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PERFORMANCE OF DISTRICT INDUSTRIES CENTRES IN KERALA: AN APPLICATION OF AUGMENTED SOLOW MODEL

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By

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CERTIFICATE

This is to certify that the thesis entitled **"Performance of District Industries Centres in Kerala: An Application of Augmented Solow Model"** submitted in the Department of Applied Economics, Cochin University of Science and Technology by Sri. K. Abdul Hameed is a record of original and independent work done by the candidate during the period of study under my supervision and guidance and that the thesis has not formed the basis for the award to the candidate of any Degree, Diploma, Associateship, Fellowship or other similar title.

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DECLARATION

I declare that the present thesis titled, "**Performance of District Industries Centres in Kerala: An Application of Augmented Solow Model**" is the original research work undertaken and carried out by me under the guidance of **Prof. (Dr.) Jose T. Payyappilly**, Professor and Director (Rtd.), School of Management Studies, Cochin University of Science and Technology, Cochin. I further declare that the material of the thesis has not in any way found the basis for the award of any Degree, Diploma, Scholarship, Fellow ship or other similar title of recognition.

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LIST OF ABBREVIATIONS

ADIO	-	Assistant District Industries Officer
ASI	-	Annual Survey of Industries
BC	-	Backward Community
CSO	-	Central Statistical Organization
CST	-	Central Sales Tax
DCSSI	-	Development Commissioner, Small Scale Industries
DGDIP	-	District Gross Domestic Industrial Product
DIC	-	District Industries Centres
DI&C	-	Directorate of Industries and Commerce
DIDC	-	District Industries Development Committee
DLRC	-	District Level Review Committee.
DRDA	-	District Rural Development Agency
EDP	-	Entrepreneurship Development Programme
EOs	-	Extension of Officers
EOU	-	Export Oriented Units
GCC	-	Green Channel Committee
GM	-	General Manager
GO	-	Government Order
IPR	-	Industrial Policy Resolution
IPS	-	Industrial Policy Statement
IDA	-	Industrial Development Area
IDBI	-	Industrial Development Bank of India
IE	-	Industrial Estate
IPP	-	International Perspective Planning
ITI	-	Industrial Training Institute
JRY	-	Jawahar Rozgar Yojana
KEPC	-	Kerala Employment Promotion Council

KGST	-	Kerala Government Sales Tax
KITCO	-	Kerala Industrial and Technical Consultancy Organisation
KSFC	-	Kerala State Financial Corporation
KSSIDC	-	Kerala State Small Industries Development Corporation
KSSIC	-	Kerala State Small Industries Corporation
KVIB	-	Khadi and Village Industries Board
M (EI&I)	-	Manager (Economic Investigation and Infrastructure)
M(C)	-	Manager (Credit)
M (RM&M)	-	Manager (Raw Material & Marketing)
MRW	-	Mankiew Romer and Weil
M (VI&T)	-	Manager (Village Industries and Training)
NAS	-	National Accounts Statistics
NEF	-	National Equity Fund
NICs	-	Newly Industrialising Countries
NISIET	-	National Institute of Small Industry Extension and Training
NRDC	-	National Research Development Corporation
NRK	-	Non Resident Keralites
NSIC	-	National Small Industries Corporation
PDC	-	Pre degree
PMRY	-	Prime Minister's Rozgar Yojana
RAP	-	Rural Artisans Programme
RBI	-	Reserve Bank of India
RIP	-	Rural Industries Programme
RMSC	-	Raw Material Service Centre
SC	-	Scheduled Caste
SEP	-	Self Employment Programme
SFC	-	State Financial Corporations
SIDBI	-	Small Industries Development Bank of India

SIDCO	-	Small Industries Development Corporation
SIDECO	-	Small Industries Development and Employment Corporation
SIDO	-	Small Industries Development Organisation
SIET	-	Small Industry Extension and Training Institute
SIS	-	State Investment Subsidy
SISI	-	Small Industries Service Institute
SPB	-	State Planning Board
SSI	-	Small Scale Industries
SSIDC	-	State Small Industries Development Corporation
SSSBE	-	Small Scale Service Business Enterprise
SSLC	-	Secondary School Living Certificate
STE	-	Sales Tax Exemption
ST	-	Scheduled Tribe
TRYSM	-	Training for Rural Youth for Self Employment
UK	-	United Kingdom
US	-	United States
WIP	-	Women Industries Programme
VSI	-	Village and Small Industries

CHAPTER I

INTRODUCTION

1.1. Development Policies of Small Scale Industries

Efforts to promote small scale industries have a relatively long history. In Latin America well-organised programmes existed as early as mid fifties. At that time, technical assistance was still rare, but financial programmes had already been created in Mexico, Venezuela and Argentina. These initiatives were followed by Brazil, Chile and Colombia which launched their own programmes in the sixties (United Nations, 1969) [1].

In Africa programmes oriented towards supporting small scale industries appeared soon after independence in the mid sixties; Tanzania and Kenya being the earliest to adopt these policies. African programmes have emphasized provisions of industrial estates and training of entrepreneurs. Kenya, Ghana and Botswana are examples of countries which organised programmes of both industrial estates and training of entrepreneurs. These programmes were often linked to Africanisation policies in which assistance was aimed primarily at transferring business to indigenous nationals (Livingston, 1982) [2].

In Asia, also in the fifties, the Indian government created a very elaborate promotional scheme based on a different rationale and oriented towards slightly different goals (Suri, 1988)[3] under the influence of Gandhian thinking and belief in the capital-saving characteristic of small scale production units. India instituted a programme addressed to village and cottage industries, to be extended later to the modern small scale industry sector. In contrast to Latin American approach, the Indian government set out to protect labour intensive technologies and khadi and cottage and village industries through a complex system of incentives, subsidies and market reservation regulations intended to stimulate demand.

A remarkable consensus about objectives and instruments was evident in these early initiatives. They were oriented towards the formation of a layer of modern small scale manufacturing firms, facilitating the transition from household or handicraft enterprises. Employment creation was an important objective, but efficiency criteria

were upheld vigorously. Established to counter the negative discriminations inflicted upon small scale industries by import substitution strategies, the programmes were carried out by either state or parastatal agencies.

1.1.1. Underlying Rationale: Three alternative Approaches

The above-mentioned expectations about the potential of small scale production have been generated by three different rationales. The first emerged from the realisation of the limits of 'modernisation' in achieving social development as well as economic growth. The second set, reminiscent of Schumpeter's ideas, stems from the revived appreciation of management skills and entrepreneurship in development processes. The third focuses on new flexible production systems were brought about by recent technological innovation as a means to revitalise stagnant industrialisation processes.

1.1.11. Unemployment, Poverty and Limits of modernisation policy

The post war period saw high and accelerating rates of economic growth and industrialisation in most developing countries. Between 1950 and 1975, the annual per capita income in the developing world had grown at an average of 3.1 per cent (Hughes 1978)[4]. Characterized by massive investment in large scale and capital intensive sectors, this growth, however, had not solved the problems of unemployment and poverty. By the mid-seventies around 700 million people (more than a third of the population of developing countries) continued to live in extreme poverty (World Bank, 1978)[5].

Most of the benefits had accrued to those with access to jobs in modern industries, while a sizable proportion of the population continued to depend on low productivity activities for their survival or remained unemployed for extended periods. Thus the expected 'trickle down' effect had not occurred with the speed and intensity predicted in the theories. Moreover, by the mid seventies, it was evident that the dynamic period of employment creation in the manufacturing sector would be exhausted or severely reduced to much lower levels than anticipated (Hughes 1978)[6].

These criticisms prompted new development strategies. The new approaches sought to combine economic growth with social equity, to associate

development with improvement at the bottom of the social scale through employment creation.

The emergence of eloquent advocates of the advantages of 'smallness' best exemplified by Schumacher provided considerable support to the new policy proposals (Schumacher 1973) [7]. Thus low-cost, appropriate or intermediate technology using inputs and factors of production in proportions close to the overall endowment of these factors in the economy became an important component of most new strategies. In such an economy, assuming products consumed by the poor to be labour intensive (ILO, 1970) [8] and produced by small scale production, a much greater role would be played by small farmers and small scale urban producers.

By the end of the seventies it was widely believed that strategies of this kind would create more total employment since: (1) direct employment for a given level of capital investment would be necessarily higher than in more capital intensive industrialization, and (2) indirect service job creation would be basically unaffected by the scale or composition of the manufacturing sector (World Bank 1978) [9].

The deepening of the economic crisis in the early eighties revived the interest in the small scale sector. Under recessive conditions, the support for small scale and 'informal' activities became part and parcel of policies to sustain the survival strategies of the poor and to reduce the capital costs of employment generation. This focus on 'livelihood strategies' has relegated growth considerations and economic efficiency criteria to a secondary position.

1.1.12. The role of entrepreneurship in development

The second rationale for the development of small scale enterprise is based on Schumpeterian thinking. He emphasized the fundamental role of entrepreneurship and management skill in economic development. But both these resources are scarce in developing countries. This highlights the potential role of small scale sector. Firstly, small scale sector is the training ground and seed bed for the medium and large-scale sector, and secondly, it is an efficient user of existing indigenous entrepreneurial and management skills, which would otherwise, remain unutilised (Page, 1979) [10].

In advanced countries, the resurgence of Schumpeterian approach provided a new impulse to new types of small scale industry support programmes. There is also an expression of the political imperative for governments to retain the support of the unemployed, the self-employed and micro and small scale entrepreneurs, especially through employment generation. Thus a return to Schumpeterian interpretation of development, where entrepreneurs play a central role (and where the state and bureaucracies must only ensure) would be socially unacceptable, politically unstable and economically inefficient without a strong small scale sector. Moreover, this period of significant technical change, acknowledges the innovative and initiative attitude and ability of small scale sector (Rothwell and Zedgveld 1982)[11].

In the early 80s, it was already noticeable, that attempts had been made to transfer this paradigm, (i.e. small scale sector plays a central role) to less developed countries and identified small scale sector as a key component of development policies. The unleashing of this potential was expected to introduce flexibility into less developed economies and create new perspectives on economic development (Uribe-Echevarria 1989)[12].

1.1.13. Flexible Production and Industrialisation

The third rationale sustaining the importance of small scale production derives from the advantages of flexibility in productive organisation. Flexible specialisation is a new system of production organisation and work rescheduling based on multi-capability of productive inputs, multi-tasking and multi-skilling of workers, shorter production runs, small batch production, frequent changes in product pattern and vertical decentralisation of firms (Sukumaran.M.K.1995)[13].

Information technology, new management strategies and the increasing importance of product differentiation have triggered a vast restructuring of production in advanced economies. Until the seventies, western economies were characterised by a nucleus of massive production industries, such as cars and transport equipment, durable household consumer goods, capital equipment etc (Uribe-Echevarria 1989)[14]. The new conditions have given rise to more flexible forms of industrial organisation strengthening the case for small scale enterprises.

Flexible production / specialization implies production of non-standardised goods whose demand is subject to fluctuations, and small firms have a capacity to meet these fluctuations in demand by depending less on price and more on the quality of the product. This ability derives from possessing shorter production runs, which can cop up with short-term demand argued that volatile and uncertain market conditions limit the firm size.

There is considerable disagreement about the extent to which small scale firms are capable of fulfilling the above-mentioned expectations in developing countries. Many authors argue that such expectations are created by theoretical expectations or by the phenomena observed in developed countries (Thomas, 1987) [15]. As a result a number of questions have emerged like (1) Are small scale producers efficient users of resources? (2) Are claims about the employment generation performance of SSI realistic? (3) Do small scale firms in developed countries have a real potential for entrepreneurship and industrial development? (4) Are small scale industries a key to the satisfaction of basic needs and equitable growth? and (5) Is flexible production feasible in less developed countries?

1.1.131. Are small scale producer's efficient users of resources?

Most studies have come up with mixed results. Some studies have even shown that there are no significant differences in capital labour and/or capital output ratios. For e.g. in Africa, the most important traditional SSI (employing fewer than thirty workers) uses more capital per a unit of product than medium and large industries. It is suggested that the use of separate and inefficient technologies and high levels of technical inefficiency are the reasons for this.

In Latin America, the results obtained by Meller suggest that, in the case of efficiency of SSI, there is considerable variation by size within industries. A World Bank study of Columbia found that SSIs are efficient even though their performance was not always and not necessarily superior to larger ones (Cortes 1987) [16].

Similarly, a study of small shoe producers in Columbia did not provide support for the argument that small scale enterprises are inherently more efficient.

Among the most efficient category of firms, from a total factor productivity point of view, firms of various sizes include.

While testing the efficiency claims about modern SSI in India, Dhar and Lydall points out that those units employing fewer than fifty workers and using modern machinery utilise more capital per unit of output than do larger factories. In addition, Little provided evidence showing that the most efficient performances could be found in the medium sized rather than smaller scales of production (Dhar and Lydall, 1987) [17].

Other studies also indicate that small scale producers are rather inefficient users of capital in many branches. And the important reason for this is the regional variations (Dennis 1982)[18].

In general, the answer to the problem is the small scale producers are efficient users of resources conclude that the situation differs between sectors, types of plants and regions. This calls for a sectoral and regional approach to small scale sector rather than purely a scale approach to policy formulation (Uribe-Echivarria, 1987) [19].

1.1.132. Are claims about the employment generation performance of SSI realistic?

It is intended that small scale manufacturing generates more employment opportunities by using less capital. In this connection several authors suggest a difference between direct employment creation and total employment creation. Latin American research has often found that the creation of indirect jobs by investment in small scale sector is fairly small compared with the impact of investing in the large-scale industry (Sutcliffe, 1971) [20].

Recent research has also questioned the assumption about the positive ability of small scale sector to absorb labour. The experience of the recession of the 80s indicates that this positive ability of SSI sector has been overrated (Uribe-Echevarria 1989)[21]. During periods of falling aggregate demand only household enterprises and self employed sector absorbed labour. In contrast, employment in the micro enterprise sector fluctuates together with production. Thus on many occasions SSI exhibits a pro-cyclical behaviour, which goes against absorption of unemployment expected from them. The utilisation of SSI for anti-cyclical purposes can thus be seriously questioned.

The employment granted in the small scale sector is in poor quality. The conditions of work are appalling in many of the small scale industries: long hours of work in crowded, unhealthy and insecure conditions and a labour force including high properties of women and children.

1.1.133. Do small scale industries in less developed countries have real potential for entrepreneurship and industrial development?

In the small scale sector, most firms having fewer than three workers, many of these small scale activities can be considered 'residual' and trapped in the production of 'inferior' goods of low income elasticity, while only a minority produces for highly profitable, high income or export markets.

Entrepreneurs are poor, have only little education and usually not constrained by rules and regulations, and some are doing out rightly illegal activities. In short, there is a large incidence of 'informality' within the small scale sector and that limits the transferability of the experience of advanced countries (Thomas, 1987) [22]. Thus Schumpeterian expectation that small scale sector is a seedbed of innovation may be misplaced.

Again the role of small scale sector in the later industrialisation process is also questioned. Porter, quoted Farbman and Lessis, found in Africa that few enterprises grew naturally from micro to small firms to medium size. In Nigeria only 43.7 per cent of small and medium firms grew out of micro firms, in Rwanda (10.7 per cent) and Botswana (20.0 per cent). Berry has documented the Columbian case where the initial small, rural-based industries played very little, if any, role in later industrialisation (Porter, 1987) [23].

Haan, when discussing the case of India, reveals that the scope of spreading investment into large units is greatly reduced by the practice of large firms or wealthy families of investing in small scale sector and modern units in order to evade taxation and/or labour legislations.

In the small scale sector, there is a large incidence of informality. This creates scepticism about the reliability of product specifications, delivery schedules,

weakens the viability of subcontracting strategies and reduces the contribution of the sector in achieving more flexibility in production.

1.1.134. Are small scale industries a key to the satisfaction of basic needs and equitable growth?

The development strategy of promoting SSI is based on the concept that SSI helps to satisfy the basic needs of the society. This concept is based on three assumptions, (1) the products consumed by the poor are more labour intensive (2) SSI specialise in such products and (3) they use simple techniques.

There is relatively strong, although incomplete evidence, about the greater labour intensity of basic products consumed by the low-income population. But this does not necessarily imply that income redistribution has large total employment impacts. The actual results would depend upon the size of indirect impact, and they have often found to be relatively small (Cooper, 1980) [24].

The contention that small scale industry specializes in producing goods for low income groups has also been questioned. Small scale industries are an important source of goods for the poor, but many of them neither produce for the poor nor are necessarily labour intensive. As shown in the Indian case, urban SSI often produce either inputs for production or products for the wealthy (Uribe-Echevarria) [25]. The growth of the small scale sector, therefore, may not by itself result in greater availability (or lower price) for the necessities of the poor.

The debate over the income elasticity of demand for the products of SSI has never been settled conclusively. Even in the poorer countries such as Bangladesh, the elasticity for the products of SSI rural manufacturing is relatively low. And it is lower than those observed for services, housing and transport (King 1974) [26].

1.1.135. Is flexible specialization feasible in less developed countries?

There are successful developments of flexible specialists and of efficient agglomerations of small scale producers in developed countries, especially in several regions of Western Europe. The situation is far less clear in developing countries.

Similar production networks have emerged in the Asian Newly Industrialising Countries (NICs), with Taiwan, Hong Kong and Singapore being good examples. Some advances in the externalisation of production sub-processes have been documented in some less developed countries. Yet, the capacity to create and develop small and medium production networks independent of large-scale nuclei in Less Developed Countries is still unclear and little is known about the conditions to make them viable (Uribe-Echivarria, 1987) [27].

1.2. Small Scale Industries in India

1.2.1. Policy of Government of India towards Small Scale Industries

The emphasis that the Govt. of India placed on the small scale sector can be best understood by tracing it back to the country's freedom struggle and the emphasise Gandhiji had placed on the revival and revitalisation of the village industries. The National Planning Committee (1945-49) had resolved that cottage and rural industries should be organised and developed by the state (Zaidi, 1979) [28]. Though the Government had started taking active interest in the development of SSI units from the time of Second World War, its importance was not fully recognised till the conference on Industrial Development held in New Delhi in December 1947. Based on the recommendations of this conference, the government constituted a Cottage Industries Board in 1948. A point to be noted here is that till about the early years of the last century, no distinction was made between small and large industry or between the rural (traditional) and modern small scale industries. In the beginning there were only two distinctions. Indigenous vs. foreign industries and it so happened that the indigenous industries were mostly small and use traditional technology. However in the post World War period, when some large-scale units based on imported technology came to be established, the large vs. small debate surfaced. In fact, the National Planning Committee (1947) [29] had recommended establishing a mutually beneficial co-operation between the large and small scale sectors and it further suggested that there should be a permanent Board of Research to identify the changing economies of large scale and cottage industries.

A Cottage Industries Directorate was also formed within the Directorate under Director General of Industries and Supplies. It was soon realised that each category of activity within the rural and small scale sector faced a different set of problems and hence required specially designed set of support measures. Hence, it was necessary to have special Boards for the various categories. As a result, the following specialised Boards were set up:

1. The All India Handloom Board (1952)
2. The All Kerala Handicraft Board (1952)
3. The Central Silk Board (1949),(recognised in 1952)
4. The All India Khadi and Village Industries Board (1953)
5. The Small Scale Industries Board (1954) (for the modern Small Scale Industries Sector) and
6. The Coir Board (1954).

As the original Cottage Industries Board became redundant, it was abolished in 1953. The Cottage Industries Directorate was also ceased to function as a separate unit from January 1953. Soon after India attained independence in August 1947 enunciation of principles for industrial development was made by the government in its Industrial Policy Resolution 1948. It stressed the important role of cottage and small scale industries particularly for better utilisation of local resources and for the achievement of local self sufficiency in respect of certain essential consumer goods.

The first five-year plan that followed had laid great emphasis on the village and SSIs especially for the purpose of increasing rural development. The Plan also specified the role of the Centre and State Governments in implementing various development programmes. While the primary responsibility for development programmes rests with the state governments, it was also realised that "in many aspects the framework within which they can execute programmes for individual village industries is set up by the policies followed by the Central Government (Planning Commission, 1954) [30]. In the early stages of SSI development, no distinction was made between the modern and traditional segments of the small scale sector. In fact, the emphasis then was mainly on the traditional village crafts and the handloom sector. It

was only after the visit of the International Perspective Planning Team (IPP Team1953-54)[31] concerted efforts were made to develop the modern SSI units as a distinct segment within the small scale sector. They suggested a number of measures to encourage and assist the modernisation, expansion and rationalisation of India's SSI units. Most of these measures were accepted and implemented by the government. These included the setting up of the Small Scale Industries Board in November 1954 for nation wide planning and co-ordination of development programmes for modernise SSI units, to carry out the programmes and policies of the Board, the office of the Development Commissioner, Small Scale Industries (DCSSI) was created. In addition, National Small Industries Corporation (NISC) in 1955 and the Small Industry Extension Training Institute (SIET) in 1960 were also come into existence later on.

In the Industrial Policy Resolution of 1956, the Government once again stressed the role of Cottage and Village and Small Scale Industries in the development of national economy. It stated: the small scale industries "provide immediate large scale employment, they offer a method of ensuring a more equitable distribution of the national income and they facilitate an effective mobilisation of resources of capital and skill which might otherwise remain unutilised. Some of the problems that unplanned urbanisation tends to create will be solved by the establishment of small centres of industrial production all over the country (Government of India 1956) [32]. It further added that while the present policy of supporting the sector by restricting the volume of productions in the large scale sector by differential taxation, or by direct subsidies, will continue to exist and the aim of the policy in future will be to ensure that the decentralised sector attains sufficient vitality to be self supporting and its development is integrated with that of large scale industry (See Ibid, Para-14) [33]. The later policy announcements of the Government of India also reflect the government's continued concern and emphasis on this sector.

The statement on Industrial Policy 1977 said "The main thrust of the New Industrial Policy will be an effective promotion of cottage and small industries widely dispersed in rural areas and small towns. It is the policy of the government that whatever can be produced by small and cottage industries must only be so produced (Government of India 1956) [34]. The Industrial Policy Statement in 1980 stated that the

government intends to reverse the trend of creating artificial divisions between small and large scale industry and will make all efforts towards integrated industrial development. It was proposed to set up a few nucleus plants in each backward district. These plants were expected to generate a spread-out network of small scale units which grow faster because of the nucleus plants (Government of India, 1980) [35]. The policy also announced the government's intention to strengthen the arrangement for credit for small scale sector.

The latest Small Scale Industrial Policy announced in August 1991 is perhaps the most comprehensive of all. It stated, "The primary objective of the small scale industrial policy during the nineties would be to impart more vitality and growth impetus to the sector". Further efforts would be made to deregulate and de-bureaucratise the sector with a view to remove all fetters on its growth potential (Ministry of Industry 1991) [36]. While the small scale sector, other than tiny units, would be given only one-time benefits, the tiny units would be eligible for additional support on a continuing basis. Easier access to institutional finance, priority in government purchase programme and relaxation from certain provision of labour laws will be provided to them. The scope of National Equity Fund was widened to cover projects upto Rs.10 lakhs. Similarly, the single window scheme was enlarged to cover projects upto Rs.20 lakhs.

The new policy stressed the shifting of emphasis from subsidised credit to adequate flow of credit and quality of its delivery. To provide access to the capital market, to encourage modernisation, technological upgradation and sub contracting, other industrial undertakings would be allowed equity participation in SSI units upto 24 per cent of their total shareholding. To enhance the supply of risk capital, a limited Partnership Act would be introduced. To overcome the problem of delayed payment factoring services are to be provided through the SIDBI. Legislation will also be introduced to ensure prompt payment of small industries bills.

A Technology Development Cell would be set up in the Small Industry Development Organisation (SIDO) for providing technology inputs. An Export Development Centre would also be set up in SIDO to serve the SSI units through its network of field offices.

1.2.2. Definition of Small Scale Industries

Table 1.1

Definition of SSI, Ancillary Industrial Undertakings and tiny units

Year	Small scale industries description	Ancillary units	Small service establishment units*
1950	- Rs upto 5 lakhs in fixed assets - Units using less than 50 persons with power - units using less than 100 persons without power	-----	------
1960	- Units upto Rs.5 lakhs in fixed assets with no condition	-----	------
1966	- Upto Rs.7.5 lakhs in plant and machinery	10 lakhs	------
1975	- Upto Rs.10 lakhs in plant and machinery	15 lakhs	------
1980	- Upto Rs. 20 lakhs in plant and machinery	25 lakhs	2 lakhs
1985	- Upto Rs. 35 lakhs in plant and machinery	45 lakhs	2 lakhs
1991	- Upto Rs. 60 lakhs in plant and machinery	75 lakhs	5 lakhs
1997	- Upto Rs.300 lakhs in plant and machinery	300 lakhs	25 lakhs
1998	- Upto Rs.100 lakhs in plant and machinery	100 lakhs	25 lakhs

- Located in rural areas and towns with population of 5 lakhs.
- Tiny concept was introduced in 1977. As a follow up policy measures for promoting and strengthening small, tiny and village industries, the Act "laid in the parliament on 6th August, 1991, where the limit for "tiny enterprises" were enhanced from Rs. 2 lakhs to Rs.5 lakhs irrespective of the location of units.

Source: Compiled from Institute of Small Enterprises Development, The state of Small Enterprise Development in India, 1997, Kochi and from Report of Second All India Census of SSI units, DCSSI, Ministry of SSI & Agro and Rural Industries, New Delhi.

The concept, small scale industry covers a wide range of activities and its definition changed from time to time. The table 1.1 indicates the historical evolution of definition of small scale and ancillary units.

1.2.3. Growth of Small Scale Sector in India

The small scale industrial sector has played a vital role in shaping the destiny of the nation since independence. It has emerged as a highly vibrant and dynamic sector of the Indian economy. In fact, it is one of the success stories of modern India. Today the sector accounts for about 95 percent of industrial units, contributes about 40 per cent of the value added manufacturing sector and over 33 per cent of the national exports. Through over 31 lakh units spread all over the country, the sector now provides employment to 171 lakh people. The indirect employment created through forward and backward linkages is no less important. The sector now produces over 7500 items.

In fact the range of products is so wide that there is hardly any product we see around in our day-to-day life, which is either not, produced directly or indirectly by the SSI sector. This is a sector that has continued to grow even in the face of rising threats from the large industrial sector inside and the multinationals from outside. In spite of several shortcomings, innumerable handicaps and severe limitations, the sector is widely acclaimed for its indisputable role in employment generation, production and exports. The contribution of the unorganised industrial sector is next only to agriculture so far as employment generation is concerned.

The onset of the planning era in 1951 saw the village and small industries sector being recognised as an important tool for employment generation and thus, the sector found itself in perfect tune with the national objectives of employment generation and balanced regional development. In view of this, plan outlays for this sector also rose phenomenally over the years. At the micro level, the small scale sector was also visualised as a tool for diffusing entrepreneurship and bringing about an equitable distribution of national wealth by utilising and tapping the locally available human, physical and material resources and converting them into productive assets. The outlays on SSI in the Central and State Plans are indicated in Table 1.2.

Table 1.2

Plan outlays on Small Scale Industries

Plan	Period	Small Scale Industries including Industrial Estates. (Rupees crores.)
First Plan	1951-56	5.20*
Second Plan	1956-61	56.00*
Third Plan	1961-66	113.06
Annual Plans	1966-69	53.48
Fourth Plan	1969-74	96.19
Fifth Plan	1974-79	221.74
Annual Plan	1979-80	104.81
Sixth Plan	1980-85	616.10
Seventh Plan	1985-90	1120.50
Annual Plan	1990-91	392.13
Annual Plan	1991-92	482.86
Eighth Plan	1992-97	2862.14
Ninth Plan	1997-2002	4304.00**

* Excluding Industrial Estates.

** It includes internal resources generation target.

Source:- Small Scale Industries in India- Hand Book of Statistics, NISIET, 1999 Hyderabad

Despite inaccessibility to economies of scale, the sector has survived due to its inherent strength and innate capability and the support that came through the developmental programmes of the government both at the Centre and the State levels.

It received policy support as well as desired protection so that it could compete with the large sector. Of late, there has been some criticism that the sector continues to be protected even after the economic reforms of 1991. Economic reforms through changes in industrial, financial, fiscal and trade policies, in fact, have brought this sector within the ambit of extensive challenges and intensive competition. The sector has survived due to its inherent strength of flexibility and innovativeness.

Tracing the path of the SSI sector's journey naturally warrants an analysis of the important indicators of growth. Systematic data are available only from 1973-74

i.e., when the First All India Census of Registered SSI Units was held, when the number of working registered SSI units was 1.64 lakhs. The estimates of unregistered units were 2.52 lakhs and thus the total SSI units were estimated at 4.16 lakhs that year. These units accounted for production of Rs.7200 crores and employment of 39.70 lakhs people. The export was worth Rs.393 crores in 1973-74. (Table 1.3)

The Table 1.3 indicates a phenomenal growth in terms of unit's production, employment and exports. As evident from the Table 1.3 the number of small scale units, which was 4.16 lakhs in 1973-74, increased to 31.21 lakhs by 1998-99. Contribution of small scale industries in terms of output employment and exports is also presented in the Table 1.3. The contribution of SSI sector to the Net Domestic Product (NDP) in terms of its production is also significant and growing. The total value of output of the SSI sector at current prices was Rs. 7200 crores in 1973-74, which increased to Rs.578470 crores in 1999-2000. Moreover it provided employment for 39.7 lakhs people in 1973-74, which increased to 177.3 lakhs in 1999-2000. This huge employment buffer in the Indian economy was frustrated by the growth of unemployment. In addition the SSI sectors experienced a marked progress with respect to its total value of exports and thus have been making a sizable contribution to the country's exports. The total value of SSI exports of Rs.393 crores in 1973-74 increased to Rs.48979 crores by 1998-99. It is thus evident from the analysis that the growth and contribution of SSI sector in the Indian economy is sizable and significant in different dimensions.

Table 1.3

Growth of SSIs in terms of Number of Units, Production, Employment and Exports

Year	No. of units in lakhs	Production (at current prices) (Rs. crores)	Production (at constant prices) (Rs.crores) (At 1970-71 prices)	Employment (in lakh Nos.)	Export (Rs. crores)
1973-74	4.16	7200	5161	39.70	393
1974-75	4.98	9200	5450	40.40	541
1975-76	5.46	11000	6425	45.90	532
1976-77	5.92	12400	7078	49.80	766
1977-78	6.70	14300	7980	54.00	845
1978-79	7.34	15700	8797	63.80	1069

1979-80	8.05	21635	10025	67.00	1226
1980-81	8.74	28060	10906	71.00	1643
1981-82	9.62	32600	11837	75.00	2071
1982-83	10.59	35000	12800	79.00	2045
1983-84	11.55	41620	14120	84.15	2164
1984-85	12.40	50520	15810	90.00	2541
1985-86	13.53 (9.11)	61228	17840 (12.84)	96.00 (6.67)	2769 (8.97)
1986-87	14.62 (8.06)	72250	20187 (13.16)	101.40 (5.63)	3643 (31.56)
1987-88	15.83 (8.28)	87300	22742 (12.66)	107.00 (5.52)	4372 (20.01)
1988-89	17.12 (8.15)	106400	25672 (12.88)	113.00 (5.61)	5489 (25.55)
1989-90	18.23 (6.48)	132320	28690 (11.76)	119.60 (5.84)	7625 (38.91)
			(At '90-91 prices)		
1990-91	19.48 (6.86)	155340	155340	125.30 (4.77)	9664 (26.74)
1991-92	20.82 (6.88)	178699	160156 (3.10)	129.80 (3.59)	13883 (43.66)
1992-93	22.46 (7.98)	209300	169125 (5.60)	134.06 (3.28)	17784 (28.10)
1993-94	23.88 (6.14)	241648	181133 (7.10)	139.38 (3.97)	25307 (42.30)
1994-95	25.71 (7.66)	293990	199427 (10.10)	146.56 (5.15)	29068 (14.86)
1995-96	27.24 (5.95)	356213	222162 (11.40)	152.61 (4.13)	36470 (25.46)
1996-97 (P)	28.57 (4.88)	412636	247311 (11.32)	160.00 (4.84)	39248 (7.61)
1997-98	30.14 (5.5)	465171	268159 (8.43)	167.20 (4.5)	43946 (11.97)
1998-99 (P)	31.21 (3.55)	527515	288807 (7.7) **	171.58(Pj) (2.62)	48979 (11.45)
1999-2000	32.25 (3.33)	578470	312576 (8.23)	177.30 (3.33)	NA

Figures in the brackets indicate percentage growth over previous year.

P=Provisional, Pj-Projected, **= Revised

Sources:-1. Reports of Currency and Finance, RBI.

2. Reports on Small Scale Industries, DC SSI, Government of India.

3. Data Base of Indian Economy-1997-98.

A comparison of the growth of SSI sector vis-à-vis the industrial sector is given in the Table1.4 indicates that since the Seventh Plan onwards SSI sector achieved higher growth rate than the industrial sector except for the year 1995-96.

Table 1.4

Growth of SSI sector vis-à-vis with the industrial sector

Year	SSI Sector (Base year 1990-91 prices)	Industrial Sector (Base year 1980-81)
1985-86	12.84	8.7
1986-87	13.16	9.1
1987-88	12.66	7.3
1988-89	12.88	8.7
1989-90	11.76	8.6
1990-91	8.5	8.2
1991-92	3.1	0.6
1992-93	5.6	2.3
1993-94	7.1	6.0
1994-95	10.1	9.4
1995-96	11.4	12.1
1996-97	11.3	7.1
1997-98	8.43	NA
1998-99	7.70	NA
1999-2000	8.20	NA

Source: Compiled from the Reports of Small Industries Development Organization, DC (SSI), Government of India, New Delhi, 1988-2000

1.3. Industrial Scenario in Kerala

The various studies on the industrialization of Kerala underlined the states industrial backwardness and various hypotheses have been put forward to explain this phenomenon (Prakash B.A. 1984)[37]. The important hypotheses are lopsided industrial structure, high wage-cost, labour militancy, lack of entrepreneurship and locational disadvantages.

