the Cyclic Model deals with the identification of the different categories in existence within the state. The prominent categories are (at present) Agro-based, Forest based, Service based, etc. Besides, identification can also be made as to units engaging in processing, repairing, manufacturing, etc. and their respective market potentials. The major problems at present are felt to be the most acute problem. Thus, the State Government can identify each trade, categories and their problems, and prospects so that it will be able to formulate pilot projects for future developments.

Above all, there should be a cell of monitoring and evaluation with able manner. It is presumed here that, if there can be an oasis in the desert and if deserts can be transformed into green fields with modern technology, there is no reason why Mizoram will remain 'No Industry Area'.

LITERATURE REVIEW

Industrial development and industrialization in broad sense denote the organization of production in business enterprises, characterized by specialization and division of labour and involving the application of technology and mechanical and electric power to supplement and/or replace human labour. The industrial development programmes in India was started with the launching of the First Five Year Plan from the year 1951-52. However, the process of industrialization has
started with the second plan, under which expansion of capital goods industries was given more priority. But till the present day, the country with its multi-regional economy is far from achieving equal regional development. Rather while some states or regions have achieved more development, certain other regions will be lagging behind. Accordingly, the Central Government still declared the entire North-Eastern Region as industrially backward and is offering a host of incentives to industrialise it. Moreover, the North-Eastern Region is also still agriculturally backward either. Specially, the present study area, i.e., Mirzapur state is still agriculturally dominated area. The characteristic features of its economy can be said as infrastructural poor base of facilities, resource-rich, high cost and lagging state, where a number of pull and push factors are operating. Thus number of obvious problems are now obstructing the processes of industrial development of the state.

After all, industrialization in backward areas and developing societies is one of the major problems faced in the developing countries. But, ’industrialization’ by itself, raises the question as to when can an economy be called industrialized? Some economists suggested that a really industrialized economy is one which has a highly developed (mechanized) agriculture. On the other hand, others like K. U. Sinha suggested that an economy’s one-fourth of whose GDP arises in the industrial sector, of which at least 60 percent in manufac-
By the above criteria, India cannot be called as an industrialized country. Once it occupied the tenth position in the World League of Industrial Nations and recently has slipped down to the 27th. Due to its vast technical man-power, highly complexed and relatively sophisticated industrial structure, India is now internationally regarded as a semi-industrialised Nation (Neog, 1988, p. 140).

Leines (1736) for the first time studied industrial development focusing his attention on the forces which determine the employment policy followed in industrialization process. He propounded the theory that entrepreneurs will offer the amount of employment which offers maximum output and advocated also that employment can increase only with increase in investment and vice-versa.

Labour employment is an important component of industries and intensity of labour input is not only the function of production maximization of the firm but it is also influenced by availability of labour force. Thus, the importance of labour employment, its volume and quality, for the industrial development has been felt since long time but and it drew the
attention of scholars to study the labour employment and labour characteristics. Therefore, in the post second world-war, a major theoretical work has been achieved (Lewis 1954, pp. 139-191). Lewis had a conviction that labour-reallocation from agricultural sector to industrial sector which result into the migration of labour from primary sector to the secondary sector. Lewis advocated that this process of labour migration ultimately shift the centre of gravity of the economy towards industrial sector whose ultimate result been the heart of development problem in an agriculture predominant labour surplus economy like India.

In fact, Lewis hypothesis of labour force migration seems to be quite valid with the present case of Mizoram industrial development which is in its initial stage. Actually, it is not possible to pin-point at which stage Mizoram stays industrially, may be at its transitional juncture. Therefore, at present, it is observed that as industry becomes more and more important while agriculture declines year by year, there has been labour migration at a significant level since the 1960s. Accordingly, when looking into the picture of sectoral shift of labour force, the highest growth of labour force between 1961-1971 has been recorded by the industry in secondary sector in the state (Fig. 4.2).

But the intermediate sector expansion is particularly in promising short-run strategy for employment generation and growth. This fact has been proved with the help of
mathematical analysis of the model of Hakimi and Todaro by introducing an intermediate sector (Steel and Tolstoy 1978). Steel and Tolstoy ultimately suggested that a policy of industrialization at minimum cost in unemployment must include a strategy of supporting the intermediate sector as well as investing in the modern sector. It appears, therefore, that the process of shifting labour force from primary to secondary sector is not an endless phenomena in a labour surplus country like India or Mizoram. A time will come when a particular sector cannot absorb all the labour force in queue. There should be sectoral balance of labour force and the strategy for industrial development should take care of other sectors side by side.

Scholars on industrial activity also recognized the incidence of functional relationships between the firms and industries leading to considerable overall economics in industrial production. Thus, with regards to the functional relationship of firms or industrial establishment, agglomeration has been identified as one of the locational factors besides the least costs of transportation and labour (Brinton 1969, pp. 105-107).

Weber (1909) focused his attention on agglomerative factors as an advantage or a cheapening of production and marketing created from the fact that production is carried on to a considerable extent at one place. Though Weber did not specify exactly what he meant by 'one place' in geographical
terms, it could be a large urban centre where infrastructural facilities are available and such facilities are likely to act as agglomeration factors (Hallenbeck, 1927, p. 126).

