CHAPTER 2

REVIEW OF LITERATURE AND DESIGN OF THE STUDY

This chapter introduces the theoretical basis of the co-operatives and findings of major empirical investigations and presents the design of the present exercise.

2.1. Theoretical basis of the co-operatives

Vanek's\(^1\) general theory of labour-managed market economics provides a comprehensive theory in support of an economic system different from Capitalism and Socialism. In this system the employees manage the enterprise and share the surplus. The decisions are taken by the firm and the control of the government over the individual firm is meagre. However, it is noted that the principle of labour management is in conflict with the principles of control and management by the owners of capital but not with the principles of private or social ownership of production assets.

Ireland and Law\(^2\) made an attempt to study the economics of labour managed enterprises. They examined the differences between conventional firms and labour managed enterprises. "Conventional firm
is a technical unit within which resources are combined for the production of marketable goods and services.\(^3\) Inputs are hired and output decisions are made by the owner of the firm or the entrepreneur. The entrepreneur is also the residual claimant and is often assumed to have an interest in maximising profit. The authors have examined the economics of enterprises in which labour is the residual claimant. The right to share the residual in this case derives from the provision of labour service within the firm and not from the ownership of capital. The control can be envisaged as being exercised directly or indirectly through a hired or elected manager. Workers are thus not hired inputs but may be described as members of the firm and the members share the surplus of revenue over non-labour costs.

Ellerman\(^3\) who compared the legal structure of the conventional neo-classical firm with that of the worker co-operatives found superiority in the latter. While in the conventional neo-classical firm demand from the part of workers for better benefits is ignored, attempt to increase output and productivity continues. He uses a simple model to make the concepts explicit. Consider a simple production process\(^4\) in a manufacturing enterprise where workers use up raw material \((X)\) and the machine service \((K)\) to produce output \((Q)\). If we conceptually treat the productive activity of workers as another, 'input', the labour service \((L)\), then \(L\) is also "produced and used up in the production process. In a capitalist firm
the productive activity of labour is indeed legally treated as a commodity 'L' that is purchased in the employment contract.

The net result of assets and liabilities resulting from production, is called the economic profit, (EP). If the outputs are listed as positive and the inputs as negative, then the EP would be represented by the vectors

$$\text{EP} = (Q, -X, -K, -L) \ldots (1)$$

where $\text{EP}$ = Economic profit

$Q$ = Output produced

$X$ = Raw material used

$K$ = Machine service

$L$ = Labour service

The equation (1) in value terms can be written as:

$$\text{Economic Profit} = PQ - P*X - RK - WL \ldots (2)$$

where $P$ = Market price of output

$P*$ = Market price of raw material

$R$ = Market price of capital service

$W$ = Market price of labour service.

Then the economic profit (EP) is produced through the production process of the labour. The main motive of the capitalist is to maximise the economic profit (EP). This can be achieved by increasing the total output ($QP$). Contrarily the worker-owned firm is so designed that the people working in it appropriate the positive and negative fruits of labour. In this firm, workers are not employees since they are not selling labour to the firm or capitalist. They
qualify for co-operative membership by virtue of working in the firm. The members have the opportunity to solve their problems and take decisions by their own efforts rather than through any external agency. This is not unrealistic since the method was the outcome of the endeavours of the working class to protect themselves against poverty and exploitation perpetuated ruthlessly on them by the capitalist. Naturally, as an alternative form of organisation, the co-operative firm assures several conveniences to the members. Co-operative assures higher income to the members than what a worker would get in the conventional firm. This can be observed from the following production process.

Let \( Q, X, K \) and \( L \) be the vectors of output, raw material, machine service and labour activity respectively.

The labour product = \( (Q, -X, -K) \)

The human activity is regarded as another 'input' to the production which could be represented as the fourth component in the vector.