The first set of explanation regarding industrial backwardness was based on the structural hypotheses. It has been pointed out that Kerala's industrial structure did not provide a dynamic base for the growth of modern industries and the lopsided character of industrialization continued unabated. This suggests that the industrial backwardness is linked to the industrial structure and that structural factors are important in the growth of a region (Subramaniyan and Pillai, 1986) [38]. Mohanan Pillai and K.K. Subramaniyan (1994) [39] argue that weak industrial base hold good even in the case of Small Scale Industries. Additionally the infrastructural constraints of the state have been pointed out as leading to locational disadvantages which act as hindrance for industrial growth.

Another major argument is centred on the high wage cost hypothesis. A high level committee of the State Planning Board looking into the lack of industrial growth in Kerala stated that wages had increased over the years without a stimulus increase in productivity with the result that the industries in the state are not able to produce at competitive prices even for its sustenance. Thampy (1986) [40] also supporting this view and added that Kerala's small scale industries are characterised by low productivity and high wages as compared to all India. He concluded that the general notions that high labour costs are inhibiting the growth of industries in Kerala is true at least in the case of a majority of industrial groups in the small scale sector. Contradicting this hypothesis, KK Subramanniyan and Pillai (1986) [41] pointed that high wage cost alone cannot be considered as the reason for the industrial backwardness.

Oommen (1981) [42] examining the reasons for the mobility of small scale entrepreneurs from Kerala to neighbouring states concluded that labour militancy, high wage-cost and government policy were responsible for the flight of capital. He pointed out in his comparative study of Kerala, Karnataka and Tamil Nadu that there were fewer work stoppages and labour strikes in the later two states compared to Kerala. This was often cited as an evidence for labour militancy in Kerala. However it has been suggested that militancy has to be examined in the light of peculiar industrial structure and social educational status achieved. The perceptions of entrepreneurs regarding militant labour may be deep and persistent that entrepreneurs do not change their

attitudes. However it is worth examining whether these attitudes have changed overtime, or whether it is a psychological fear that still persists (Oommen 1981)[43].

A major limitation that inhibits the growth of industries in the state of Kerala is said to be the lack of entrepreneurship. The following observation is a reflection on the popular perception on entrepreneurship. It has been lucidly commented that "a malayalee would deposit his savings in a bank than take the risk of starting an enterprise"(Report 1984)[44]. Such observations were made in relation to indigenous entrepreneurship in other states. Studies in 1960s and 1970s mapped the transition from mercantile communities. Mahadevan also points out the lack of detailed studies on Ezhavas and Syrian Christians of Kerala, Nadars and Muslims of Tamil Nadu and Shettys in South Kanara (Mahadevan, 1987)[45].

According to Vaidynathan and Eapen (1984)[46], it is important to look at the industrial sector and its variations in terms of its organisational composition. An attempt has been made to segregate the component-wise distribution of industrial employment in Kerala and is given in Table 1.5.

From Table 1.5 two trends are discernible. From 1961-81, there was a sharp fall in household industries matched by a proportionate increase in the non-household sector. Further, it is noteworthy that between 1981-91, when non-household non-factory sector has gained prominence, there was a concomitant decline of the registered ASI component. Although the pattern is broadly similar to that of all India, the growth of the non-household non-factory sector, which we have classified as the small industries sector, is now significant in Kerala. The share of ASI in total manufacturing of Kerala was only19.41 per cent as against 27 per cent at all India level. The non-household non-factory sector constitutes 62.41 per cent in total manufacturing as against 49.3 per cent at all-India level. This aspect has not received sufficient attention in the earlier studies.

Table 1.5
Organisational Composition of Industry in Kerala

	No. of workers (In '000)			Share in Total (In %)			Share in non-Household (in %)		
	'61	'81	'91	'61	'81	'91	'61	'81	'91
AM	1018	1079	1176	100	100	100	--	--	--
HH	489	251	214	47.99	23.23	18.18	--	--	--
NHH	530	828	962	52.01	76.77	81.82	100	100	100
ASI	137	233	228	13.49	21.56	19.41	25.94	28.08	23.73
HHNF	392	596	734	38.52	55.52	62.41	74.06	71.92	76.27

AM : All Manufacturing
HH : House hold
NHH : Non House hold
ASI : Annual Survey of Industries
HHNF: House hold non-factory
Source:-1. Census Report of 1961, 1981, &1991
2. Survey Results of ASI factory Sector for 1961,'81,&'91

1.4. Need for Industrial Development of Kerala

Industrial development plays a vital role in the economic growth of Kerala as discussed below:

1.4.1. Economic development

Industrialisation has been defined by Sutcliffe "as a process which has invariably been the outcome or accompaniment of economic development". It is a set of policies, which more than any other set of policies is seen as a means towards economic development (Bam.P.A. 1962)[47]. Industrialisation, in a state like Kerala, has become inseparable part of development process. Planners and policy makers have viewed it as the most acceptable one and argued that in an under developed country with a poor agriculture and vast population there is little choice but to give priority to the development of industries.

1.4.2. Utilisation of resources

Industrial development facilitates the tapping of resources which otherwise would remain unused. These resources include entrepreneurship, capital, labour and

raw materials. They can mobilise rural savings which may otherwise remain idle or may be spent on luxuries or channelled into non-productive ventures.

1.4.3. Employment Generation

In Kerala there is the basic problem of absorbing the surplus manpower in non-agricultural jobs and providing additional employment opportunities for the growing population. Thus industrial development creates employment opportunities and especially small scale industries create employment opportunities at a relatively low capital cost.

1.4.4. Innovation

The industrial sector is more powerful in innovation, which injects dynamism and brings about lasting increase in productivity of labour. "Industrialisation not only influences the growth of national output and income, but also influences the natural life and the social, political and cultural pattern. It was hoped that industrialisation would bring social transformation, social equality, higher levels of employment, more equitable distribution of income and well balanced regional development" (Rosentein Rodan P.N. 1946)[48]. Industrial development has further been acknowledged as a means to distribute employment, income and consumption between the various regions by giving special emphasis on industrialisation of backward regions. In the opinion of Rosentein Rodan, industrialisation is the way of achieving a more equal distribution of income between different areas of the world by raising income in depressed areas at a higher rate than in rich areas (Third Five Year Plan) [49]. What Rosentein Rodan says in the context of world economy is also applicable to an individual country suffering from the problems of inter regional as well as intra regional disparities in development. Development of industries in backward regions, therefore, has been accepted as a means to reduce regional disparities.

1.5. Small Scale Industries in Kerala

1.5.1. Kerala Government Policy on Small Scale Industries

Within the overall framework of the Industrial Policy Resolutions of 1948 and 1956 the State Government had been following a policy of encouraging and

supporting SSI units in the state. As already mentioned, under the constitution, the development of village and small scale industries is primarily the responsibility of the state government. The centre's roles are only to co-ordinate and broadly define the lines of development and to provide technical and financial assistance to schemes implemented by state governments. We, therefore, propose in this section to briefly examine the strategy followed by the Government of Kerala for the development of SSI units as revealed by the various industrial policy statements and five year plan documents.

1.5.2. Industrial Policy Statements

The first Industrial Policy Statement for the Kerala State was announced in June 1960. This policy aimed at:

1. Maximizing the exploitation of local natural resources
2. Spreading industrialization to all parts of the state
3. Priority to small scale and traditional industries and
4. Ensuring the healthy industrial relations in the state.

It also announced a number of incentives and assistance programmes relating to the provision of factory accommodation, machinery, raw materials, marketing, finance and training.

The second Industrial Policy Statement, which came in 1967, announced a few more special concessions for SSI units in addition to the ones announced earlier. These related to share participation by government in deserving cases, provision of industrial land and factory sheds, tool rooms and common facilities centres and training assistance, and more liberal credit facilities.

In response to the new industrial policy statement announced by Government of India in July 1980, the state government announced a new statement of Industrial Policy in January 1983. With regard to the SSI units, the policy aimed at establishing an integrated system of large, medium and small-scale units with modern sector to make optimum use of the state's natural and manpower resources. Some more incentives such as concessional power tariff for SSI units and increased assistance for revival of sick units were also announced.

Closely following the New Industrial Policy of the Government of India, Kerala Government (1992) [50] announced a new statement of Industrial policy in October 1992, with the following objectives:

1. To substantially step up the rate of growth of industry through a high level investment
2. To provide massive employment opportunities
3. To create an industrial environment that will lead to sustained growth
4. To establish infrastructure facilities which will stimulate faster growth of the industry
5. To initiate a process of continuous interaction between government and industry to remove possible adverse factors which can inhibit industrial growth
6. To ensure industrial utilization of raw-materials available in Kerala, and
7. To ensure required development of high-tech industries.

The new policy revised the package of incentives, taking into account the incentive regimes of neighbouring states. These included enhanced investments subsidies, more liberal Sales Tax concessions and exemptions, introduction of "Green Channel Scheme" and simplification procedures. Several measures for improvement in the industrial relations and investment climate and for infrastructure development were also announced.

Thus, the various industrial policy statements of the state government had clearly recognised the need for the speedy development of the industries sector and within that, the modern SSI sector. A number of incentives and assistance programmes have also been announced and implemented through District Industries Centres. However, it is also seen that all the four policy statements, without exception, have admitted that in spite of the several favourable factors and incentives offered, there has been no satisfactory progress in the industrialization of the state, especially when compared to the neighbouring states.

1.5.3. Growth of Small Scale Sector in Kerala

There is a phenomenal growth of small scale industries in Kerala. The number of small scale industrial units increased from 15974 at the beginning of DIC programme 1979-80 to 240141 in 2000-2001. Table 1.6 furnishes details about the growth of small scale industries in Kerala during the last 21 years. During the period 1990-91 to 1999-2000, the total number of small scale units in the state increased from 73522 to 220068. Table 1.6 also shows a cumulative index of the growth of small scale industries. It shows that cumulative growth index increased from 100 in 1979-80 base years to 1503 in 2000-2001.

Capital plays the role of a limiting factor in enhancing the production and productivity in the small scale sector. It is estimated that the average investment per unit was Rs.1.02 lakhs as at the end of 1984-85 (V.R. Pillai 1986) [51]. This rose to Rs.1.12 lakhs per unit at the end of 1987-88. The average investment per unit was Rs.1.38 lakhs in 1999-2000 (Economic Review, 2001) [52].

Table 1.6

Registered Small Scale Industrial Units in Kerala

Year	Number of Units	Cumulative Number of Units	Cumulative Index of Growth 1979-80=100
1979-80	3856	15974	100
1980-81	2980	18954	119
1981-82	3023	21977	138
1982-83	2907	24884	156
1983-84	3233	28117	176
1984-85	3382	31499	197
1985-86	3866	35365	221
1986-87	4977	40342	253
1987-88	6849	47191	295
1988-89	8236	55427	347
1989-90	8541	63968	400
1990-91	9554	73522	460
1991-92	10938	84460	529
1992-93	11411	95871	600
1993-94	14533	110404	691
1994-95	15506	125910	788
1995-96	17213	143123	896
1996-97	17421	160544	1005
1997-98	19553	180097	1127
1998-99	19730	199827	1251
1999-2000	20241	220068	1378
2000-2001	20073	240141	1503

Sources: 1. Background paper on Small Scale Industries, Formulation of Five Year Plan, (1978-83), State Planning Board.

2. A Report on the Role of Small Scale Industries in the Seventh FiveYear Plan, State Planning Board.

3. Economic Reviews, State Planning Board, Thiruvananthapurm

1.6. District Industries Centres (DICs) and small scale industries in Kerala

The District Industries Centre concept has came into prominence in India through the Industrial Policy Statement of 1977 and the Central Government subsequently issued guidelines for establishing DICs in the States. In Kerala the DIC programme was implemented with effect from 1978.

The rationale behind establishing DICs is to make district a focal point of industrial development. The DICs are supposed to assist the growth of industry in the district with special emphasis on cottage, village and small scale industries. They are expected to provide a host of services in order to facilitate the growth of small-scale industries. It is a matter of gratification that DIC aims at providing all types of assistance as far as possible and practicable at pre-investment and post-investment stages at district level. The important type pre-investment assistances and incentives are registration, preparation of feasibility report, training and study tour programmes for potential entrepreneurs, training for managers of SSI, training to various activities and Entrepreneurial Development Programme (EDP). The post-investment assistances are (a) Assistance for supply of raw materials (b) Supply of machinery on hire purchase (c) Marketing assistance (d) Exhibition (e) Industrial Estate (f) Margin Money Loan (g) State Investment Subsidy and (h) Sick Units Revival Programme.

1.7. Statement of the Problem

It is clear from the existing literature that a few studies had already been conducted with respect to different aspects of DICs and their functioning. Many of these studies were naïve and devoid of reasonable theoretical foundations. However, most of them arrived at the general conclusion that the DICs were not effective to the extent to which they were expected of. We also arrived at a similar result in the following chapters based on a non-theoretical analysis. But one of the most important shortcomings of these approaches is that they lacked a solid theoretical foundation, which explains the macro economic behaviour of a district economy. Therefore, we attempt here to answer the question as to whether the DICs were effective, to the extent to which they were expected of, on the basis of a macroeconomic model of a district economy.

1.8. Objectives of the study

The main objectives of the study are:

1. To examine the origin and emergence of DICs and its organizational structure.
2. To carry out a non-theoretical study of the performance of DICs based on both primary and secondary data.
3. To provide a theoretical analysis of the performance of DICs based on a macro economic model representing the behaviour of the district economies in the state.
4. To conduct an econometric test of the above model using secondary data.

1.9. Hypothesis

The main objectives of DIC programmes are the promotion and development of small scales industries to generate greater employment opportunities by making available various pre-investment and post-investment assistances and incentives under a single roof. It also aims to promote process of industrialisation through the decentralisation and dispersal of industries all over the country to semi urban and rural areas by acting as a nodal agency for providing support services to village and small industries.

From the observation of data it seems that the DICs in the state have not served the objectives mentioned above to the extent expected from them.

1.10. Sources of Data

The term SSI has several different connotations. Hence collecting data about SSI presents considerable difficulties. One can identify at least five very clear sources of data, based on their own separate definitions. These are: (a) the data on small factories as per the Annual Survey of Industries (ASI) (b) the data on household, non-household, and factory sector supplied by the decennial population census (c) the data supplied by the planning commission on Village and Small Scale Industries (VSI) (d) the data on unregistered manufacturing as per the National Accounts Statistics (NAS) supplied by the Central Statistical Organization (CSO), Ministry of Planning and (e) the data on registered small scale industries supplied by the Small Industries Development

Organization (SIDO). This study is mainly depending on the last source, because that source of data is more suitable to analyse the performance of DICs.

This study is based on both primary and secondary data. In order to get primary data sampling technique was used. The sample survey was conducted in three selected districts, of which Malappuram, the most backward district, Ernakulam, tops and Thiruvananthapuram, an average district on the basis of last of ten years district wise per capita income at current prices. The sample districts Thiruvananthapuram, Ernakulam and Malappuram belong to Travancore region, Cochin region, and Malabar region respectively. The total numbers of SSIs in the entire three sample districts are 63062 and about 37 per cent is situated in Thiruvananthapuram district, 46 per cent in Ernakulam and 17 per cent in Malappuram. So out of total the 250 sample units, 37 per cent (92 units) are from Thiruvananthapuram, 46 per cent (115units) from Ernakulam and 17 per cent (43 units) from Malappuram were selected. Then the primary data were collected by administering questionnaires, personal interviews with the beneficiaries and through formal and informal discussions with officials and agencies concerned. It was administered personally during 2000-2001.

Secondary data were obtained from the publications of central and state level organizations relating to DICs and from the office records. Some of them are mentioned below:

1 From the publications of the Development Commissioner, Small Scale Industries, Ministry of Small Scale Industries and Agro and Rural Industries

2 Small Industries Service Institute (SISI)

3 Directorate of Industries and Commerce, Government of Kerala

4 State Planning Board, Thiruvananthapuram, Kerala

5 Bureau of Economic and Statistics, and from its publications like Statistics for Planning.

6 District Rural Development Agencies (DRDA)

7 DIC Documentation Centre, Thiruvananthapuram

8 District Industries Centres (DIC).

1.11. Tools of Analysis

In order to get inferences from collected data, various statistical techniques were applied, viz., percentages, averages, standard deviation, compound growth rate, scoring technique and application of Solow model, etc. Analysis of data is done mainly by using two methods: one is theoretical and the other is non-theoretical. After non-theoretical analysis of data, to know whether that conclusions are correct or not, a theoretical analysis was also done. For theoretical analysis Solow model is augmented, by using DIC's expenditure as an additional variable. The objective of the theoretical analysis was to examine whether the findings of the non-theoretical analysis are in accordance with the theoretical findings. Coefficient of determination (R^2) and 't' tests were applied wherever necessary in the theoretical analysis.

1.12. Limitations of the study

Like all the studies, the present study is also not free from limitations. Some of the important limitations of present study are:

1. Most of the primary data elicited from respondents are based on the recall method and are, therefore, subject to normal recall errors. Although efforts have been made to cross check and verify the accuracy of the data the possibility of some recall errors still remaining cannot be ruled out.
2. Another limitation relates to the coverage of the study is that only 250 units were selected as samples from a total population of more than two lakhs. The sample study is only based on three District Industries Centres out of fourteen Districts Industries Centres in the state.
3. The non-availability of detailed upto-date data has placed some limitations in reviewing all the promotional activities of DICs.
4. The unregistered units are excluded from the scope of the study.

1.13. Plan of the Thesis

The thesis has been organised under seven chapters.

- First Chapter deals with the development policies on SSIs and its underlying rationale. It includes small scale industries in India, Kerala's industrial scenario, the need for industrial development of Kerala. It also includes the importance and growth of SSIs and DICs in Kerala. Lastly, the statement of the problem, objectives, hypothesis and plan of the thesis are also included in this chapter.
- Second Chapter comprises of Review of literature and methodology of the study.
- Third Chapter examines the origin, growth and emergence of District Industries Centres.
- Fourth Chapter makes a non-theoretical analysis of the performance of DICs in Kerala in three parts. The First part of the Fourth Chapter (4.1) examines the organisational structure of DICs and the second part (4.2) provides a non-theoretical analysis of performance of DICs based on the secondary data. The part (4.3) of this chapter highlights a non-theoretical analysis of the performance of DIC-assisted SSI units based on primary data.
- Fifth Chapter deals with theoretical analysis of the performance of DICs in Kerala based on the augmentation of Solow model.
- Sixth Chapter is an econometric specification of data and empirical results.
- Seventh Chapter deals with summary, findings and recommendations of the study.

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CHAPTER II

REVIEW OF LITERATURE AND METHODOLOGY

2.1. Review of Literature

Survey of literature is based on various articles published in the leading journals, unpublished and published dissertations and theses submitted to some of the Indian universities, papers presented at seminars, newspaper reports, and published books. A.W. Shepherd (1979) [1] in an occasional paper of Development Administration Group briefly outlined the objectives of the DIC programme in India. According to him the obvious reasons for setting in motion the DIC programme in late 1970s are as follows:

1. The growing concern in government circles in India with India's rapidly expanding metropolitan cities and with stemming rural-urban migration.

2. The emergence of the rural rich as an increasingly powerful interest group at the centre of Indian politics led by Charan Singh. Farmers and rural traders are, it could be argued, unable to cope with organizational multiplicity and complexity and so need a coordinated and decentralized approach on the part of the Government if their business are to be helped to prosper, which explains the spatial shift in Industrial policy, i.e. concentration of attention on all market towns through DIC programme.

3. It is an attempt on the part of the central government to gain control over the troublesome politics of tribal India and to re establish central government control over the development of SSI.

4. The growth of violent trade unionism and protest in modern small-scale industry in industrialised regions such as Bombay, Bangalore etc. is also responsible for spatial shifts through the establishment of DICs.

Abid Hussain Expert Committee on Small Enterprise had made significant recommendations towards making the sector more viable, but without adequately outlining the administrative and financial support, which would be required to

implement them. There can be no disagreement with the basic thesis of the report that the time has come for the policy of "protection," so far followed in India, towards the small scale sector needs to be replaced by one of "promotion". Any policy followed without change for a number of years begins to acquire many undesirable characteristics. Many young entrepreneurs today, are not specifically interested in the incentives provided by government and wish to have as little interference as possible from government agencies. In any case, to talk of protection at a time when the country is adopting a policy of "open economy" becomes both unrealistic and unwise. As the Chairman in his introductory note has rightly pointed out; 'the basic accent of the policy towards the small industry in India has been defensive aiming to insulate it from the dynamics of competitive growth. In the world of today, such insulation is not practical." The new policy to be formulated, should aim to make the sector able to stand on its own legs and compete as equal terms with other industrial sectors and the role of the state is merely to ensure a "level playing field" for this purpose. This change of perspective in the policy frame is essential if the sector is to survive and grow as a dynamic component of the economy. One would have liked the report to consider some special conditions under which some measures of protection may be not only necessary, but equitable. Thus, a small unit operating in one of the metros with developed infrastructure and ready access to market is a completely different proposition from one in the remote country side. Similarly, small units in the developed regions of the Punjab, Haryana, Maharashtra or Tamil Nadu have obvious advantage over these operating in North-East, with geo-graphic isolation and limited market. The country, thus, can reap rich dividends if discriminating support were given to such pockets. The Committee thus recommended, "the cluster concept: it has great deal of merit; it provides an added strength by the close proximity of other units, by large and small, supplemented by the ready availability of ancillary services" (Ram K Vepa, 1997) [2].

Abid Hussain Committee Report (1997) [3] about DICs says that the DICs were set up in 1978 to act as nodal agency for the industrial growth in a district by bringing a number of agencies under a common umbrella with a team of officials. The concept was laudable and much was expected of the new agency to bring a new spirit into the semi-urban and rural areas of the country. Having associated with it as the first national coordinator, it was disappointing to find that the DICs became a refuge for all

the personnel working in the state Industry Departments. Some of them even benefited through quick promotions since open market recruitment of fresh personnel were resented. Thus an experiment, which could have yielded many benefits, became merely a device for helping government personnel: the entrepreneurs saw the same faces and the same attitudes in the new agencies and quickly became disillusioned with them. Slowly, the old regulatory instincts of the DIC personnel took precedence and the early promotional zeal was quickly stifled. Another problem, which the DICs encountered, was the reluctance of the departments to delegate the powers of inspection provided in the various statutes to the General Manager of DIC. In the DIC, even the limited innovation of building a new bridge with the banking system did not work as well his endorsement carried little weight even with erstwhile colleagues, leading to frustration all round. The report merely notes that the DIC had not functioned well without going into the reason for it; instead, it recommends the setting up of a new agency District Enterprise Promotion Agency (DEPA) which included representatives of departments like sales tax, excise, labour and environment in the hope that these departments will look more favourably to the small enterprises: but past experience makes this highly doubtful. A more drastic exercise may be necessary to amend many of the existing enactments, particularly those dealing with labour and environment, as one has remarked "one cannot impose a first class legislation on a third class economy".

Sathysundaram's (1987) [4] study on DICs, concentrates on the interface of DIC with other agencies. The DICs have set up to coordinate the industrial expansion and to serve as 'single window service' institutions. However, in actual practice, most DICs have failed to discharge this function effectively. The performance of DICs in respect of conducting techno economic surveys identifying market potential for various products, assisting respective entrepreneurs, imparting training to them and initiating quality control measures is not up to the mark. The Lead bank, District Rural Development Agency (DRDA) and the DIC have to function with perfect understanding. However, the linkage among them is very weak.

Ajith Kumar Gaur (1987) [5] studies about the staffing pattern of DICs and explains that the staffing pattern of the DICs remained to be streamlined. The unscheduled transfer of the DIC personnel, including the General Manager, usually

casts an adverse effect on the general functioning of the development programme. Generally, the DIC personnel should be transferred only after completing a five-year term.

Sudakhar Rao (1984) [6] emphasizes on the technical information available from DICs and writes that the technical information available with DICs is almost negligible. It would be desirable if the DICs possess reliable information relating to projects, technology, machinery suppliers etc., in respect of industries relevant to the district concerned. The DICs should have a shelf of projects with all relevant information, which can be implemented without any difficulty. While the DICs were required to make provisions in their action plans for the establishment of rural marketing centres, most DICs do not make any such provision, as pointed out by the Public Accounts Committee in its 219th Report submitted in August 1984.

An intensive review of the DIC programme was done by a high level team. Following this review, the Government decided in August 1981 to restructure the DIC programme with one General Manager, four functional Managers and upto three project Managers in disciplines, considered relevant to the needs of the particular districts. But, this restructuring has been very slow probably because there was a fear that this centrally sponsored programme would be wound up after the 6th plan. Again while many of the DICs did prepare action plans, they were not based on any detailed survey or study (EPW 1986) [7].

Mr. Eshwarlal Jain (1979) [8] while submitting the fourth report of the Estimates Committee of the Maharashtra Legislature welcomed the scheme of setting up DICs for the development of small, tiny, village and cottage industries in rural areas. But the report submitted states that the DICs have proved totally ineffective and inefficient in the matter of establishing the required coordination amongst various organizations of government connected with industrial development.

Ram K.Vepa (1979) [9] expressed the view that the basic approach of DICs is not to disrupt the existing occupational patterns at the rural level, but to help those who are already engaged in traditional occupations, improve upon them to provide a livelihood for themselves and be of greater service to the community. According to him

the ultimate success of the programme depends upon the human factor on two counts, 1) on the personnel will of the man at the corridors of power and 2) entrepreneurs that it will be able to attract and stimulate.

Upadhayay N (1980) [10] reviewed the progress achieved by the DICs in Rajasthan and came to the conclusion that with greater coordination among the various functionaries the DICs shall be able to play a still more effective role towards building a sound industrial net work based on local resources, skill and entrepreneurship. DICs hold a promise for ushering in a new economic order and balancing regional imbalances.

Reddy T.S and Reddy P.N (1980) [11] examined the day-to-day functioning of the DICs and pointed out the constraints that persist. The study is confined to Anantapur district in Andhra Pradesh. After studying the achievements of DIC Anantapur, for the year 1979 they concluded that proper selection of personnel for DIC work and also imparting necessary training to them is essential to improve the DIC functioning. They also laid emphasis on the need for timely financial assistance, uninterrupted supply of raw materials, result-oriented entrepreneurs, meaningful coordination among officials and agencies engaged in promotion of SSI and entrepreneurship.

The overdoing of industrialisation idea by the administrators has also been pointed out by Sandesara (1982) [12]. His study on Efficacy of Incentives for Small Industries made an evaluation of the impact of long-term financial assistance to small industrial units. The study revealed that while assisted units showed more efficient use of labour and better rewards to them, the non-assisted unit's showed better use of capital. On the question of better performance, as measured by certain growth indicators, the assisted units did not show any better performance over non-assisted units in a majority of cases.

A more recent study by Sandesara (1988) [13] made a more elaborate study of assistance programmes for small scale industries. The study revealed that the units producing items in the reserved list did not show any superior performance over other

units, mainly because the easy entry for new small-scale units had intensified the competition among the small units.

Shaney M (1980) [14] while analyzing the implications of the government policy to establish DICs identified two basic shortcomings, viz., that it places the burden of a developmental role on bureaucracy in executing regulatory controls and that it is highly biased in favour of urban areas to serve as an instrument of industrial growth in the rural pocket. However he suggests that the DICs should be autonomous bodies devoid of any bureaucratic controls and they should be manned with people dedicated to the cause of the segment to be served and acceptable to them.

Harinaryana Rao (1986) [15] examined the role of DICs in the promotion of entrepreneurship and rural industrialization in Anantapur district. He came to the conclusion that effective coordination and cooperation was lacking among the developmental agencies and organizations connected with the implementation of the Gramodaya scheme.

Satyanarayana (1989) [16] made an attempt to evaluate the impact of DICs in the industrialization of Anantapur district. The study is based on the census data for large and medium scale industries and sample data for small, cottage and village industries, which were collected from 60 units from three blocks out of 16 blocks in the district. He used simple statistical tools like averages, percentages, compound growth rates, standard deviation and coefficient of variation. In this study it is concluded that the impact of DIC was not significant in respect of promotion and development of SSI units, village and cottage industries in Anantapur district. It also concluded that the role of DIC depends upon the personality of the General Manager and his staff.

When compared to the large-scale sector, the small scale industrial sector of Kerala is acquiring prominence both in number and in employment generation, especially during the eighties. The sector is capable of providing more than fifty per cent of the industrial employment in the state. Based on the capital and technological constraints of the state, the need and scope for the development of the small-scale sector is of much relevance in the context of Kerala's industrial development (Thampy1990) [17].

The State Planning Board (1989) [18] in its approach to the Eighth-five year plan has rightly emphasized that "private investment, which in the state even now amount to less than forty per cent of the total investment in modern industry in the organized sector. has enormous potential to expand and it must be given all needed assistance to play its due role in invigorating the industrial economy of the state".

The efforts of the government should primarily be directed towards ensuring inter-industry linkages, agglomeration economies, technological modernization. marketability etc that will raise the regions cost-effectiveness in manufacturing skill intensive and high value added products and those that have linkage with the regional economy (Thampy1990) [19].

On incentives and assistance programmes for the small-scale sector in Kerala, there have not been many studies. Oommen's study (1972) [20] and also the earlier study by Dhar and Lydall found that the Industrial Estate Programme had not been a success in the state, which Oommen found that the Rural Industries Project in Kerala was a not success, he found that the government as an agency for financial assistance was not successful. The Planning Commission's (1968) [21] study had also found that the RIP scheme was not a success in Kerala.

According to Oommen (1972) [22] the various development programmes for the promotion of small scale industries have largely failed to meet their avowed objectives. The poor performance, however, seemed not due to any basic weakness in the conception of these programme but due to the defects in their design and implementations.

The Task Force on SSI (1989) [23] found that available subsidies and concessions are not distributed to eligible units at the right time. Such assistances announced by the government are badly delayed for several reasons such as delay in issuing, detailed orders, inadequacy of budget provisions etc.

In a seminar on prevention and cure of sickness among the SSI units, held in 1990 at Hyderabad, it was hinted that experience from Kerala showed that an over dose of incentives was one of the main reasons for turning healthy units into sick units (SPB,1990) [24].

It is thus clear from the review of the existing literatures that a detailed study about the performance of DICs in the development of SSI units in Kerala is the need of the hour.

2.2. Methodology

One of the most important objectives of the present study is to assess whether the DICs have been effective in their functioning to the extent to which they were expected of. The study is conducted in two stages: the first stage is a non-theoretical analysis based on both secondary and primary data. The second stage is a theoretical analysis purely based on the secondary data.

The organizational structure of DICs, strengths and weaknesses are studied based on the staffing pattern of DICs, the duties and responsibilities attached to functional managers, project managers and extension officers. Shortcomings are identified in the light of formal and informal discussions carried out with the officials of DICs and also with the beneficiaries.

The growth of small scale industry before and after the establishment of DICs is studied by classifying the data into two periods, i.e. before 1979 (Pre-DIC Period) and after 1979 (DIC Period). The growth of SSIs during the period 1979-2001 is considered as an indicator of DIC performance. For this purpose compound growth rates were calculated for three indicators, i.e., units, employment and investment. Structural changes in the composition of SSI after the establishment of DICs were also analysed. Comparative performance of DICs at all India level vis-à-vis Kerala is studied based on the following nine selected indicators:

1. Entrepreneurs identified
2. Registrations given
3. SSI units established
4. Additional employment generated
5. Technical Assistance provided
6. Project profiles prepared
7. Credit assistance

8. Cash subsidy disbursed and
9. Artisan units established.

Standard deviation and coefficient of variation were calculated to know the relative performance. To assess the performance of DICs in the districts of Kerala state and to identify the DICs that fared better a Performance Index has been prepared based on the nine indicators mentioned above. These are the key indicators wherein the DICs were assigned a special role and responsibility. Time series data from 1980-81 to 2000-2001 have been collected from 14 districts. As the achievements in terms of different indicators differ among DICs, in order to measure the overall performance scores were allotted ranging from 1 to 14. The DIC with the highest average in a particular indicator was given the maximum score of 14 and then in descending order for each indicator. The total scores obtained by each DIC for all the nine indicators were aggregated to find out the overall performance of the DICs. This method helps in identifying the DICs, which performed well. For the purpose of an in depth study of the working of DICs three districts were selected. The districts are drawn from the three broad geographical regions of the state i.e. Travancore, Cochin and Malabar region. The sample districts include Thiruvananthapuram from Travancore region, Ernakulam from Cochin region and Malappuram from Malabar region. Out of the total 250 sample units, of which 92 are from Thiruvananthapuram, 115 from Ernakulam and 43 from Malappuram.

Linkage effects generated by industrial units were estimated on the basis of the methodology adopted by the IDBI Report on "IDBI assisted Industrial Estates in Karnataka and Andhra Pradesh"(1980) [25], i.e. when inputs are purchased within the districts, income and employment are generated indirectly to the local people. Hence it is deemed to have a strong backward linkage effect. When output is sold in the local area, it is expected to have a strong forward linkage effect as some units which otherwise would have purchased those products outside the local area have access to them within the local area itself. Purchase of inputs and sale of output outside the district are considered as leakages. Factors influencing the location of the unit, selection of line of activity and satisfaction about the DIC assistance are analysed by giving weightages to the beneficiary responses. The weightages given to the responses are shown in Table 2.1.

Table 2.1

Motivational factors influencing selection of location of the unit

Degree of influence	Weightages
Very High	6
High	5
Fair	4
Moderate	3
Low	2
Very Low	1
No influence	0

Source: Computed

Degree of satisfaction in relation to DIC assistance is measured by assigning the in weightages which is presented in Table 2.2.