The Weber's agglomeration factors were again classified into three specific types of economies, viz., (1) large scale economies, (2) Localization economies and (3) Urbanization economies (Hoover 1937, pp. 90-91). Hoover again added transfer economies into the general agglomeration economies. Hoover's transfer economies implied 'locational juxtaposition' of industries resulting from input-output transactions between a set of technologically interdependent industries. The 'Locational juxtaposition' of industries in a limited geographical space referred to the location of interdependent industries in a large urban area or centre or in a metropolitan cities leading into minimization of the opportunity cost.

However, further studies of industrial linkages and of industrial complexes freed the concept of industrial linkages from the narrow confines of an urban centre, and interdependence between industries could also be examined at the regional level. For example, Isard and others aspired to find the best combination of industries for the whole of Puerto Rico (Isard 1959).

The industrial linkages are often perceived as channels through which the growth impulses are stimulated and transmitted, not only within the growth centre but also in
regions other than the centre. Industrial linkages are accepted tools of regional development, which include the development of backward areas as well as the central centres. Thus, the system of forward and backward linkages between complementary industrial units expected to be able to develop a self-supporting growth process. Siret (1969, p. 177) was of the opinion that in fostering such systems of complementary industries it can be expected that the strength and diversity of backward and forward linkages involved would soon initiate a self-supporting growth process.

The origin of this regional development model lies in the conceptual framework of 'Growth Poles' and 'Growth Centres' and the principles of the 'Diffusion of growth'. The growth generated in the selected growth centres is supposed to trickle down the hinterland of such centres (Hermanson 1972).

What is important with all these theories, models and concepts is the goal of those scholars. Looking into their respective works, we can conclude that the development of theory of such kind and the works of the scholar always aimed at three main principal objectives, such as (1) to advance the understanding of industrial location in general, deducing the locations or patterns likely to be adopted in specific circumstances; (2) to provide a framework for the explanatory side of individual empirical inquiries, and (3) to identify the conditions required for optimality according to particular criteria, so as to make better plant location decisions.
In fact, these objectives are always closely intertwined, since abstract general theory must be constantly related to ground reality, if it is to be anything more than an exercise in applied logic and must ultimately be judged by its capacity to explain location patterns in the real world and to guide the planning of industrial development. Therefore, what is more important here is the empirical application in industrial location analysis as well as the applicability in actual ground conditions.

Towards the direct application of industrial location theory to real-world situations, only very limited progress has been made so far. Stevens and Brajelett (1967, p. 7) had carried out a comprehensive survey of literature and presented their observations. Of course, a large number of empirical studies have been carried out during the last few decades, but most of them have been for the purpose of gaining general understanding of location factors and patterns rather than of testing theory. This is partly because it has been difficult to generate testable hypothesis from the existing theory because the goals of the theoreticians have been quite different from the goals of researchers in empirical work.

Economists are generally more concerned with the construction of elegant theories of locational equilibrium, or with the fusion of location theory and production theory than with providing a guide for empirical inquiry. And the empiricalists in geography have been more inclined to use
Industrial location as a context for the application of currently fashionable numerical methods than to draw on the existing body of theory.

Looking into the practical part, we find that the conventional industrial location theory does not necessarily permit the formulation of explanatory hypotheses or models which are very much required by the real world situations. Therefore, finding the optimum location for one firm at one point of time is of little help for the explanation of the ground distribution of a whole industry, which may be the end product of a long process of evolution.

Besides, there is an acute problem of obtaining the necessary data as per the conventional industrial location theories. In this present day situation, the identification of a least-cost location for even a particular industrial establishment requires a large amount of accurate information obtained only by direct inquiry of existing firms. Moreover, other variables such as demand function for different sets of customers and the cost savings from agglomeration economies cannot be measured in numerical terms which means the incorporation of those components would not be possible in an operational model. However, a large number of studies have been conducted by international agencies, National agencies or private individuals in various countries, regarding different aspects of an employment-oriented strategy of industrialization. In spite of varying nature of political and socio-
Economic systems prevailing in different countries, a review of the strategies and mechanisms, which have contributed to the economic achievements in other countries, can enrich the insights into the issues confronting in other areas or countries in one way or the other, whereas it may be difficult to envisage the ready transfer of the whole strategies from one country to another. Wu (1969, pp. 219-241) has also examined relevant data from India, Japan, Pakistan and Philippines and he found that both the capital-output ratio and wage-capital ratio show an inverse relationship with capital intensity. With the case of Delhi City, Wu found that the 'rate of operating profit' for Small Scale Industries showing a similar inverse relationship with capital intensity. Wu ultimately recommended the setting up of capital light Small Scale Industries in a country with a large unemployment problem like India. From his study of industries in Puerto Rico, Reynolds (1969) found that the development of modern factory style of manufacturing made only a limited contribution to employment generation. He therefore, suggested what he called 'Imaginative exploration of Small Scale, more decentralized, more labor using forms of organization, such as have persisted in the Japanese economy' for incorporating in an employment oriented industrialization programme. The study of United Nations Industrial Development Organisation (UNIDO, 1969, p. 56) based on evidence from a number of developing countries also revealed that small enterprises with a lower level of investment per worker tend to achieve a higher productivity of capital than do the large scale, more capital enterprises.
The study of the pattern of employment in the Tropical Africa revealed the significant advantage of labor intensive techniques vis-a-vis capital intensive techniques, (Arrighi, 1970). Arrighi found that in the case of the study area, the capital intensive techniques were characterized by a pattern of employment in which semi-skilled labor and high level manpower predominate, whereas labor-intensive techniques make greater use of skilled and unskilled labor.