Thus the labour product = \( (Q, -X, -K, 0) \)

\[ = (Q, -X, -K, -L) + (0, 0, 0, L) \]

\[ EP + \text{Labour Commodity.} \]
In a capitalist firm the workers do not appropriate the entire labour product. The workers are paid only for their labour \((0, 0, 0, L)\), while the employer legally appropriates the whole economic profit \((Q, -X, -K, -L)\). However, in the co-operative firms the workers are the owners of the means of production. The net economic value of the assets and liabilities, \((Q, -X, -K)\) is:

\[
\text{Value of labour product} = PQ - PX - RK
\]

\[= WL + \text{Economic Profit} \ldots (3)\]

The difference between the conventional and the worker owned firm is that in the former the workers receive the wage, \(WL\):

\[WL = PQ - PX - RK - EP \ldots (4)\]

Whereas in the latter the profit is not diverted to any other channel. Hence the worker appropriates the amount \(WL + EP\) which is greater than \(WL\) of the conventional firm. Thus the worker's income in the worker-owned firm is higher than that in the conventional firm.

Moreover, the alternative venture provides the members opportunities for participation in decision-making in different ways, viz; serving as Board members, electing members to the Board of Directors, voting on critical issues, working side by side with Board members and voicing complaints and making suggestions freely to the General Managers. Such opportunities are not available in the conventional firm. Further the entire firm is managed by the Committee elected by the members. Thus there are certain fundamental
differences between the two in the pattern of ownership, decision making and management. The co-operative sets limits to concentration of wealth, which is considered to be the focus of vehement criticism against capitalism.

2.2. Empirical Investigations

Thomas and Logan examined the historical and organisational significance of co-operatives, centred on Mondragon in Spain's Basque province, and analysed their economic aspects. They found that co-operatives gave considerable attention to create full employment condition and safeguard existing jobs. Education and training in the Mondragon groups showed their orientation towards the welfare of society as a whole. A network of institutions formed a supporting structure for the co-operative factories. Funds were made available to spread educational and training achievements among the community of the district in which Mondragon is located. In Mondragon all workers were members of co-operatives, the only exception being highly skilled experts who were employed temporarily for short periods. Since every worker was a member they were fully committed to their goals, a condition which improved productive efficiency on a continuous basis. The surplus is distributed on the basis of the financial position of the co-operatives. This practice has successfully prevented the differential between the highest and the lowest earnings from exceeding a range of three to one. The annual profits have been consistently used to strengthen the financial structure of the
co-operative. Apart from ten per cent allocation to social projects, the entire annual surplus is added to own funds. The success of this organisation is reported to the General Assembly and the Supervisory Board which consist of three categories: Students, Staff and Supporting institutions. A Council of students and a Council of Staff, both elect representatives to the Board, while the Supporting institutions nominate their representatives in proportion to their 'financial stake'. Thus the authors came to the conclusion that the co-operatives have done remarkably well with respect to employment creation, earning levels and yield on resources.

Roony examined the correlation between employees ownership and workers' participation in the employee-owned firms. This study was carried out in the U.S.A on the basis of data collected through questionnaires. The targeted population consisted of the majority employee-owned firms and non-employee-owned firms matched by size. Information on the extent of workers' participation in twelve areas was collected and listed with the help of the index developed by adding the weighted scores for each possible area of participation. From the analysis, it is found that contrary to expectations, there existed little worker participation in employee-owned firms. Employee-owners wanted and expected greater participation in management and the lack of work participation caused problems in some employee-owned firms.
Abel and Mahoney examined the performance of small scale industrial producer co-operatives in developing countries. Small Scale Industry covered organisations which had fewer than 100 members each. The co-operatives were studied in detail in four countries: India, Peru, Indonesia and Senegal. Four units were taken for detailed study from the former three countries and two from the last one. Shortage of capital and lack of good management were identified as problems faced by capital-intensive Industrial producer co-operatives. The performance of the Industrial Producer Co-operatives was in general poor in cases in which the skill-mix of the (initial) members was inappropriate; in the success cases high levels of solidarity were observed among the members.