Table 2.2

Weightages assigned

Degree of satisfaction	Weight
High	3
Moderate	2
Low	1
No influence	0

Source: Computed

Based on the responses for each category, collective scores under each sub-head is worked out and total collective scores for the respondents in each district are arrived at. These are used for calculating the average scores for each district. The collective scores and number of respondents for all the three districts are tabulated separately feature-wise and the combined scores for respondents of all the three districts put together feature-wise have also been worked out. This is used for arriving at the average of combined scores, which measures the degree of influence/satisfaction in respect of each feature.

The average score for each district and for all the districts put together facilitated the ranking of the degree of influence/satisfaction as high, moderate and low as per the gradation shown below in tables. The degree of influence is ranked in Table 2.3 and in Table 2.4.

Table 2.3

Degree of influence in Selection of Location

Rank	Range of average score
High	4 to 6
Moderate	2 to 3.99
Low	Below 2

Source: Computed

Table 2.4

Degree of satisfaction about DIC Assistance

Rank	Range of Average Score
High	2 to 3
Moderate	1 to 1.99
Low	Below 1

Source: Calculated,(The results are presented in Chapter IV).

The second and the most important method used in the present study, which in fact distinguishes it from earlier studies, is the construction of a purely theoretical model. This model is expected to represent the macroeconomic behaviour of a representative district economy. This model is in fact an augmentation of R.M. Solow's (1956) model of economic growth. The augmentation is based on the incorporation of an additional independent variable to the original production function used by Solow. This additional independent variable is DIC's expenditure. Therefore, in addition to capital and labour we will have the expenditures by DICs as well in the production function. However, the dependent variable will be District Gross Domestic Industrial Product (DGDIP). The formulation, analyses and derivations of final results will completely be discussed in Chapter V. It should be noted that the theoretical model uses the variable DGDIP while the non –theoretical analyses centre around all the

remaining variables discussed above. The reason for this is that it is extremely difficult to construct theoretical models for all variables mentioned above, in the non-theoretical analyses, become dependent variables. At the same time, there exist readily available models in standard macroeconomic theory, which can be reformulated to include DGDIP as the dependent variable (e.g. as GDP in Solow's production function).

Once the theoretical model is formulated and final results are derived in Chapter V, we propose to derive its econometric form for the purpose of testing its predictions empirically. This is carried out in Chapter VI. Data for these tests are collected from secondary sources. Complete details about the nature of data and their sources are provided in Chapter VI.

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CHAPTER III

THE EMERGENCE OF DISTRICT INDUSTRIES CENTRES (DICs)

3.1. Background

In the bid to solve unemployment problem within a short span of ten years, Janatha Party placed much more stress on the development of small and cottage industries. In its election manifesto (1977) this party clearly stated that, the objective of a just and egalitarian society can "become a realisable ideal only if one move towards the establishment of an economy in which agriculture and cottage and small industries have primary role, and are not sacrificed to big machines and the big city...the only way to steer clear of the evils of capitalism and state capitalism and to ensure full employment and the decentralization of economic power is to follow the Gandhian percept that whatever can be produced efficiently by the decentralized industry should be so produced. This spirit must guide us in framing the nation's economic policy" (Janatha Party 1977) [1].

In the last thirty years, the village economy was divorced from industrial activities. This led to unbalanced and undeveloped rural economy solely dependent on agriculture. This has to be reversed by appropriate and intermediate technology. The investment needed for providing employment to one person ranges between less than Rs.1,000/- and Rs.6,000/- in village and small industries, the corresponding range of investment in the large scale industries is between Rs.40000 and Rs.100000. If seventy to eighty millions are to be provided with employment in the next decade, large industries do not offer a solution because of the enormous investment required for this purpose (Gupta and Singh 1990) [2].

In the light of the important role of the small scale sector in the Indian economy, the government in its Industrial Policy of 1977 has accorded a prestigious place to the development of small scale and cottage industries. The main thrust of this industrial policy was on the effective promotion of cottage and small industries widely dispersed in rural areas and small towns. In the past, there was a tendency to proliferate schemes,

agencies and organizations, which have tended more to confuse the average small and rural entrepreneur than to encourage and help him. Under the Industrial Policy of the government there will be one agency in each district to deal with all the requirements of small and village industries. This will be called the District Industries Centre (DIC). In pursuance of the Industrial Policy Resolution, 1977, a programme for setting up DICs as an effective nodal agency for the promotion of cottage and small industries widely dispersed in rural areas and small towns. The DIC programme was started on 1st May 1978, as a centrally sponsored scheme. Under the programme each district was to have an agency to deal with all the requirements of small and village industries.

3.2. Origin of DIC

One of the basic programmes of assistance required by small entrepreneurs in the developing countries is a programme providing industrial extension service to transmit knowledge and skill to persons engaged in industrial activities. Such assistance is required in four main areas viz. economic, technical, management development and product improvement (UNIDO 1969)[3].

Economic assistance starts with the counselling required for pre-investment appraisals, for example, assessing the prospects of a particular industry, selecting a location and estimating capital requirements and potential markets. After an enterprise is started, small entrepreneurs will continue to require assistance regarding credit, raw materials, labour, factory space, marketing, etc. Existing firms also needed such counselling to diversify their products and to improve their efficiency.

Technical assistance covers, principally guidance in choice of raw materials, machinery and tools, and their productive utilization. It includes advice on installation of machinery, on plant layout and on techniques of production, maintenance, repairs and testing.

Management development covers all aspects of business, such as obtaining finance, production planning and control, marketing of products etc. It includes advice on sources of credit, tools, costing, bookkeeping, advertising, publicity, sub-contracting etc. Product Improvement covers improvement of design and standardisations.

In this context it is suggested that the SSI units will be in need of industrial extension services, which should be provided by the government. In view of the multifarious functions expected of an institution for the development of SSI and the speed and promptness with which services are expected to be rendered it is advisable to give such institutions maximum freedom and flexibility in their operations. In India, the district as a focal point of industrial development gained currency from the middle of 1970s.

Prior to the establishment of DICs, there was no agency exclusively to look after the development of industry except the district industries office with some supporting staff. However, in 1962 government introduced the Rural Industries Programme (RIP) and Rural Artisan Programme (RAP) in order to bring about industrial development in rural and backward areas in a phased manner. These programmes could not achieve the desired effect and produced only partial results. The main reasons were that various agencies operating at the district level were not in a position to provide enough assistance to existing as well as potential entrepreneurs in establishing industrial units. This is due to the absence of necessary expertise with the district industrial promotion officers and lack of enough authority. As a consequence, small entrepreneurs were subjected to a lot of hardship and delay in conceiving and executing their industrial projects. They were forced to run from pillar to post to get various clearances / licences to establish a unit, which involved a lot of expenditure and time. This led to the realisation of the need for establishing an agency exclusively for assisting and promoting industries at the district level. The Small Industrial Extension Training Institute (SIET), Hyderabad, advised the Government of India during the 6^{th} Plan period, to establish a strong developmental agency for industrial promotion at the district level, so that all problems of entrepreneurs could be tackled and solved under a single roof. Following the SIET report, the Government of India in the Industrial Policy Statement of 23 rd December 1977 announced the establishment of District Industries Centres.

Announcing the Industrial Policy Statement of 1977 Mr George Fernandes the then Union Minister of Industries made the following statement in the Parliament: "That in each district there will be one agency to deal with all the requirements of small and village industries. This will be called DISTRICT INDUSTRIES CENTRES (DIC).

Under the single roof of DIC, all the services and support required by small and village entrepreneurs will be provided. These will include economic investigation of the district's raw materials and other resources, supply of machinery and equipment, provision of raw materials, arrangement for credit facilities, and an effective step for marketing and a cell for quality control, research and extension" (Industrial Policy1977)[4].

The DIC, therefore, is expected to provide all the services and facilities to entrepreneurs under a single roof for setting up small and village industries. Looking at the objectives of DICs there are three important functions, which the DICs could discharge effectively.

DICs should act as a data bank, an information bank and a dissemination centre, for giving prompt up-to-date and reliable information to anybody trying to set up a small scale unit and the information should cover not only with regard to licensing procedures, but also about what is in the realm of feasibility and what is not.

Another area is regulatory work of registration, deregistration, monitoring and utilization of credit, raw materials, processing of cases regarding supply of machinery of hire purchase, marketing assistance etc.

The third aspect in which the DICs can play an effective role is with regard to inter linkages with different institutions such as electricity department, department of water supply, municipality / panchayat, town planning, commercial planning, etc. The DICs should function in close coordination with all agencies related to industrial development at the district level. To ensure this there should be a single line of command operating from the DIC for the entire field staff connected with industrial promotion activities and diffusion of direction and responsibility should be provided to enable DICs to adopt a result-oriented approach.

The DIC programme made rapid progress soon after its introduction by the Central Government. The state governments were quick in responding to the centre's initiative and established DICs in a number of districts quite fast. This can be noted from table 3.1.

Table 3.1

Number of DICs Sanctioned

Year	No. of DICs Sanctioned	Year	No. of DICs Sanctioned
1978-79	346	1987-88	422
1979-80	372	1988-89	422
1980-81	382	1989-90	422
1981-82	385	1990-91	422
1982-83	393	1991-92	----
1983-84	397	1992-93	----
1984-85	397	1993-94	----
1985-86	397	1994-95	----
1986-87	419	1995-96	----
		1996-97	442

Source; Vasant Desai (1995), Management of Small-scale Industries, Himalaya Publications, Pp.101

So far 442 DICs are established covering 442 districts. The four metropolitan cities of Delhi, Mumbai, Kolkata and Chennai are outside the purview of the DIC programme. In a number of districts created in recent years, proposals for formation of DICs are pending with Development Commissioner, Small Scale industries, (DC,SSI). In various states the urban part of the capital city or the major industrial city is separated from rural parts. The DICs funded by the centre covers the rural parts, whereas for the urban part separate DICs were established by the State Directorate of Industries with its own finances. DC (SSI) does not fund those DICs covering the urban part of the major industrial city of the state. Hyderabad district of Andhra Pradesh is of this category where DIC is promoted by the state government. The tremendous progress in the establishment of DICs can be attributed to the funding policy of the Central Government.

3.3. Conceptualisation of DIC

A District Industries Centre is an institution at the district level which provides all the services and facilities to entrepreneurs at one place, so that they may set up small and village industries. It provides a focal point for the promotion of small, tiny, village and cottage industries and to offer all the services and support to

decentralized industries under a single roof at the pre-investment and post-investment stages. The "District Industries Centres"(DICs) at the district headquarters make available all the facilities to entrepreneurs under one roof at pre-investment and post-investment stages (Srivastava, 1981) [5]. It provides the services and facilities like the identification of a suitable scheme, the preparation of a feasibility report, arrangements for the supply of machinery and equipment, provision of raw-materials, credit facilities and input for marketing and extension services, quality control, research and entrepreneurial training.

The District Industries Centre should also ensure that small industries continue to be viable. For this purpose, it provides all the facilities to the entrepreneur under one roof at the district and sub-district levels. Suitable powers have now been delegated by several departments of the state government to the District Industries Centre, so that an entrepreneur may get from one agency all the needed assistance. Efforts have been made to cover each district in the country with an industries centre. By the end of 1978-79, the number of approved DICs had gone upto 346. At the end of March 1998 the total number of DICs stands 442 (Desai Vasant, 1983) [6].

3.4. Rationale of DIC

There are several schemes for assisting rural entrepreneurs, and several government corporations, banks etc are involved in implementing schemes such as Seed Money Assistance, Scheme to Assist Educated Unemployed, Margin Money Assistance Scheme, Financial Assistance to Backward Class Entrepreneurs, Central Subsidy Scheme and Special Capital Incentive Scheme. The rural based entrepreneurs are often unaware of such schemes, and even if they are aware of them, the requirement of approaching different authorities and complicated procedures and endemic delay at each point have been causing considerable frustration. The rationale of DIC programme is that, by channelling assistance under all these schemes through the DICs, an entrepreneur is enabled to get full benefit of various schemes with a minimum effort and without inordinate delay.

Today almost every country is aware of the possible causes and the horrible consequences of regional disparities. India, with its politico-economic federal structure, is not free from regional disparities. Thus the Government of India in its Fourth and Fifth Five Year Plans have accepted the goal of regional development more clearly, and have taken steps for setting up agencies and formulating policies having greater spatial orientation (Seshadri.1991) [7]. The programme of District Industries Centre was launched, on 1st May 1978 to lessen the regional imbalance in the industrial development through dispersal of industries from urban areas to semi-urban and rural areas.

Rural Industrialisation through the development of small scale industries has been the goal of development in India since a long time. Various Industrial Policies in the past emphasised development of small industries. However, institutional setup to promote rural industrialisation was highly uncoordinated and therefore it cannot promote the task effectively. Thus there was a need to develop an integrated approach to promote rural industries through a single agency, which could provide all types of assistance from pilot survey to marketing of products for the entrepreneurs. Thus the DIC programme were initiated with a avowed objective of providing an integrated administrative framework at the district level to promote effective development of small industries widely dispersed in rural and semi-urban areas (DC, SSI.1980) [8].

In view of the large employment potential in rural areas, the new industrial policy has assigned an important role to the development of village and cottage industries in those areas. To achieve these objectives the focal point of development has been shifted from cities to small towns. To implement this policy, the Government launched the DIC programme on 1st May 1978 to provide a focal point for the promotion of small, tiny, village and cottage industries and to offer all the services and support to the decentralised industries sector under a single roof at the pre-investment and post-investment stages. The main thrust of the DIC programme is on the development of such industrial units as to create larger employment opportunities in rural and semi-urban areas.

As a part of ensuring people's participation in the planning process, the Ashok Metha Committee recommended a two-tier Panchayath Raj structure -- Zila

Parishad at district level and Mandal Panchayath at Mandal (being a village cluster of 15000-20000 population) level -- which would provide opportunities for the elected peoples' representatives to identify the needs and aspirations of the local people. As a complement to this, the process of decentralised administration began with the subject experts posted at district level, setting up of DICs having expertise leading to industrial matters and setting up of district planning units (Aziz Abdul 1989)[9].

3.5. Functions of DIC

3.5.1. To survey existing, traditional and new industries, and raw materials and human resources; to identify schemes and make market forecasts for different items; to prepare sample techno-economic feasibility reports and other investment advice to entrepreneurs.

3.5.2. To assess the machinery and equipment requirements of small scale, tiny and village industries; to indicate the locations where machinery and equipment for different plants may be available for entrepreneurs to liaison with research institutions and arrange for the supply of machinery on hire purchase basis;

3.5.3. To arrange for training of entrepreneurs of small and tiny units and liaison with Small Industries Service Institute, Small Industrial Extension Training Institute and other institutions, to keep abreast of the latest research and development in selected product lines and quality control methods.

3.5.4. To ascertain the raw material requirements of various units, their sources and prices and to arrange for their bulk purchases and distribution to entrepreneurs.

3.5.5. To liaison with lead banks and other financial institutions, appraise applications, monitor the flow of industrial credit in the district, and arrange for financial assistance to entrepreneurs:

3.5.6. To organise marketing outlets, to liaison with government procurement agencies, convey market intelligence to entrepreneurs, organise market surveys and market development programmes.

3.5.7. To give particular attention to the development of Khadi and Village and other cottage industries, liaison with State Khadi and Village Industries Board and organize training programmes for rural artisans.

3.5.8. To provide immediate aid required by entrepreneurs in respect of power supply, licences required under municipal and health departments and Factories Act for the establishment of industries.

3.5.9. To assist entrepreneurs in allotment of work sheds or sites required for establishment of industries in industrial estates.

3.5.10. To help in arranging cent per cent loans to educated unemployed belonging to scheduled castes, scheduled tribes and socially or economically backward communities for starting industries under special employment schemes;

3.5.11. To help in extending suitable technical training to rural youth to pursue self-employment schemes;

3.5.12. To assist in arranging grant of central and state government concessions and interest free sales tax loans, to provide capital for purchase of plant and machinery, construction of buildings and allotment of sites to new industrialists;

3.5.13. To assist entrepreneurs of small scale units in establishing industries collectively by formation of industrial cooperatives;

3.5.14. To arrange for the issue of guarantee deeds to new industries in respect of supply of electricity by giving rebate.

3.6. Objectives of DIC

It was realised that unless the process of industrialisation is well dispersed over the country and taken to the semi urban and rural areas, no real impetus to the economic development could be possible. The main objective of DIC programme for the development of the small industries have been to create large scale employment opportunities, to promote decentralisation and to disperse industries, to develop agro-

based and ancillary industries, to improve the skills of artisans and quality of their products, to reduce the role of subsidies and to step up the production of economic goods and other essential articles having a large potential for exports. The small and rural industries have therefore been treated as among the nation's priority sectors. The District Industries Centre constitutes an institutional device to provide the industrial infrastructure at the door step of the entrepreneurs and to tackle the problems of small scale sector with an integrated approach.

3.7. Role of DICs

An underlying consideration for the present approach to decentralised industrial growth is that, small and tiny industries have the maximum employment potential and in a capital-scarce and labour-surplus economy, any meaningful approach to industrialisation should take into account the creation of new employment opportunities with a minimum capital outlay. The rural bias in the policy reflects government's anxiety to reverse the present trend of large scale migration of labour to urban centres as also to provide scope for utilisation of resources and skills available in rural areas for setting up employment-oriented ventures, partly or meeting local needs.

The DICs are being conceived as a single agency for making available all the necessary facilities under one roof so that an entrepreneur can avoid the complicated time- consuming process of getting various permissions and facilities form a large number of departments and financial institutions.

Another role assigned to DICs is that of providing entrepreneurial advisory services. Entrepreneurs intending to set up units in rural centres naturally should have information about the prospects and marketability and availability of raw material inputs etc. Guidance may be required in conducting feasibility studies and preparation of project reports. The rural centres are not served by technical/commercial consultants, and naturally the DICs are expected to provide these services to the prospective entrepreneurs who need such services.

The manager of the economic investigation department of a DIC is responsible for the survey of the position in respect of raw materials and human skills,

for the identification of potential industries, for data collection on existing industries and for the preparation of sample techno-economic feasibility studies.

The manager of the machinery and equipment section assesses the requirement of the machinery and equipment needed by various small scale industries, including simple machines for village industries, he ascertains their sources of supply in the country, maintains list of prices and of suppliers, places orders on behalf of small entrepreneurs, and liaison with various research institutions for the provision of R&D technology.

The manager of the research, extension and training section ascertains the problems faced by small scale entrepreneurs in their production processes and methods and in the procurement of quality raw-materials, and keeps abreast of R&D in select product lines and quality control methods. He is also responsible for arranging training courses in production management.

The manager of the raw materials department ascertains the raw materials requirements of various units, their sources of supply and prices at which they are available, and arranges for their co-operative or bulk purchases.

The manager in charge of the credit section explains various credit schemes to entrepreneurs and helps them in filling up applications forms to financial institutions and acts as a liaison of application received from small units. He also monitors the flow of industrial credit in the district.

The manager for marketing organises market surveys and market development programmes, conveys market intelligence to entrepreneurs, organises marketing outlets, and liaison with the Government procurement agencies.

The manager for cottage industry pays special attention to khadi and village industries, maintain liaison with the State Khadi Board, and similar organisations engaged in promoting these industries, and organises training programmes for rural artisans.

3.8. Works Programme of DIC

The DICs are expected to prepare development programmes, in accordance with the direction given by the Development Commissioner, Small Scale Industries. The development programmes incorporated in the action plans, spell out the resources available, skills, demand estimates, input, requirements of credit, raw-materials and industrial accommodation. The action plans indicate the types of industries which can be encouraged to be undertaken by the entrepreneurs in an area, target of new units to be set up, generation of employment, production and investment in the new units. The details of other programmes such as entrepreneurial development and training, assistance to sick units, supply of raw-material finances, technical and technological inputs and marketing assistance are also incorporated in the Action Plan.

3.9. DIC as a Co-ordinating Agency

The DICs which have been envisaged essentially as coordinating agencies seek guidance from the existing agencies and utilise the expertise so gained for service of small scale units (Desai Vasant, 1983) [10]. The DICs are expected to develop close linkage with the various organisations at central and state levels. In some states the lead banks have already deputed their officers to act as Managers for credits in DICs, while arrangements have also been made in several states to draw officers from State Financial Corporations who act as managers. But in Kerala, DIC officers are not on deputation from other agencies, but were appointed and promoted from the industrial department itself. In order to have a close coordination with the Small Industries Development Organization (SIDO) a branch of Small Industries Service Institute (SISI) is situated at Thrissur, so that DICs can be easily accessible to the functions and programmes of SIDO.

From the above discussion it is observed that the DICs maintain a very close link with the State as well as Central Level Organisations. These Organisations should work hand in glove with DICs and provide all the necessary assistance to General Manager of DICs, so that all inputs of these organisations are also made available to the entrepreneurs under the DIC scheme.

3.10. Financial Assistance to DIC

The DIC programme continues to be centrally sponsored scheme during Ninth Plan Period. At the time of initiation of the DIC programme in 1978 the pattern of central assistance envisaged was to provide a non-recurring grant of Rs.5 lakhs per DIC for the construction of office buildings, purchase of furniture and other office equipments including vehicles. The recurring grant for establishment of expenditure was given to the extent of 75 per cent of the actual expenditure incurred which was limited upto Rs.3.5 lakhs per DIC per annum (DC, SSI, 1984-85) [11]. This pattern of central assistance was, however, changed during 1979-80. According to the pattern of central assistance approved by National Development Council, which was effective from 1979-80, the central and state government share expenditure on 50:50 basis on each financial component of the programme, namely (1) one time non-recurring grant for capital expenditure and (2) recurring establishment grant for incentives and promotional schemes and loans. The central assistance has been limited to Rs.3 lakhs per DIC regarding both recurring and non-recurring grants, however, this limit was enhanced to Rs.4 lakhs per DIC from 1985-86 onwards. In the case of Union Territories 100 per cent assistance is provided by the central government, subject to the approved expenditure pattern and availability of funds (SIDO1988-89) [12].

From the above discussion it is clear that DIC scheme will continue as centrally sponsored during the Ninth Plan and it poses an important question about the Central Government Policy regarding the scheme in the subsequent Five Year Plans. It would be pertinent to mention that unless the central government is satisfied with the working of DICs, the scheme needs to be monitored and assisted at the Central level. In this way, central and state governments can mutually share and utilise their experiences in the implementation of DIC schemes.

3.11. Monitoring the Programme of the DIC

The DIC programme is monitored at district, state, regional and the central levels with a view to ensuring that each DIC works effectively to achieve the objectives for which it has been set up (Desai Vasant 1998) [13].

3.11.1. Central Level Coordination Committee

A Central coordination Committee has been set up with the Minister of Industries as its Chairman and the Development Commissioner (SSI) Ministry of Industries as its member secretary (Pillai, V.R.1986)[14]. It reviews the programmes, policies and formalities at central level in the light of experiences gained.

3.11.2. Regional Coordination Committee

Five regional committees have been formed in the country to provide coordination and exchange of information among the different states in the region. The entire country has been divided into five regions, and includes the states mentioned as under:

3.11.21. Northern Region: - Jammu and Kashmir, Punjab, Haryana, Himachal Predesh, Delhi and Chandigarh.

3.11.22. Eastern Region:- West Bengal, Bihar, Orissa, Assam, Arunachal Predesh, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, Sikkim, Andaman & Nicobar Islands.

3.11.23. Central Region: - Madhya Pradesh, Rajasthan and Utter Pradesh.

3.11.24. Western Region: - Gujarath, Maharastra, Dadra and Nagar , Haveli, Goa.

3.11.25. Southern Region: - Andhra Pradesh , Karnataka, Kerala, Tamilnadu, Pondicherry and Lakshadweep.

3.11.3. State Level Coordination Committee

Under DIC Scheme the States were advised to constitute state level coordination committees. Accordingly in Kerala State the state level coordination committee was constituted in 1978. In the state level committee, Minister of Industries acts as Chairman. The committee was formed to review the functioning of DIC schemes in the state, and formulate programmes at the state level and report to central government on the progress and problem encountered in the implementation of DIC scheme and solutions identified to enable the central government to review the progress of DIC scheme, from time to time (Development commissioner1985) [15].

3.11.4. District Advisory Committee

At district level, District Advisory Committee headed by District Collector as Chairman was constituted in 1978 to provide suitable arrangement for effective coordination between the DICs and other state government departments, local bodies and non-official agencies. The committee was formed to review the DIC programme and make recommendations for implementation of DIC scheme.

3.11.5. Monitoring Cell at the State Headquarters

A special cell has been constituted in the state level with the main objective of reviewing the progress in various DICs in the state and ensuring adequate exchange of information, so that the experience gained by one DIC could be utilised by other DICs. The cell has to test the information of the DICs regarding the promotional activities as well as achievements. The outstanding achievements and problems are to be intimated to the State Level Coordination Committee.

3.11.6. Monitoring Cell at the Development Commissioner (SSI)

This cell has been constituted at the national level with a view to watch and guide in the implementation of the DIC schemes. The analysis of DIC scheme is made on the basis of monthly and annual progress reports, which are being sent by DICs and proper guide- lines were issued to the state governments to ensure the proper implementation of DIC scheme.

From the above discussion, it is observed that the central government has given great importance to DIC scheme. In order to make DIC effective, delegation of powers is required. Accordingly, a brief account of the delegation of powers is given below.

3.12. Delegation of Powers

In order to make DIC effective, arrangements are further made to have adequate delegation of powers from various agencies. For instance the powers for allotment of land, work sheds etc, have been given to DICs. The state government has already delegated administrative powers and some of the financial powers of the

department of industries. The powers delegated to DICs may be broadly divided into three groups:

3.12.1. Administrative Powers

(a) For running the office of DIC and for efficient discharge of regulatory functions.

(b) To carry out effective promotional and developmental activities.

3.12.2. Financial Powers

(a) Powers of Head of Office in respect of financial matters.

(b) Powers for promotion and developmental activities.

(c) Powers under the provision of Import Trade.

3.12.3. Control Policy

(a) Powers under Indian cooperative societies.

(b) Miscellaneous including those delegated by other departments.

Almost all the states have delegated administrative and financial powers to the General Managers of DICs, but administrative and financial powers for the promotional and development activities have not been delegated adequately or formally over the states (SIDO 1985-86) [16].

The researcher feels that the adequate delegation of powers to the General Manager of DIC is important, so that entrepreneurs may not experience any delay in availing of the assistance from DIC. Further adequate delegation of powers may develop more interest, enthusiasm and job satisfaction for managers of DICs, otherwise they may feel themselves as messengers and not managers.

3.13. Development of Linkages

The State Government has been advised to take initiative in developing linkages with State and Central Institution and take steps for coordinating their activities with those of the other bodies concerned with decentralised industrial sector. There should be a fuller integration of the DIC programmes, which will have an impact on the development of small and cottage industries. The Government of Tamil Nadu has issued

instructions for reserving purchases of the Government Departments, Boards, Corporations, etc, exclusively from cottage and small industries in respect of 13 groups of items. It has also simplified procedures, so that no permission is required for establishing units involving an investment of less than Rupee one lakh. The DICs are actively engaged in developing linkages with programmes exclusively meant for artisans, e.g. the Integrated Rural Development Programme. To provide additional marketing outlets for the products of rural artisans and tiny units, the DICs have been involved in the establishment of rural marketing and service centres. The procedure and performa for obtaining small loans have been simplified to meet the requirements of most of the units. A scheme of composite loan up to Rs.25000 for equipment or working capital or both has been introduced.

3.13.1. Training

To ensure that the functional managers in the DICs have a clear idea of their duties and that they effectively discharge their responsibilities, it has been proposed to conduct training programmes for them. The first such training course for General Managers was arranged at Hyderabad and Ahmedabad.

In order to ensure that the General Managers and Functional Managers have a clear idea of their duties and they effectively discharge their duties, special training programmes were organised by reputed organisations in the country. The training programmes included the communications of knowledge of the concept and policies of the DIC programme, behavioural sciences, and technical component of the respective disciplines of the Managers participating it.

3.13.2. Recommendations of the Working Group

The Working Group on the delegation of powers to District Industries Centres and linkages with Central and State Government organisations was set up at the Workshop on Industries Centres which was convened in Delhi on 6th and 7th March 1978. This Working Group was comprised of:

3.13.21. Secretaries of Industries from the State Government of Uttar Predesh, Gujarat and West Bengal, and

3.13.22. Representatives from the Department of Economic Affairs, Department of Supply, the Reserve Bank of India, National Small Industries Corporation and the Development Commissioner, Small Scale Industries. The Working Group held its first meeting in New Delhi on 23rd March 1978. Among its recommendations on the question of powers to be delegated to the DIC to finalise the sanction and disbursement of loans, it was decided, after considerable discussions of the various implications, to make the following recommendations.

3.13.221. The project of new entrepreneurs should be appraised by officers of the DICs. If they are found to be viable and bankable the party's banker, if any, or the State Financial Corporations or both, if necessary, should be invited to the DIC to participate in the proceedings for their final clearance. If a project is cleared, the decision of the DIC should be accepted by all without any further scrutiny. If an entrepreneur does not have any banker, it should be the responsibility of the DIC to invite the bank in the district to join the proceedings for the purpose of a financial assessment of the project, and financial assistance should be extended, thereafter, by the participating bank or SFC or both, wherever necessary.

3.13.222. As regards the availability of funds for any individual project, a DIC's decision should commit a bank or SFC, or both where necessary, to the extent of Rs.2 lakhs by way of term loans and an aggregate of Rs.3 lakhs, including working capital loan.

3.13.223. The Working Group also recommended that the powers to sanction loans upto a total of Rs.2 lakhs, including the working capital, should be delegated to the district level officer by the banks and SFCs to ensure that no reference to an authority above all this level may be necessary to sanction and disburse loans upto these amounts.

3.13.224. Under the existing scheme of margin money, the Group recommended that a specific sum of money may be allotted by the concerned Director of

Industries to the DICs to be utilised for margin, so that assistance to the extent of 10 per cent of the total investment, including fixed capital of Rs.20000--whichever is less--may be disbursed to an entrepreneur by a DIC.

3.13.225. The Group further recommended that all the subsidy schemes, which were being implemented at the state level, should be made at the level of the DIC by a delegation of powers to the General Manager of DIC.

Under the district industries scheme, a Group on "Target Audience and Approach in Rural Areas" was formed, which held a workshop in Delhi. The terms of references of the Group were:

(a) To define the target audience under a DIC

(b) To review the existing facilities under the various programmes as backward areas of developments, rural artisans and rural industries projects for the target population and

(c) To suggest package of Assistance for the Target Audience.

In the area of financial assistance, Group suggested that:

(i) The nationalized banks may be asked to provide loans upto Rupees 1 lakh of the amount of investment in plant and machinery at 10 per cent interest without demanding any collateral security.

(ii) Loans advanced by banks to the target population may be recovered as areas of land revenue.

(iii) No collateral security should be demanded from the entrepreneurs for the state aid.

(iv) In a district in which a district industries centre has been set up, the deposit investment ratio of the nationalized bank should be 1:1.

(v) At the state levels 15 per cent of the funds of the nationalized bank should be earmarked for rural industrialisation.

(vi) The nationalized banks may be asked to operate the IDBI's refinance scheme on loans given to the tiny and small entrepreneurs so that the advantages available through the IDBI's refinance scheme are passed on to the small and tiny entrepreneurs.

(vii) Under the lead bank scheme, it may be made mandatory for banks in a district industries centre to adopt each block. For villagers which are located in interior, the nationalized banks in the districts may operate a mobile van scheme; each bank van may visit each village twice a week, collect deposits and advance loans to small and cottage industries.

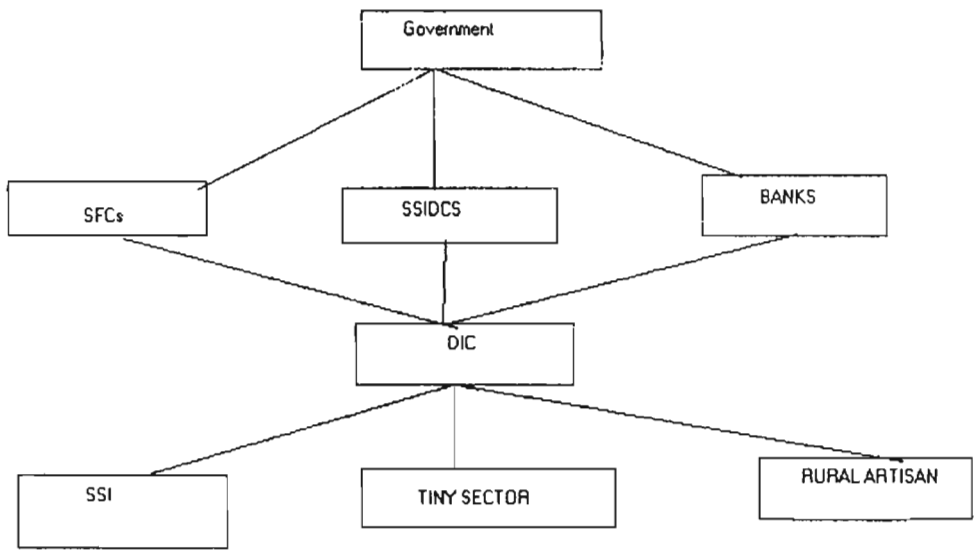
(viii) The banks operating agricultural branches may be asked to give industrial loans to small and tiny entrepreneurs through such branches.

3.13.3. Linkage with other state level organisations

The DIC maintains a very close link with other state level organisations such as State Financial Corporations (SFC) and State Small Industries Development Corporations (SSIDC). These state level organisations work in close cooperation with the DIC and provide all the necessary assistance to their General Manager so that all the inputs of these organisations are also made available to the entrepreneurs under the DIC.