A study of some developed countries like U.K., U.S.A., West Germany, France and Austria shows that employment and productivity have a negative relation and the employment-CNP relation may not be non-appropriate. (Adhvaryu, 1976, pp. 44-46). On the basis of his findings Adhvaryu concluded that an industrial strategy based on maximizing only one objective, i.e., employment, may lead the economy into an economic quagmire and to extricate it therefrom may prove a sheer frustrating experience. He, accordingly suggested that, even an employment-oriented strategy of industrialization should aim at maximization of GNP, so that the surplus generating capacity of the economy is not adversely affected.

A comparative analysis of employment data for large scale and small scale sugar and textile plants from India and for cement plants from China has been made (Siral 1980, pp. 119-155). The analysis revealed that the employment per unit of capital was about 9 times more for small plants than those of the large scale units. Siral's analysis shows that:
(a) Large plants have higher unit cost of production than the small ones using appropriate technology.

(b) A given capital invested in a number of small scale plants can contribute more to industrial output than it invested in a single large scale plant, and

(c) Small scale plants are more appropriate than large scale facilities for efficiently utilizing the resources of African countries. Strat finally, therefore, concluded that 'modern small scale industries are the most desirable industries' in countries where chronic unemployment is already pervasive.

A number of specific case studies conducted in different countries by World Bank (1978) led to the conclusion that 'small manufacturing firms generate more direct and probably more indirect jobs per unit of invested capital on the average'. The study indicated that in many activities where the optimal size of production unit is small, it proved to be the most efficient organization and as firm size increases (a) capital investment per worker rises, (b) value added per worker rises (c) the wage rate rises, and (d) value added per unit of capital falls. A detailed study of industrial patterns of India and South Asian countries was carried out by Mehta (1976). In the light of inter-regional, inter-country and inter-industry analysis, he suggested that 'the broad framework of an employment-oriented industrial strategy should include vigorous, sustained and concerted measures for (1) fuller and more efficient utilization of idle capacity in manufacturing industries, (2) reducing the capital intensity of industrialization through: (a) promotion of labour-intensive manufactures, and (b) application of economically sound labour-intensive techniques of production, and (3) rapid expansion and promotion...
of technically sound and economically viable Small Scale and Cottage Industries that could secure simultaneous increases in output, employment, savings and investment.

Another case study on rural industrialization in China was made by Sigurdson (1973). Sigurdson found that rural industries, as a component of overall strategy of employment-oriented industrialization, have miserably failed to satisfy the employment aspirations of the people. In support, he cited the figures from Zunhua county, where more than 45 percent of the total work force still depends on agricultural operations, which even for a developing agricultural economy is too high. But Deleyne (1973, p. 59) on the basis of a detailed and objective study of China's economy, arrived at the conclusion that the creation of Small Scale Industries constituted the only means of creating a large number of jobs for the young people coming in to the labour market.

A stream of thinking pioneered by Schumacher (1972, pp. 75-76) brought forward the suggestion for 'intermediate technology' which will not only maximizes employment, but is also a reaction to the fact that modern technology and rapid industrialization have led to many problems in the advanced countries. In a nut-shell, his intermediate technology approached the adoption of labour-intensive Small Scale technologies, compatible with efficient production and as low a capital investment as possible with a view to maximize employment.
Currently. This stream has been followed up also by Dickson (1974), Sen (1975), Johnson (1975) and Vyasulu (1976, p. 28).

Another important analysis of the pros and cons of adoption of a labour-intensive technology has been presented by Dandeker and Rath (1970). These two scholars pointed out that there are three important questions which must be asked and answered before accepting the labour-intensive technology as the most suitable employment oriented strategy of industrialisation such as (1) Does the adoption of a labour-intensive technology, which is also a technology with low labour productivity, enable a person to earn a minimum desirable living? (2) Is it a feasible solution in the sense of one which can be maintained in the face of economic forces operating in an economy in which the means of production are privately owned? (3) If the solution is to be maintained over a period, does it create conditions for progressive economic development or is there a danger of its leading into conditions of stagnation.

Galenson (1963, pp. 505-570) pointed that the use of highly labour-intensive techniques in manufacturing may create more jobs in the sector, but if this is accomplished at the expense of immediate production or of the rate of growth of manufacturing capacity, there may be an offsetting loss of job opportunities in tertiary employment. He, therefore, suggested that an employment-oriented strategy of industrialisation must take into account the impact on tertiary employment. If it
seems socially desirable to sacrifice a portion of manufacturing output through the use of labor-intensive techniques in order to relieve unemployment. Such policy might prove irrational unless new manufacturing employment offset the tertiary employment forgone as a consequence of diminished output.