Chris Conforth , et al. examined the performance of industrial Co-operatives in the United Kingdom using empirical evidence. A detailed study of two local support organisations (CSU) was carried out first. Formation and survival of co-operatives since the enactment of Industrial Common Ownership Act was examined in the second section; the third section reported case studies of sixteen co-operatives, examined in terms of their development as business units and democratic organisation. The membership of the co-operatives was seen to have increased rapidly up to 1984 and then leveled off. Differences existed in the patterns of development among co-operatives. It was found that, being small units the economic performance and labour process of co-operatives are strongly influenced by external conditions in their particular labour, capital
and product markets. At the stage of their beginning, most of these units were seen to have been severely under-capitalised with workers of low level of skills, or skilled workers who were very old. They found it difficult to attract, develop or retain persons with ability and competence in management. All these factors contributed to low labour productivity, their survival depending mostly on low wages or long hours of unpaid overtime work.

Several studies in India also have gone into the problems and performance of industrial co-operatives. Mehta was one of the earliest to study the problems of industrial co-operatives in this country. He traced the development of industrial co-operatives in the different states. This was by and large descriptive study which emphasised the significant role that the Industrial co-operatives could play in the country’s development.

Venkatappa examined the progress and problems of Handloom Weavers Co-operatives in Karnataka State by analysing the changes in membership, number of looms, share capital and working capital. It was observed that due to lack of organisational set up among the weavers and the non-effective working of the existing co-operatives, the coverage of looms under the co-operative fold was small. The major problems of the co-operatives identified were: (a) social problems, (b) problems relating to management, (c) organisational defects, and (d) administrative problems. Venkatappa advanced the following suggestions to solve them: Construction of separate worksheds for
running of looms, supply of advanced technical know-how to the workers, appointment of paid staff to provide better management, supply of raw material to weavers at controlled rates and introduction of modern technology. He also emphasised the need for strengthening the apex institutions financially.

Choubey analysed the problems and prospects of weavers co-operatives in Bihar by examining the working and the dormant primary weavers co-operatives in the State. He found that in Bihar several spurious weavers co-operatives had sprung up whose sole interest was getting Government rebate and other concessions. Weavers co-operatives in the State were facing a number of problems: (a) of organisation, revitalisation, management and supervision, (b) of supplies (c) of Finance and Auditing, (d) of Education and Training and (e) of marketing. Choubey made a few suggestions for government action for solving these problems. His suggestions included amendment of the Co-operative Societies Act, opening of raw materials depots and research cell, establishment of separate cell in the central co-operative banks for meeting the financial needs of primary societies or setting up another independent financial agency to serve them adequately, and a well designed training and educated programme for members. He observed that, even though the performance and function of these co-operatives were not satisfactory, they had immense potentiality in Bihar.
Cavvery and Sudha Nayak \(^{13}\) emphasised the need of Industrial Co-operatives for Tapioca Processing. The authors pointed out that Tamil Nadu has a good record of successful industrial co-operatives for several Cottage and Small Scale Industries in the fields of production and marketing. The steps taken in the State for the formation of Tapioca Processing Industries had helped the farmers and assured steady prices for both the segments of the industry. The study concluded with the optimistic note that the economic conditions of the Sago and Starch manufacturers were looking up.

Rayudu\(^{14}\) examined the financial performance of six Co-operative Spinning Mills of Andhra Pradesh using ratio analysis. (The Ratios used are: current Ratio, Acid-test Ratio and Debt equity Ratio). The objectives of the research were to examine the financial positions of co-operative mills, financial operations and performance, and the nature and extent of Government's financial spoon feeding. Further, he studied the relationship between various variables as depicted in financial statements and evaluated the returns on capital invested. For this study, six co-operative mills were chosen at random. The analysis revealed that all the six mills in the co-operative sector had accumulated losses, the member's share capital base was very weak, and there existed heavy doses of outsider's finance.

Mahapatro\(^{15}\) made an effort to study the nature of Cotton Handloom Industry in India. The handloom industry, everywhere in the
country, was struggling for survival for several decades. Over and above this, it was fighting a losing battle with the cotton textile mills and powerlooms. Yet, the industry in Orissa, like in many other parts of the country, did show some inherent vitality to survive the vicissitudes. In his view, the major evil in the handloom industry is the master weavers. The master weavers have become exploiters of the poor weavers. However, the growth of the co-operative sector might lead to automatic shrinkage and ultimate extinction of the master weaver system. Small household weaving would ultimately show good results if they get the same facilities of credit, marketing and research which large units enjoyed by virtue of their size and resources. Mahapatro has also mentioned that the coverage of the co-operative system was not adequate in his study area.