The linkages among Government, State Financial Corporations (SFC), Small- Scale Industries Development Corporation (SSIDC), Bank, DIC and Small scale sector are shown in the figure 1 given below.

Linkage with state level organizations



Source: Vasant Desai, (1989) Problems and Prospects of SSI in India. Himalaya Publishing House.P.124

The function of the DICs is to help small industries and rural artisans in backward areas. So far various facilities for the development of small industries have benefited mainly the more well to do entrepreneurs who manufacture sophisticated items in the small scale sector. The DIC must help the weaker section of the community in rural and backward areas so that they may get all the assistance they need to set up village industries and improve their own economic condition.

3.14. Organisational Set up of DIC

The DIC scheme was started as a centrally sponsored scheme, but the responsibility for its implementation has been entrusted with state governments. Under the organisational set up suggested by Government of India, each DIC includes a General Manager who is assisted by seven Functional Managers' to deal within the following subjects:

1. Economic Investigation
2. Machinery and Equipment
3. Research, Extension and Training
4. Raw-materials and Infrastructure
5. Credit
6. Marketing and Ancillary
7. Technical Officer

The number of functional managers was kept flexible keeping in view of the size , population and potentialities of various districts and this number varies from four to seven (DC,SSI 1980) [17].

3.15. Restructuring of the DIC

The organisational structure of DICs was reviewed during the year 1980 and it was decided to restructure their composition and functioning to make them more relevant to the area with effect from 1st April 1981.

In order to have an intensive review of the working of DICs and to make it the base for restructuring of DICs, a study was conducted by the Ministry of Industries, to collect information and views of all the state governments in respect of the performance and other promotional aspects of the DIC programme. The Study Team

selected one from each from the Northern, Central, Western, Southern and Eastern regions of the country. The Study Team comprises of the representatives of the Ministry of Industries, Ministry of Commerce, Ministry of Rural and Reconstruction, RBI and Development Commissioner, Small Scale Industries. The selected DICs were Anantnag in Jammu and Kashmir, Alwar in Rajasthan, Surendernagar in Gujarat, Sundargarh in Orissa and Ramanathapuram in Tamil Nadu. It was, therefore, decided to modify the organisational structure of DICs. The restructured DICs would have a General Manager and four Functional Managers, of which there would be mandatory in the fields of

1. Economic Investigation
2. Credit and
3. Village Industries.

The state Governments were free to appoint a fourth manager for any of the other areas such as raw materials, marketing, training, information and infrastructure, depending upon the specific requirements of each district.

In 1984, on the basis of the observation of Coordination Committee of the DICs, a more positive role was assigned to the DICs in the seventh plan, which emphasises the need for greater delegation of powers to the DICs by the State Government particularly relating to raw materials, allotment of industrial sheds, power, margin money, investment subsidy and incentives. The DICs are being restructured to make them technically and professionally competent. With a view to enable the DICs to recruit project managers (Technical) and other functional mangers of desired calibre etc. The ceiling on Central Assistance for establishment expenditure has been raised (Government of Kerala 1986) [18].

3.16. Performance of DIC

Efforts have been made to cover each district in the country with a District Industries Centre. The performance of the DIC during the last 20 years has been presented in Table 3.2.

Over the years the DICs have identified 79.84 lakh entrepreneurs; new provisional registration was done in the case of 47.95 lakhs, number of units established 23.54 lakhs small scale industries and 57.27 lakhs artisan units by providing credit of Rs.230.94 crores. The additional employment generated was of the order of 197.43 lakhs.

If these figures are to be believed, the performance of the DICs are exemplary and it also indicated that the country has abundance of entrepreneurial and artisan talent. At this rate, the country should have prospered immensely, but that is not happened. Thus it can be presumed that the figures are deceptive. There is something missing and a correct picture is not seen emerged. The gap between the other statistics is quite wide and beyond comprehension.

Table 3.2

DIC's Physical Achievements

Year	No.of Entrepreneurs identified, (Lakhs)	New Provisional Registrations done (Lakhs)	No. of units established			Credit Provided by Financial Institutions (Rs.Crore)	Additional Employment generated in Lakhs
			SSIs (Lakhs)	Artisan units (Lakhs)	Total (Lakhs)		
1978-79	----	------	0.26	0.62	0.88	260	2.74
1979-80	-----	------	0.27	1.50	1.77	267	6.66
1980-81	2.93	1.53	0.6	1.78	2.38	286	8.07
1981-82	3.49	1.89	0.7	2.38	3.08	424	9.57
1982-83	3.65	2.7	0.74	2.91	3.65	560	11.82
1983-84	5.17	3.01	0.75	2.74	3.49	610	11.15
1984-85	5.22	3.42	0.91	2.86	3.77	611	11.48
1985-86	4.64	3.72	0.97	2.65	3.62	1109	12.23
1986-87	5.11	3.74	1.06	3.16	4.22	891	13.33
1987-88	5.29	3.48	1.24	3.59	4.83	1093	12.24
1988-89	5.3	3.13	1.21	3.01	4.22	1326	11.24
1989-90	5.08	2.71	1.22	3.01	4.23	1724	10.93
1990-91	4.88	2.54	1.30	3.13	4.43	1700	10.66
1991-92	4.62	2.38	1.38	3.26	4.64	1700	10.39
1992-93	4.22	2.18	1.46	3.28	4.74	1685	10.12
1993-94	4.10	2.01	1.56	3.33	4.89	1608	10.31
1994-95	4.00	1.99	1.62	3.2	4.82	1759	10.89
1995-96	4.20	2.03	1.79	3.56	5.35	1802	11.60
1996-97	4.30	2.80	2.18	3.68	5.86	1802	11.60
1997-98	3.64	2.7	2.32	3.89	6.21	1864	12.00
Total	79.84	47.95	23.54	57.27	81.08	23094	197.43

Source:-DIC Programme Physical Achievements, Development Commissioner, 1984-85 and 1999 - 2000, Small Scale Industries, New Delhi.

3.17. Package of Assistance offered by DICs.

It is a matter of gratification that a DIC aims at providing all types of assistance as far as possible and practicable at pre-investment and post-investment stages at district level. This is discussed below:

3.17.1. Assistance offered at Pre-Investment stages:

With the formation of DICs, the change took place in the mode of registration as the powers have been decentralised. At present the registration is granted by the DIC concerned. It is explained hereunder:

3.17.11. Grant of Registration

With the establishment of DICs powers have been delegated to this agency to make a registration. Therefore, the primary function of DICs is to grant registration to the entrepreneurs, so that entrepreneurs can avail of the special incentives offered by government for the development of small scale industries.

The registration of small scale industries is done in two stages:

3.17.111. Provisional Registration

Provisional registration is accorded in order to enable an entrepreneur to take the necessary steps to bring the unit into existence. "Provisional Registration" is converted into a "Permanent Registration" after the unit provides satisfactory proof of its having come into existence. Government has introduced "Single Window System" to obtain all licences / clearances / certificates required for an industry within a prescribed time limit. The provisional registration is valid for one year which can be extended to two years by the intervals of six months. Total validity is three years. But the extension of period is subject to the production of satisfactory proof that the party is taking active steps to establish the unit but could not complete the same (DI&C 1998)[19].

Provisional Registration may entitle the party to

(a) Apply for a shed in industrial estate and material for construction of shed.

(b) Apply to Corporation/ Municipal or Local authorities for permission to construct the shed for the establishment of the unit.

(c) Apply for power connection.

(d) Apply for financial assistance to banks and other financial institutions on the basis of project report as may be required by them.

(e) Apply to National Small Industries Corporations (NSIC) or other institutions for procuring machinery on hire purchase basis.

(f) Take other steps that may be necessary for the establishment of the unit.

3.17.112. Permanent Registration

When the party has taken all the steps to establish the unit, i.e. when the factory building is ready, power connection has been given, the machinery has been installed etc., he may apply for the regular registration of the unit. Powers have been delegated to DICs for issuing the Permanent Registration Certificates.

On the receipt of application from the unit-holder, the Manager of DIC inspects the unit. On being satisfied that the unit is capable of production activity, a "Registration" certificate is issued.

All registered units are required to submit half-yearly reports of the raw materials received/utilised, stock in hand, production and sales to DIC. Failure to submit such statements within the prescribed period may constitute adequate ground for refusing to sponsor application for import/allocation of raw-materials (DIC 2001)[20]. SSI registration fees are given in Table 3.3.

Table 3.3

SSI unit's registration fees in Kerala.

Serial Numbers	Description of units	Registration of units
1	Units having investment in machinery and equipment upto Rs. 2 lakhs	Rs. 100/-
2	Above Rs. 2 lakhs but below Rs. 10 lakhs	Rs. 500/-
3	Above Rs 10 lakhs but below Rs. 25 lakhs	Rs.1000/-
4	Above Rs.25 lakhs but below Rs. 50 lakhs	Rs. 2000/-
5	Above Rs. 50 lakhs	Rs. 4000/-

Source:- G.O.M.S. No.665/99/ Fin dated 1.3.99.

Record numbers of 99909 units were provisionally registered in the state, which reflects the intentions of potential entrepreneurs to start small scale units (DI&C 1999)[21].

3.17.113. Deregistration of Units

The DIC has been empowered to de-register any unit if it fails to fulfil its requirements. Thus a small scale unit already registered may be deregistered on any one or more of the following grounds:

1. If the unit remained closed continuously for a period exceeding one year.
2. If the unit has been proved to have misutilised raw materials allocated to it.
3. If the unit failed/refused/avoided to give full and truthful information as called by the registering authority from time to time and particularly the half yearly report.
4. If the unit is found to be a subsidiary of or owned or controlled by medium and large scale industries.
5. If the fixed investment in plant and machinery exceeds the fixed investment ceiling prescribed in the definition of small scale industries.

The orders for deregistration are signed by the General Manager of DIC, where the unit is situated. However, the General Manager is should send a show cause notice to the party and give 30 days time for reply.

3.17.114. Grant of Registration for units intending to expand / diversify

The DIC has laid down a complete system of procedures for introducing any kind of diversification or expansion in the units. Thus, according to those norms, a unit which wants to expand by increasing the production of the item for which it is already registered need not obtain any fresh registration or any endorsement on its registration certificate unless it involves the additional plant and machinery and consumption of additional scarce and imported raw materials. A unit which may desire to diversify its production by addition of one or more item for which it was not already registered will have to get its registration certificate duly endorsed for such items after technical inspection.

In case of an entrepreneur who intends to manufacture new products and has installed or proposes to install additional machinery and require scarce raw materials will have to apply to the DIC concerned.

3.17.12. Prime Minister's Rozgar Yojana (PMRY)

The objective of the scheme is to provide sustainable employment to educated unemployed youth in micro enterprises, which will include manufacturing, business and service ventures. An amount of Rs.311.04 crores was sanctioned to 56690 persons and Rs.182.83 crores was disbursed to 34175 beneficiaries for setting up of their own self employment ventures during the period of 1996-1999 (DI&C1999)[22].

3.17.13. Single Window System

Government has introduced "single window system" to obtain all clearances or certificates or licenses required for an industry within a prescribed time limit. It is expected that this will positively change the industrial scenario of the state rapidly.

A green channel committee has been constituted in every district with District Collector as Chairman, General Manager District Industries Centre, as Convener and with the district heads of all related departments as members. The committees facilitate timely issue of licences and clearances and function as a single window for industry.

3.17.14. Preparation of Feasibility Reports

A feasibility report is an appraisal of project based on certain information and factual data. Feasibility report enables an entrepreneur to know the inputs required and if rightly prepared conforms to the conviction that he is proceeding in the right direction. To appraise the units DICs perform the different types of activities. A brief classification of these activities is given below:

(a) Economic and Commercial Analysis: To determine whether the project is sound from the economic point of view and assess the demand and marketability of product.

(b) Financial Feasibility: To determine whether the project is financially viable.

(c) Technical Feasibility: To determine whether the specification of technical parameters are realistic.

(d) Miscellaneous aspects depending upon the peculiarities of a particular area where the project is to be undertaken.

It is generally believed by the financial agencies that the project reports prepared by DICs are not based on factual information and, therefore, most of the cases are refused by financial agencies though recommended by DICs. Cost of project report and technical know-how is subsidised to the extent of 100 per cent from National Research Development Corporation of India (NRDC) and 50 per cent from other approved sources, upto a maximum limit of Rs.10000 (DI&C 2000) [23].

3.17.15. Women Industries Programme

Units which are owned or managed by women and with not less than 80 per cent women employees are considered as women industrial units. There are special assistances to these units, such as

3.17.151. Fifty per cent of the cost of building as grant subject to a maximum of Rs.50000/-

3.17.152. Fifty per cent grant on cost of machinery and equipment subject to maximum of Rs.75000/-

3.17.153. Rent grant for four years upto a maximum of Rs.750/- on a tapering basis of, 100 per cent for first year, 75 per cent for second year, fifty per cent for third year and 25 per cent for the last and fourth year.

3.17.154. Salary grant to one expert and one manager for four years upto a maximum of Rs.750/- on tapering basis as referred above in the rent grant.

3.17.155. Stipend to trainee's upto maximum of Rs.500/- per trainee per month for six months and maximum wastage allowance of Rs.2000/- per annum. Both stipend and wastage allowance together should not exceed Rs.10000/- per annum per institution.

3.17.156. Fifty per cent of the hire purchase charges limited to a maximum of Rs.25000/- to units housed in Mini Industrial Estates will be sanctioned as grant.

3.17.157. Share capital to Women's Industrial Co-operative Society subject to a ceiling of Rs.3.50 lakhs. The scheme is implemented through district panchayat.

During the period 1996 to 1999, 4431 industrial units were registered under Women Industries Programme. An intensive programme has been launched to generate more employment opportunities to women. In order to achieve this goal, coordinating and monitoring of the implementation of various women employment generating schemes are being operated by various departments and agencies. Government found it necessary to form a state level body and accordingly a state level women cell has been constituted. Units owned and managed by women entrepreneurs are eligible for 50 per cent subsidy for building and machinery (each limited to Rs.25000/-), rent subsidy, managerial grant, stipendiary, training etc (DI&C 1997)[24].

3.17.16. Training and study tour programmes for potential entrepreneurs

If there are some entrepreneurs who are interested in the establishment of a particular unit but lacking the knowledge about it, in this connection, it is pleasure to note that the DICs have made the arrangements for training of those entrepreneurs. The entrepreneurs are sent to the already established units of the same nature for training. Assistance is also provided to the entrepreneurs for acquiring necessary technical know-how.

3.17.17. Training of Managers of Small Scale Industries

According to Singh (1977) [25], more than 60 percent of new units never last over five years and the reasons for majority of failures is a lack of proper organisation and management know-how. Thus DIC organises training courses in reputed training institutions to the managers, executives and assistant executives of small scale units. It is pertinent to state here that small units are mostly managed by owners of the units, but some of them are lacking the efficiency in the field of management. They are overenthusiastic about their projects. Inefficient managers shift their responsibilities to other shoulders and hold external factors responsible for their failure.

3.17.18. Training to various activities

It is a pleasure to note that DICs are imparting training to the boys and girls in various activities viz. leather footwear manufacturing, printing, candle manufacturing etc. Each session of a training course runs for three months to six months and during this period stipend is paid to the trainees.

District Industries Centres organises Entrepreneurial Development Programme (EDP) with the help of Directorate of Industries and Commerce, Small Industries Service Institute, Kerala Industrial and Technical Consultancy Organisation (KITCO), SIDBI, Centre for Management Development (CMD), State Financial Corporations, Commercial Banks and other agencies concerned for the development of awareness in the minds of the people consisting of skilled /semiskilled and educated/uneducated persons. The DICs refer the entrepreneurs to these institutes for seeking knowledge in wide range of subjects.

The manager of Ernakulam DIC has reported that at the instance of DIC Ernakulam the Kerala State Productivity Council conducted a training programme for 30 trainees (SC/ST) each from seven backward taluks. But none of them was able to start units due to the inability of the DIC to provide financial assistance for lack of funds (Government of Kerala 1994-95) [26].

3.17.2. Assistance offered at post –investment stages

3.17.21. Assistance for supply of raw materials

Though there are nearly 2 lakhs registered SSI units in Kerala, many of them are not properly functioning due to shortage of raw materials. In Kerala state raw materials are issued by Small Industries Development Corporation on the basis of assessment made by DICs. General Managers of DICs were authorised to recommend the cases of units directly to those agencies for the supply of raw materials. The supply of raw materials being made by SIDCO is confined to supply of scarce raw materials for SSIs. It is argued that there is a strong need to streamline the activities of SIDCO to procure and distribute raw materials to SSI units. Many small units are facing the problem of lack of raw materials and fall into the category of sick units.

To overcome this problem, the General Manager of DICs should be empowered to recommend the cases directly to the agencies concerned or SIDCO should undertake the supply of all types of raw materials to the units or in alternative DICs should have their own 'Raw materials Banks' in order to supply the raw materials of required quality, and at the required time. The establishment of these banks should not only put an end for procedural delay but also provide all facilities to the unitholders under one roof. However the strict vigil of DIC's on the units is strongly recommended to see that the raw materials allotted to the units are not misused.

In addition to above, DICs also recommend the cases of units requiring imported raw materials to the Director of the Industries and Commerce which, in turn, recommend the cases to the Controller of Imports and Exports for the grant of import licences in favour of the said units. Further Central Sales Tax (CST) charged on the raw materials brought from outside the state is refunded to the unitholders for a period of five years from the date of commencement of production at the rate of 4 per cent of Central Sale Tax.

3.17.22. Supply of machinery on hire purchase

One of the major conclusions of International Planning Team 1953-54 was that deficiencies in small scale industries arose from the then prevailing methods of

production. The reluctance of small units to install modern and up-to-date machinery due to insufficient funds. It was, therefore, against this background that the scheme for the supply of machinery on hire purchase basis was formulated. The unitholder can purchase the machinery from National Small Industries Corporations (NSIC) on hire purchase basis.

The forms for the purchase of machinery from the National Small Industries Corporation (NSIC) are obtained from Small Industries Service Institute (SISI) or Directorate of Industries and Commerce or from the Regional Office of NSIC. These forms are prepared in quadruplicate. The original and two copies of these are submitted to the concerned office of National Small Industries Corporation. The Regional office of NSIC forward two copies of application to the General Manager of DIC. After obtaining recommendation / comments from the Directorate of Industries and Commerce, the application is placed before the State Level Committee (SLC) for consideration. The applications recommended by state level committee are considered for supply of machinery.

From the above discussion it is learnt that DICs also helps the entrepreneurs in the procurement of machinery on hire purchase, but procedure for procurement of machinery from NSIC is circuitous. Due to this lengthy procedure, some entrepreneurs are frustrated and hence give up the idea of procuring the machinery on hire purchase from NSIC. It is, therefore, suggested that the forms for purchase of machinery from NSIC be made available in the office of each DIC. The General Manager of the DIC should be authorized for the submission of the forms directly to the office of NSIC.

3.17.23. Marketing Assistance

Marketing occupies an important place in the management of small scale industries. But, unfortunately, in Kerala the state small scale units suffer much on account of competition. In order to help to boost the products of small scale units DIC have undertaken various activities, which are as follows:

(1) To organize market survey, market development programmes.

(2) To organize market outlets.

(3) To keep and assist small industries in maintaining and developing standards, quality control measures and liaison with testing centres.

(4) To assist small units for participation in purchase programmes of State and Central Governments, Local Bodies and Public Undertaking

In spite of the above activities undertaken by DICs the field survey revealed that unawareness about the procedure for participation, tedious formalities, understandardisation of the products and insufficient production have been the main barriers in the way of participation by small unitholders in the purchase programme of the Central Government, though the procedure for participation in Central Government purchase programme has been revised and made easy. Now the units registered with the National Small Industries Corporation (NSIC) would be treated at par with those registered with the Director General of Supplies and Disposals (DGS &D). The application form for registration has now to be submitted to the SISI set up in Thrissur. The application should be considered for supply of machinery on the recommendation of DIC or in alternative of this, the Small Industries Development Corporation should undertake the supply of machinery on hire purchase basis as Uttar Pradesh State Small Scale Industries Development Corporations (UPSICOP) provides machinery on hire purchase basis in UP in collaboration with the State Bank of India.

3.17.231. Exhibition

In order to display the end-product of small scale units and to project achievements made in various other industrial fields, DICs organises the exhibition. The exhibition helps the entrepreneurs in identification of potential avenues of marketing and product development. Additional advantage of exhibition is that the interaction among various unitholders is generated, which augurs well for the development of an industrial culture.

Over and above this, small scale unitholders are provided assistance in other respects discussed as under:

3.17.232. Price preference

In order to compete with the large scale industries, 15 per cent price preference is allowed in the purchase of products by Government and Government-controlled organisations from products of the small scale units registered by the DICs, manufactured within the state. A 5 per cent price preference is allotted to products of industries outside the state and products of large and medium units within the state. No price preference over products of government units. SSI units are exempted from earnest money deposit and security deposit in tenders by government and government-controlled institutions (DI&C1997) [27]. A 2 per cent additional price preference for the product having SSI registration (SIDCO 1991) [28].

3.17.233. Sales Tax exemption

New SSI units other than that notified from time to time set up on or after 1.4.93 are eligible for exemption in KGST, CST, Purchase Tax and surcharge for a period of seven years upto a monetary limit equal to 100 per cent of the fixed capital investment. Existing SSI units which effect expansion, diversification or modernisation on or after 1.4.93 are eligible for three years tax exemption upto a monetary limit equal to the value of machinery and equipments installed for expansion, diversification and modernisation.

3.17.24. Reservation of items

In order to assist the small scale industries for participation in Central Government purchase programme 409 items have been reserved by Central Government for exclusive purchase from small scale units (DCSSI 1997) [23]. In addition to this the government has reserved 822 items for exclusive manufacture in small scale units (Nadakarni 1983) [29]. Table 3.4 shows the reservation of items (SIDCO) for exclusive production by the small scale sector.

However, the purchases by government from small scale units are possible in case the quality of products are good and supply sufficient. But it has been observed

that the poor quality of goods produced by the small scale units is one of the barriers for participation in the government purchase programme.

Therefore, the role of DICs in this respect is significant. The DICs should ensure the regular supply of required quality and quantity of raw materials. Further the DICs should extend assistance to unitholders in the field of exports. In this connection, the activities of DICs should include dissemination of information about the foreign markets, consultancy service in the matter of export procedures and package of incentives being offered by the government, identification of small scale units already possessing necessary equipments and skills to undertake production of item having export potential, organisation of training programmes on export marketing, maintaining liaison with concerned export development agencies, meetings and seminars on export promotion etc.

Table 3.4

Reservation of items (SIDO) for Exclusive Production in Small Scale Sector

Years	Number of Items	Addition /Deletion
1967-68	47	--
69-70	51	+4
70-71	124	+73
73-74	177	+53
76-77	180	+3
77-78	504	+324
78-79	807	+303
81-82	832	+25
82-83	837	+5
83-84	872	+35
85-86	873	+1
86-87	863	-10
Dece -88	846	-17
Dece.1992-96	836	-10
March-1997	822	-14

Source: Desai Vasant, (1999): Small Scale Enterprises, Assistance and Incentives Vol.8._ Himalay Publishing House, Mumbai P.58.

One of the handicaps being faced by industrialists is the lack of space (escalating land value) to carry on manufacturing activities. This difficulty discourages many entrepreneurs in the establishment of their own units, because a lot of money is required to buy land and construct building at a place having all the required facilities, viz. transport, lighting, banks, post office etc. What role is being played by DICs in this respect will be a matter of discussion.

3.17.25. Industrial estate

The entrepreneurs are facing the problem in the selection of suitable locations. The main problems connected with the selection are availability of labour, power, lighting, roads, banks, transport, post office etc. With the establishment of industrial estates a solution to this problem has been found. The industrial estate programme was launched in India in 1955 with the objectives of encouraging the small scale units.

Kerala adopted the industrial estate programme during the Second Five Year Plan, during which seven industrial estates were established in seven districts. Eleven more were established during the Third Plan period. The Industries Department acquired development plots also in suitable areas and allotted them to small scale entrepreneurs on hire purchase basis. This arose the chemical estate at Aroor and the Kalamassery estate at Ernakulam. Functional estates were also organized for rubber and plastics at Changanacherry and for ceramics in Kollam. The first series of seven major industrial estates were constructed by Government, but the second series of eleven estates were constructed by the Kerala State Small Industries Corporation (KSSIC), which was also entrusted with the management of all the 18 estates according to the pattern adopted by the Central Government, when the KSSIC and the Kerala Employment Promotional Corporation (KEPC) was amalgamated in 1975 to form the Kerela State Small Industries Development and Employment Corporations Limited (SIDECO). It becomes the promotional agency for the development of SSI sector and management of all the industrial estates through the concerned DICs. Details of these industrial estates are given in the Table 3.5. The information given in Table 3.5 reveals that there are 348 units in major industrial estates in Kerala out of these 300 units are functioning and 48

units are not functioning. In Mini industrial estates there are 329 units among them 159 are functioning units and 170 units are not functioning.

Table 3.5

Major Industrial Estates in Kerala

Name of the Industrial Estate	Total Number of Units	Units Working	Units Idling
Pappanamkode	39	28	11
Umayanalloor	26	15	11
Karunagappally	7	4	3
Kollakadavu	26	22	4
Changanacherry	23	23	-
Ettumanoor	31	24	7
Shertallai	13	10	3
Palluruthy	6	6	-
Mudickal	13	13	-
Kallettinkara	14	14	-
Ollur	44	43	1
Karakkad	14	14	-
Olavakot	22	21	1
Manjeri	16	11	5
West Hill	35	33	2
Palayad	9	9	-
Kasargode	10	10	-
Total	348	300	48

Source: Government of Kerala, (1986): Formulation of the Five Year Plan, 90-95, Background Paper on SSI, State Planning Board, Thiruvananthapuram

3.17.26. Industrial land and plots/ factory sheds

Developed land is made available to entrepreneurs at subsidised cost. This is available on outright purchase or on hire purchase basis. The entrepreneur has to make an initial payment of 10 per cent of the cost of land and the balance of 90 per cent has to

be paid in 10 instalments with an interest of 15.5 per cent. Factory sheds with all the infrastructural facilities are also made available to entrepreneurs in the industrial estates and mini industrial estates. Industrial shed will be available for SC/ST categories exclusively on rental basis.

3.17.27. Margin Money Loan (Seed Capital Loan)

All newly registered SSI units other than those categories of industries specifically excluded by the Government shall be eligible for assistance under this scheme. An amount upto Rs.2.5 lakhs at an interest rate of 9 per cent will be extended to the units. The loan is to be repaid in sixteen equal quarterly instalments. The first instalment due is 3 months after the date on which the last instalment of term loans fell due and shall full originally scheduled by the bank/finance institutions or on completion of the 51st month of disbursement of Margin Money Loan (MML), whichever is earlier. Penal interest is 2.75 per cent. Margin Money Loan is also paying to Non Resident Keralites (NRKs). This scheme is to assist the technically qualified Non Resident Keralites (NRKs). The limit is Rs.5 lakhs. Interest is 9 per cent and penal interest is 2.75 per cent.

3.17.28. State Investment Subsidy

New industrial units are eligible for an investment subsidy of 10 per cent subject to a maximum of Rs.5 lakhs. But units set-up in the industrial parks, growth centres and units set-up in Idukki and Wayanad districts are eligible for a maximum of Rs.10 lakhs and for thrust industries like Export Oriented Units (EOUs), Rubber Based Units, Information Technology, Food Processing, Ready Made Garments, Tourism, Ayurvedic Medicines, Mining, Light Engineering, Bio Technology, Sea Foods etc. The ceiling of investment subsidy is 15 per cent subject to a maximum of Rs.15 lakhs except of IT. Thrust sector industries in Idukki and Wayanad districts are eligible for 25 per cent State Investment Subsidy subject to a maximum of Rs.25 Lakhs.

3.17.29. Sick Unit's Revival Programme

Industrial sickness may manifest in several forms depending upon the cause and nature of sickness. "A sick unit is an unhealthy unit to a common man, a profit-

postponing unit to an investor, a discouraging unit to an industrialist, a doubtful debtor and a weak borrower to a creditor, an industrial problem to the government; a victim of technological change to a technocrat, a bad employer to workers and a source of wastage of resources to the economy" (Reddy 1987)[30].

In terms of the definition evolved by the Reserve Bank of India, an industrial unit is regarded as sick if it has incurred cash loss for one year and in the judgment of bank, it is likely to continue to incur cash loss in the two following years and it has imbalance in its financial structure as current ratio being less than 1:1 and worsening debt -equity ratio.

Available data on Indian industrial scenario indicate that industrial sickness has been growing. Industrial sickness continues to remain a major area of concern. During 1998-2000 Kerala Government has already created professional groups in the state at the district level, to provide necessary assistance to sick SSI units. The specialised teams will survey individual sick units and also incipient sick units suggest appropriate measures for revitalizing and will help in preparing feasible revival project report and provide them with necessary marketing support. As a result 856 units were identified as sick, 152 units were registered as sick and 42 units were revived for the period from 01.04.1998 to 31-12-1999. At present Rs.1 lakh is given as margin money loan under Sick Unit Revival Programme. Also rescheduling facility and deferment of recovery action etc. are available. The cost of Rehabilitation Project report subject to a maximum of Rs.2000/- which will be reimbursed to each unit (DI&C 2001)[31].

From the above discussion it is observed that DICs have been provided with broad- based organisational structure to carry out various programmes and activities. DICs play the role of a facilitator for promoting the growth of small scale units within the district. After a general review of the functions, role and importance of the DICs, the study goes on to evaluate the performance of DICs in Kerala, and the various operational problems faced by them, including those related to organisational structure of the DICs and their working methods in the next chapters.

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CHAPTER IV

PERFORMANCE OF DICs IN KERALA

(A Non-Theoretical Analysis)

In an attempt to industrialize the country, it has been noted in the foregoing chapters that the Central as well as the State Governments have been taking a series of measures from time to time in a planned manner. The DIC is a step in this direction. With a view to assess the performance of DICs on the industrial scenario of the state, it would be in the fitness of things to examine in greater detail the organizational structure of DICs, to make a macro analysis of performance of DICs and make an analysis of the performance of DIC assisted SSI units. Thus, this Chapter is divided into three parts. Part 4.1 is an examination of the organizational structure of DICs. Part 4.2 is the Performance of DICs in Kerala - A Macro Analysis on the basis of secondary data. Part 4.3 highlights Performance of DIC assisted SSI units on the basis of primary data.

4.1. Organizational structure of DICs

As the DIC is one of the most important agencies for planning, organising and implementing industrial development programmes at the district level it need hardly be emphasised that its success depends upon the existence of a sound organisational structure. The analysis about the organisational structure is largely based on the discussions held with the officials of various DICs and also with those at state level. The nature of the functions performed by DICs is two pronged, i.e. (1) Developmental and (2) Regulatory.

The developmental role covers (i) Industrial extension services, which include planning for industrialization in the context of Village and Small Industries (VSI) with respect to the district and subunits. (ii) Building up an information base of relevance to existing and prospective entrepreneurs and dissemination of data and counselling services.

Regulatory responsibilities cover a wide range of services such as registration of SSI units, recommending the cases for raw material allotment, processing

application for import of machinery, allotment of factory shed, and appraisal of loan applications etc.

The regulatory functions should subserve and should be used as instruments for making the development role more wide-spread and effective.

4.1.1. General Manager

Each DIC is headed by a General Manager who is responsible for the overall coordination and development of SSI including village industries in the district and ensure the implementation of action plans drawn up for promoting and developing small scale, cottage and village industries in the district. General Manager is the kingpin of the DIC programme. He has to provide leadership to the team operating under him. He should be an effective instrument in initiating the massive programme of rural industrialisation and identification of growth centres in the district.

Four functional Managers assist the General Manager. They look after four disciplines, viz (i) Economic Investigation – Information & Infrastructure (2) Credit (3) Raw Materials & Marketing (4) Village Industries & Training (VI&T). They are to be assisted by Technical Supervisors, Assistant District Industries Officers and clerks.

Besides, in all DICs in Kerala there is a co-operative wing comprises of Deputy Registrars, Assistant Registrars, Senior Co-operative Inspectors and Junior Co-operative Inspectors. At Taluk level, there is a Taluk Industrial Office, which helps DICs in their functioning.

4.1.2 Manager Economic Investigation, Information & Infrastructure (EI, I&I)

4.1.21. Functions and duties

4.1.211. To conduct the survey of industrial potential of the district with a view to make fuller and better utilization of the available raw materials and skills and creation of maximum employment opportunities.

4.1.212. To prepare action plans for future development of the district.

4.1.213. To coordinate with the existing medium and large scale industries

4.1.214. Disbursing various incentives and subsidies to eligible units.

4.1.215. Collection, storage and dissemination of vital information relating to the industrial activities in the district.

4.1.22. Observations

Thus an examination of the performance of EII&I Manager brings out the following observations:

4.1.221. The manager EII&I is burdened with too many functions and responsibilities to be discharged.

4.1.222. Most of the time, manager is engaged in compilation and filling up of elaborate statistical returns and preparation of progress reports.

4.1.223. Very often action plans are not implemented properly and timely.

4.1.224. There is neither scientific methodology nor norms followed in the preparation of industrial surveys and action plans.

4.1.225. The EII&I manager is not vested with enough power, to provide power, water, factory accommodation etc. His power is limited in recommending and pleading with the departments concerned.

4.1.226. The people appointed as managers (EII&I) are mostly promoted from the department of industries having no personal zeal or motivation to do good work. They lack the necessary technical expertise and carry on their activities as matter of routine that defeat the very purpose.

4.1.23. Recommendations

4.1.231. The manager EII&I should be assigned the responsibilities of only economic investigation and entrepreneurial guidance and be relieved of other responsibilities.