APPROACHES TO INDIAN INDUSTRIALIZATION

Coming into the Indian context, it appears here too that, the large amount of industrial literature is found on the ground of industrial labour employment. This is mainly because the Indian scholars are always preoccupied by the spirit of scarcity of capital and prevailing large scale unemployment coupled with over dependence of population on agriculture as the country is highly populated. Therefore, most of the studies in the field are strategy for employment generation. In fact, in a country like India, even the national planners are left with little choice except to adopt the strategy of labour intensive Small Scale Industrialization Programme to increase employment opportunities for the growing workforce and to reduce the dependence on capital intensive technology for industrial development. In short, industrial sector is expected to be a strategy to fight growing unemployment at the national level. Therefore, almost all the scholars who are engaging in industrial studies, concerned themselves and try to test the validity of industries as a strategy to tackle unemployment problems.
The beginning of the modern factory system in India can be traced back to the second half of the 19th century (Ramavtar 1992, p. 13). Before the 1850s, there were some early attempts to set up modern factories in India. These were the pioneering efforts, mostly of the Europeans and they got success because of political privilege, control over external business and control over organized money market. The first Indian to think on the line of industrial development or industrial entrepreneurship was Kachod Lal Chotalal Lal, a Naqquri Brahmin, in 1847. (Ramavtar 1992, p. 13) who envisaged the textile manufacturing on modern factory line. A number of studies have been carried out or conducted by Government Agencies as well as scholars in India to work out the proper strategy of industrialization which could help in accelerating the National economy as a whole, whereas most of such studies are on the sector-based approach. The Village and Small Scale Industries committee, dealing with employment oriented strategy of industrialization (Planning Commission 1956) suggested the setting up of Village and Small Scale Industries in the rural areas would be suitable as the rural areas or people have been traditionally trained and for which they possess equipments. The committee realized the necessity of introducing better technique among the village industries so as to make them go along with the progressively expanding national economy. The committee further recommended that such injection of better technology in the rural industries should not hamper employment generations within itself.
Dhar and Lyndal (1961) studied the capital, labour and output aspects of various industries. The study was based on the figures of 'Census of Indian manufactures 1950' and the studies prepared by the Perspective Planning Division of the Planning Commission. They found that although small enterprises appeared to employ less capital per unit of output, in general the most capital intensive type of manufacturing establishments are in the Small Scale Factory using modern machinery employing up to 50 workers. They, therefore, concluded that the issue of choice between large and Small Scale Industries for the purpose of an employment-oriented industrial strategy is largely irrelevant, and it should aim at making the best use of scarce resources, instead of aiming at creating employment just for the sake of employment. Further, the National Committee on Science & Technology (NCST 1975) had carried out a study on the Khadi and Village Industries with regards to the growth of production and employment in the sector. The study revealed that the Khadi and Village Industries are not good or reliable source of employment as they seem to be and the study reported that the compounded rates of growth of employment in these industries, as compared to the growth of output, were very meager.

Datt and Sundharam (1979, pp. 547-574) studied the employment-oriented strategy of industrialization by working out employment, output, capital output and employment generated in different industrial sectors. Their studies revealed that though productivity is the lowest in the Small "Scale Sector.
its employment generating capacity was eight times that of the larger sectors. Another important finding of their studies was that the net capital output ratio of the Small and Medium Sectors worked out to 4.0 and 3.2 times respectively than that of the large sector in 1965. They therefore, strongly advocated for the case of Small Scale and Household Industrial Establishments as an important employment generation potential sector. On the other hand, Kripashankar (1979) while doing a case study of potentialities of growth in Ghazipur District of Uttar Pradesh show that in the recent years in the District, only those Small Scale and Tiny units, vertically linked with the large scale establishments which produce accessories, parts and spares, survived. He said that due to severe competitions between organized sector and unorganized Small Scale and Cottage Industries, the later normally do not survive. This indicates the need of cloutching and reducing the level of competitions between the two sectors in such an area. Another case study with 36 sample units in large scale sector and 114 units in the Small Scale sector from Uttar Pradesh (Rao 1980, pp. 67-76) revealed that the large scale firms were 4 times more capital intensive than the small Scale units. Rao's study also found that the choice of appropriate technology offered only 'marginal opportunities' for increasing employment and that the main choice variables were the product mix and the scale of operations.

Srivastava (1984) carried out his study on rural industrial development base on the actual survey in five
Community Development Blocks of Jajpur District in Uttar Pradesh. His study focused mainly on the extent and nature of unemployment among agriculturists and agricultural labourers. Srivastava opined that for the industrial development of such rural areas, the best strategy would be employment oriented Small Scale and Village Industries. He, however, concluded his studies with severe limitations of such strategy as a solution to unemployment. He opined that eradication of or even substantial reduction in general unemployment or under-employment of the study area, through the development of industries was a practical impossibility. Umapati (1971, pp. 277-295) who had carried out studies in the context of promotion of SSI units in India was also doubtful about the merits of the SSI units in India. According to him, the promotion of SSI units in this country encourages subminimal wage rates and weakens the bargaining strength of the industrial workers. She made her argument that the SSI units are not competitive rather often tied with the big firms with regards to their products, price and the amount of output they can produce and sell. Subramuniyam and Jadhav (1975) also already had conviction that it is a myth that the SSI units use a more labour intensive technology and therefore, generate more employment for the same amount of investment or output.

It is true that the industrial activities in India are mainly characterized by the dominance of informal and small forms of production. Thus, the industrial sector instead of accelerating technological and socio-economic change throughout
the economy shows all symptoms of high cost economy, semi-feudal character lacking in vitality and prone to sickness despite the availability of cheap labour. The main reasons behind the main plausible reason of this poor industrial performance may be due to the less weight given towards agglomeration and scale economies within the industrial planning (lushyap and Shah 1989, pp. 1977-80). On the other hand Patel (1983) was of the opinion that the poor performance of the industrial sector in the Indian context could be due to entrepreneurial and managerial deficiencies rather than any exogenous influences. Smith's study (smith 1982) however, pointed out that emphasis on lack of entrepreneurship and managerial skills puts the blame for the failure of small enterprises on the people who run them rather than on the environment in which they are operating. The studies carried out on the small scale manufacturing process in the developing countries by Little, Mazumdar and Page (1987) made conclusion that the promotional agencies are ill-equipped to render necessary guidance to help small business, choose products and technologies.