Ghuman and Anil Monga examined the performance of the co-operative sugar mills in Punjab using both primary and secondary data. They analysed the performance of the financial and physical activities of the co-operative sugar mills of Punjab. In order to examine the managerial performance, informal interview techniques were used. Financial performance was evaluated through information on share capital and profit and loss account. For the evaluation of physical performance, indicators such as sugar cane crushed per unit, sugar produced per unit (in quantity and in value) per society were used. All the units under the study were found running at a loss. To overcome the loss, the following suggestions were made: (a) the political interference around the location of co-operative mills
should be minimised and new mills located in areas having sufficient quantity of sugarcane, (b) in order to enjoy economies of scale the installed capacity of co-operative mills should be enhanced considerably, (c) efforts have to be made to minimise inventories by using modern materials and management techniques and (d) the government of Punjab should make arrangements for cultivation of improved varieties of sugar cane.

Thanulingom and Gurumoorthy discussed the financial performance of the Handloom Co-operatives in Paramkudi Town in TamilNadu. They used three categories of ratios: (a) Liquidity ratio (b) Profitability ratio and (c) Turn over ratio. Liquidity ratios were used to judge the firm's ability to meet short term obligations. The profitability of the societies was examined with the help of gross profit ratio, net profit ratio, operating ratio and return on investment. The effective utilisation of different assets was assessed with the help of stock turn over ratio and debtors turn over ratio. This analysis has drawn a dismal financial picture of the handloom co-operatives in TamilNadu.

Uma and Thanulingam examined the operational efficiency of co-operative spinning mills in TamilNadu for a period of six years from 1980 to 1985. The profitability of these units were measured in two ways: (1) by evaluating the financial performance and (2) by evaluating the operational performance with the help of relevant ratios, (net operating profit ratio, operating ratio, material cost
ratio and labour and overhead cost ratio), which were calculated using available balance sheet data. This analysis also presents a dismal picture of the handloom co-operatives in the State.

Rajagopal 19 analysed the economics of modern co-operative rice mills in Madhya Pradesh, employing the case study method. Various disadvantages of the traditional Paddy processing method are explained. He estimated losses incurred at different levels of processing: (a) 1 to 1.5 per cent of paddy through shedding in the field and transportation, (b) 1.2 per cent due to eating away by birds and rodents during open drying and (c) 3 per cent in milling. Thus the major item of loss was the traditional system of milling. Further, the study showed that modernisation of rice mills in co-operative sector had a great impact on the regional economy. It reduced the influence of intermediaries in the processing of paddy to a large extent. Owing to these reasons, Rajagopal argued for modernisation of rice mills owned and operated by the marketing federation.

Ravinder Sharma, et al. 20 have done cost benefit analysis of Tea Co-operatives in Kangra District of Himachal Pradesh. Cost benefit ratio of the factory under study during the period and net profits from tea processing in different years were computed. Data relating to the fixed assets and variable costs were collected from the records of the factory. The study pointed out that the total income earned by the factory from the sales of tea has significantly
increased. But profits were found only over a part of the period under study because the total cost increased year after year and the factory income was just adequate to meet its variable costs. The researcher reminds that more care should be taken so that the financial positions of the society could be improved by adjusting the total cost with the output.

NarayanaSamy and Ramachandran\textsuperscript{21} examined the factors affecting the growth and development of Co-operative Sugar factory by a case study of Amaravathi Co-operative Sugar Mill in Tamil Nadu. They examined different factors such as area under sugar cane production, membership, equity capital, Debt capital, net working capital, cane price, cost of production, machinery utilisation, sales price, income expenditure and profit. The authors concluded that the mill should bestow better attention to cane development activities for increasing recovery, increasing supply of sugar cane, strengthening of capital structure, controlling of expenditure and improving the machinery utilisation to improve its operational efficiency.

