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CHAPTER - VStructure of Engineering Industry.Various Concepts.

One should know the terms that are generally used. -
While undertaking a study of any type of industrial - - - -
production. The concepts are " Plant," " Firm " and Industry!"

By ' Plant ' we mean the place where actual physical
production takes place. In general 'factory' is a term used -
for this. It is in this plant the firm tries to secure all the
internal economies of scale, with the help of external - - -
economies arising out of rail-road, banking, electricity, --
training, research facilities etc. It is only competent firms
that achieve all these advantages which are external to the -
firm, by profitable exploiting technical, managerial financial
and marketing aspects and can survive all ups and downs - -
occurring in the industrial world every now and then. In the -
preceding chapters we have studied the external factors and
the locations of various units influenced by them. The 'firm' -
takes the decision to locate the plant at the most profitable

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and least cost points. The firm is a basic unit taking - - -
 economic decisions. The ' Firm ' is defined by Mrs. Penrose
 as an administrative planning unit, the activities of which
 are inter-related and are co-ordinated by policies framed in
 the light of effect on the enterprise as a whole."⁵⁸ The - -
 decisions are taken in respect of location, production, - -
 marketing etc. by firms embodied either in the form of - - -
 proprietorship, partnership, joint-stock company, co-operative
 or governmental undertakings.

" Industry is a group of firms producing identical
 or homogeneous products, the products are homogeneous in the
 physical make up and also the consumers think the products -
 are alike in all respects." This definition assumes perfect
 competition and single product firms, same technique of --
 production and organising ability. " In reality, the - - -
 assumptions behind the term, Industry are not found. Because
 the ' market structure ' has become monopolistic, imperfect

 Ref : 58 : "Industrial organization." Beacham and

Cunnungham" Ch. I

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competitive market. There is product differentiation in the form of different ' brands ', the plants are not ' single - product plants ' always. They have become ' Multi Product - plants '. The firms also are becoming multiplant firms. - - - Techniques of production and organizing abilities are changing. These changes are influencing the structure and size of -- industries.

Judged from these considerations we find there is - no ' Diesel Oil engine ' industry or the engineering industry as such in Kolhapur. Because the products of the ' Diesel Oil engine ' industry are not homogeneous, there is product - - - differentiation, in the sense, that different brands such as ' Vishwas ' ' Mayur ', ' Yashawant ' of Oil engines are - - - - manufactured. This shows that the market is imperfect. We find differences in cost of production of these engines. They - - reflect the changing technique of production and organizing ability adopted by the firms. Some firms (e.g. Memons, Gharage, Patil, Kulkarni) are multi-plant firms, and many multi-product ~~plants~~ also are found. In this situation neither the ' U ' - shaped cost curve nor the single-product plant is found. When the plants are multi-product plants, the cost curve will be ' L ' shaped.

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Industrial Structure -

In the above mentioned market-structure, the - - - engineering industry in Kolhapur carries on its manufacturing activity. We prefer to call it, still, an engineering or Diesel oil industry. Because the production units use similar raw - materials, similar processes make common use of a given type of machinery. The engineering industry thus is composed of - technical units (plants), units of enterprise and units of finance i.e. firms. The industrial structure is studied from two aspects 1) composition of industrial activity in a - - - particular economy and 2) the place of particular industry in the composition.

I) Industrial activity in Kolhapur.

According to this, we find that ' industrial ' - - activity' in Kolhapur has increased from 1961 to 1971, - - - wherein we find that percentage of cultivating activity was 43.86% in 1961 but it decreased in 1971 to 32.06%. The - - - percentage of non-agricultural population rose from 45.19% in 1961 to 55.6% in 1971. In Kolhapur district the industrial

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activity predominates in ' non-agricultural ' activity.