Aggrawal (1987, pp. 15-18) had a comprehensive study on the industrial sickness in the country. He pointed out that in between 1980 to 1985, the number of sick SSI units in the country went up from 23149 in 1980 to 1,17,783 units in 1985, which indicated an increase of 400 percent. Angarwala's study also revealed that the number of sick unit in case of Large Scale sector during the same period went up from 409 to 637.
(54.00%) and in the case of Medium Scale units it was 69.58 to 118.6 (19.00%) only.

Very recently, there have been some case studies on the aspects of industrial linkages of small towns and Regional development as well as explorations. In this respect, Pathak (1993, pp. 45-50) focuses attention on industrial interdependence and linkages with the hinterland of an industrial town of the developing region of Western Uttar Pradesh (Dhamapur) where the entire economy is based on sugarcane (top and rural-industrial) setup is based on Thandian industry. In the backward state of Orissa where industrial linkages are weak, the hinterland of industrial towns are poor, and therefore, there are many problems in the industrial development. These problems were studied by Meher (1993, pp. 74-83) by taking Jagalpur industrial estate as a sample case of SSI and concluded that because of lack of qualitative entrepreneurship, improper planning and cumbersome bureaucratic procedures followed in the release of fixed and working capital as well as other benefits, the performance of the SSI units in the estate has remained far from satisfactory.

Another case study on the developments of Small Scale Industries in relation to growth, employment and regional distribution in Madhya Pradesh has been made by Shulla (1993, pp. 87-97). In the case of Madhya Pradesh, the scholar has found that the SSI units are more employment-oriented providing about 60 percent of industrial employment within the State. His
study revealed that the SSI units provided 1.5 times more of employment than the Large and Medium Industries.

But, so far as the case studies are concerned, they are seldom of wholesome studies and that they provide informations, in general, of one aspect or the other of the sector. And no scholar so far is not in a position to give concrete conclusions so as to provide a valid and development guaranteeing schemes.

There have also been numerous studies on the industrial development of the North-Eastern Region of India. The proceedings of the seminar on 'The impact of the Five Year Plans on the Socio-Economic Development of the N.E. Region of India' organized by Gauhati University, Gauhati in the month of January 1988, have emphasized on many aspects of industrial development in this part of the country. Different scholars have prepared research papers on different topics on the theme. Therefore, at the time of the Seminar, the Scope of Industrial Development, approaches to industrialization, problems and prospects of industrial sectors of the economy and their factors in the case of each and every constituent states were discussed elaborately. The Seminar concluded that there are enough potentials in the industrial sector of North-Eastern Region which can absorb more labour force and the fact that the sector has enough employment opportunities in the future with increasing industrial production and productivity especially of the Small Scale and Cottage Industries (Udiali 1990).
So far as the study area in particular is concerned, it is still at the status of 'No Industry Area' and that industrial literature based on empirical studies is yet to be created. So far as the area remained under the then Assam Government as a district, no economically worth mentioning economic development took place in the area. But it was however felt that the cottage and village industries could be developed to some extent. Thus, the attitude of the administration in this regard was expressed in the annual administrative report of 1935-36 in the following manner.

"As the villagers are familiar with the art of spinning and weaving their clothes, attention towards better development of this art is also being paid by encouragement of sheep breeding that will produce good wool and sericulture that will produce good silk for their clothes. Industries and economy are virtues of a civilized life. As the district, which is still raw and penniless, is awakening and feeling the need for money, it is hoped that these new industries will become village industries suitable for local conditions" (Annual Report 1936, pp 34-36).

Consequently the district officer and his wife perceived that the Lushais possessed a great skill in cotton weaving on hand looms, traditionally in use from their forefathers. The couple, with a view to introducing the skill of the Lushais to the commercial markets, so that, among other things, the Lushai people could have some thing upon which to fall back in case of failure of the rice crop, financed a cottage industries organization from his salary and borrowings from the government and the bank. So the Lushai Hills Cottage Industries grew from small beginnings, and the superintendent's residence
became swamped with stalls of rugs, cotton, book keeping, packing materials; all the paraphernalia of business. It was Sir Robert Hold, Governor of Assam, and Lady Hold, who became the patrons of the industries, who saw the need of an adequate building, and accordingly provided Head House at Aizawl, which acted for office stock room, dye room, and large packing room..., chief markets lay in Shillong, Calcutta, Bombay and Silchar in Assam. All that is produced is quickly sold (McCall 1949 pp. 270-274). Thus, the first organized attempt to developing industries in the Lushai Hills was made by McCall, Superintendent in the 1940’s with very active and encouraging help from his wife. They started a unit in Aizawl. Villages were encouraged to take up making of rugs, money bags, cane work, luncheon mats, ladies hand bags, aprons and many other similar articles. (Kay 1902, pp. 175-196).

The Superintendent, McCall and his wife thought that the traditional woolen Mizo blanket was not good for business purpose and they searched for a new design. The new designed Mizo woven blanket was then liked not only by rich people in India, but also in England. Thus, they could sell Rs. 2,00,000/ worth of these blankets within a year and in those days, a full grown men costs only Rs. 0.25 (Thus, 50 years ago, the local woven blankets already reached England but today, we do not have any item of industrial product marketable to other parts of our India and the sending out of our industrial products to overseas like England is out of memorable) (Zodontam 1987, pp. 75-78).
It is clearly seen from the above that Handloom industry of Mizoram was very much popular and profitable at that time. But there was no persuasion and impulse to develop the skill, labour as well as to carry on the task. Therefore, till the present day the handloom cloths are not exported any more and rather Handloom industry are still found in the State at very small level.