Om Prakash Kajipet and Narayana Reddy Rapole\textsuperscript{22} have made an effort to examine the potentiality of industrial co-operatives as a better solution for rural unemployment. They argued thus: (a) agricultural production in India, to a considerable extent, is being organised on capitalist lines and led to growth of disguised and open unemployment, (b) the increasing unionisation among agricultural labour resulting in higher wages and downward wage rigidities which
reduces labour absorption in agricultural operations and (c) Government legislative measures (such as minimum wages) and insistence by Government and labour unions on payment of minimum wages, discouraging labour absorption in agriculture activities. Finally, they noted that, the factor price distortions of capital and labour in India are also favouring intensive use of capital in agriculture. Based on the above facts Kajipet and Napole considered the co-operative forms of organisation to be more suitable and appropriate than any other form for development of the farm sector and rural industries. The main objectives of the industrial co-operatives, the authors noted were: (i) provision of employment and ensuring regular work to the rural unemployed and rural artisans and (ii) improvement in the living conditions and economic betterment of rural artisans and the rural unemployed by ensuring fair and regular wages to them. Consequently, the solution to the problem lay in the organisation of rural industries and agricultural allied activities along co-operative lines.

2.3.2. RELATED STUDIES IN KERALA

Ravi Makrari made an effort to study the levels of living of the beedi workers in Kerala. He studied the problems which the workers were facing and observed three types of exploitations in the beedi sector: (i) of workers by owners of means of production, (ii) by middle man and (iii) of helpers by the workers. The only exception to this type of exploitation was the Dinesh Beedi Co-operative
society. Here the members got several benefits denied to their counterparts in the other types of organisations. Based on these acts, the writer argued that the co-operatives are the only solution to the problems of the unorganised workers in the beedi sector.

Vasudevan examined the role played by the beedi co-operatives to rehabilitate the unemployed beedi workers and creation of additional employment opportunities. He also examined the extent to which the societies succeeded in implementing the Beedi and Cigar Workers Act of 1966. With the help of case study method (A case study of Kerala Dinesh Beedi) Vasudevan established that within a period of seven years from its beginning the society succeeded in finding employment to all the displaced beedi workers of Kannur District and creating additional employment opportunities. He noted that the co-operatives were very effective in the beedi industry. The workers are free from exploitation by middle man. In addition the societies succeeded in implementing many of the provisions of Beedi and Cigar Workers Act of 1966.

Pyaralal Raghavans has examined the evolution of beedi industry in Kannur District. He analysed various factors which have contributed to the success of beedi co-operatives such as the organisational structure, managerial system, marketing efficiency, worker's participation, worker's commitment, etc. Further, he examined the history of evolution of this organisation. The changes in organisation of production of the beedi industry of Kannur
District were similar to those in the other traditional industries. But unlike the other traditional industries, the beedi co-operatives emerged as a viable unit of production. The success of the co-operatives could be attributed to the commitment and motivation of the workers and trade unions in addition to efficient management.

Rajagopalan identified the structural differences in the handloom industry between North and South Kerala, with the help of a sample survey. He analysed the problems of co-operatives in Cannanore and Trivandrum Districts. His study revealed that the industry reflected varied historical experiences and had developed on quite distinct lines in the two regions. Consequently, Trivandrum and Cannanore exhibited wide variation in the type of industries which in turn led to a divergence in the organisation of production and in marketing channels. He observed that while the industry was relatively more organised in Cannanore and depended on distant markets, in contrast, in Trivandrum it was highly decentralised in nature and depended on domestic market. Further, it was observed that cheap handloom good were being brought into Kerala from neighbouring states in large quantities posing fresh threats to this industry in general.

Mathew George has made a historical analysis of handloom industry in Kerala. The study identified the following as the major causes of the crisis in the handloom industry: (1) under production, (2) under employment and (3) accumulation of unsold stock. The majority of the members in the co-operatives received employment only
for less than 175 days in a year. Majority of the production by the societies is carried out with the help of financial schemes and State Government's rebate scheme. The societies tend to depend more and more on institutional finance and lose progressively their capacity to become self-reliant.