Out of the total industrial activity, Textile, -
 Sugar and Engineering industry are significant. But as yet
 engineering industry's share in this manufacturing activity
 has not come up to the 1st rank. It is 3rd important industry
 of Kolhapur district. Because," at the early stages of the
 development of a country, the largest proportions of - - -
 manufacturing output and employment are found in industries
 that have relatively simple technologies and modest capital
 requirements, utilize local raw materials and produce goods
 for which there is a wide and stable local demand. Foremost -
 among such industries are cotton textiles, food etc. As - - -
 economic development proceeds, the cotton textile industry
 becomes comparatively less important in the manufacturing -
 sector of the economy, even though the output of the cotton -
 textile industry continues to increase.⁵⁹ At the same time, -
 technologically more complex and relatively more capital -
 intensive industries become increasingly more important - -
 - - - - -

Ref : 59 : "Engineering Industry of India " A.G.

Mazumdar Ch.I.E S R F.

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commanding larger share in the manufacturing output and - -
 employment. Among such ' new ' industries, the engineering
 industry covering a vast field of industrial activities - -
 including manufacturing of metal products, electrical - - -
 machinery, transport equipment etc. are the most important!"⁶⁰

I Table - 16.

Composition of workers in Kolhapur District.

Year Cultivators Agricultural labour Non-Agri-labour.

1961	43.86	10.98	45.19
1971	32.04	12.4	55.6

Persons in non-agricultural sector have
 increased.

II) Composition of workers in Major industries in -
 Kolhapur District.⁶¹

Sr.No.	Major Industries	Year	Workers	Total Factory Workers.
1)	Food except Beverage	1968	3181 (19.92)	15963
2)	Textile	1968	6470 (40.53)	15963

Ref: 60 : "Engineering Industry of India " A.G.Mazumdar
 ChI. E S R F

: 61 : Socio- Economic and District Statistical abstracts
 for the years 1968-1969.(pages 17,63,64,65 Tables
 26,26-A) and 1971.

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3)	Machinery Except (electrical)	1968	2789 (17.47)	15963
1)	Food except Beverage	1969	5005 (29.91)	16733
2)	Textiles	1969	4152 (24.81)	16733
3)	Machinery except (electrical)	1969	3810 (22.76)	16733
1)	Food except Beverage	1971	5314 (31.55)	16839
2)	Textiles	1971	4672 (27.74)	16839
3)	Machinery except (electrical)	1971	3020 (17.93)	16839

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Persons employed in engineering sector slightly increased from 17.47% in (1968) to 17.93% in 1971.

These findings have been derived by the following method.

Total population of a country is composed of --- workers and non-workers.

Total workers are composed of cultivators + -- Agricultural workers + non-agricultural workers.

Non-agricultural workers are composed of workers -

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in various secondary and tertiary jobs.

Secondary sector consists of factory workers - - - belonging to various types of factories. Persons employed in factory sector, consist of workers employed in textile, sugar, paper, machine, electrical etc.

In order to know the percentage of workers employed in machinery (excluding electricals) we will have to - - - multiply the persons employed in this industry by 100 and - divide it by the number of persons employed in factory sector. Considered from this standpoint we find " engineering industry i.e. machinery (except electrical goods) shows 17.47% in - 1968, 22.76% in 1969 and 17.93% in 1971 in Kolhapur district. Food industry shows gradual rise in persons employed, textile shows a decline over 1968. The figures point out that - - - engineering industry has not developed significantly, but - though, it is weak its development is pronounced.

In ' Kolhapur City ' proper on the basis of 1961 - data, we have found that diesel oil industry shows 53.85% - workers employed as a percentage of total workers employed in engineering sector. Moreover this industry (engineering -

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sector 1+2+3) shows that out of 643 units in existence with 3670 workers employed, 47.43% units with 73.89% workers were concentrated in 'E' Ward, 44.47% units with 23.89 workers - were in 'C' Ward (See Chapter on location & engineering units) and 8.08% units with 2.20% workers in 'D' ward. This clearly shows that engineering industry esp. Diesel Oil engine, - dominated in the engineering sector in the Kolhapur city and that too in 'E' Ward. We have seen so far one aspect of - - 'industrial structure ' i.e. its percentage in total economic activity judged from employment and units aspect."

Relative importance of different units in diesel oil engine industry.

We have noted above that diesel oil engine industry is some what significant in the engineering industry in Kolhapur. There is another aspect i.e. " The relative importance of - different units, their interrelationships, the size structure of firms." It will have to be studied. The size of the unit is measured in terms of employment and also output capacity. -

In Kolhapur engineering industry (i.e. diesel - - engine industry) there are large, medium and small sized units.