4.1.232. Scientific techniques and methodology are to be developed and vigorously followed for preparing industrial potential surveys, action plans, bankable projects etc.

4.1.233. Enough powers should be delegated from various departments like KSEB, Municipality, and Water Supply Department etc. to the General Manager of DIC.

4.1.234. Proper facilities and enough number of assistants should be kept at the disposal of the manager (EII&I) for proper documentation and upkeep of records in the DIC.

4.1.3 Manager-Credit

4.1.31. Functions and duties

The important functions and duties of the Credit Manager are the following:

4.1.311. To prepare annual credit plan for the industrial development of the district.

4.1.312. To coordinate the lead bank in the district this is also charged with the responsibility of preparing credit plans for the entire district. That is credit manager has to see that the credit plans prepared by the lead bank for industrial development synchronize with the credit plans prepared by the DIC.

4.1.313. To ensure that the various commercial banks implement the credit plans of the lead bank.

4.1.314. Lapses in the implementation of credit plans by the commercial banks should be brought to the notice of District Level Consultative Committee.

4.1.315. Identification and rehabilitation of sick industrial units is yet another area to which the credit manager has to attend.

4.1.316. Sanctioning and disbursing of seed money / margin money assistance to the beneficiaries.

4.1.317. To help the beneficiaries, who are incapable of filling up the application form and those who are not in a position to fulfil the cumbersome formalities of credit.

4.1.32. Observations

From the observation and analysis the following issues emerge:

4.1.321. The credit manager often fails in preparing realistic action plans and credit plans.

4.1.322. There is lack of co-ordination between the DIC, Lead Bank and other related agencies.

4.1.323. The credit plan prepared by DIC and the Lead bank is not in conformity with each other.

4.1.324. The credit managers are helping the beneficiaries only in filling up the application form rather than in assisting them in securing credit from banks.

4.1.325. There are no scientific criteria adopted in conducting project appraisals thereby leading to ambiguity and large scale rejection of application by the banks.

4.1.326. Bank officials complained that the DICs are not nelping them in the recovery of loans and also in monitoring the utilization of credit leading to misuse. The credit managers, on the other hand, complained that the beneficiaries are not co-operating with the DIC officials, once the credit is sanctioned and the unit is launched.

4.1.327. Most of the beneficiaries complained that they have to approach the banks directly and make their own arrangements to secure the credit. They opined that the DIC has become yet another hurdle in getting loan assistance.

4.1.328. Banks are sanctioning loan assistance to units situated in and around the urban centres and credit is not flowing in to backward and rural areas.

4.1.329. There is concentration of credit amongst the larger of the small-sized units and, moreover, banks are insisting on collateral security.

4.1.33. Recommendations

4.1.331. Credit managers should maintain proper liaison with the lead banks and prepare the credit plans in coordination rather than in isolation.

4.1.332. Scientific criteria should be evolved for preparation of action plans, credit plans and also for project appraisals.

4.1.333. Non-implementation of credit plans should be viewed seriously.

4.1.334. RBI should further liberalize the sanctions of credit and see that the banks do not insist on collateral security.

4.1.335. The SSI units who avail bank credit should be compelled to get their balance sheets audited by qualified auditors and submit a copy of the auditors report to

the DIC. If necessary statutory compulsion should be introduced. This will ensure proper utilisation of credit.

4.1.336. For proper distribution of credit among different blocks in the district the credit plans should be bifurcated and targets fixed for each block making sufficient provision for development of backward blocks in the district.

4.1.4 Manager Raw Material and Market (RM&M)

4.1.41. Functions and duties

4.1.411. To prepare the resources data and all statistics pertaining to raw materials, marketing machinery and equipment.

4.1.412. To identify the availability of raw materials within the district and also the neighbouring areas of the district.

4.1.413. To establish close liaison with managers of EII&I and credit.

4.1.414. To establish close liaison with SIDCO, NSIC, SISI and other agencies.

4.1.415. To assess and monitor the smooth and equitable distribution of scarce and imported raw materials to all SSI and rural industrial units.

4.1.416. The manager (RM&M) should arrange for the establishment of at least one raw material depot by SIDCO in the district and watch their proper utilisation

4.1.417. He should conduct market intelligence surveys and identify the products for which the demand exists in the district.

4.1.418. To devise appropriate marketing strategies for selling small industry products manufactured in the district.

4.1.419. Assisting small entrepreneurs in identifying and procuring the appropriate machinery and equipment.

4.1.420. Identify technological problems faced by small industrialists and assist them in finding solutions.

4.1.421. To help unitholders in obtaining machinery under hire purchase scheme of NSIC and KSIDCO

4.1.422. To organize industrial co-operatives to ensure the flow of raw materials, machinery and marketing assistance to the smallest of small entrepreneurs and artisans.

4.1.42. Observations

4.1.421. DICs do not have accurate information about the availability of raw materials within the district.

4.1.422. Raw materials service centres are ineffective and could not supply critical raw materials at the appropriate time and the required quantity.

4.1.423. The lists of suppliers of raw materials and machinery available with the DICs have become old and obsolete. So the beneficiaries were not in a position to get correct information about the suppliers.

4.1.424. The Manager (RM&M) reported that the inordinate delay in the supply of raw materials in due to the non-availability of these resources with RMSCs.

4.1.425. The marketing assistance rendered by the DICs is also not upto the satisfaction of the beneficiaries. Some of the state government departments are issuing open tenders for the purchase of various commodities, which are cornered by the large industrial undertakings.

4.1.426. Some entrepreneurs complained that they were not in a position to deposit the earnest money deposit to the government departments.

4.1.427. Some entrepreneurs complained that the Price Preference Scheme was not helpful to them as their products were rejected on the grounds of inferior quality.

4.1.428. The entrepreneurs who were fortunate in getting the government orders for their products complained that there was inordinate delay in receiving the payments from government departments for their products; they have to go from pillar to post for getting payments, even by leaving the factory work.

4.1.429. In the case of the supply of machinery and equipment the DIC assistance also seems to be very little.

4.1.430. The hire purchase scheme of NSIC and KSIDC is also not considered attractive by the small units, as they have to deposit the earnest money, bank guarantee etc. in advance. The cost of the machinery supplied to them is also very high as the transit charges and demurrage charges were also included in the cost of the machinery. Some of them complained that the price fixed for the machinery by NSIC and KSIDC is much higher than the actual price of the machine in the market.

4.1.43. Recommendations

4.1.431. The DIC should immediately update the data regarding the availability of raw materials.

4.1.432. The DICs should persuade the KSIDC to establish Raw Material Service Centres (RMSC) per district with one or two branches at the block level and ensure adequate suppliers or raw materials based on the estimated requirements of the units.

4.1.433. The practice of advanced payments for raw materials should be dispensed with and substituted by payment at the time of delivery of raw materials.

4.1.434. Delays in the supplies of raw materials should be avoided and the transport cost of bringing the raw materials to the raw material service centres should be borne by the government itself.

4.1.435. The Manager (RM&M) should periodically inspect the units and ensure proper utilization of scarce raw materials.

4.1.436. The government departments should be strictly instructed to purchase the materials in the reserved list of the SSI and artisan units and any violation should be viewed seriously.

4.1.437. DIC should establish their own Quality Control Mechanism and the SSI products tested and certified by the DIC should not be rejected by the government departments.

4.1.5 MANAGER Village Industries & Training (VI&T)

Manager (V I & T) is specially designed to look after the needs of cottage and village industries. He is supposed to look after the activities dealt with by organizations of handlooms, handicrafts etc.

4.1.51. Functions and duties

4.1.511. To prepare block level surveys on artisan activities, focussing on the problems faced by individual artisans, trades and crafts man, type of assistance needed, scope for upgradation of technologies, tools and equipments needed and opportunities for diversification and enlargement of markets served by them.

4.1.512. The Manager (V I &T) assists the beneficiaries by processing their applications for assistance and forward them to the appropriate agencies like KVIB, Directorate of Handlooms and SC/ST Corporations etc.

4.1.513. He assists DRDA in the implementation of IRDP/TRYSM, JRY, and in identifying the beneficiaries for assistance and helping them to set up industry.

4.1.514. He is also vested with the responsibility to look after various training programmes under self-employment schemes and artisan and entrepreneurial development programmes.

4.1.515. He enables the beneficiaries to take up self-employment avenues and helps them to cross the poverty line.

4.1.516. He is also charged with the responsibilities to look after RIP and RAP.

4.1.517. He has to co-ordinate with various agencies like DRDA, KVIB, SISI, SC/ST, Corporations etc.

4.1.518. It is the responsibility of the manager to help KVIB & DRDA in the preparation of innovative schemes / projects. In this area not much headway has been made, as most of the assistance provided to the artisans is concentrated in the traditional industries.

4.1.52. Observations

Some of the artisan beneficiaries have complained that there was proliferation of too many institutions like DRDA, KVIC, SC/ST and Backward Community Corporations, DIC, etc. As a consequence they were confused as to which agency they have to approach for assistance.

Another lacunae observed during the research Survey is that Manager (VI&T) have not conducted any survey at the village level to identify village craftsmen and artisans for assistance. But assistance was rendered only to those who approach DIC. But Extension Officers (EOs) explained that the intensive campaigns undertaken by them at the village level to bring the artisans at a common place and inform them about the assistance available from DIC and other agencies was a failure due to poor response.

4.1.521. Not much co-ordination existed between DIC and agencies like DRDA, KVIB, SC/ST/BC Corporation.

4.1.522. The Manager (V I & T) failed in preparing any innovative schemes of assistance and assistance was concentrated in traditional industries and products.

4.1.523. Existence of too many agencies to assist village industries, artisans and socially depressed classes added confusion.

4.1.524. The tools supplied to the beneficiaries are outdated and are not suitable for product diversification.

4.1.525. The subsidy provided to the trainees is too meagre and training at far away places dislocated their regular work.

4.1.526. The industrial units to which the trainees were assigned were misusing them to extract routine work than providing training.

4.1.527. Intensive campaign has not succeeded in attracting large number of rural masses.

4.1.528. Inordinate delay in providing subsidies and other assistance by the DICs were reported by the beneficiaries.

4.1.53. Recommendations

4.1.531. For effective functioning of the Manager (VI&T) there must be proper delegation of powers and greater co-ordination among the manager (VI&T) and the other agencies working in the fields of rural industries.

4.1.532. There is a proliferation of too many agencies leading to confusion and the single window approach has not taken root in rural industries. This calls for establishing yet another agency at the block level, with proper delegation of powers from all the related agencies, which should act as a single window.

4.1.533. Whenever the DIC assists the beneficiaries under different programmes in the form of loan, subsidy, tools etc. the assistance should be given only to those beneficiaries or units, which produce non-traditional products for which the ready market outlets exist. Assistance for producing traditional products is no answer for uplifting the rural poor and for bringing them above the poverty line. If possible, research institutes should be set up exclusively for the purpose of developing new products and innovating new techniques.

4.1.534. Training to rural youth/artisans under different programmes should be provided within the village without dislocating their regular work and suitable incentives should be provided.

Mini Industrial Training Institutes (ITI's), and Co-operative Production Centres should be established at block / village level. Mobile Training units / vans like SISI mobile training units will be of great help in this respect.

4.2. Performance of DICs in Kerala – A Macro Analysis (A Non-theoretical Analysis based on Secondary Data)

This part deals with the progress of DICs and their achievements based on the analysis of secondary data. An attempt is made to make a comparative assessment of the working of DICs at the all India level vis-à-vis Kerala. An analysis of inter-regional and inter-district performance in the state is also attempted.

The DIC concept has come into prominence in India through the Industrial Policy Statement of 1977 and the Central Government subsequently issued guidelines

for establishing DICs in the states. In Kerala the DIC programme was implemented with effect from 1978.

The rationale behind establishing DICs is to make district a focal point of industrial development. The DICs are supposed to assist the growth of industry in the district with special emphasis on cottage, village and small scale industries. They are expected to provide a host of services in order to facilitate the growth of small industry.

The extent of success of the DIC programme in assisting the SSI sector can be noted by looking at the number of SSI units established, employment generated and investment made which were collected for the period from 1956 to 2001. In order to know the growth of the small industry before and after the establishment of DICs the time period has been classified into two periods, i.e., 1958--78, 1979--2001. The first period indicates the growth of small industry in the state under the pre-DIC period and the second period 1979-2001 represents DIC period. On the basis of this data it is also attempted to identify whether any structural changes occurred in the growth of SSI, after the establishment of DICs. The cumulative growth of small scale industries in Kerala from 1958 to 2001 is shown in the Table.4.2.1

Table. 4.2.1

Growth of Small scale Industries in Kerala—1958-2002

Year	Number of Units	Employment (Lakhs)	Investment (Rs.crores)
1958	221	0.11	6.63
1964-65	2090	--	--
1965-66	2910	--	--
1966-67	3253	--	--
1967-68	4304	--	--
1968-69	6711	--	--
1970-71	6753	--	--
1971-72	--	1.27	--
1972-73	6205	1.26	44.08
1973-74	7718	1.28	56.17

1974-75	9105	--	--
1975-76	9377	1.32	--
1976-77	10873	2.16	--
1977-78	12118	1.32	70.80
1979-80	15974	2.04	190.82
1980-81	18954	2.39	228.01
1981-82	21977	1.60	249.08
1982-83	24884	1.83	273.11
1983-84	28117	2.12	302.32
1984-85	31499	2.35	335.08
1985-86	35365	2.63	384.91
1986-87	40342	2.93	451.6
1987-88	47191	3.32	546.01
1988-89	55427	3.73	659.67
1989-90	63968	4.22	773.81
1990-91	73522	4.65	871.83
1991-92	84460	5.27	1002.89
1992-93	95871	5.68	1127.91
1993-94	110404	5.29	1175.15
1994-95	125910	7.03	1367.33
1995-96	143123	7.75	1591.87
1996-97	160544	8.40	1922.69
1997-98	180097	9.10	2351.33
1998-99	199827	9.81	2653.43
1999-2000	220068	10.54	3050.96
2000-2001	240141	11.15	3467.61

Source: Compiled from Economic Reviews of various years, State Planning Board, Thiruvananthapuram

It can be observed from Table 4.2.1 that the number of SSI units in 1958 was only 221, which increased to 240141 in 2000-2001, and employment was increased from 11050 to 1115000 and investment from Rs.663 lakhs to Rs.346761 lakhs during the same period. Based on the data presented in Table 4.2.1 a semi log model with year (time) as the explanatory variable would help to fit a geometric compound growth rate of number of units, investments and employment during 1958 to 2000.

$Y = a\, b_t$

$\text{Log } Y = A + Bt + U$

Y = Number of Units /Investment / Employment

T = time

A & B are parameters, U= random error

The estimated equations on the basis of data of Table 4.2.1 are given in Table 4.2.2.

Table 4.2.2

Growth of Small Scale Industries in Kerala (Compound Growth Rates)

	PRE DIC PERIOD 1958---1977-78			DIC PERIOD 1977-78---2001-2002		
	No. Of Units	Employment	Investment	No of units	Employment	Investment
CGR	27.97	12.31	58.9	14.85	9.85	14.95
R^2	0.75	0.71	0.86	0.68	0.95	0.99
SE 'A'	0.1618	0.05814	0.10794	0.16809	0.0228057	0.01873
SE 'B'	0.019	0.1221	0.0394	0.01338	0.001816	0.001489
Var 'A'	0.02618	0.00338	0.01165	0.02825	0.0005201	0.000351
Var 'B'	0.00036	0.000223	0.00155	0.00018	0.000003298	0.000002
A	2.898	0.0028	1.378	4.46	0.171143	2.19
B	0.1071	0.0504	0.2011	0.06012	0.04081	0.060144

CGR=Compound Growth rate; SE 'A'=Standard error of A; SE 'B'=Standard error of B
Var 'A'=Variance of A; Var 'B'= Variance of B
Source: Computed

It can be observed from Table 4.2.2 that the growth of SSI in the state was very high during the period 1958 to 1977-78 (pre-DIC Period) as compared to the 1977-78 to 1999-2000 (DIC period). The compound growth of units established was 27.97 per cent, employment generated 12.31 per cent and investment increased at the rate of 58.9 per cent. The main reason for this high growth during 1958 to 1977-78 was that the

state was in its formative stage and there was a strong industrial base in Travancore-Cochin area and the importance given to industry in the Second Five Year Plan. The other obvious reasons for phenomenal growth in small scale sector was the satisfactory performance of agriculture and the existence of better power surplus.

During the period 1977-78 to 2000-2001, i.e. after the DICs came into existence, the growth of SSI sector did not show a better performance, though it provided many incentives and assistance under a single roof. In this period the number of SSI units increased at a compound growth rate of 14.85 per cent only, as compared to the 27.97 per cent during the pre-DIC period; employment in the DIC period increased at a rate of 9.85 per cent only as compared to the 12.31 in the pre-DIC period; and investment at current value increased at the rate of 14.95 per cent in the DIC period, but during pre-DIC period, it increased at the rate of 58.9 per cent. Thus in the case of investment also pre-DIC period showed a better performance compared to DIC period. This is due to the increase in the investment levels in the definition of small scale industries from five lakhs in 1950 to 300 lakhs in 1997 and reduced to 100 lakhs in 1998. This resulted in more capital-intensive units coming under the purview of small scale industries during the pre-DIC period.

Structural changes in the composition of small scale industries after the establishment of DICs can be seen from Table 4.2.3.

Table 4.2.3

Industry-wise Growth of Units, Investment and Employment (in SSI sector)

	Up to 1979			Up to 1990-91			Up to 1999-2000		
Industry Group	Units In Numbers	Invest-ment (lakhs)	Employ-ment	Units	Invest-ment (Lakhs)	Employ-ment	Units	Invest-ment (Lakhs)	Employ-ment
Agro based	3370 (27.61)	2183 (30.84)	66264 (50.2)	18245 (25.5)	17287 (23.59)	209896 (45.12)	58406 (26.54)	88996 (29.17)	447225 (42.44)
Forest & Animal Based	2520 (20.65)	1195 (16.88)	15959 (12.09)	13522 (18.63)	10186 (13.9)	65592 (14.1)	36533 (16.6)	45886 (15.04)	157398 (14.94)
Rubber, Petroleum, Chemical, Nonmetallic & Mineral	2687 (22.02)	1509 (21.31)	17728 (13.43)	16504 (22.75)	22014 (30.04)	68245 (14.67)	54203 (24.63)	72094 (23.63)	169513 (16.09)
Iron, Steel &Metal Based	1834 (15.03)	1027 (14.51)	10441 (7.91)	12057 (16.62)	13388 (18.27)	47822 (10.28)	39378 (17.89)	49609 (16.26)	104194 (9.89)
Manufacturing of machinery &Transport Equipment & Servicing.	1793 (14.69)	1166 (16.46)	21608 (16.37)	12217 (16.5)	10405 (14.2)	73640 (15.83)	31558 (14.34)	48511 (15.90)	175203 (16.64)
Total	12204 (100)	7080 (100)	132000 (100)	72545 (100)	73280 (100)	465195 (100)	220068 (100)	305096 (100)	1053533 (100)

Source: Panchayath Level Statistics, Bureau of Economics and Statistics, Government of Kerala, Thiruvananthapuram, 1994.

A close look at Table 4.2.3 indicates that agro-based industries and forest and animal-based industries together accounted for 48.26 per cent of units, 47.72 per cent of investment and 62.29 per cent of employment as on 31-3-1979. In other words, nearly half of the industrial activity was dominated by these two sectors. But by 1999-2000 it can be observed that the percentage of units in these industries showed only a slight change; their share is 43.14, 44.21, and 57.38 per cent in the case of units, investment and employment respectively. In the case of Rubber, Petroleum, Chemical and Non-metallic, Mineral industry it is 22.02 per cent of units, 21.31 per cent of investments and 13.43 per cent of employment as on 31-3-1979. But this increased only to 24.63 per cent of units, 23.63 per cent of investments, 16.09 per cent employment as on 31-3-2000; i.e. significant shifts cannot be observed in this sector also. The shares of Iron and Steel and metal-based industries and manufacturing of machinery and transport equipment and servicing and repairing industries have also showed a slight increase in case of all the three indicators between 1979-2000. Thus, it can be inferred that, agro-based and forest and animal-based industries constitute nearly half of the total industrial activities. Thus after the establishment DICs, it failed to make a structural shift in favour of industries other than agro-based and animal and forest-based industries.

Evaluating on the basis of growth of small industry, the researcher felt that the performance of DICs are not satisfactory. To evaluate DICs only on the basis of growth of SSIs may not be adequate: because, the DICs are vested with numerous responsibilities for facilitating growth of village, cottage and SSI units. However, to evaluate the performance of DICs no objective criterion is readily available. Through informal discussions with the officials of the DICs and other academics the researcher has identified nine indicators to assess the performance. The nine indicators are:

1. The number of entrepreneurs identified
2. The number of new registration given
3. The number of project profile prepared
4. The number of units provided with technical assistance
5. The number of artisan units established
6. The number of SSI units established

7. Additional employment generated
8. Amount of credit assistance given
9. Amount of subsidy sanctioned.

To assess the performance DICs in Kerala, a comparative study has been made at all India level. For this purpose the secondary data published by Development Commissioner, Small Scale Industries (DC, SSI), for the period of 1980-81 to 1995-96 has been collected for the all India level and data for Kerala was collected from the DIC offices for the same period. Table 4.2.4 presents achievement of DIC in terms of all the nine indicators for the period of 1980 to 1996.

It can be noted from the Table 4.2.4 that the number of entrepreneurs identified, SSI units established, New provisional registration done, Credit provided, Additional employment generated, project profiles prepared, and technical assistance provided out of nine variables, eight mentioned is less in Kerala when compared to the All India average for most of the years. As regards the cash subsidy in '81-82, '82-83, '84-85, '85-86 and '94-95, Kerala averages per DIC are higher than All India DIC averages. This shows that in terms of eight variables Kerala DICs performance is much lower than All India performance of DICs. But in the distribution of subsidies, Kerala is somewhat at par with All India averages of DICs. This may be due to the misutilization of subsidies. The poor performance of DICs may be due to non-existence of trained, experienced and skilled functionaries in the DICs in Kerala.

Standard deviation and coefficient of variations were calculated for all the nine selected indicators, both for all India as well as Kerala and presented in Table 4.2.5. It can be observed from table 4.2.5 that the average performance of DICs in Kerala is much less than that of the DICs at all India level. Table 4.2.5 also reveals that the all India achievements of DICs show much consistency, as the co-efficient of variation in relation to the majority of indicators is less than that of Kerala.

Table 4.2.4

Physical Achievements of DIC Programme--- All India & Kerala (Average per DIC)

	No.of Entrepren-eurs identified		SSI units Establ-ished		New Provis-ional Registration		Artisan Units Establis-shed		Credit Provided Rs.crores		Additional Employment Generated		Cash Subsidy Rs.crores		Project Profiles Prepared		Technical Asstances provided	
	AI	KL	AI	KL	AI	KL	AI	KL	AI	KL	AI	KL	AI	KL	AI	KL	AI	KL
1978-79	NA	NA	965	NA	NA	NA	179	NA	0.75	NA	792	NA	NA	NA	NA	NA	NA	NA
79-80	NA	NA	1053	NA	NA	NA	403	796	0.72	NA	1774	NA	NA	NA	NA	NA	NA	NA
80-81	767	NA	1172	275	1473	NA	466	412	.75	NA	3973	NA	.23	.19	254	122	524	95
81-82	706	NA	1358	274	1565	NA	618	530	1.1	NA	4210	2343	.14	.18	289	174	566	88
82-83	929	NA	1545	242	1712	NA	740	565	1.42	NA	4990	2002	.14	.19	336	197	107	104
83-84	1302	658	1723	249	1760	NA	690	605	1.54	NA	5496	2213	.23	.22	496	168	108	109
84-85	1315	656	1901	242	1964	NA	720	792	1.54	1.01	5779	1686	.19	.24	552	234	128	119
85-86	1169	736	2149	276	2937	811	668	540	2.79	.89	7242	1970	.22	.33	564	215	121	120
86-87	1220	501	2263	356	2895	869	754	777	2.13	.98	7128	2133	NA	.43	NA	254	74	112
87-88	1254	861	2500	489	2768	854	851	338	2.59	NA	6325	2732	NA	.38	NA	203	136	128
88-89	1256	NA	2772	588	2938	894	713	444	3.14	NA	7373	2941	NA	.45	NA	264	241	159
89-90	1204	NA	3002	590	3102	921	713	641	4.09	.95	7745	3063	.54	.48	589	288	196	168
90-91	1156	574	3265	632	3488	984	742	360	4.03	1.338	7868	3771	.62	.53	614	254	203	171
91-92	1079	356	3533	780	3699	1174	769	251	3.97	1.575	7913	3615	.55	.52	668	108	221	196
92-93	977	279	3868	815	3999	1117	770	203	3.9	1.685	8277	4353	.59	.56	679	176	256	171
93-94	984	242	4150	1038	4344	1260	784	55	3.87	1.644	8881	5258	.61	.57	568	349	277	189
94-95	1050	544	4570	1113	4610	1522	796	66	3.92	1.725	9651	5127	.65	.66	640	392	264	144
95-96	950	853	4801	1230	4904	1772	766	143	3.98	1.941	NA	4619	.67	.65	593	284	NA	182
96-97	973	883	5039	1244	5143	1849	NA	NA	NA	1.842	NA	5019	.71	.69	637	197	NA	241
97-98	989	776	5321	1396	5439	1977	NA	NA	NA	1.719	NA	547	.68	.52	NA	199	NA	196
98-99	NA	856	NA	1409	NA	2108	NA	NA	NA	1.614	NA	5146	NA	.45	NA	176	NA	147
99-00	NA	917	NA	1429	NA	2077	NA	NA	NA	1.603	NA	4354	NA	NA	NA	187	NA	210
00-01	NA	631	NA	1433	NA	NA	NA	NA	NA	1.669	NA	NA	NA	NA	NA	NA	NA	NA

Source: 1 All India data are compiled from, Development Commissioner, SSI, Dept. of SSI, A&RI, Govt. of India, New Delhi, Jan.1994 and from Vasant Desai, Management of small- scale industries, S. Chand. Publications, 1995, P.P.101.

2. Kerala data are compiled from Economic Reviews, 1978-79 to 2000-2001S, State Planning Board, Thiruvananthapuram, and from the Progress Reports of DICs in Kerala.

Table 4.2.5

Mean, Standard Deviation and Co-efficient of Variation

For selected indicators (Kerala &All India)

Sl. No.	Indicators	n	AI / KL	X	SD	CV
1	Entrepreneurs identified	13	AI	1110	127.71	11.51
			KL	625	227.89	36.46
2	New Registration (provisional) given	13	AI	3867	901.74	23.32
			KL	1271	415.81	32.71
3	Project profiles pre- pared (No. Units)	14	AI	534	153.15	28.68
			KL	225	79.46	35.32
4	Artisan units established	16	AI	723	80.25	11.09
			KL	420	226.38	53.9
5	SSI units established	18	AI	3049	733.39	24.05
			KL	657	386.6	58.80
6	Additional Employment generated	14	AI	7063	1475	20.85
			KL	3086	1134	36.75
7	Technical Assistance Provided	15	AI	228	139.47	61.17
			KL	138	79.46	35.32
8	Credit Assistance given (Rs. Crores)	10	AI	3.3	0.853	25.68
			KL	1.4	0.357	25.94
9	Cash subsidy (Rs. Crores)	15	AI	0.4533	0.22	48.22
			KL	0.435	0.183	42.00

KL=Kerala, AI=All India

Source: Calculated on the basis of Table 4.2.4.

4.2.1. Achievements of DICs by Different Classes

The DICs were assigned a special responsibility to provide assistance particularly to the SC / ST and other socially oppressed sections of the community and also women entrepreneurs in order to enable them to take recourse to small industry and to join the main stream in course of time. Hence detailed analyses of the achievements of DICs of Kerala by classes are presented in Table 4.2.6.

Table 4.2.6 shows the number of artisan units established by different classes. It can be noted that the number of artisan units established has gone down steeply between 1979-80 and 1995-96, i.e. from 11149 to 2000 units. Number of artisan units established class wise, indicate that the share of SC /ST beneficiaries varied from 37 per cent in 1983-84 to 47 per cent in 1984-85, declined to 30 per cent in 1985-86 and in 1986-87 it increased to 39 per cent. After that it declined to 31 per cent in 1995-96. The women artisan units steadily declined from 52 per cent in 1983-84 to 23 per cent in

1995-96. The inconsistent and decreasing share of these parameters (SC / ST & Women) are understandable, as most of these beneficiaries were not provided with assistance in establishing units relating to their own trade, without having any need to provide additional training to them.

Table 4.2.6

Artisan Units Established by classes

Year	SC/ST	Women	Others	Total	Rural	Urban
79-80	NA	NA	NA	11149	NA	NA
80-81	NA	NA	NA	5769	NA	NA
83-84	3121 (37)	4395 (52)	953 (11)	8469 (100)	7856 (93)	613 (7)
84-85	5210 (47)	4707 (42)	1169 (11)	11086 (100)	10259 (93)	827 (7)
85-86	2245 (30)	3402 (45)	1908 (25)	7555 (100)	6924 (92)	631 (8)
86-87	4297 (39)	4564 (42)	2021 (19)	10882 (100)	10845 (99.65)	37 (.35)
87-88	1690 (36)	1375 (29)	1665 (35)	4730 (100)	4369 (92)	361 (8)
90-91	1428 (29)	1313 (26)	2292 (45)	5033 (100)	5007 (99)	26 (1)
93-94	NA	NA	NA	775	NA	NA
94-95	NA	NA	NA	926	NA	NA
95-96	623 (31)	460 (23)	917 (46)	2000 (100)	1689 (84)	311 (16)

Figures in the parenthesis indicate percentages

Source: Economic Review,(1979-80 to 1996-97),State Planning Board, Thiruvanathapuram ,Kerala,

Table 4.2.7

SSI Units Established by Classes

Year	SC /ST	Women	Others	Total
1985-86	255 (6.6)	112 (2.9)	3499 (90.5)	3866 (100)
'86-87	302 (6.07)	130 (2.62)	4545 (91.31)	4977 (100)
'87-88	142 (2.08)	690 (10.07)	6017 (87.85)	6849 (100)
88-89	473 (5.75)	293 (3.56)	7470 (90.69)	8236 (100)
'89-90	578 (6.98)	445 (5.38)	7248 (87.64)	8271 (100)
'90-91	579 (6.0)	588 (7.0)	7684 (87)	8847 (100)
'91-92	339 (3.0)	780 (7.0)	9799 (90)	10918 (100)
'92-93	898 (8.0)	2669 (23.0)	7844 (69)	11411 (100)
'93-94	1230 (8.0)	3742 (26.0)	9561 (66)	14533 (100)
'94-95	1053 (7.0)	3619 (23.0)	11164 (70)	15836 (100)
'95-96	726 (4.0)	3711 (22)	12466 (74)	16903 (100)
'96-97	698 (4.0)	3238 (19)	13485 (77)	17421 (100)
'97-98	883 (4.0)	4666 (24)	13998 (72)	19547 (100)
'98-99	565 (3.0)	4459 (22)	14712 (75)	19736 (100)
'99-00	543 (3.0)	3929 (20)	15534 (77)	20006 (100)
'00-01	251 (1.0)	3304 (17)	16518 (82)	20073 (100)

Figures in the parenthesis indicate percentages.

Source: Economic Reviews, 1985 to 2001, State Planning Board, Thiruvananthapurm,

Table 4.2.7 indicates the number of SSI units established by different classes. It can be observed that there is a five-fold increase in the number of SSI units established during 1985-86 to 2000-2001. The SC / ST beneficiaries in 1985-86 were 6.6 per cent, which was 8 per cent in 1992-93 and 1993-94. Thereafter it gradually declined to one per cent in 2000-2001. The percentage of women beneficiaries was 2.9

in 1985-86, and it was increased to 26 per cent in 1993-94. After 1993-94 it also declined to 17 per cent in 2000-2001. Thus it can be inferred that the declining trend of SC/ ST and women beneficiaries in Table 4.2.7 is due to the failure of DICs in assisting a large number of SC /ST and women beneficiaries in establishing SSI units.

Table 4.2.8

Additional Employment Generated in SSI units

Year	SC /ST	Women	Others	Total
1985-86	1204 (4.3)	799 (2.7)	25670 (93.0)	27574 (100)
'86-87	1975 (6.2)	780 (2.80)	27270 (91.0)	29862 (100)
'87-88	864 (2.20)	3853 (10.0)	33599 (87.8)	38245 (100)
'88-89	2578 (6.0)	1465 (3.5)	37350 (90.5)	41180 (100)
'89-90	3123 (7.6)	2206 (5.00)	35929 (87.4)	41000 (100)
'90-91	3059 (7.0)	2831 (6.5)	37244 (86.5)	42881 (100)
'91-92	1787 (3.3)	3772 (7.1)	47386 (89.6)	52797 (100)
'92-93	4340 (8.5)	11837 (23.3)	34787 (68.2)	50606 (100)
'93-94	5622 (9.2)	15692 (25.7)	40095 (65.1)	60945 (100)
'94-95	5336 (7.2)	16824 (22.8)	51899 (70.0)	73618 (100)
'95-96	3360 (4.6)	15758 (21.9)	52934 (73.5)	71775 (100)
'96-97	2824 (4.3)	12018 (18.5)	50051 (77.2)	64660 (100)
'97-98	3460 (4.9)	16486 (23.4)	50317 (71.7)	70263 (100)
'98-99	2302 (3.2)	18207 (25.4)	51123 (71.4)	71632 (100)
'99-00	2151 (2.98)	15917 (22.12)	53974 (74.9)	72042 (100)
'00-01	838 (1.37)	11287 (18.5)	48832 (80.13	60957 (100)

Source: Economic Reviews,1985 to 2001,State Planning Board, Thiruvananthapuram, Kerala

The additional employment generated in SSI units by classes is displayed in Table 4.2.8.