Manual examined capacity utilisations of handloom co-operatives in Kerala. He measured empirically the extent of capacity utilisation in the handloom industry region-wise and analysed the underlying factors. Primary data were collected through a sample survey from Kannur and Trivandrum districts for the period 1979-85. He found that in the handloom sector, labour shortage was a serious problem (not to the same extent in all regions) due to the prevalence of extremely low wage rates in the industry. Though a weaver is a skilled worker, he was paid less than other skilled workers like a carpenter or a mason. Inadequate credit facilities and challenge from the mills and powerloom sectors reduced the production and demand of handloom textiles. The decline of demand leads to the decline in the level of utilisation of capacity.

Toney Joseph has done a comparative analysis of the cottage and factory subsectors of the co-operative sector in the handloom industry of Kerala. He examined structural differences in the cottage and factory subsectors of the co-operative sector operational cost and profit margin and the relative differences in the working conditions enjoyed by the members in both subsectors in the state. Sample survey
method was employed and Kannur District was chosen for study due to the dichotomic structure of the industry. It is observed that about 33% of the weavers are under co-operative sector (the four types of handloom industries are: household co-operatives (primary societies), non household co-operatives (industrial co-operatives, private household sector, private non Household sector). But the average production was found to be high among the industrial society which showed relatively high productivity. Further, the weavers, in general felt that they were pursuing a job of low status and hence majority of them did not like to bring their children into the handloom sector. Most of them had joined the co-operatives either for better remuneration or for protection against exploitation.

Apart from the above research studies, a large volume of writings by journalists and popular writers is available on problems of traditional industries and their workers. The studies cited are useful as a source material for method, design and analysis in the present study; however, their usefulness is limited since they concentrate on the traditional sector. The present study focuses its attention on the co-operative ventures in the modern Small Scale Sector a topic on which available literature is scant if not non-existent. It has a special significance in the present context of Kerala when growth of the modern industrial sector is identified as its major problem.
2.3 Design of the study

2.3.1. Statement of the Problem

Industrial co-operatives in the modern small scale sector, have to play an important role in the industrialisation of a State like Kerala. Almost all the previous studies on industrial co-operatives in Kerala were confined to the traditional industries and virtually no serious attempt has so far gone in to the problems of modern Industrial Co-operatives. The present study is an attempt in this direction. The specific objectives of the study are the following:

2.3.2. Objectives of the Study

1. To trace the evolution of industrial co-operatives in Kerala and identify the factors which have contributed to their growth and development.

2. To analyse the efficiency of industrial co-operatives in terms of:
   (a) growth, productivity and capacity utilization.
   (b) The financial performance of the industrial co-operatives.

3. To analyse the level of worker's involvement in the industrial co-operatives.

2.3.4. Scope of the study

The scope of the present study is confined to the modern small scale industrial co-operatives.
2.3.4.1 Small Scale Industries

Frequent changes in the definition of Small Scale Industries in India pose several problems to researchers. Moreover, the administrative definition of small, medium and large scale industries in India is unidimensional. It takes into account only one criterion, i.e. the fixed assets without considering other relevant factors.

According to the official source small scale industry comprises industrial units with investment less than Rs.60 lakhs and ancillary unit with investment less than Rs.75 lakhs in machinery and equipment.

2.3.4.2. Modern Small Scale Manufacturing Industries

The main differences of modern and traditional industries may be identified in the following four phases: (1)Outlook (2)Product and Product design (3)Physical technology of Production (4)Social technology of organisation and management. Based on these ideas the modern manufacturing industries may be defined as firms which are progressive in outlook and adaptable to changing conditions, use the result of modern science and invention in their Production Processes and apply reasonably up-to-date ideas of organization and management in their business operation. The Central Statistical Organisation has classified the industries into different groups. This grouping is
generally known as National Industrial Classification (NIC). The NIC is presented at different levels of aggregation: one digit, two digit or three digit. In the three digit classification, the manufacturing industrial groups are spread from 200 to 399. Out of this, the industries coming under 200-299 are basically agro-based or forest based industries. The industries coming under 300-399 are the intermediate and engineering industries, and they are often referred to as the modern manufacturing industries. Thus, the scope of the present study is confined to these (300-399) industries.