In 1971, the Lallhama Committee reported that there was no industrial unit worth the name in the Mizo Hills. According to the report submitted by the Rural Industries Project Office Aizawl, there were 119 units under the RJP, Aizawl. These units, except a handful of them, could not be said to be industries in the real sense of the term (S100 1971, pp. 73).

The development of industries initiated under the community development projects, suffered a set back because of the disturbances of 1966. The Lallhama Committee listed a number of industries which could be conveniently developed in the Mizo Hills. Some of those were: Manufacture of sugar, fruit preservation, tapioca starch making, oil expelling, bamboo pulp, board, saw mill, Processing of maize, banana, chilli, and Ginger. Apart from these agri-based industries, there are possibilities, according to the committee, of many other Small Scale Industries like tyre retreading, radio assembly and repairing and manufacture of plastic articles, footwear, household goods, ready-made garments, aluminum utensils, etc. (S100 1971, pp. 78-79).
By January 21, 1972, when Mizoram became Union Territory, the industrial establishment in the Territory did not have any class one post. Moreover, out of six class two posts, only one post was filled up. Practically, there has been no published works on the industrial development in Mizoram, based on empirical studies. Of course, the Directorate of Industries published Journal (Industrial serbhen) regularly wherein valuable articles are available as well as government official information.

At the instance of the Directorate of Industries, Government of Mizoram, a techno-Survey of the Aizawl District was carried out to explore in-depth the industrial potential for the District of Aizawl (SIET-1977).

The Government of Mizoram appointed Sri L. L. Nanjappa, an international expert in the field of Small Scale Industries development for a period of 3 months as industrial adviser to the government. Nanjappa joined his duty on 1st June 1987. Nanjappa studied the organizational set up and reviewed the activities of the Industries department in Mizoram. With the recommendation and request of the Adviser the first Industrial Convention in Mizoram was convened on 21-22 July 1987 and the convention was attended by 1000 participants on the first day and 800 persons on the second day. The convention was regarded as the first major step in the industrial revolution of Mizoram. (Nanjappa 1987 pp. 2-3).
The industrial Advisor's deputation period was extended for another three months and he prepared a comprehensive and integrated development programme for Mizoram with certain recommendations. As per his recommendation, the Directorate of Industries, Government of Mizoram, had taken many steps towards industrial development.

Nanjappa recommended reorganization and realignment of the Directorate of Industries, finance institutions functions and attitudes towards the industrial entrepreneurs, and steps to be taken with suggestion (Nanjappa 1997, pp. 73-84).

The Association for Mizoram Economic Forum (AHEF 1997, p. 31) during 1992 organized two workshops at (1) Aizawl during 24-28 February 1992 and (2) Lunglei during 27-30 April 1992 on 'Problems and Prospects of Economics Development in Mizoram', with Participatory Training Methodology. Even though their attention was on the overall economic development of the state as a whole, their findings and the outcome of the two seminars published by the Association, are expected to be very meaningful even for industrial development of the state.

The workshop identified the following bottlenecks of economic development activities in Mizoram:

1. Plan miscalculation (lack of proper planning),
2. Marital laws (lack of matrimonial problems),
3. Politics in administration (misuse of political power),
4. Hlengihlana (Prevalence of Corruption),
5. Khathawhlim (lack of hardwork).
6. Lack of good leadership,
7. Lack of public awareness,
8. Lack of economic consciousness, and
9. Physical features of the area.

On the whole, going through the literature survey related to the theories, concepts, and approaches on industrial development of the world, India and Mizoram, it can safely be concluded that the study of industrial development in the backward tribal economy that prevails in the state of Mizoram must be based on the major aspects of (i) the availability of raw material (ii) Interacting and interdependence of industrial setup, (iii) Marginal productivities and elasticities of various types of industries establishing in the state and (iv) the problems of entrepreneurs and government agencies in the development of industrial setup. These aspects are closely related with the methodological perspective of the present study which is given in the proceeding section.

DATA BASE AND METHODOLOGY

In the preceding part of this chapter, the conceptual background and available models for the study of industrial setup in Mizoram have been highlighted. For proceeding the work in the core of the present study, a few questions relating to the methods and data collections may also be answered here. In far as the methods adopted in the present study for interpreting the structural components of Small Scale and Cottage Industries and their spatial distributions are concerned, the normative
viewpoint is put forward for the same. Therefore, the methods which are used here can be interpreted in the following.

(a) Cartographic Methods:

Cartography is the tool for geographers and planners. Through cartographic representations, a planner can infer many and varied results of the organism which he wants to study. Therefore, the distributive nature of the existing small scale industrial characteristics have been shown by suitable maps and diagrams. To show appropriate results and also to provide the logical reasoning in the facts, suitable cartographic representations like wheel diagrams, pie diagrams, bar graphs, line graphs, etc. are used. In fact, these tools are not sharp enough for inferring the accurate results and to the validity of the hypotheses posed for the present study. These cartographic representations have only been used for the general inference of the interrelated phenomena. But for logical study of the industrial (SSI) set up of Mizoram, statistical methods have also been used.