Table 4.2.9

New Provisional Registration given by Classes

Year	SC / ST	Women	Others	Total
1985-86	681 (6.0)	510 (4.5)	10163 (89.5)	11354 (100)
'86-87	912 (7.5)	729 (6)	10525 (86.5)	12166 (100)
'87-88	227 (2.0)	1315 (11)	10414 (87)	11956 (100)
'88-89	625 (5.0)	563 (4.5)	11328 (90.5)	12516 (100)
'89-90	915 (7.0)	774 (6)	11205 (87)	12894 (100)
'90-91	826 (6.0)	1581 (11.5)	11369 (82.5)	13776 (100)
'91-92	625 (4.0)	938 (6)	14075 (90)	15638 (100)
.92-93	1751 (11.2)	3000 (19.2)	10890 (69.6)	15641 (100)
'93-94	1659 (9.4)	5065 (28.7)	10925 (61.9)	17644 (100)
'94-95	1916 (9.0)	4479 (21)	14921 (70)	21316 (100)
'95-96	1240 (5.0)	5458 (22)	18109 (73)	24807 (100)
'96-97	1113 (4.3)	4414 (17.1)	20358 (78.6)	25885 (100)
'97-98	1383 (5.0)	6366 (23)	19930 (72)	27679 (100)
'98-99	737 (2.4)	5902 (20.1)	22866 (77.5)	29505 (100)
'99-00	378 (1.3)	4625 (15.9)	24079 (82.8)	29082 (100)

Source: Economic Review, State Planning Board, Thiruvananthapuram, Kerala,1986 to 2001. (Figures in the parenthesis show percentages)

It can be observed from Table 4.2.8 that the share of SC and ST, in additional employment generated by the SSI units varied below 9.2 per cent upto 1993-94. After 1993-94 it gradually declined to 1.37 per cent in 2000-01. The share of

women in the additional employment generated varied from 2.7 per cent in 1985-86 to 25.7 per cent in 1993-94. After that it gradually declined to 18.5 per cent in 2000-01.

Table 4.2.9 indicates the number of registration given to SSI units by classes. It can be observed that the numbers of provisional registration given by DICs per annum are increasing from1985-86 onwards. The number of provisional registration given by DICs in the state has gone up more than two and half times, i.e. from 11354 in 1985-86 to 29082 in 1999-2000. This suggests that more and more entrepreneurs are approaching DICs for registration. This may be due to the insistence of DIC registration by agencies for providing assistance to the units. However, it can be observed from Table 4.2.9 that the percentage of registrations given to SC /ST beneficiaries varies from 6 per cent to 11.2 per cent in 1992-93. After that it declined to 1.3 per cent in 1999-2000. The number of registrations given to women entrepreneurs varied between 4.5 per cent and 11.5 per cent between 1985-86 and 1990-91. In 1992-93 and 1993-94 the percentage of registration given to women entrepreneurs increased to 19.2 per cent and 28.7 per cent respectively. After that it declined to 15.9 per cent in 1999-2000.

Thus it can be observed that the number of registration given to SC /ST and women entrepreneurs together declined after 1993-94. Registrations given to SC /ST and women beneficiaries show an inconsistent trend upto 1993-94 and a downward trend after 1993-94.

The above analysis shows that SCs / STs were not benefited by the DICs, as their share in the number of registration given, SSI units established, artisan units established and employment generated are decreased. This suggests that the socially oppressed classes could not get any consistent assistance from the DIC programme to the desired extent. In the case of women their per cent share in the number of registration, SSI units established, and employment generated increased, but there is a decline in the share of artisan units established. Thus we can conclude that the DIC programme made some benefit to women, but leaves much to be desired.

4.2.2. Inter-Regional Analysis of Performance of DICs

An inter-regional analysis of the performance of DICs is presented in Table 4.2.10. The Kerala State is traditionally divided into three regions. Firstly, Travancore region, which comprises of southern six districts, i.e., Thiruvananthapuram, Kollam, Kottayam, Pathanamthitta, Idukki,and Alappuzha. The Ernakulam and Thrissur districts comprise of Cochin State, and northern six districts (Malappuram, Palakkad, Kozhikode, Wayanad, Kannur and Kasargode) comprise of Malabar region. It can be observed that the performance of DICs in Cochin Region is far better than that of the other regions. The DIC achievements in Cochin region i.e. in Thrissur and Ernakulam districts are higher than the state averages in all the nine indicators.

Table 4.2.10

Region-wise Position of Performance Indicators & Kerala Average (Average per DIC per annum)---1985-86 to 2000-2001

Indicators	Travancore	Cochin	Malabar	Kerala Average
Entrepreneurs identified	105	101	87	98
Project profiles prepared	186	217	146	170
Artisan units established	250	1734	489	582
SSI units registered	1405	2247	990	1390
SSI units established	1030	1497	629	924
Employment generated	4604	7431	2775	4226
Credit (Rs.Lakhs)	39	102	34	39
Subsidy (Rs.lakhs)	31	56	27	32
Technical assistance provided	136	180	119	134

Calculated on the basis of above tables

Travancore region also fared better when compared to Malabar region as the achievements per DIC in relation to seven indicators are higher than the state averages. But in terms of the number of artisan units established and subsidy provided, achievements in the Travancore region are below the state averages.

4.2.3. Inter-District Analysis

To assess the performance of DICs in the districts of Kerala and to identify the DICs that fared better, a performance index has been prepared, based on nine indicators. They are 1) Entrepreneurs identified 2) Registrations given to SSI units 3) Artisan units established 4) SSI units established 5) Additional employment generated 6) Technical assistance provided 7) Project profiles prepared 8) Credit assistance given 9) Cash subsidy sanctioned. These are the key indicators wherein the DICs were assigned a special role and responsibility. Time series data from 1985- 86 to 1999-2000 have been collected and aggregated for all the nine indicators and from which yearly averages were calculated for all 14 districts. As the achievements in respect of differed indicators differ among DICs and in order to measure the overall performance, scores were allotted ranging between 1 to 14. The DIC with highest average in a particular indicator was given the maximum scores of 14 and so on in descending order for each indicator. The total scores obtained by each DIC for all the nine indicators were aggregated in order to find out the overall performance of the DICs. The performance index was used to identify the DICs which performed well. The average achievements for the nine indicators and the scores obtained by each DIC are presented in Tables 4.2.11 and 4.2.12.

The total score being 110, DICs which scored 55 and above are considered as successful, while the rest are not so. From Table 4.2.11 it can be observed that Thrissur DIC tops the list with 110 points followed by Ernakulam, Kollam, Palakkad, Thiruvananthapuram, Alapuzha, Kozhikode, Kottayam and Malappuram. Performance of DIC Kasarkode was at the bottom with 22 points followed by Wynad, Pathanamthitta, Idukki, and Kannur.

From the above analysis it can be noted that performance of DICs in Thrissur, Ernakulam, Kollam and Palakkad districts were impressive. This may be due to the agglomerative advantages enjoyed by these districts. A careful perusal of Table 4.1.11 also shows that DICs in the districts with strong industrial base and relatively developed performed well. The performance of three DICs in the Malabar and Travancore region are below the average and have failed to provide the desired level of assistance to the entrepreneurs.

Table 4.2.11

District Performance Indicators—Averages per annum

	Ent. identified	Project profiles	Artisan units est'd	SSI units Reg'd	Tech'l Assist. Provided	SSI units Est'd	Empl. gener-ated	Credit Rs. Lakhs	Subsidy Rs. Lakhs
Thiruvananthapuram	102	208	286	2238	162	1417	6373	53.2	39.8
Kollam	304	264	296	2105	264	1217	6518	53	43.5
Pathanamthitta	66	40	164	811	42	681	2636	18.1	15.2
Allappuzha	155	248	134	1371	96	1198	5945	45	52.3
Kottayam	108	152	65	1950	165	1314	4254	342	15.3
Idukki	88	173	283	703	109	355	1893	18	10.3
Ernakulam	139	193	285	2552	190	1683	881	65	47.7
Thrissur	126	221	2523	2742	168	1310	5973	63	62.5
Palakkad	150	217	1487	168	213	1063	4812	56	57.5
Malappuram	78	189	159	1276	166	621	2851	52	36.8
Kozhikode	89	177	303	1225	119	918	3760	34	25.5
Wayanad	106	121	273	301	72	232	1105	10	8.5
Kannur	92	107	140	924	80	605	2664	32	26.3
Kasargode	39	90	172	501	57	344	1474	31	8.22

Source: Calculated from the secondary data

Table 4.2.12

Scores allotted to each indicators and total scores obtained by each district in Kerala

	Ent. ident ified	Project profiles	Artis-an units estd.	SSI units regd.	Techl. assist. provi-ded	SSI units est'd	Empl. gener-ated	Credit Rs. Lakhs	Sub-sidy Rs. Lakh	Tot-al	Over all point
Thiruvan anthapuram	7	10	10	12	9	13	12	11	9	93	5
Kollam	14	14	11	11	14	10	13	10	10	107	2.5
Pathana Mthitta	2	1	5	4	1	6	4	3	4	30	12
Allappuzha	13	13	2	8	5	9	10	8	12	80	6
Kottayam	9	5	1	10	6	12	8	7	5	63	8
Idukki	4	6	8	3	7	3	3	2	3	39	11
Ernakulam	11	9	9	13	12	14	14	14	11	107	2.5
Thrissur	10	12	14	14	11	11	11	13	14	110	1
Palakkad	12	11	13	9	13	8	9	12	13	100	4
Malapp Uram	3	8	47	7	10	5	6	9	8	60	9
Kozhikode	5	7	12	6	8	7	7	6	6	64	7
Wayanad	8	4	7	1	3	1	1	1	2	28	13
Kannur	6	3	3	5	4	4	5	5	7	42	10
Kasargode	1	2	6	2	2	2	2	4	1	22	14

Source: Calculated on the basis scoring technique.

Ent. = Entrepreneurs, Estd= Established, Regd = Registered, Techl = Technical, Assist = Assistance, Empl = Employment

4.2.4. Self Employment Scheme

This portion gives a brief account of the self-employment programme. The Government of India, Ministry of Industry, launched the scheme in August 1983 for providing self-employment to educated unemployed youth. The main objective of the scheme is to encourage the educated unemployed youth to undertake self-employment in industry, service and business through the provision of package of assistance. The scheme will cover all the educated unemployed youth who are matriculates (10^{th} class passed) and above with-in the age group of 18 to 35 years and whose family income does not exceed Rs.10000 per annum. Further there is reservation of 30 per cent for scheduled castes/tribes. In the modified scheme, the beneficiaries for industrial and service ventures will include ITI passed young persons. The limit of loan for industrial ventures has been increased from Rs.25000 to Rs.35000, in the case of service ventures the limit remains at 25000; while in the case of business ventures the limit has been reduced from Rs.25000 to 15000. However, of the types of ventures, the subsidy for which are fixed at 25 per cent in 1993 this project has been modified as Prime Ministers Rozgar Yojana (PMRY) and the matriculation pass was reduced to $VIII^{th}$ standard and whose family income does not exceed Rs.24000.

In Kerala, under PMRY 22.5 per cent and 27.5 per cent of State target is reserved for SC/ST and OBC respectively. For business purpose maximum amount will be one lakh and for other activities it is upto Rs. 2 lakhs. An individual gets 15 per cent (Rs.7500) as subsidy of his loan amount. The rate of interest of the loan under the scheme will be normal bank interest without any collateral security except assets brought by using loan amount. The repayment of instalments would spread over 3 to 7 years depending upon the nature and profitability of the venture.

4.2.41. Role of DIC in the implementation of the Scheme

The District Industries Centers are assigned operational responsibility of the scheme at district level over and above the present normal activities. The DIC in consultation with the Lead Bank of the respective area acts as the Nodal Agency for the formulation of Self Employment Schemes. It plans and monitors their implementation

under the overall guidance of the state government. The SISI will assist the DIC in carrying surveys, assessment of potentialities and preparation of projects and schemes.

4.2.42. Progress

Under the PMRY programme the state government fixes the target to be achieved by the DICs every year. The DICs, in turn, are supposed to execute the programme in liaison with banks and other government agencies. In order to evaluate the progress made under this programme the researcher collected data relating to the targets fixed, number of cases cleared, amount of credit disbursed and the number of units sanctioned, along with the total amount of credit sanctioned and amount disbursed. The data was collected from the Director of Industries for the State as well as the three selected districts during the period from 1983-84 to 2000-01. This is shown in Table 4.2.13.

It can be observed from Table 4.2.13 that the number of beneficiaries selected from the state as a whole is 779. But in selected districts Malappuram is the only district among the selected districts below the state average per annum i.e. 505 in the case of number of beneficiaries selected. Ernakulam and Thiruvananthapuram are above state average; i.e. 1389 and 1325 respectively.

It can also be observed from Table 4.2.13 that the number of beneficiaries selected for assistance the performance of DICs in Ernakulam and Thiruvananthapuram are better than Malappuram; because they achieved more than 70 per cent higher than the state average, whereas Malappuram could achieve only 64 per cent of the state average.

As to the number of beneficiaries to whom the loan amount is disbursed; Malappuram is below the state average and Ernakulam and Thiruvananthapuram are above the state average. Malappuram showed poor performance in relation to these two indicators.

Table 4.2.13

Targets/Achievements/Credit Sanctioned and Disbursed

(Average per annum per DIC) 1983-84 ----2000-01

District	Target units	No. of beneficiaries Selected	No. of units to which credit sanctioned	Amount sanctioned	Amount disbursed	Percentage of amount disbursed to amount sanctioned
Malappuram	935 (72.7)	505 (64.8)	352 (71.8)	276.24 (73.5)	192.577 (62.4)	69.71
Ernakulam	2200 (171)	1389 (178)	808 (165)	793.3 (211)	416.28 (183)	52.47
Thiruvananthapuram	-	1325 (170)	837 (171)	601.415 (160)	385.003 (170)	64.02
Kerala	1285 (100)	779 (100)	490 (100)	375.48 (100)	226.95 (100)	60.44

Figures in the parenthesis indicates percentages to state average

Source: Calculated on the basis of figures obtained from the Directorate of Industries and Commerce, Thiruvananthapuram, 2001.

The average amount of credit sanctioned to beneficiaries by the DICs in the state is Rs.375.48 lakhs per annum. A comparison of this indicator with Ernakulam and Thiruvananthapuram shows that these two districts are far better than the state average, but in Malappuram the average amount of credit sanctioned per year is less than the state average. The average amount disbursed also has the same feature. The percentage of the amount of credit disbursed to credit sanctioned shows that the performance of DIC Malappuram is better than the rest.

The inadequacy of finance is also observed under PMRY, which is considered as an important scheme in order to motivate the educated unemployed youth for the establishment of their own units. Table 4.2.14 reveals that the unitholders immensely suffer from inadequacy of finance under PMRY Scheme. It reveals the disheartening position that only 53 to 67 per cent of DIC recommended amount is sanctioned by financial institutions. Then after sanctioning the disbursed amount is only 44 to 47 per cent of the recommended amount. Table 4.2.14 reveals that the approach of financial agencies has remained negative towards the unemployed trying for self-employment. The difference between amount recommended, sanctioned and disbursed is very high in all the districts.

Table 4.2.14

Amount Recommended by DICs and sanctioned and disbursed by Financial Institutions (Rs. lakhs)

Name of the district	1996-97			1997-98			1998-99		
	Amount Recommended by DIC	Amount Sanctioned by the Bank	Amount Disbursed by the Bank	Amount Recommended by DIC	Amount Sanctioned by the Bank	Amount Disbursed by the Bank	Amount Recommended by DIC	Amount Sanctioned by the Bank	Amount Disbursed by the Bank
Thiruvana-thapuram	1567.75	972.55 (62)*	603.29 (38)***	1520.59	973.49 (64)*	644.56 (42)***	1505.05	1106.89 (73)*	737.97 (49)***
Kollam	1200.56	753.18 (62)	559.1 (46)	1122.67	725.71 (64)	522.74 (46)	1132.9	815.63 (72)	536.37 (47)
Pathana thitta	597.4	403.11 (67)	307.92 (51)	596.41	428.46 (71)	291.5 (48)	656.8	468.5 (71)	343.07 (52)
Alappuazha	1111.05	729.52 (65)	492.74 (44)	879.87	595.72 (67)	417.86 (47)	894.29	647.57 (72)	460.51 (51)
Kottayam	1229.7	781.26 (63)	537.07 (43)	1219.01	757.62 (62)	502.12 (41)	1081.03	754.91 (69)	470.00 (43)
Idukki	373.74	266.56 (71)	209.85 (56)	365.21	233.66 (63)	172.56 (47)	321.86	256.67 (79)	139.63 (43)
Ernakulam	1295.2	994.78 (76)	727.9 (56)	1296.49	1033.89 (79)	737.81 (56)	1664.77	1165.81 (70)	503.57 (30)
Thrissur	1199.8	916.93 (76)	762.31 (63)	1283.21	985.57 (76)	727.02 (56)	1228.7	968.3 (78)	487.74 (39)
Palakkad	578.55	504.24 (87)	331.23 (57)	903.44	644.4 (71)	322.37 (35)	1170.3	912.16 (78)	150.65 (12)
Malappuram	727.67	452.25 (62)	196.95 (27)	594.97	378.00 (63)	306.00 (51)	691.03	513.02 (74)	293.28 (42)
Calicut	959.03	649.31 (67)	416.89 (43)	952.36	625.32 (65)	325.06 (34)	823.11	607.02 (73)	305.9 (37)
Wynad	173.02	124.3 (71)	110.4 (63)	236.64	197.9 (83)	128.55 (54)	227.29	170.00 (74)	127.00 (55)
Kannur	766.17	496.56 (64)	408.42 (53)	782.52	490.92 (62)	256.8 (32)	691.46	537.09 (77)	223.03 (32)
Kasargode	344.23	220.38 (64)	167.2 (48)	326.07	202.28 (62)	128.5 (39)	356.87	249.39 (69)	108.87 (30)
Kerala	12401.56	8339.22 (67.24)*	5831.27 (67.52)** (47.02)***	12079.46	8252.94 (68.32)*	5486.45 (66.48)** (45.41)***	11090.46	9192.96 (82.89)	4887.59 (53.16)** (44.07)***

* Percentage of amount sanctioned to amount recommended

** Percentage of amount disbursed to amount sanctioned

*** Percentage of amount disbursed to amount recommended

Source: Directorate of Industries and Commerce, Thiruvannathapuramm, 2001.

4.2.5. Summary

4.2.51. After the establishment of DICs in Kerala SSI did not show improved performance as the compound growth rate of units, employment and investment under pre-DIC period is higher than the post-DIC period. It was

27.97 per cent, 12.31 per cent, and 58.9 per cent in pre-DIC period and 14.85 per cent, 9.85 per cent and 14.95 per cent in Pre-DIC period in the growth of number of units, employment and investment respectively.

4.2.52. Structural changes have not taken place in the composition of small scale industry in the state as the importance of agro and forest and animal-based industries did not show a pronounced decline. Their share in units, employment and investment declined from 27.6 to 30.8 per cent, 50 to 26.5 per cent and 29 to 42 per cent respectively and the importances of rubber, petroleum chemical non-metallic mineral industry have not shown a pronounced increase.

4.2.53. Analysis of the performance of DICs based on nine selected characteristics shows that the DICs in Kerala are not relatively better than the all India averages in respect of all eight variables and in the cash subsidies Kerala averages is at par with all India averages. The co-efficient of variation in Kerala is very high in respect of most of the indicators compared to the all India performance.

4.2.54. The DICs has not succeeded in assisting the socially downtrodden classes. The number of registration given, SSI units established and employment generated not increased gradually over the years.

4.2.55. Inter-regional comparisons of the performance of DICs show that the performance of DICs in Cochin region is better than the rest. The DICs in backward Malabar region failed to provide the desired level of assistance.

4.2.56. District-wise performance of DICs measured through performance index indicates that Thrissur district stands first, whereas, Kasargode is at the bottom. Better performance of DICs in Thrissur and Ernakulam is due to the agglomeration advantages enjoyed by the industrial units.

4.2.57. It can also be noted that performance of DICs in districts with strong industrial base and relatively developed is better than the rest.

4.2.58. Inadequacy of finance is observed under PMRY or Self Employment Scheme, which is considered as an important scheme to motivate educated unemployed youth to set up industrial units.

4.2.59. The study also reveals that the approach of financial institution towards educated unemployed youth trying for self employment is not positive.

It is clear from the analysis that the performance of DICs in Kerala is far below comparing the all India performance. An inter-regional analysis of the performance of DICs also suggests that in backward region like Malabar DIC failed to accelerate the process of industrialization. Across the districts, the performance of DICs in developed districts is better than in backward districts. This shows that the benefits of industrial development, after commencement of DIC programme, could not percolate down to the backward region and districts adequately. Therefore it is suggested that efforts should be made by DICs to concentrate on the development of backward districts and regions. If necessary more funds are to be allocated and DIC personnel should work with greater vigour and zeal. It can also be noted that the DICs, no doubt, have not succeeded in assisting and motivating SC, ST beneficiaries in establishing SSI and artisan units.

4.3. Performance of DIC-Assisted SSI Units

(A Non-theoretical Analysis Based on Primary data)

The performance of DIC-assisted industrial units in the selected districts is evaluated by using structural ratios, linkages with the hinter land. The views and reaction of sample beneficiaries about DIC assistance were also taken into account. The main objectives of the sample survey are:

1. To identify whether the DICs have succeeded in attracting new entrepreneurship into the field of industry.
2. To know the performance of industrial units established after the DICs.
3. To find out the linkage effects generated by the industrial units with the hinterland.
4. To measure the degree of assistance received by the entrepreneurs from DICs, and also their views and reactions.

4.3.1 Sample Design

The sample survey was conducted in three selected districts, of which one district is industrially developed in the state, second one is industrially most backward in the state and third one is lying between these two. The districts are drawn from the three economic regions, namely, Travancore, Cochin and Malabar. The sample districts include Thiruvananthapuram from Travancore region, Ernakulam from Cochin region, and Malappuram from Malabar region. The total number of SSI units in the entire three sample districts is 63062 and its 37 per cent is situated in Thiruvananthapuram, 46 per cent in Ernakulam, and 17 per cent in Malappuram. The three districts were selected on the criteria of ranking of districts on the basis of district-wise per capita income at current prices, which is shown in Table 4.3.1.

Table 4.3.1

Ranking of Districts on the basis of District wise Per Capita Income at current prices

Year District	'90-91	'91-92	'92-93	'93-94	'94-95	'95-96	'96-97	'97-98	'98-99	'99-00
Thiruvananthapuram	8	8	6	5	4	4	6	7	6	7
Kollam	5	10	5	8	8	8	9	10	7	8
Pathanamthitta	4	5	9	7	7	6	5	9	11	11
Alappuzha	7	11	13	12	12	12	13	8	12	3
Kottayam	9	7	11	10	10	10	14	3	4	4
Idukki	2	2	2	3	3	3	2	2	3	6
Ernakulam	1	1	1	1	1	1	1	1	1	2
Thrissur	3	4	4	4	5	5	7	5	5	5
Palakkad	13	9	12	13	13	13	12	13	13	10
Malappuram	14	14	14	14	14	14	14	14	14	14
Kozhikode	10	12	3	9	9	9	10	11	9	9
Wayanad	6	6	7	2	2	2	3	4	10	1
Kannur	11	3	8	6	6	7	11	12	8	12
Kasargode	12	13	10	11	11	11	8	6	2	13

Source: Economic Review, 1996 to 2000, State Planning Board, Thiruvananthapuram, Kerala.

From the Table 4.3.1 Ernakulam, Malappuram and Thiruvananthapuram are selected as sample districts because Ernakulam tops, and Malappuram, the most backward district and Thiruvannathapuram a medium, in the level of per capita income in ranking districts on the basis of last ten years district wise per capita income at current prices.

A pilot study was conducted through a structural questionnaire by selecting five SSI units from each of the three districts. Based on the responses, the questionnaire was modified and administered on 43 SSI units in Malappuram district, 115 units in Ernakulam district and 92 in Thiruvananthapuram district, covering different geographical areas on a random basis. Despite the efforts of the researcher the response from the units has not been very encouraging. In some units it is only after three to four personal visits that the researcher could get the entrepreneur for a personal interview. For the purpose of analysis, using the resource-based classification; these sample units

were classified into five industry groups, viz. 1) Agro-based 2) Forest and animal - based 3) Rubber, Petroleum, chemical, non-metallic and mineral-based 4) Iron and Steel and metal-based and 5) Manufacturing of machinery and Transport Equipment. The distribution of Sample units - industry-wise - can be noted from Table 4.3.2.

Table 4.3.2
Distribution of Sample units - industry wise

Industry	Malappuram	Eranakulam	Thiruvananthapuram	Total	Percentage of Total
Agro Based	11	43	50	104	41.6
Forest and Animal Based	11	12	6	29	11.6
Rubber, Petroleum, Chemical, Non-metallic, Mineral	16	19	13	48	19.2
Iron and Steel and Metal Based	2	20	11	33	13.2
Manufacturing of Machinery and Transport Equipments	3	21	12	36	14.4
Total	43	115	92	250	100.0

Source: Sample Data

It can be observed from Table 4.3.2 that 41.6 per cent of the sample units are Agro-based, 11.6 per cent are Forest and Animal-based, 19.2 per cent are Rubber, Petroleum, chemical and non-metallic mineral-based, 13.2 per cent are Iron and Steel and Metal based and the remaining 14.4 per cent are manufacturing of Machinery and Transport Equipment. Thus sample units cover industrial units representing a broad spectrum of industrial activity in the selected districts. The units in some industry groups are better represented in a particular district due to their relative importance in that district.

4.3.11. Age Distribution of the Units

While selecting the sample units, enough care has been taken to cover only those units that came into existence after the establishment of DICs, so that the entrepreneur will be in a better position to respond adequately to the various direct and indirect benefits they have received from or through DICs during the pre-investment, investment and post-investment stages. Table 4.3.3 shows the frequency distribution of units by age.

Table 4.3.3

Frequency Distribution of Units by Age*

Age in Years	Malappuram	Ernakulam	Thiruvananthapuram	Total	Percentage
<2 years	25	40	63	128	51.2
2-6 years	5	43	15	63	25.2
7-11 years	5	12	5	22	8.8
12-20 years	6	16	4	26	10.4
>20 years	2	4	5	11	4.4
Total	43	115	92	250	100.0

Source: Sample data
* Age of the Units.

It can be noted from Table 4.3.3 that 11 out of 250 sample units have been functioning before or at the time of establishment of DICs. Among 250 sample units 85 per cent of the units are in the age group below 12 years. It reveals that more units have come into existence in the later half of the emergence of DICs.

4.3.12. Distribution of Units by Nature of Organization

Table 4.3.4 shows the distribution of sample units by nature of organization.

Table 4.3.4

Distribution of Units Based on the Pattern of Organization

Nature of Organization	Malappuram	Ernakulam	Thiruvananthapuram	Total	Percentage
Proprietary	35 (81.4)	91 (79.1)	76 (82.6)	202	80.8
Partnership	7 (16.3)	18 (15.7)	5 (5.4)	30	12.0
Private Ltd.Company	1 (2.3)	3 (2.6)	4 (4.4)	8	3.2
Co-operative society	0	3 (2.6)	5 (5.4)	8	3.2
Others (Charitable Institutions)	0	0	2 (2.2)	2	0.8
Total	43 (100.0)	115 (100.0)	92 (100.0)	250	100.0

Source: Sample data
Figures in the brackets indicate percentages.

A perusal of Table 4.3.4 shows that the proprietary concerns are dominant in the sample. Of the 250 samples units 80.8 per cent are proprietary concerns, 12 per cent partnership concerns, 3.2 per cent private limited companies and 3.2 per cent co-operative society. The 0.8 per cent comes under the category of "others" includes the units run by charitable institutions. A comparison of sample units across the districts shows the domination of proprietorship concerns in all the three districts.

4.3.13. Distribution of sample units based on the classification of Small Scale Industries

Table 4.3.5 shows the distribution of industrial units based on the classification of Small Scale Industries. It can be observed that 53.2 per cent of the sample units are tiny units, 35.6 per cent units are SSI units and 11.2 per cent units are Small Scale Service Business Enterprises. The inter-district comparisons also show the dominance of tiny units.

Table 4.3.5

Classification of Small Scale Industries

Classification of SSI	Malappuram	Ernakulam	Thiruvananthapuram	Total	Percentage
Tiny	19	53	61	133	53.2
SSI	22	48	19	89	35.6
SSSBE	2	14	12	28	11.2
Total	43	115	92	250	100.0

Source: Sample data

4.3.14. Location of the Units (Within or out side industrial Estate/ Industrial Development Areas).

One of the functions of the DIC is to assist the entrepreneurs by providing factory accommodation. The availability of ready infrastructure in the form of developed plots/ constructed shed with all facilities like availability of power, water, roads, sheds etc in Industrial

Table 4.3.6

Location of the Units

Location	Malppuram	Ernakulam	Thiruvananthapuram	Total	Percentage
With in I E/ I D A	7 (16.3)	28 (24.3)	14 (15.2)	49	19.6
Out side I E/IDA (Hired shed)	23 (53.5)	71 (61.7)	56 (60.9)	150	60.0
Out side I E/I D A (Own shed)	13 (30.2)	16 (14)	22 (23.9)	51	20.4
Total	43 (100.0)	115 (100.0)	92 (100.0)	250	100.0

Source: Sample data. IE: Industrial Estate. IDA: Industrial Development Area

Estates /Industrial Development Areas lure the entrepreneurs into industrial activity. This is so because they are relieved of some of the teething problems that they have to encounter in obtaining licences or clearances from different agencies. Table 4.3.6 shows location of sample units.

A perusal of the Table 4.3.6 shows that only 19.6 per cent of the sample units are located in Industrial Development Areas and the remaining 80.4 per cent are located outside the industrial development areas. Inter–district comparisons show that about 15 to 25 per cent of the sample units are operating in the industrial Development Areas. This shows that the DICs are helping the entrepreneurs by providing them with developed plots/sheds to establish their units. In all the industrial estates and IDAs visited by the researcher, unitholders complained was about "attimari" (loading and unloading) workers. In Manjeri mini- industrial estate, unitholders complained that even there is no water supply facility. Some of the industrial Development Areas and Industrial Estates where the researcher personally visited noticed that even the one by third of the industrial estate land couldn't be used due to locational inappropriateness of the Industrial Estate or Industrial Development Plot.

4.3.2 Entrepreneur's Profile

The success of an industrial unit depends upon the entrepreneurial efficiency, which in turn is influenced by age, educational background, etc. The following analysis gives a brief account of the entrepreneurial profile.

4.3.21. Educational Profile

Table 4.3.7 shows the educational background of the entrepreneurs. It can be observed from the Table 4.3.7 that out 250 sample units, 49.6 per cent are owned by entrepreneurs who do have only SSLC or below SSLC. 33.2 per cent are Pre-degree and Diploma holders. 14.4 per cent are graduates, 2.8 per cent have post graduate degrees. The number of graduates and post graduates among the entrepreneurs is 17 per cent. This suggests that the DICs have not succeeded in motivating educated / skilled people to establish industrial units.

Table 4.3.7

Entrepreneur's Educational Background

Education	Malappuram	Ernakulam	Thiruvananthapuram	Total	Percentage
SSLC and Below SSLC	25 (58.50)	58 (50.40)	4~1 (44.80)	124	49.6
PDC and Diploma	13 (30.20)	35 (30.50)	35 (38.0)	83	33.2
Graduates including Engineering Graduates	4 (9.00)	18 (15.60)	14 (15.20)	36	14.4
Post Graduates	1 (2.30)	4 (3.50)	2 (2.0)	7	2.8
Total	43 (100.00)	115 (100.00)	92 (100.00)	250	100.0

Source: Sample data

4.3.22. Age of the Entrepreneurs

Table 4.3.8 shows the entrepreneurial profile by age. It can be observed from this Table that about 30.4 per cent of the entrepreneurs are in the age group of less than 30 years and 69.6 per cent entrepreneurs are in the age group of 31 and above; which suggests that young entrepreneur's entrance into the area of industry is very low. Out of the 69.6, about 37.2 per cent are in the age group of 31- 40 years and the 25.6 per cent belong to the age group of 41 – 50 and the rest 6.8 per cent are above 50 years.

This analysis shows that in Malappuram District only 25.5 per cent of the entrepreneurs are in the age group of less than 30 years. About 67.7 per cent of the

entrepreneurs are in the age group of 31 to 50, which also indicates that young entrepreneurs are hesitating to enter into the area of industry.

Table 4.3.8

Age Classification of Entrepreneurs

Age Classification	Malappuram	Ernakulam	Thiruvananthapuram	Total	Percentage
Below-30	11 (25.5)	31 (27.0)	34 (37.0)	76	30.4
31 – 40	18 (42.2)	48 (42.0)	27 (29.0)	93	37.2
41 – 50	11 (25.5)	30 (26.0)	23 (25.0)	64	25.6
51 – 60	3 (7.0)	5 (4.3)	5 (5.4)	13	5.2
60 and above	0	1 (0.7)	3 (3.6)	4	1.6
Total	43 (100.0)	115 (100.0)	92 (100.0)	250	100.0

Source: sample data

4.3.23. Previous Occupation

Table 4.3.9 shows the previous occupation of entrepreneurs. It can be noted that 41 entrepreneurs (i.e. 16.4 per cent) were already in the field of industry owning or working in industrial units. The entrepreneurs having previous occupation "Tailoring" started mostly garment units, 10.8 per cent of entrepreneurs belong to this category. About 16 per cent (40) gulf returnees either started a unit or purchased an earlier unit for a livelihood. Entrepreneurs having business background (i.e. 14.4 per cent) started SSI units to support their business. For example, the researcher noticed that bakery shop owners started food product units and textile shop owners garment units etc. Thus about 58 per cent (including tailoring, gulf, business and worked in industrial unit) of entrepreneurs were induced not by DIC to start industrial units. The persons having no job category started industrial unit is only 9.6 per cent. This shows that DIC has not succeeded in attracting new entrepreneurs by encouraging them to start new units.