2.3.4.3. Industrial Co-operatives

It is difficult to get a single specified definition of industrial co-operatives by which the entire concept could be explained. Different definitions explain various aspects of the industrial co-operatives from different angles.

Generally, an industrial co-operative can be defined as a firm which is wholly or substantially owned and controlled by persons who work in it and run it for their mutual benefit. Further, this is a firm in which the workers retain a majority control of the enterprise. Control is exercised democratically on the basis of one person one vote, membership is open as far as possible to all workers and there are limits on the returns to be aimed at in capital invested in the enterprise.
However, according to the Kerala Co-operative societies Rules\textsuperscript{34}, 1969, Industrial Producer co-operative is a society which is organized in the industrial sector. All the prevailing conditions which are applicable to other societies are applicable to the producer co-operatives too. Hence, in the present study industrial co-operatives which are registered under the Kerala Co-operative Societies Rules 1969 and engaged in manufacturing activities are chosen for detailed study.

3.5 Data Source

Since the statistics available from the secondary source are found insufficient, a detailed primary investigation is undertaken.

2.3.6. The Universe of the Study

There are 1062 Small Scale industrial co-operatives in the manufacturing sector in Kerala, out of which only 458 were working in 1989-90. All the registered, working small scale manufacturing industrial co-operatives which are spread in the industrial group 300-399 are identified for the detailed study.

2.3.7 Method of Analysis

The study proceeds in two different stages. The first stage involves an analysis on the evolution of industrial co-operatives.
This gives a brief account of the co-operative movement and makes an assessment of the functioning the function of the co-operatives. In the second stage, a detailed micro analysis of industrial co-operative units is undertaken which forms the core of the empirical analysis. The analysis is presented in three sections (a) growth, productivity and capacity utilisation (b) financial analysis (c) co-operative management and worker's involvement.

Growth rates of output, value-added, labour and fixed capital are estimated and the average annual growth rates and the trend growth rates are obtained. In the productivity analysis, the factor productivity - labour productivity and capital productivity indices are estimated. Total factor productivity (TFP) measures are employed to get the total productive efficiency. Three sets of indices namely Translog, Solow and Kendrick, are worked out to find the T.F.P. Capacity utilisation is measured by the minimum capital output ratio method.

As is widely understood, the performance of industrial units depends much on financial management. An attempt is also made in this direction. The financial analysis is done by estimating the financial ratios like liquidity ratios, solvency ratios and profitability ratios.

Now-a-days the success of an enterprise also depends on management and attitude of worker. In the present study, the last
section analyses the co-operative management and worker's involvement. Likert-type scale is used to analyse the various levels of involvement of member workers and non-member workers.

2.3.8 Scheme of the Study

The study is presented in seven chapters. The second chapter presents a review of literature and design of the study. The evolution of industrial co-operatives in Kerala is traced in chapter three. Growth, productivity and capacity utilisation of modern industrial co-operatives are discussed in chapter four. Financial performance and management is examined in chapter five. Co-operative management and worker's involvement are discussed in chapter six. The last chapter summarises the major findings of the study.

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Notes and References

2. Ireland and Law, (1982).
4. ibid. p. 864.
5. ibid p.870.


27. Mathew George, (1987)


31. Stanley and Morse, (1965)

32. Govt. of India, (1987), Ministry of Planning, Dept. of Statistics revised national industrial classification. According to this classification the total units are classified under eight broad three digit NIC classes. Out of the total 20 units, four are engaged in the manufacturing of drugs, medicines and allied products, three units each in the manufacturing of rubber products not elsewhere classified and manufacture of fabricated structural metal products and two units each engaged in the manufacture of plastic products of not elsewhere classified, manufacture of hand tools weights and measures and general hardware, manufacture of metal products not elsewhere classified, manufacture of electrical machinery, apparatus and parts thereof.