(b) Statistical Methods:

As the collection of the detail statistics of industrial phenomena for the entire Mizoram is very voluminous, the inference of the results directly from the raw data is impossible. Therefore, processing of the raw data through statistical techniques are essential. But, the appropriate use of such techniques is a crucial importance because the wrong application of the techniques is sure to give insignificant and
misleading results. However, some simple and appropriate statistical techniques have been used here for interpreting the results and accelerating the decision-making process. The following statistical methods are, therefore, appropriately used for the present work:

1. For showing the variation and variability results of the distributional patterns, the coefficient of variation which is the ratio of Standard Deviation (SD) with Mean has been adopted.

2. Though the relationship among the attributes of industrial characteristics are also shown graphically by scattered diagrams, the Coefficients of Correlations are also measured by the Karl Pearson method of 'product moment'. Even the causal relationship of industrial characteristics have also been shown by preparing the correlation matrices.

3. The index of industrial diversification ($D_c$) which shows the diverse nature of industrial composition of the industrial centres is prepared by generating two attributes of the industrial characteristics: (i) the mean of various industrial units on a particular location ($\bar{x}$), and (ii) the mean difference among the industries ($Md$) which refers to the differences among all the possible pairs of various industries. The following formula may be derived for the purpose:

$$D_c = [1.00 - (Md/\bar{x})].$$
The study of the marginal productivity and elasticity of various industries with respect to their input structure is very much important for accelerating the decision making process for the self-sustained growth and well-balanced development of the industrial structure in the state. For the same, the 'production function approach' is adopted and marginal productivity and elasticity coefficients for various industrial categories are calculated by adopting multiple regression model. In fact, marginal productivity refers to the absolute change in industrial output with respect to change in its input intensities while elasticity indicates the proportionate change of output with respect to proportionate change of in input. The following form of production function is used for assessing the marginal products and elasticities of various industries of the study area:

\[ Y = a + b_1X_1 + b_2X_2, \]

where \( Y \) is the industrial output, \( X_1 \) and \( X_2 \) are the capital and labour inputs, \( b_1 \) and \( b_2 \) refers to the coefficient and \( a \) is

* - The concept of marginal productivity and elasticity of a production function is based on the differential calculus of mathematics. Economists are using frequently these concepts in production theories. It has been symbolised mathematically as:

(i) **Average Productivity (Ap) -** \( Y/X_n \),

(ii) **Marginal Productivity (Mp) -** \( dY/dX_n \), and its diminishing return follows the condition, \( dY/dX_n < 0 \).

(iii) **Production Elasticity (Pe) -** \( (dY/Y)/(dX_n/X_n) \).

It can be simplified as:

\[ Pe = (dY/dX_n)/(Y/X_n). \]

Thus, \( Pe \) is the ratio between \( Mp \) and \( Ap \) in the industrial production system.

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constant in the model. Cobb-Douglas production function is used for the detailed study of the production characteristics. The details about this function would be interpreted in the concerned Chapter IV.

(1) Methods for Selection of Sample Locations:

Though the total areal universe of the study area (i.e. Mizoram) is small, the industrial units are dispersed unevenly throughout the entire area. Thus, for the detailed study, there is need of selection of some sites/centres and industrial units so as to achieve detail and informative results of the industrial activities. In fact, the total 2288 industrial units (March 1990) are dispersed on 148 locations of the state. Out of these 148 locations, some are towns, sub-towns and villages. Therefore, out of these locations, only 29 main concentration centres have been selected for spatial, functional and in-depth study of the existing industrial phenomena. These 29 centres truly incorporate as much as 1528 (58.1) units, i.e. 69.12% of the entire state. The Table 2.3 shows the detail compositions of various industrial categories within the selected centres.

From the Table 2.3, it has been identified that minimum units in all categories are confined within the 29 selected locations. Therefore, for further detailed study, certain number of units from various trades of the different categories are chosen on the basis of:

1. Stratified purposive sampling where 250 industrial units
out of the 1965 units of the sample locations have been chosen. Thus, the size of the sample units from the 20 selected locations is 10.72 percent.

Table 2.3: Category-Wise SSI Units of Sample Locations in Mizoram (1990).

<table>
<thead>
<tr>
<th>S1. Industrial Categories</th>
<th>Total Units</th>
<th>Total Sample Units in 100 Locations</th>
<th>Share of Sample (in %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Food Products &amp; Allied Industries</td>
<td>256</td>
<td>476</td>
<td>69.86</td>
</tr>
<tr>
<td>2. Manufacture of Woods &amp; Wooden Products</td>
<td>397</td>
<td>225</td>
<td>51.06</td>
</tr>
<tr>
<td>3. Manufacture of Textiles &amp; Textile Goods</td>
<td>390</td>
<td>78</td>
<td>98.00</td>
</tr>
<tr>
<td>4. Manufacture of Paper Products, Publishing and Allied</td>
<td>100</td>
<td>98</td>
<td>98.00</td>
</tr>
<tr>
<td>5. Manufacture of Rubbems, Plastics etc.</td>
<td>35</td>
<td>25</td>
<td>100.00</td>
</tr>
<tr>
<td>6. Manufacture of Chemicals &amp; Chemical Products</td>
<td>55</td>
<td>55</td>
<td>100.00</td>
</tr>
<tr>
<td>7. Manufacture of Non-Metallic and Material Products</td>
<td>50</td>
<td>50</td>
<td>100.00</td>
</tr>
<tr>
<td>8. Manufacture of Basic Metal &amp; Allied Industries</td>
<td>41</td>
<td>34</td>
<td>80.70</td>
</tr>
<tr>
<td>9. Manufacture of Metal Products &amp; Parts</td>
<td>75/19</td>
<td>46</td>
<td>60.00</td>
</tr>
<tr>
<td>10. Manufacture of Leather Goods &amp; repairing</td>
<td>21</td>
<td>21</td>
<td>100.00</td>
</tr>
<tr>
<td>11. Service Based Industries</td>
<td>125</td>
<td>71</td>
<td>73.10</td>
</tr>
<tr>
<td>12. Miscellaneous</td>
<td>21</td>
<td>60</td>
<td>84.91</td>
</tr>
<tr>
<td>Total</td>
<td>8309</td>
<td>1965</td>
<td>38.80</td>
</tr>
</tbody>
</table>