Table 4.3.9

Previous Job of the Entrepreneurs

Job of the Entrepreneurs	Malappuram	Ernakulam	Thiruvanan-thapuram	Total	Percentage
Tailoring	4 (9.3)	14 (12.2)	9 (9.8)	27	10.8
Gulf	14 (32.4)	17 (14.8)	9 (9.8)	40	16.0
Business	3 (7.0)	12 (22.0)	21 (22.8)	36	14.4
Worked in industrial Unit	4 (9.3)	22 (19.1)	15 (16.3)	41	16.4
Other Job	12 (28.0)	39 (33.9)	31 (33.7)	82	32.8
No job	6 (14.0)	11 (9.6)	7 (7.6)	24	9.6
Total	43 (100.0)	115 (100.0)	92 (100)	250	100.0

Source: Sample data

Thus an analysis of entrepreneurship based on age, educational background and previous occupation shows that

1. More than 69 per cent of entrepreneurs are in the age group of above 30 years.
2. The proportion of graduate and post-graduate entrepreneurs is only 17 per cent.
3. By analyzing the previous occupation of entrepreneurs; only few new entrepreneurs entered to the area of industry.

This shows that after the establishment of DICs young post graduate, unemployed new entrepreneurs have not ventured into industrial activity.

4.3.3. Economic Performance of Sample Units

Economic Performance of Sample units is examined in terms of capital intensity, labour productivity and capital productivity.

4.3.31. Capital Intensity

Capital intensity indicates the nature, techniques of production employed and the employment generating ability of the industrial units. An analysis of K/L

(Capital / labour) ratio has been made for the sample units in selected districts are presented in the Table 4.3.10.

Table 4.3.10

Capital per worker in Rupees

District	Sum of investment in plant and Machinery (Rs.Lakhs)	Total Labour	Capital/labour K/L (Rs).
Malappuram	400.035	336	119058
Ernakulam	678.31	542	125150
Thiruvananthapuram	630.71	511	123426
Total	1709.055	1389	123042

Source: Sample data

From Table 4.3.10 it can be observed that the capital employed per worker for all these sample units is Rs 123042. Inter- district comparisons of capital intensity show that the K/L ratio is higher for units established in Ernakulam district and Thiruvananthapuram district; while in Malappuram it is below the sample average. This means that units in Ernakulam and Thiruvananthapuram are more capital-intensive and less employment generating.

4.3.32. Labour Productivity

Productivity of labour is estimated by dividing the value of output (gross) with the number of workers employed. Though value added per worker is a better indicator of labour productivity than output per worker, it could not be calculated due to non-availability of relevant information. Table 4.3.11 shows the output per labour.

Table 4.3.11

Output per labour

District	Output (Rs. Lakhs)	Labour	Output/labour. Rs. (per annum)
Malappuram	442.182	336	131602
Ernakulam	1023.145	542	188772
Thiruvananthapuram	711.631	511	139262
Total	2176.958	1389	156728

Source: Sample Data

It can be observed from Table 4.3.11 that labour productivity per person employed is Rs.156728 for the sample units as a whole. The labour productivity is highest in Ernakulam district (i.e. Rs. 188772). The lowest productivity is in Malappuram district i.e. Rs.131602. In Thiruvananthapuram also labour productivity is below average, i.e. Rs.139262.

4.3.33. Capital Productivity (O/K)

Like labour productivity, capital productivity is also calculated by dividing the value of output (gross) with the amount of fixed investment and presented in Table.4.3.12.

Table 4.3.12

Out per unit of Capital

Districts	Rs lakhs Out put	Rs lakhs Capital	(In Rupees) O/k
Malappuram	442.182	400.035	110536
Ernakulam	1023.145	678.31	150837
Thiruvananthapuram	711.631	630.71	112830
Total	2176.958	1709.055	127378

Source: Sample data

From Table 4.3.12 it can be inferred that output per unit of capital for the sample units as a whole is Rs.127378. Units in Ernakulm have the highest O/K ratio i.e., Rs.150837 and the lowest in Malappuram Rs.110536 and Thiruvananthapuram are also below whole average i.e. Rs.112830 lakhs.

A comparative study of three structural ratios, viz, K/L, O/L, and O/K throws light on the relative performance of units in the three selected districts. From Table 4.3.10, 4.3.11 and 4.3.12 the following features can be observed:

4.3.331. There is a positive correlation between capital per worker and output per worker. In Ernakulam and Thiruvananthapuram capital per worker is high compared to Malappuram and thus, in these districts output per worker is also high compared to Malappuram

4.3.332. The relative performance of units in Ernakulam is far better compared to Thirvananthapuram and Malappuram .

4.3.333. The performance of units located in Thiruvananthapuram stands second to Ernakulam in respect of all the three indicators.

4.3.334. The performance of units in Malappuram is very poor as the K/L, O/L and O/K ratios are the lowest in this district.

From the above analysis it can be summed up those units in Ernakulam district have outstanding performance, than these in the other districts.

4.3.34. Sources of Funds

Availability of credit, both short term and long term, facilitated the establishment of industrial units. Table.4.3.13.shows the various sources of funds for the industrial units district-wise. It can be observed that about 22 per cent of the funds have been contributed by the owner/proprietors. About 20 per cent of the funds have come from term lending institutions like KSFC/SIDBI etc. and about 58 per cent from commercial and co-operative banks.

Table 4.3.13
Source of Funds- District wise (in percentages)

Industry	Malappuram	Ernakulam	Thiruvananthapuram	Total
Own	12 (27.91)	24 (20.87)	18 (19.57)	54 (21.6)
Term loans SIDBI/KSFC	5 (11.62)	21 (18.26)	25 (27.17)	51 (20.4)
Bank	26 (60.47)	70 (60.87)	49 (53.26)	145 (58.0)
Total	43 (100)	115 (100)	92 (100)	250 (100)

Source: Sample Data
Figures in the bracket indicate number of units.

Across the districts there are significant variations. In Malappuram district where 27.9 per cent of funds are mobilized from own funds and only 11.62 percent from term lending institutions. In Thiruvananthapuram19.57 percent are mobilized from own

funds and only 27.17 per cent from term lending institutions. These figures for Ernakulam are 20.87 per cent and 18.26 per cent respectively

4.3.4. Linkages

The linkage effects generated by industrial units in the selected districts are estimated by adopting the methodology of the IDBI Report "IDBI assisted Industrial Estates in Karnataka and Andhra Pradesh"[1], i.e. when inputs are purchased within the district, income and employment will be created to the local people and hence it is deemed to have strong backward linkages. Similarly when output is sold in the same market it creates a strong forward linkages as some units, which otherwise would have purchased these products outside the local areas, have access to them within the local area itself. Purchase of inputs and sale of output outside the district represent leakages.

Table 4.3.14 shows the sources of inputs and place of sale of output for the three selected districts. A close look at the table shows that only 20.8 per cent of the inputs purchased by the units are from within the district and the remaining 79.2 per cent of the inputs are purchased from outside the districts. Similarly, 34.4 per cent of the sales by the sample units are made within the district and the remaining 65.6 per cent of the sales are affected outside the districts. This suggests that the backward as well as the forward linkages of sample units with the hinterland are very weak. The leakages are more than the linkages.

Table 4.3.14

Source of Inputs and sale of Output

	Inputs			Sale of Output		
Districts	Within District	Same State	Outside State	Same District	Same State	Outside State
Malappuram	8 (18.6)	21 (48.8)	14 (32.6)	11 (25.6)	20 (46.5)	12 (27.9)
Ernakulam	24 (20.9)	62 (53.9)	29 (25.2)	44 (38.3)	49 (42.6)	22 (19.1)
Thiruvananthapurm	20 (21.7)	44 (47.8)	28 (30.5)	31 (33.7)	33 (35.9)	28 (30.4)
Total	52 (20.8)	127 (50.8)	71 (28.4)	86 (34.4)	102 (40.8)	62 (24.8)

Source: Sample Data.

Comparison across the districts suggests that units established in Thiruvananthapuram and Ernakulam districts have higher backward as well as forward linkages with 21.7 and 20.9 per cent of inputs purchased, 33.7 per cent and 38.3 per cent of the sales made within the districts respectively. In contrast leakages are very high in Malappuram district, where only 18.6 per cent of the inputs purchased and 25.6 per cent of the sales made are within the district. The main reason for a high degree of leakages in Malappuram district is the poor economic development and lack of purchasing and sale facilities.

From the above analysis it is inferred that

4.3.41. The units in Ernakulam and Thiruvananthapuram districts are generating maximum linkages, both forward as well as backward, with the hinterland.

4.3.42. The units in Malappuram are having more leakages than linkages.

4.3.43. The linkage effects generated by the sample units with the state are high, as more than 70 per cent of the inputs purchased and output sold is in the state itself.

4.3.5. Employment (Linkages)

The employment linkages generated by the SSI units district-wise can be noted from Table 4.3.16:

Table 4.3.15

Employment – district wise – Labour Nativity.

Districts	Same District	Same State	Outside the State	Total
Malappuram	257 (76.5)	42 (12.5)	37 (11.0)	336 (100.0)
Ernakulam	423 (78.0)	63 (11.7)	56 (10.3)	542 (100.0)
Thiruvananthapuram	379 (74.0)	46 (9.0)	86 (17.0)	511 (100.0)
Total	1059 (76.0)	151 (11.0)	179 (13.0)	1389 (100.0)

Source: Sample Data
Figures in the parenthesis are percentages.

It can be observed that employment linkages created by sample units are very strong with 76 per cent of the total labour is drawn from the same district and only 11 per cent from the same state (other than the district) and the remaining 13 per cent from outside the state. Comparison among the districts suggests that barring Thiruvananthapuram, Malappuram and Ernakulam between 10 and 11 per cent of the employment created by the labour are outside the state, whereas in Thiruvananthapuram, it is about 17 percent. The main reason for a high degree of leakages in employment compared to Malappuram and Eranakulm is that the district is located on the border of Tamil Nadu state and some of the industries are dependent on Tamil Nadu for labourers.

4.3.6. Factors Influencing Location of the Units

The success of an industrial unit depends on the right choice of location. Therefore an analysis of the factors influencing the location of the unit is analyzed by using scaling technique. Weightages were given based on the degree of importance[2]. Table 4.3.16 A&B shows the degree of importance of various factors influencing the location of the unit. (Refer Tables: 1, 2, 3, & 4 in Appendices)

Table 4.3.16 (A)

Motivational Factors for Selection of Location

Districts	Personal Preference	Avail. of ready shed /plot	Avail. Of infrast-ructure	Proximity of raw materials	Proximity of market	Avail. of skilled labor	Incen-tives
Malappuram n=43	5.05	3.05	2.68	2.42	2.91	1.88	3.00
Ernakulam n=115	4.28	3.74	3.48	2.65	3.12	1.83	1.90
Thiruvananthapuram n=92	3.65	2.86	2.62	2.50	4.61	2.10	2.61
Average n=250	4.2	3.32	3.04	2.61	3.60	1.94	2.35

Source: Sample data Avail. =Availability

Degree of influence

Below 2 – LOW

2 to 3.99—MODERATE

4 to 6.00—HIGH

It can be observed from Table 4.3.16 (A) & B personal preference has a high degree of influence on the choice of location for the sample units as a whole. The proximity of market, availability of ready shed/plot, infrastructural facilities, proximity of raw materials and incentives has only a moderate degree of influence.

Inter district comparisons do not display significant deviation except in Ernakulam, where incentives and availability of skilled labour have only low degree of influence. In Thiruvananthapuram proximity to market have a high degree of influence on the location of the units and all other factors are moderate. There is no factor, which has a low degree of influence. In Malappuram availability of skilled labour has only a low degree of influence and except personal preference all other factors have only moderate degree of influence.

Table 4.3.16 (B)

Motivational factors for Selection of Location

Degree of Satisfaction	Total Sample	Malappuram	Ernakulam	Thiruvananthpuram
High (4& above)	1. Personal Preference (4.2)	1.Personal Preference (5.05)	1.Personal Preference (4.28)	1.Proximity of Market (4.61)
Moderate (2 to 3.99)	1.Proximity to market (3.6) 2. Availability of ready shed (3.32) 3. Availability of infrastructure (3.04) 4. Proximity to raw materials (2.61) 5.Incentives (2.35)	1.Availability of Ready shed (3.05) 2.Incentives (3.0) 3.Proximity to market (2.91) 4.Availability of Infrastructure (2.68) 5.Proximity of raw materials (2.42)	1.Availability of ready shed (3.74) 2.Availability of infrastructure (3.48) 3. Proximity to market (3.12) 4. Proximity to raw materials (2.65)	1.Personal preference (3.65) 2. Availability of ready shed (2.86) 3.Availability of infrastructure (2.62) 4. Incentives (2.61) 5.Availability of Raw materials (2.50) 6.Availability of skilled labor (2.15)
Low (Below 2)	1. Availability of Skilled labour (1.94)	1.Availability of skilled labour (1.88)	1.Availability of skilled labour(1.83) 2. Incentives (1.9)	

Source: Sample Data

4.3.7. DIC Assistance -- Views and Reactions of the Beneficiaries

The views and reactions of beneficiaries about the DIC assistance are as follows.

4.3.71. Factors influencing the Selection of Line of Activity

Factors influencing the selection of line of activity are measured by giving weightages to the responses of the sample units[3]. The averages scores and the ranks are given in Table 4.3.17 (A) & (B). A close observation of 4.3.17 (B) shows that self-motivation has a high degree of influence on the selection of line of activity (2.2). This followed by the influence of other agencies which, in turn, includes--- banks, financial institutions and promotional agencies of the government except DIC. (Refer Table 5, 6, 7, & 8 in Appendices)

Table 4.3.17 (A)

Motivational factors for selection of line of Activity

Name of the District	Motivational factors			
	Self Motivation	DIC	Other Agencies	Father/Brother/ Friends and Relatives
Malappuram n=43	2.42	1.12	1.7	0.77
Ernakulam n=115	2.40	0.75	1.64	1.21
Thiruvananthpuram. n=92	2.04	1.01	1.87	1.05
Average n=250	2.2	0.91	1.74	1.08

Source: Sample Data

Degree of Influence

Below 1 - LOW

1 to 1.99 - MODERATE

2 to 3 - HIGH

Table 4.3.17 (B)

Motivational factors for selection of line of Activity

Degree of Satisfaction	Total sample	Malappuram	Ernakulam	Thiruvananthapuram
High (2 to 3)	1.Self Motivation (2.2)	1. Self Motivation (2.42)	1. Self Motivation (2.40)	1. Self Motivation (2.04)
Moderate (1 to 1.99)	1.Other Agencies (1.74) 2. Father/ Brothers/Friends & Relatives (1.08)	1.Other Agencies (1.7) 2.DIC (1.12)	1. Other Agencies (1.64) 2.Father/ brother/Friends &Relatives (1.21)	1. Other Agencies (1.87) 2. Father/ Brother/ Friends &Relatives (1.05) 3. DIC (1.01)
Low (Below 1)	1. DIC (0.91)	1. Father/ Brother/ Friends & Relatives (0.77)	1. DIC (0.75)	

Source: Sample Data

The degree of influence of these agencies is moderate (1.74). The influence of DICs in the selection of line of activity is low (0.91) for the sample units as a whole, and also in Ernakulam (0.75). But in Malappuram and Thiruvananthapuram the influence of DIC is moderate i.e. just 1.12 and 1.01 respectively. Thus the inter district-comparison shows that the impact of self motivation is high and other agencies (Moderate) in all the districts, but there is minor deviations in the case of the influence of DICs and fathers/brothers/relatives and friends.

4.3.72. Registration

One of the main functions of the DICs is to give permanent registration to industrial units which enable the entrepreneurs to avail themselves of the various incentives, concessions and other benefits from agencies related to the development of small scale industries. Therefore the extent of help or assistance provided by DICs in registration of units is assessed in terms of the number of visits made by the entrepreneurs to the DIC office to get permanent registration. Table 4.3.18 shows the number of visits made by the beneficiaries to DIC office.

Table 4.3.18

Number of Visits Made by Entrepreneurs for Permanent Registration

Number of visits	Malappuram	Ernakulam	Thiruvananthapuram	Total
1	0	0	0	0
2	9 (20.93)	16 (13.91)	20 (21.74)	45 (18.0)
3	10 (23.26)	31 (26.96)	40 (43.48)	81 (32.4)
4	7 (16.28)	36 (31.30)	16 (17.39)	59 (23.6)
> 4	17 (39.53)	32 (27.83)	16 (17.39)	65 (26)
Total	43 (100.00)	115 (100.00)	92 (100.00)	250 (100.00)

Figures in the parenthesis indicates percentages
Source: Sample Data

It can be observed from Table 4.3.18 that all the sample units have approached the DIC for permanent registration. Permanent registration is supposed to be given to the industrial unit within one year after commencement of commercial

production. It can be observed that the number of visits made by the sample units to get permanent registration is alarmingly high. Sixty five units (26.0 per cent) have reported that they have made more than 4 visits to get the permanent registration. One hundred forty units (56 per cent) have made 3 to 4 visits and 45 units (18 per cent) have made 2 visits to get permanent registration. It is this time consuming process involved in giving permanent registration by the DICs that has made some of the entrepreneurs to feel that the DICs have become yet another hindering agency in their way to establish industrial units and some of them have even blamed the government for starting the DICs. In the context of permanent registrations, comparisons across the districts also shows wide ranging deviations, while in the case of Malappuram district 39.53 per cent made more than 4 visits, it is 27.83 per cent and 17.39 per cent in Ernakulam and Thiruvananthapuram respectively.

4.3.73. Training

One of the main functions of the DICs is not only to identify and motivate the entrepreneurs to enter into the field of industry, but also to provide them training in establishing and running the industrial units. In this context the DIC can organize Training Programmes either on its owner in collaboration with other agencies like KITCO, SISI and NISIET etc. From Table 4.3.19 it can be noted that only 24 entrepreneurs out of 250 sample units have received technical/management training under the "Entrepreneurial Development Programme " (EDP) of which 16 entrepreneurs informed that the training programmes are useful and the rest expressed the view that the training programmes are not very much useful to them.

Table 4.3.19
Training to Entrepreneurs

Training Received or not	Malppuram	Ernakulam	Thiruvananthapuram	Total
Training Received	4	11	9	24
Training not Received	39	104	83	226
Total	43	115	92	250

Source: Sample Data

4.3.74. Credit

Finance is the lifeblood of industry. The success of industrialization programmes mainly depends on easy availability of financial assistance, both for fixed capital investment and for working capital needs. Apart from easy availability, adequacy of financial assistance at the right time, at reasonable rates of interest facilitates the growth of industry. In this context this researcher tried to elicit information about the sources of credit and also the views of the entrepreneurs and their reactions, which are presented in Table 4.3.20 and 4.3.21.

It can also be observed from Table 4.3.20 that 58 per cent of the entrepreneurs availed credit assistance from commercial banks, 10 per cent availed loans from Kerala State Financial Corporation (KSFC), and only 1.6 per cent availed credit assistance from NSIC (National Small Industries Corporation), for the purchase of machinery under the Hire Purchase Scheme. Eighteen entrepreneurs availed financial assistance from Kerala State Small Industries Development Corporation (KSSIDC), 4 entrepreneurs also availed credit assistance from SIDBI (Small Industries Development Bank of India) and fifty-eight per cent of the sample units (i.e.145 units) availed financial assistance from agencies like SBT, SBI, other nationalised and scheduled commercial banks, cooperative bank etc.

Table 4.3.20

Agencies Approached for Financial Assistance

Districts	KSFC	KSSIDC	NSIC	SIDBI	Banks and Cooperative societies.
Malappuram	3	2	0	0	26
Eranakulam	12	8	1	2	70
Thiruvananthapuram	10	8	3	4	49
Total	25 (10.0)	18 (7.2)	4 (1.6)	6 (2.4)	145 (58.0)

Source: Sample Data

Table 4.3.21 shows the reactions of entrepreneurs on the adequacy of loan, time taken for appraisal, procedural difficulties, repayment schedules etc. It can be

noted that in Table 4.3.21 about 198 units obtained financial assistance from one agency or the other. As regards the adequacy of loan 109 entrepreneurs considered the assistance sufficient and 89 held the view that the loan amount is not sufficient. As regards the time taken for appraisal and sanctioning of loan amount, 73 respondents considered that their applications were processed and the loan amount is released in reasonable time by the financial agencies; 34 considered that they have received loan assistance promptly, while 91 units reported inordinate delays in appraisal and sanctioning of loans but 69 reported that project cost escalated due to the delays in sanctioning loans. However, 167 respondents expressed the view that procedural aspects involved in processing and sanctioning of the loans are highly cumbersome. As regards the repayment schedules are concerned, 107 out of the 198 respondents expressed the view that repayment schedules are not very convenient.

The involvement of DICs in processing the loan applications and pursuing the case for sanction of loan is expressed in the Table 4.3.22.

Table 4.3.21
Reactions of the Entrepreneurs on the Financial Assistance

Districts	Availed or not		Adequacy		Time taken for appraisal and sanction			Procedural Aspects		Repayment Schedule		Cost over run due to delay in loan sanction	
	Availed	Not Availed	Sufficient.	Not sufficient	Long	Reasonable	Prompt.	Simple	Cubersome	Convenient	Not Convenient	Yes	No
Malappuram	31	12	15	16	10	12	9	9	22	12	19	9	22
Ernakulam	93	22	58	35	52	30	11	7	86	52	41	35	58
Thiruvanan-thapuram	74	18	36	38	29	31	14	15	59	27	47	25	49
Total	198	52	109	89	91	73	34	31	167	91	107	69	129

Source:-Sample Data

According to Table 4.3.22, 37 out of the 198 respondents reported that they have involved the DICs, out of which, 2 respondents considered that the DICs are very helpful. For 10 respondents it is only helpful, but 27 expressed the view that the DICs are not helpful in any manner. Some of them also expressed that the loan applications processed by DIC officials and forwarded to banks /financial institutions recommending the sanction of loan assistance were either rejected or called for reappraisal, involving a

lot of delay. Some of them formally expressed the view that DIC Credit Managers neither have competence nor are genuinely interested in rendering any type of assistance in this respect.

Table 4.3.22

Role of DICs in Credit Assistance

District	Involved	Not involved	Very helpful	Helpful	Unhelpful
Malappuram	7	24	0	3	4
Ernakulam	18	75	2	4	12
Thiruvananthapuram	12	62	0	3	9
Total	37	161	2	10	27

Source: Sample Data

As regards the mode of release of loan and their views regarding supply of machinery, the units failed to give proper responses.

4.3.75. Raw Materials

One of the functions of DICs is to help the entrepreneurs in processing scarce and imported raw materials. In providing raw material assistance to needy units DICs are supposed to liaise with SIDECO, NSIC and other government departments/agencies. During the survey it was observed that few entrepreneurs approached the DICs for the supply of raw materials. Table 4.3.23 shows the number of entrepreneurs who approached the DICs and their views about such assistance.

Table 4.3.23

Raw Material Assistance

District	No.of Entrepreneurs availed raw material assistance	Reasonable Price	Right Time	Adequate Quantity
Malappuram	3	1	1	2
Ernakulam	9	4	2	4
Thiruvananathapuram	8	4	1	3
Total	20	9	4	9

Source: Sample Data

It can be noted from 4.3.23 that only 20 units approached DICs for raw material assistance, of which 9 units held that the raw materials were supplied to them at reasonable prices. But the rest of them were not happy as regards the DIC's role in the supply of raw materials. The major complaints in this regard are inordinate delays and inadequate supplies. In informal discussions, some entrepreneurs expressed the view that the functional managers in charge of raw material assistance were not helping them in any manner. They also criticized that the SIDCO are not following any clear norms for the supply of raw materials and also are more biased in favour of large and medium scale units. Some of the entrepreneurs criticized the policy of supplying agencies calling for advance payments before the supply of raw materials, which is locking up their working capital and in case of any delay the units are not in a position to purchase them from the open market. Some other entrepreneurs complained that government raw material price is higher than the open market price; and SIDCO is not bothered, even though we reported this, because, they are interested only in their salary.

4.3.76. Marketing

DICs are expected to assist the small entrepreneurs in marketing their products by way of supplying the necessary information to the units about the market potential, price preference schemes offered by the State and Central governments, export possibilities and also liaise with the KSIDC which makes purchases on behalf of the State Government. During the course of the survey none of the entrepreneurs reported that they have availed marketing assistance through the DICs. But some entrepreneurs reported that the DICs helped them in displaying their products by allotting stalls freely in the trade fairs or exhibitions. In the freely allotted stalls, there is no lighting facility and sales are very poor; because they allots stalls which lie in the corner position of exhibition field. But if we pay, we will get much better stalls, where sales are much better, and thus we abandoned freely allotted stalls and purchased another one.

4.3.77. Incentives

In order to attract industries and encourage growth of industrial units the Central and State governments have announced a package of incentives. The various incentives offered to industrial units include state / central investment subsidy, concessional finance, interest subsidy, seed capital/margin money loan, power subsidy etc. Table 4.3.24 shows the number of units, which availed themselves of these incentives.

Table 4.3.24

Number of Beneficiaries availed various Incentives.

Districts	Investment Subsidy	Concessional Finance	Interest Subsidy	Seed Capital/ Margin Money Loan	Power subsidy	Sales Tax Exemption	Price Preference
Malappuram	15	-	-	6	2	2	0
Ernakulam	34	2	2	12	7	6	3
Thiruvanan-thapuram	22	2	-	8	5	6	2
Total	71	4	2	26	14	14	5

Source : Sample Data

Table 4.3.25 (A)

Types of Assistance Received from DIC

District	Suggesting the project profile	Supply of the product	Procedural aspect	Feasibility report preparation	Feasibility report appraisal	Information and machine supp-lies	PMT and Provisional Registration	Raw material Assistance	Recomm-endation for eligible incentives	Marketing assistance	Counselling
MPM	1.35	0.95	1.0	1.0	1.05	0.93	1.07	0.58	0.84	0.53	0.86
EKM	1.38	0.67	1.15	1.23	1.17	0.97	1.49	0.51	0.99	0.67	0.36
TVM	0.96	0.46	1.28	0.85	1.40	0.55	1.25	0.38	1.43	0.32	1.57
Total	1.22	0.64	1.17	1.05	1.24	0.81	1.32	0.48	1.13	0.52	0.89

Source: Sample Data

Degree of Satisfaction

Below 1-Low

1 to 1.99—Moderate

2 to 3.00 –High

MPM= Malappuram, EKM= Ernakulam,

TVM= Thiruvnanthapuram

Table 4.3.24 shows the number of units, which availed themselves of these incentives. It can be observed from the table that of all the incentives, 71 units out of 250 sample units availed the investment subsidy, which shows the popularity of the scheme. The seed capital/ margin money loan was availed by 26 units. Fourteen units availed power subsidy as well as sales tax exemption. Only 5 units availed price preference and 4 units availed concessional finance.

The overall performance of DICs in rendering assistance to the entrepreneurs is analysed in respect of 11 characteristics. For this purpose scaling techniques have been used, by giving weightages to the responses given by the entrepreneurs[4]. The averages of combined scores of the respondents for each district as

well as for the four districts for these 11 characteristics can be observed from Table 4.3.25 (A). The Degree of Satisfaction is measured by taking the range of average scores of 2 to 3, 1 to 1.99 and below one are considered as high , moderate and low degree of satisfaction respectively, and this can be noted from Table 4.3.25 (B). (Refer Tables 9, 10, 11, & 12 in Appendices)

Table 4.3.25 (B)

Types of Assistances Received From DIC

Degree of Satisfaction	Total Sample	Malappuram	Ernakulam	Thiruvananthap-uram
High 2 to 3	Nil	Nil	Nil	Nil
Moderate 1 to 1.99	1.Permanent & provisional registration (1.32) 2.Feasibility Report Appraisal (1.24) 3.Suggesting The Project Profiles (1.22) 4.Procedural Aspect (1.17) 5.Recommendationsof eligible incentives(1.13) 6.Feasibility Report Preparation (1.05)	1.Suggesting the Project Profiles (1.35) 2. Permanent and provisional registration (1.07) 3.Feasiblity Report Appraisal (1.05) 4.Procedural Aspect (1.0) 5.Feasibility Report Preparation (1.0)	1. Permanent and Provisional registration. (1.49) 2.Suggesting the Project Profiles (1.38) 3.Feasibility Report Preparation (1.23) 4.Feasbility Report Appraisal (1.17) 5.Procedural Aspect (1.15)	1.Counselling (1.57) 2.Recommendations of eligible incentives (1.43) 3.Feasibility Report Appraisal (1.40) 4.Procedural aspect (1.8) 5. Permanent and provisional registration (1.25)
Low Below 1	1.Counselling (0.89) 2.Information and Machine supplies (0.81) 3. Supply of the Product (0.64) 4.Marketing Assistance (0.52) 5.Raw material Assistance (0.48)	1.Supply of the Product (0.95) 2.Information &Machine Supplies (0.93) 3.Counselling (0.86) 4.Recommendations of eligible Incentives (0.84) 5.Rawmaterial Assistance (0.58) 6.Marketing Assistance (0.53)	1.Recommendations of the eligible incentives (0.99) 2.Information & Machine Supplies (0.97) 3.Marketing Assistance (0.67) 4.Supply of the Product (0.67) 5.Rawmaterial assistance (0.51) 6.Counselling (0.36)	1.Suggesting the Project Profile (0.96) 2.Feasibility Report Preparation (0.85) 3.Information and Machine supplies (0.55) 4.Supply of the Product (0.46) 5.Rawmaterial assistance (0.38) 6.Marketing assistance (0.32)

Source:- Sample Data

Tables 4.3.25 (A) & (B) show that among the 11 characteristics, there is no variable for the sample units which gives a very high level of satisfaction. The sample units expressed moderate degree of satisfaction in respect of provisional and permanent registration, feasibility report appraisal and procedural aspect, if all the sample units are taken as whole and in three districts also. Suggesting project profiles and feasibility report preparation are also moderate degree of satisfaction, if the sample units, taken as a whole and in Malappuram and Ernakulam districts also. In respect of recommendations of eligible incentives and counselling, Thiruvannathapuram district's sample results show a moderate degree of satisfaction. All other characteristics like information and machine supplies, supply of the product, marketing assistance and raw materials assistance in all the districts and if sample units taken as a whole also show a very low level of satisfaction. Thus, it indicates that the degree of satisfaction in relation to the 11 characteristics is not upto the expectations of the entrepreneurs.

The performance of DICs in all the three districts seems to be very poor as the degree of satisfaction is low and moderate in relation to all the 11 characteristics. There is no single variable, which has a high degree of satisfaction.

4.3.8. DIC as Nodal Agency

The DICs are supposed to act as a single window of assistance to the small entrepreneurs, byestablishing liaison with other government department agencies. As per the guideline issued by the Development Commissioner, Small Scale Industries, the Nodal Agency meetings are to be convened once in every month under the chairmanship of District Collector. The extent to which the DICs have succeeded in discharging the functions related to the Nodal Agency in the three selected districts is analyzed based on the number of meetings held and number of cases cleared. Table 4.3.26 shows the various committees meeting held and cases cleared for the period 1995-96 to 2000-2001.

It can be observed from Table 4.3.26 that there is no uniformity as the number of nodal agency meeting convened in the three districts. The number of meetings held varied between 7 to 33 per year.

Table 4.3.26

Nodal Agency-Meetings Held and Cases Cleared

Year	DLRC	DIDC	GCC	STE	SIS	Cases Cleared
Malappuram						
1995-96	--	2	1	3	2	79
'96-97	3	4	3	3	4	118
'97-98	2	3	1	2	4	84
'98-99	1	1	1	2	2	92
'99-00	2	3	1	4	3	115
'00-01	2	1	2	3	3	91
Total	10	14	9	17	18	579
Ernakulam						
1995-96	3	-	8	9	10	635
96-97	2	1	7	8	9	278
97-98	1	1	1	10	10	339
98-99	1	1	8	9	10	248
99-00	1	1	8	9	6	125
00-01	1	-	-	1	1	32
Total	9	4	32	46	46	1657
Thiruvananthapuram						
1995-96	2	-	4	4	7	98
96-97	3	4	8	5	6	87
97-98	3	7	7	7	5	159
98-99	2	-	3	5	5	278
99-00	4	4	6	11	7	126
00-01	4	6	8	4	5	84
Total	18	21	36	36	35	832

Source: DICs, Malappuram, Eranakulam, and Thiruvananthapuram

DLRC = District Level Review Committee.

DIDC = District Industries Development Committee,

GCC = Green Channel Committee,

STE = Sales Tax Exemption Committee,

SIS = State Investment Subsidy Committee,

This shows that the DICs are not strictly following the direction of the Development Commissioner of Small Scale Industries in convening nodal agency meetings every month. As to the number of cases cleared there are wide-ranging variations over a period of time in each district and also across the districts. A close perusal of the above table 4.3.26 also shows that there is no consistency in the reporting of the data relating to the number of cases cleared. The maximum and minimum number of cases cleared in Malappuram district is 79 and 115 respectively, in Ernakulam it varies between 32 to 635 and in Thiruvnanthapuram it varies between 84 to 278. The researcher got the opportunity to watch one of the DLRC (District Level Review Committee) meetings and observed that the meeting was conducted in routine and casual manner. The absence of seriousness to the issues concerned is glaring. It is also observed that the entrepreneurs, whose applications are taken up for discussions, are not invited to the meetings to present their case.