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These units consist of 1) manufacturers 2) assemblers - - -
 3) ancillaries and component manufacturers and 4) others - -
 (include foundry, forging).⁶²

The manufacturers and assemblers are manufacturers of diesel engines. The difference lies in the extent of use made of components manufactured outside.

1) The manufacturers manufacture some parts and -
 assemble the oil engines by purchasing less than 70% parts from outside.

2) The assemblers purchase more than 70% parts -
 from outside.

These two groups depend on the ancillaries and - -
 component manufacturers. In 1971, there were 20 manufacturers,
 45 assemblers, component manufacturers and ancillaries 400.
 Out of 465 units in that year 36.02% were the component - -
 manufacturers or ancillaries. 4.30% manufacturers and 9.67%
 were assemblers. This shows Diesel oil engine manufacturing

 Ref : 62 : Recession in oil engine industry in Kolhapur.

"Nagaiyya S I E T Hyderabad."

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units purchase the raw materials i.e. spare, and components from 86.02% of ancillaries. In other way we can say such a larger section of ancillaries depends on such a small section of manufacturers. This larger section falls in the category of small scale units and the smaller section in large-scale units. 20% ancillaries feed one percent of manufacturer and 8.89% of assemblers depend on one percent of ancillaries.

The growth of industrial units.

We have seen that before 1947, this industry did not develop much, but after 1947 the industry was getting - momentum and many units were established during two decades.

It seems from the report of K I R P.B that - - - aggregate number of factories in 1970 was 154 employing - 11,147 workers. Out of these total workers working in - - - engineering industry alone, 3000 or 27% in sugar factory and 1100 or 10% in textile mill and rest i.e. 19% in industries other than above.⁶³.

" On 31-3-1976, 430 factories were working and they

Ref : 63 : Kolhapur-Ichalkaranji Regional Planning

Board- Survey report 'Industry' P.3 & 4.

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employed 19546 workers. Out of this textile industry comes first, with 4961 workers. Next is sugar and engineering. Out of engineering units 39 were diesel with 1546 workers.⁶⁴

The following table gives some idea of some of the units that were established in respective periods.⁶⁵

Table - 17

Some large medium and small scale units during
1926, 1927-37, 1937-47, 1948-57, 1958-67, 1968-1977

9	1	3	17	37	14
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We find the growth of all these units took place during 1953-1967. It was the period of 2nd five year plan in which Government declared the policy of industrialization with its stress on 'engineering industry.' Growth during this period is found in Maharashtra as well as in Madras.

The units were much ambitious about future demand and there

Ref : 64 : Industrial Development of Kolhapur district

Dr. R.L.Moktali.

- : 65 : i) Information based on the survey of sampled units as well as information collected from -
ii) N.V.Sovani : Socio-economic, survey of Kolhapur.

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was mushroom growth of the units and many started with larger capacities. Demand for oil engine was rising, naturally this boosted up the ancillaries, which supply required components to maintain the continuity in production of Oil engines. - During December to May there is always a larger demand for oil engines for the purpose of irrigation and supply of water to the crops especially sugar cane in Kolhapur. The beginning of 1969 was a peak period in diesel oil industry and - - - engineering industry of India also.⁶⁶ In Kolhapur upto May 1970 nearly 6000 workers were busy in manufacturing 2,500 engines per month. In 1971 only 800 engines were manufactured. In 1974-75, 1000 engines were manufactured per months in Kolhapur district. In 1975-1976 on an average 199 engines were - - - manufactured per month in industrial area of Kolhapur city. Production during 1975-1976 was 2396 engines only.⁶⁷ The oil engine industry is recession prone industry. The number of new units established declined during 1968-77. The units in - existence have survived, they are trying to grow. The reason

Ref : 66 :- A.G.Mazumdar."The Engineering industry of India " p.84, T.N.6.3.

: 67 : Derived from the information presented in "Industrial development of Kolhapur District " Dr. R.L.Moktali.

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behind survival of the units is the ' management '.Management
is an essential condition for growth.

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