Source: Industry Directory, Mizoram.

(2) The sample units are selected from each and every trade of all the industrial categories so that we can infer the results for all the categories. As per the Industry Directory (1990) which is published by Directorate of Industries, Government of Mizoram for registered industries for individual trades. 56
different trades have been identified (Appendix B).

Accordingly, the samples are chosen in such a way, so that they should represent to each and every trade of the state excluding the miscellaneous group. The trade-wise number of sample units and their proportionate share are given in the table 2.4.

Table 2.4 : Number of Sample Units (Category-Wise).

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Industrial Categories</th>
<th>Total Sample Units (No.)</th>
<th>Total Sample Units in Sample Locations (No.)</th>
<th>Share of Each Total Category Units in Sample Location (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Manufacture of Food Products &amp; Allied Industries</td>
<td>176</td>
<td>36</td>
<td>20.43</td>
</tr>
<tr>
<td>2.</td>
<td>Manufacture of Woods &amp; Wood Products</td>
<td>320</td>
<td>40</td>
<td>12.07</td>
</tr>
<tr>
<td>3.</td>
<td>Manufacture of Textiles &amp; Textile Goods</td>
<td>390</td>
<td>50</td>
<td>14.09</td>
</tr>
<tr>
<td>4.</td>
<td>Manufacture of Paper Products, Publishing and Allied</td>
<td>90</td>
<td>10</td>
<td>10.20</td>
</tr>
<tr>
<td>5.</td>
<td>Manufacture of Rubber, Plastics etc.</td>
<td>35</td>
<td>5</td>
<td>14.29</td>
</tr>
<tr>
<td>6.</td>
<td>Manufacture of Chemical &amp; Plastics</td>
<td>25</td>
<td>10</td>
<td>18.18</td>
</tr>
<tr>
<td>7.</td>
<td>Manufacture of Non-Metallic and Metal Products</td>
<td>21</td>
<td>4</td>
<td>19.05</td>
</tr>
<tr>
<td>8.</td>
<td>Manufacture of Basic Metal &amp; Allied Industries</td>
<td>21</td>
<td>4</td>
<td>19.05</td>
</tr>
<tr>
<td>9.</td>
<td>Manufacture of Metal Products &amp; Parts</td>
<td>46</td>
<td>10</td>
<td>10.87</td>
</tr>
<tr>
<td>10.</td>
<td>Manufacture of Leather Goods &amp; Repairing</td>
<td>21</td>
<td>2</td>
<td>7.52</td>
</tr>
<tr>
<td>11.</td>
<td>Service Based Industries</td>
<td>783</td>
<td>90</td>
<td>13.26</td>
</tr>
<tr>
<td>12.</td>
<td>Miscellaneous</td>
<td>73</td>
<td>42</td>
<td>84.73</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>1903</strong></td>
<td><strong>250</strong></td>
<td><strong>13.14</strong></td>
</tr>
</tbody>
</table>


Note : 62 Units of Miscellaneous group are excluded while selecting sample units.
Any empirical work or research without relevant data either at the secondary level or the primary level would not be possible to be carried out. Accordingly, the present work is carried out with the help of secondary data and completed with the primary level statistics. Therefore, the statistics have been collected by secondary as well as primary sources in the present study.

(1) Primary Data Collection:

For the purpose of collecting primary data, schedules and questionnaire have been prepared. Thus, with the questionnaire, the researcher visited to all the 28 selected centres and individually to all the 250 sample households during October 1992 - March 1993. The form of the questionnaire is given in the Appendix - A.

(2) Secondary Data Collection:

For the collection of secondary data, the concerned institutions and government departments are approached. Some relevant data are obtained from Economic and Statistics Department, District Industries Centre, Census Office, Financial Institutions, and other relevant offices. However, for the collection of data related to Loans and Grant-in-Aid, Subsidized and Industrial Training, the concerned Institutions and Government Departments are approached with a separate scheduled for a specific period of time (i.e., 1989 to 1993).
Thus, with the help of these secondary data, the performances, achievements, and role of such agencies towards the industries (SSI) are tested. The Table 2.5 shows the details about the collection of Secondary data and its sources.

### Table 2.5 : Sources of Secondary Data

<table>
<thead>
<tr>
<th>No.</th>
<th>Nature of Secondary Data Collected</th>
<th>Source</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Industry Registered (SSI) units, Production, Investment in Plant &amp; Machinery, Equipment</td>
<td>Directorate of Industries, Govt. of Haryana</td>
<td>1990</td>
</tr>
</tbody>
</table>
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