4.3.9. Summary

The above analysis brings the following observations:

4.3.91. The DICs have not succeeded in attracting young and educated entrepreneurs to establish industrial units. In the Sample study 84 per cent of the unitholder are below Pre degree and SSLC and only 16 per cent constitute graduates and postgraduate and 70 per cent of the entrepreneurs belong to the age group of above 30.

4.3.92. The DICs were not successful in attracting unemployed people to start industrial units. Only 9.6 per cent of the total sample units come from "no job" category. Thus it indicates that only few new entrepreneurs entered into the area of industry.

4.3.93. Economic performance of SSI units in the selected districts shows that the performance of SSI units in Ernakulam district is far better than that of the units in other districts. The performance of units in Malappuram districts is very poor in terms of all the three structural ratios.

4.3.94. Only 20 per cent of the funds invested in SSI units have come from term lending institutions. The units are mostly dependent upon own funds and commercial and scheduled banks.

4.3.95. Linkage effects show that both backward and forward linkages of the units with the district hinterland are very weak.

4.3.96. Personal preference has a high degree of influence in the selection of location of units.

4.3.97. The choice of line of activity is mostly influenced by self-motivation and the influence of DIC in the selection of line of activity is very weak.

4.3.98. The reaction of the entrepreneurs about the DIC assistance show that they have to make a large number of visits to the DIC office to get permanent registration and DIC also failed to provide training to a substantial number of entrepreneurs.

4.3.99. Majority of the entrepreneurs reported that there is inordinate delay in processing, appraisal and sanction of loans and also that loans sanctioned by the banks and other agencies are inadequate. About 70 per cent of the unitholders are of the opinion that the performance of the DICs in credit assistance is not at all satisfactory.

4.3.910. Only very few units availed raw materials assistance and those units approached DIC are critical about DIC assistance.

4.3.911. In the context of marketing assistance, in allotting Stalls in the industrial exhibitions, SSI unitholders are critical about DIC.

4.3.912. There is no activity, which gives a high degree of satisfaction in DIC assistances to the unitholders. The degree of satisfaction is very low as regards counselling, information and supplying machines, supply of the product, marketing assistance and raw material assistance.

After the establishment of the DICs very few number of young and educated entrepreneurs entered into the field of industry and it is to be noted that majority of the entrepreneurs were of the opinion that DICs are a failure, because DICs failed to assist

in a meaningful manner. Thus it can be inferred that the DICs are a failure, and there is a need for improving the performance of DICs by strengthening them organisationally. It is suggested that the DIC should follow a result-oriented approach rather than target-oriented approach as it is practised now.

It is also observed that the influence of DICs on the choice of activity and the location of unit by the beneficiaries is very less. This is also a very unhealthy sign. The beneficiaries based on the hunches or family influence established industrial units. Even the choice of locating the units is based upon personal preference or nearness to native place. Thus the improper selection of line of activity and improper location of the unit will be detrimental to the success of the ventures. It is this factor, which is responsible for the weak linkage of the units with the hinterland. Therefore it is very clear that the DICs failed to play a decisive role both in the selection and in the location of the projects. The DICs also failed to take into account the non-availability of raw materials and non-existence of markets before they give registrations to the industrial units. These shows that the techno-economic surveys were insufficient and inappropriate in identifying industries which have the potential for development. They also failed in preparing sound project and product profiles.

The expectations of the entrepreneurs from the DICs are very high and the satisfaction is very low. This is mainly due to the lack of motivation, expertise and inadequate staff with the DICs. Hence it is suggested that the organizational structure of DICs have to be revamped.

4.3.10. References and Notes

1. I.D.B.I. Report, (1980): "I.D.B.I. Assisted Industrial Estates in Karnataka and Andhra Pradesh", June 1980.
2. Details of methodology are given in Chapter. I
3. Details of Methodology are given in Chapter. I
4. Details of Methodology are given in Chapter. I.

CHAPTER V

THEORETICAL ANALYSIS OF THE PERFORMANCE OF DICs -AN APPLICATION OF ALTERNATIVELY AUGMENTED SOLOW MODEL

5.1. Introduction

The second part of the fourth chapter deals the progress of DICs and their achievements based on the analysis of secondary data. Here an attempt is made to make a comparative assessment of the working of DICs at the All India Level vis-à-vis Kerala state, taking into account of certain selected indicators. The last part of this chapter gives an account of the performance of DIC-assisted small scale units in the selected districts of Malappuram, Ernakulam and Thiruvananthapuram on the basis of primary data. The views and reactions of the entrepreneurs of sample beneficiaries about DIC assistance were also taken into account. All these analyses are non-theoretical analysis. In this chapter it is attempted to answer whether DICs were effective on the basis of a macro economic model of a district economy.

The main objective of the present study is to assess the contribution of the functions of DICs to economic growth of different districts in Kerala. Specifically, it is attempted through the present study, to judge whether these institutions were effective in fostering economic growth to the extent to which they were expected of. As one observed in the chapter IV, this has been done through a non theoretical framework. However, in the present chapter it is attempted to develop a purely theoretical model with the aim to analyse the performance of DICs in Kerala. The model that is attempted to develop here will be an augmented version of the famous model of economic growth developed by Robert M. Solow (1956). This alternative augmentation will closely follow another augmented version of Solow model using human capital developed by Mankiew, Romer and Weil (hereafter MRW) in 1992. Instead of human capital as in MRW model, the present model incorporates DIC's investments and expenditures as one of the explanatory variables. Since the model that is attempted to develop here is an augmented version of the Solow model and since it is planned to compare the empirical

results for both models, the text book Solow model is discussed before move into its augmentation.

5.2. Solow Model

The text book Solow model with technological progress begins with a general production function as given below:

$$Y_{(t)} = F(K_{(t)}, A_{(t)}.L_{(t)}) \qquad \text{.....(5.1)}$$

Where $Y_{(t)}$ is the composite output that the economy (in the present study, the district economy) produces at time 't', $K_{(t)}$ represents the stock o f physical capital, $A_{(t)}$ shows the level of technology or knowledge; and $L_{(t)}$ represents the stock of labour or workforce, all at time 't'. Physical capital, technology and labour are all used to produce the composite output $Y_{(t)}$. Since technology augments labour in equation (5.1), we have a labour- augmenting production function. When technology augments capital one will have a capital augmenting production function and when it augments the whole function we will have a neutral production function. However, in the present case we have a labour-augmenting production function as given in (5.1) when technology augments labour, we call $A_{(t)}.L_{(t)}$ as the stock of 'effective labour' at time 't' and Solow considered it as a single factor or independent variable.

We can now divide both sides of equation (5.1) by the stock of effective labour ($A_{(t)}.L_{(t)}$) to obtain its intensive form as shown below:

$$\frac{Y_{(t)}}{[A_{(t)}.L_{(t)}]} = \frac{1}{[A_{(t)}.L_{(t)}]} F[K_{(t)}, A_{(t)}.L_{(t)}] = F\left[\frac{K_{(t)}}{A_{(t)}.L_{(t)}}, \frac{A_{(t)}.L_{(t)}}{A_{(t)}.L_{(t)}}\right]$$

Or

$$y_{(t)} = F[k_{(t)}, 1] = f(k_{(t)}) \qquad \text{.....(5.2)}$$

Where $y_{(t)}$ is output per effective labour $\left[\frac{Y_{(t)}}{[A_{(t)}.L_{(t)}]}\right]$ and $k_{(t)}$ is physical capital per effective labour $\left[\frac{K_{(t)}}{[A_{(t)}.L_{(t)}]}\right]$.

It is assumed that the general production function given in equation (5.1) or itS intensive form given in equation (5.2) possesses the property of diminishing returns with respect to each factor. It also possesses the property of constant returns to scale when we consider all the factors together. Therefore, the production function in equation (5.1) or (5.2) is called a 'neoclassical production function'.

Now, we consider the specific form for the production function in equation (5.1) used by Solow. It was of Cobb-Douglas form as given below:

$$Y_{(t)} = K_{(t)}^{\alpha}.[A_{(t)}.L_{(t)}]^{1-\alpha} \qquad \text{.....(5.3)}$$

Where α is the elasticity of output ($Y_{(t)}$) with respect to physical capital ($K_{(t)}$) and $(1-\alpha)$ is the elasticity of output with respect to effective labour $(A_{(t)}.L_{(t)})$. α is assumed to be constant. It is also assumed that α lies between zero and one, i.e. $0<\alpha<1$. As we have derived the intensive form of equation (5.1) as given in equation (5.2), we can also derive the intensive form of equation (5.3) by dividing both sides of it by $(A_{(t)}.L_{(t)})$. This is shown below:

$$\frac{Y_{(t)}}{[A_{(t)}.L_{(t)}]}. = \frac{K_{(t)}^{\alpha}[A_{(t)}.L_{(t)}]^{1-\alpha}}{[A_{(t)}.L_{(t)}]} = K_{(t)}^{\alpha}[A_{(t)}.L_{(t)}]^{-\alpha} = \frac{K_{(t)}^{\alpha}}{[A_{(t)}L_{(t)}]^{\alpha}}$$

Or

$$y_{(t)} = \left[\frac{K_{(t)}}{A_{(t)}.L_{(t)}}\right]^{\alpha} = k_{(t)}^{\alpha} \qquad \text{.....(5.4)}$$

It should be noted that the Cobb-Douglas production function provided in equation (5.3) or its intensive form provided in equation (5.4) possesses the properties of a neoclassical production function discussed above. Specifically Cobb-Douglas production function exhibits diminishing returns with respect to each factor and constant returns to scale when all factors are considered together. In additions to these two neoclassical properties, Cobb-Douglas production function given in equation (5.3) also obeys Inada conditions. This can be shown as follows: The partial derivative of output $Y_{(t)}$ in equation (5.3) with respect to physical capital ($K_{(t)}$) approaches infinity as

$K_{(t)}$ approaches zero, and the partial derivative of $Y_{(t)}$ with respect to $K_{(t)}$ approaches zero as $K_{(t)}$ approaches infinity. Similarly, the partial derivative of $Y_{(t)}$ with respect to effective labour ($A_{(t)}$. $L_{(t)}$) approaches infinity as ($A_{(t)}$. $L_{(t)}$) approaches zero, and that partial derivative approaches zero as ($A_{(t)}$. $L_{(t)}$) approaches infinity. These conditions, popularly known as Inada conditions, are mathematically shown below.

$$\text{as} \quad K_{(t)} \to 0, \ \frac{\partial Y_{(t)}}{\partial Y_{(t)}} \to \infty$$

$$\text{as} \quad K_{(t)} \to \infty, \frac{\partial Y_{(t)}}{\partial K_{(t)}} \to 0$$

and

$$\text{as} \quad [A_{(t)}.L_{(t)}] \to 0, \frac{\partial Y_{(t)}}{\partial [A_{(t)}.L_{(t)}]} \to \infty$$

$$\text{as} \quad [A_{(t)}.L_{(t)}] \to \infty, \frac{\partial Y_{(t)}}{\partial [A_{(t)}.L_{(t)}]} \to 0$$

Now we define $y_{(t)}$ as output per worker or labour (not effective worker or effective labour) and $\tilde{k}_{(t)}$ as physical capital per worker. Therefore we can write using equation (5.4),

$$\tilde{y}_{(t)} = \frac{y_{(t)}}{L_{(t)}} = A_{(t)}.k^{\alpha}_{(t)} \qquad \text{.....(5.5)}$$

5.2.1. Behaviour of the District Economy

Solow's model assumed that the labour force or workforce ($L_{(t)}$) grows over time at a constant exogenous rate 'n', when we assimilate Solow's model to a representative district economy in Kerala. We also assume that the labour force in the representative district economy grows over time at the same constant rate 'n'. Mathematically, we have the following equations:

$$\frac{\dot{L}_{(t)}}{L_{(t)}} = n \qquad \text{.....(5.6)}$$

where $\dot{L}_{(t)}$ is the derivative of $L_{(t)}$ with respect to time, i.e. $\frac{dL_{(t)}}{d_{(t)}}$. The stock of technology or knowledge in the district economy is also assumed to grow at a constant, exogenous rate 'g', i.e. We have

$$\frac{\dot{A}_{(t)}}{A_{(t)}} = g \qquad \text{..... (5.7)}$$

where $\dot{A}_{(t)}$ is the derivative of $A_{(t)}$ with respect to time, i.e. $\frac{dA_{(t)}}{d_{(t)}}$.

Following Solow's model we further assume that the representative district economy uses its final output or income ($Y_{(t)}$) for two purposes at every point in time. These are: the part used for consumption (C_A) and the part used for saving (S_K) leading to investment and, thereby, for the accumulation of the physical capital ($K_{(t)}$). Therefore, the district economy's income expenditure equation appears as follows:

$$Y_{(t)} = C_{A(t)} + S_{K(t)} \qquad \text{.....(5.8)}$$

Or, by dividing both sides of the above equation by $Y_{(t)}$, we obtain

$$\frac{C_{A(t)}}{Y_{(t)}} + \frac{S_{K(t)}}{Y_{(t)}} = 1 \qquad \text{.....(5.9)}$$

Now we define

$$c_A = \frac{C_{A(t)}}{Y_{(t)}} \qquad \text{.....(5.10)}$$

and

$$s_K = \frac{S_{K(t)}}{Y_{(t)}} \qquad \text{.....(5.11)}$$

Using equation (5.10) and (5.11) we can rewrite equation (5.9) as:

$$c_A + s_K = 1 \qquad \text{.....(5.12)}$$

Following Solow, we further assume that the fractions in the equation (5.12) are constants. Equations (5.8) through (5.12) imply that

$$C_{A(t)} = c_A.Y_{(t)} = (1 - s_K).Y_{(t)} \quad \text{.....(5.13)}$$

We further define that consumption per effective labour as

$$c_{(t)} = \frac{C_{A(t)}}{A_{(t)}.L_{(t)}}$$

and consumption per worker or labour as $\tilde{c}_{(t)} = \frac{C_{A(t)}}{L_{(t)}}$

Equation (5.13) implies, therefore, that we have the following two equations:

$$c_{(t)} = (1 - s_K).y_{(t)} \quad \text{.....(5.14)}$$

and

$$\tilde{c}_{(t)} = (1 - s_K).y_{(t)}.A_{(t)} \quad \text{.....(5.15)}$$

From the equation (5.8) it is clear that the total saving in the district economy is S_K. And from equation (5.11) we know that $S_{K(t)} = s_K.Y_{(t)}$. Saving at time 't' is becoming as investment at time 't' (I_t). (I_t) in turn, is becoming as additions to the stock of physical capital, K_t ($\dot{K}_{(t)}$). Therefore Kt evolves over time as follows:

$$\dot{K}_{(t)} = S_{K(t)} - \partial_K.K_{(t)} = I_{(t)} - \partial_K.K_{(t)} = s_K.Y_{(t)} - \partial_K.K_{(t)} \quad \text{.....(5.16)}$$

where $\dot{K}_{(t)}$ is the derivation of K_t with respect to time , I_t is investment in physical capital over time and ∂_K represents the rate of depreciation which is assumed to be constant.

5.2.2. Growth of the District Economy

It is clear from the equation (5.4) that the rate of growth of the district economy depends on the rate of growth of output per effective labour. It is also clear from this equation that, at any point of time't', the rate of growth of output per effective labour y_t will be determined by the rate of growth of physical capital per effective labour (k_t) time α is constant.

Therefore, we approach the analysis of the evolution of the representative district economy through the analysis of the evolution or growth of k_t. We know that

$$k_{(t)} = \frac{K_{(t)}}{A_{(t)}.L_{(t)}} \qquad \text{.....(5.16.1)}$$

Capital per worker can be shown from equation (5.16.1) as follows

$$\tilde{k}_{(t)} = \frac{K_{(t)}}{L_{(t)}} = A_{(t)}.K_{(t)} \qquad \text{.....(5.16.2)}$$

Taking natural logarithm on both sides of the equation (5.16.1) we get

$$\ln k_{(t)} = \ln K_{(t)} - [\ln A_{(t)} + \ln L_{(t)}] \qquad \text{.....(5.17)}$$

Differentiation of equation (5.17) with respect to time yields

$$\frac{\dot{k}_{(t)}}{k_{(t)}} = \frac{\dot{K}_{(t)}}{K_{(t)}} - \left[\frac{\dot{A}_{(t)}}{A_{(t)}} + \frac{\dot{L}_{(t)}}{L_{(t)}}\right] \qquad \text{.....(5.18)}$$

Substitution of equations (5.16), (5.6) and (5.7) into equation (5.18) yields

$$\frac{\dot{k}_{(t)}}{k_{(t)}} = \frac{s_k.Y_{(t)} - \partial_K K_{(t)}}{K_{(t)}} - [n+g] \qquad \text{.....(5.19)}$$

Now dividing both $Y_{(t)}$ and $K_{(t)}$ in equation (5.19) by $[A_{(t)}.L_{(t)}]$, we obtain

$$\frac{\dot{k}_{(t)}}{k_{(t)}} = \frac{s_k.y_{(t)}}{K_{(t)}} - [n+g+\partial_K] \qquad \text{.....(5.20)}$$

By multiplying both sides of equation (5.20) by $k_{(t)}$, we can rewrite it as

$$\dot{k}_{(t)} = s_{(K)}y_{(t)} - [n+g+\partial_K]K_{(t)} \qquad \text{.....(5.21)}$$

Now substitution of equation (5.4) into equation (5.21) yields

$$\dot{k}_{(t)} = s_k k_{(t)}^{\alpha} - (n+g+\partial_k).K_{(t)} \qquad \text{.....(5.22)}$$

Equation (5.22) gives the evolution of physical capital per effective labour over time.

5.2.3. Balanced growth path and the Steady state

It should be noted at this stage that we need to define two concepts, balanced growth path and steady state. A variable is said to be in steady state when the growth rate of the variable over time is constant. In other words, if the change in a variable over time is constant that variable is said to be in a steady state. This growth rate may be negative, zero or positive. Balanced growth path is a related concept. If two or more variables are growing over time at equal rate, then we say that the variables are in balanced growth path no matter what the actual growth rate is.

We now apply these concepts in our model of the district economy. For this we use this equation (5.22). When we divide this equation (5.22) by $k_{(t)}$ we get.

$$\frac{\dot{k}_{(t)}}{K_{(t)}} = s_K . k_{(t)}^{\alpha-1} - (n + g + \partial) \qquad \text{.....(5.23)}$$

$k_{(t)}$ is the only variable on right hand side of equation (5.23) and all others are constants. Visual examination of equation (5.23) shows that, since $0<\alpha<1$ the growth rate of $k_{(t)}$ (i.e. $\frac{\dot{k}_{(t)}}{K_{(t)}}$) will first increase and then decline as $k_{(t)}$ increases. That means it will first increase and then approach zero, and then will become negative. But, when $\frac{\dot{k}_{(t)}}{K_{(t)}}$ becomes negative, $k_{(t)}$ will decline. Thus ultimately $k_{(t)}$ settles down at a value at which ($\frac{\dot{k}_{(t)}}{K_{(t)}}$) is zero. This value of $k_{(t)}$ is called as the steady state value of $k_{(t)}$ and is denoted as k*. k* can be derived from equation (5.23) as follows:

$$\frac{\dot{k}_{(t)}}{K_{(t)}} = s_K . k_{(t)}^{\alpha-1} - (n + g + \partial) = 0$$

or

$$s_{(K)} . k^{*\alpha-1} = (n + g + \partial)$$

or

$$k^{*\alpha-1} = \frac{(n+g+\partial)}{s_K} \qquad \text{.....(5.24)}$$

Now multiply both sides of equation (5.24) by $\frac{1}{\alpha-1}$, we obtain

$$k^* = \left[\frac{(n+g+\partial)}{s_K}\right]^{\frac{1}{\alpha-1}} = \left[\frac{s_K}{(n+g+\partial)}\right]^{\frac{1}{1-\alpha}} \qquad \text{.....(5.25)}$$

Equation (5.25) shows that the steady state value of $k_{(t)}$ (i.e. k*) depends only on constants. Therefore the growth rate of k* is zero. Equations (5.2) and (5.4) show that output per effective labour ($y_{(t)}$) is a function of $k_{(t)}$. Therefore, as we saw in equation (5.25) $y_{(t)}$ will also be in steady state (with y* as its value) when $k_{(t)}$ becomes k*. This can be shown as follows: Equation (5.4) can be written as

$$y^* = k^{*\alpha} \qquad \text{.....(5.26)}$$

Substituting for k* from equation (5.25), we can rewrite equation (5.26) as given below:

$$y^* = \left[\frac{s_k}{(n+g+\partial)}\right]^{\frac{\alpha}{1-\alpha}} \qquad \text{.....(5.26)}$$

Equation (5.26) implies that the growth rate of y*, like that of k*, will be zero. Equation (5.14) shows that consumption per effective worker ($c_{(t)}$) is a function of $y_{(t)}$. Therefore $c_{(t)}$ will approach steady state (with c* as its value) when $y_{(t)}$ is y*. This is shown below:

$$c^* = (1-s_K).y^* \qquad \text{.....(5.27)}$$

Substituting for y* from equation (5.26) we can rewrite equation (5.27) as follows:

$$c^* = (1-s_K)\left[.\frac{s_k}{(n+g+\partial)}\right]^{\frac{\alpha}{1-\alpha}} \qquad \text{.....(5.28)}$$

Equation (5.28) implies that, since all the elements on its right hand side are constant, the growth rate of consumption per worker in the steady state (c*) is zero.

The above analysis shows that all the relevant variables in the model in the steady state (y*, k*, c*) are all growing at constant zero rate in the steady state. Therefore we can say that the economy represented by the model is on balanced growth path .That is

$$\frac{\dot{y}^*}{y^*} = \frac{\dot{k}^*}{k^*} = \frac{\dot{c}^*}{c^*} = 0 \qquad \text{.....(5.29)}$$

We now consider the steady state growth rates of output per worker($\tilde{y}^*$), capital per worker($\tilde{k}^*$) and consumption per worker ($\tilde{c}^*$). For this we use equation (5.5), (5.15) and (5.16.2) .These equations take the following forms in the steady state:

$$\tilde{y}^* = A^*.y^* \qquad \text{.....(5.30)}$$

$$\tilde{C} = A^*.(1-s_K).y^* \qquad \text{.....(5.31)}$$

and

$$\tilde{k}^* = A^*.k^* \qquad \text{.....(5.32)}$$

From equation (5.25), (5.26) and (5.25) we can see that the growth rates of steady state y, k and c (i.e. y*, k*, and c*) will be zero. Therefore equations (5.30), (5.31) and (5.32) imply that the steady state growth rates of $\tilde{y}^*, \tilde{c}^*, and\, \tilde{k}^*$ will all be equal to the steady state growth rate of technology (A*). Since it is always growing at the same rate 'g' {from equation (5.7)} technology is always in the steady state and its growth rate is 'g'. This implies that all the relevant per capita variables in the model are growing at the same rate. That is,

$$\frac{\dot{\tilde{y}}^*}{\tilde{y}^*} = \frac{\dot{\tilde{c}}^*}{\tilde{c}^*} = \frac{\dot{\tilde{k}}^*}{\tilde{k}^*} = \frac{\dot{A}^*}{A^*} = g \qquad \text{.....(5.33)}$$

Now taking natural logarithm on both sides of equation (5.26), we can write as

$$\ln y^* = \frac{\alpha}{1-\alpha}\ln\left[\frac{s_k}{(n+g+\partial)}\right] = \frac{\alpha}{1-\alpha}\ln s_k - \frac{\alpha}{1-\alpha}\ln(n+g+\partial) \qquad \text{.....(5.34)}$$

Similarly, by taking natural logarithm on both sides of equation (5.30) we can write as follows:

$$\ln \tilde{y} = \ln A^{*} + \ln y^{*} \qquad \text{.....(5.35)}$$

We now substitute equation (5.35) into equation (5.34) to get the following form:

$$\ln \tilde{y} = \ln A^{*} + \frac{\alpha}{1-\alpha} \ln s_k - \frac{\alpha}{1-\alpha} \ln(n + g + \partial) \qquad \text{.....(5.36)}$$

Equation (5.36) is the final equation in the Solow model of the representative district economy. We will make use of this equation in the next chapter.

5.3. An Alternative Formulation of Solow Model

As discussed in the introduction to this chapter, we now propose an alternative reformulation of the Solow model explained in the last section. The proposed reformation in the present study differs from the previous reformulations carried out already by others. The main difference is that, in the present study, we use DIC's expenditure as an additional explanatory variable. With this modification, the model is structured as follows:

We begin the model by assuming that the representative district economy produces a composite out put $Y_{(t)}$ using capital $(K_{(t)})$, DIC expenditure $(D_{(t)})$ and effective labour $(A_{(t)}.L_{(t)})$. Then, the general production function takes the following form:

$$Y_{(t)} = F\left[K_{(t)}, D_{(t)}, A_{(t)}.L_{(t)}\right] \qquad \text{.....(5.37)}$$

Equation (5.37) shows that, as equation (5.1) we have a labour-augmenting production function. The only difference between the production function in equation (5.37) and that in equation (5.1) is that in the former we have an additional explanatory variable---DIC expenditure or contribution $(D_{(t)})$. All other explanations of equation (5.37) are the same as equation (5.1). As we derived equation (5.2), we can derive output per effective labour by dividing both sides of equation (5.37) by $[A_{(t)}.L_{(t)}]$ as given below:

$$\frac{Y_{(t)}}{A_{(t)}.L_{(t)}} = \frac{1}{A_{(t)}.L_{(t)}}.F(K_{(t)}, D_{(t)}, A_{(t)}.L_{(t)}) = F\left[\frac{K_{(t)}}{A_{(t)}.L_{(t)}}, \frac{D_{(t)}}{A_{(t)}.L_{(t)}}, 1\right]$$

or

$$y_{(t)} = F(k_{(t)}, d_{(t)}, 1) = f(k_{(t)}, d_{(t)}) \qquad \text{.....(5.38)}$$

where y_t is output per effective labour, $k_{(t)}$ is capital per effective labour and $d_{(t)}$ is DIC expenditure per effective labour. Equation (5.38) shows the intensive form of the equation (5.37).

It is assumed that the general production function given in equation (5.37) or its intensive form given in equation (5.38) possesses the property of diminishing returns with respect to each factor. It also possesses the property of constant returns to scale when we consider all factors together. Therefore the production function in equation (5.37) or (5.38) is called a 'neo classical production function.'

We now consider the specific form for the production function given in equation (5.37). It is of Cobb-Douglas form as given below:

$$Y_{(t)} = K_{(t)}^{\alpha}.D_{(t)}^{\beta}\left[A_{(t)}.L_{(t)}\right]^{1-\alpha-\beta} \qquad \text{.....(5.39)}$$

Where α is the elasticity output $(Y_{(t)})$ with respect to physical capital $(K_{(t)})$; β is the elasticity of output with respect to DIC expenditure $(D_{(t)})$ and $(1-\alpha-\beta)$ is the elasticity of output with respect to effective labour $(A_{(t)}.L_{(t)})$. α and β are assumed to be constants. Both α and β are assumed to lie in between zero and one, i.e. $0<\alpha<1$ and $0<\beta<1$. We can now derive the intensive form of production given in (5.39) by dividing both sides by $(A_{(t)}.L_{(t)})$. This is shown below:

$$\frac{Y_{(t)}}{A_{(t)}L_{(t)}} = \frac{K_{(t)}^{\alpha}D_{(t)}^{\beta}\left[A_{(t)}.L_{(t)}\right]^{1-\alpha-\beta}}{A_{(t)}L_{(t)}} = \left[\frac{K_{(t)}}{A_{(t)}L_{(t)}}\right]^{\alpha}\left[\frac{D_{(t)}}{A_{(t)}L_{(t)}}\right]^{\beta}$$

or

$$y_{(t)} = k_{(t)}^{\alpha}d_{(t)}^{\beta} \qquad \text{.....(5.40)}$$

It should be noted that the production function given in equation (5.39) or its intensive form given in equation (5.40) possesses the new classical properties. They also possess the Inada condition discussed in the last section.

We have defined above that

$$y_{(t)} = \frac{Y_{(t)}}{A(t).L(t)}; \quad k_{(t)} = \frac{K_{(t)}}{A_{(t)}.L_{(t)}} \quad \text{and} \quad d_{(t)} = \frac{D_{(t)}}{A_{(t)}.L_{(t)}};$$

We now define output per worker, capital per worker, and DIC expenditure per worker respectively as given below:

$$\tilde{y}_{(t)} = A_{(t)}.y_{(t)} \qquad \text{.....(5.41)}$$

$$\tilde{k}_{(t)} = A_{(t)}.k_{(t)} \qquad \text{.....(5.42)}$$

$$\tilde{d}_{(t)} = A_{(t)}.d_{(t)} \qquad \text{.....(5.43)}$$

5.3.1. Behaviour of the District Economy

Solow's model assumed that the labour force or workforce ($L_{(t)}$) at time 't' grows at constant exogenous rate 'n'. When we assimilate Solow's model to a representative district economy in Kerala, we also assume that the labour force in the district economy grows over time at the same constant rate 'n'. That is, we have

$$\frac{\dot{L}_{(t)}}{L_{(t)}} = n \qquad \text{.....(5.44)}$$

As in Solow's model, the stock of technology or knowledge in the district economy grows over time at a constant, exogenous rate 'g'. That is, once again we have the following relation:

$$\frac{\dot{A}_{(t)}}{A_{(t)}} = g \qquad \text{.....(5.45)}$$

We further assume that the district economy uses its total output income ($Y_{(t)}$) for three purposes at every point in time. These are: for consumption (C_A); for saving leading to investment (and, thereby, for the accumulation of physical capital)

(S_K); and for saving leading to the expenditure made by DICs (D). Therefore, the economy's income expenditure equality appears as follows:

$$Y = C_A + S_K + S_D \quad \text{.....(5.46)}$$

or

$$\frac{C_A}{Y} + \frac{S_K}{Y} + \frac{S_D}{Y} \quad \text{.....(5.47)}$$

Now we define $c_A = \frac{C_A}{Y}$; $s_K = \frac{S_K}{Y}$; and $s_D = \frac{S_D}{Y}$. This implies that

$$c_A + s_K + s_D = 1 \quad \text{.....(5.48)}$$

We further assume that the fractions in equation (5.48) are constants. Equations (5.46) and (5.48) imply that

$$C_{A(t)} = c_A.Y_{(t)} = (1 - s_K - s_D).Y_{(t)} \quad \text{.....(5.49)}$$

We define consumption per effective worker as

$$c_{(t)} = \frac{C_{A(t)}}{A_{(t)}.L_{(t)}} \quad \text{.....(5.50)}$$

and consumption per worker as

$$\tilde{c}_{(t)} = A_{(t)}.\frac{C_{A(t)}}{A_{(t)}.L_{(t)}} = A_{(t)}.c_{(t)} \quad \text{.....(5.51)}$$

Equation 5.51 implies that

$$c_{(t)} = (1 - s_K - s_D).y_{(t)} \quad \text{.....(5.52)}$$

and

$$\tilde{c}_{(t)} = A_{(t)}.(1 - s_K - s_D).y_{(t)} \quad \text{.....(5.53)}$$

Given equations (5.46), (5.47) and (5.48), physical capital $K_{(t)}$ is growing over time as follows:

$$\dot{K}_{(t)} = S_K - \partial_K.K_{(t)} = I_K - \partial_K K_{(t)} = s_K.Y_{(t)} - \partial_K.K_{(t)} \quad \text{.....(5.54)}$$

where ∂_K represents the constant rate of depreciation and I_K shows investment in physical capital. Similarly, expenditure by DIC ($D_{(t)}$) grows overtime as follows:

$$\dot{D}_{(t)} = S_D - \partial_D.D_{(t)} = s_D.Y_{(t)} - \partial_D.D_{(t)} \quad \text{.....(5.55)}$$

where ∂_D represents the constant rate of depreciation. For the sake of convenience, we assume that $\partial_K = \partial_D = \partial$. so we can write

$$\dot{K}_{(t)} = s_K.Y_{(t)} - \partial K_{(t)} \quad \text{.....(5.55.1)}$$

$$\dot{D}_{(t)} = s_D.Y_{(t)} - \partial D_{(t)} \quad \text{.....(5.55.2)}$$

5.3.2. Growth of the District Economy

Equation (5.40) implies that, at any point in time 't', the rate of growth of $y_{(t)}$ will be determined by those of $k_{(t)}$ and $d_{(t)}$. Therefore, we consider below the evolution (or growth) of $k_{(t)}$ and $d_{(t)}$. We first consider $k_{(t)}$. We have defined $k_{(t)}$ as

$$K_{(t)} = \frac{K_{(t)}}{A_{(t)}.L_{(t)}}$$

Taking natural logarithm on both sides of the above equation and differentiating the result with respect to time, we get,

$$\frac{\dot{k}_{(t)}}{k_{(t)}} = \frac{\dot{K}_{(t)}}{K_{(t)}} - \left[\frac{\dot{A}_{(t)}}{A_{(t)}} + \frac{\dot{L}_{(t)}}{L(t)}\right]$$

Substitution of equation (5.55.1), (5.44) and (5.45) into the above equation yields

$$\frac{\dot{k}_{(t)}}{k_{(t)}} = s_K.\frac{Y_{(t)}}{K_{(t)}} - [n + g + \partial]$$

Now dividing $Y_{(t)}$ and $K_{(t)}$ by $(A_{(t)}.L_{(t)})$, we obtain

$$\frac{\dot{k}_{(t)}}{k_{(t)}} = s_K \frac{y_{(t)}}{k_{(t)}} - [n + g + \partial]$$

We now substitute for $y_{(t)}$ from equation (5.40) into the above equation and manipulate slightly to get the following form:

$$\dot{k}_{(t)} = s_K k_{(t)}^{\alpha} d_{(t)}^{\beta} - [n + g + \partial] k_{(t)} \qquad \text{.....(5.56)}$$

Equation (5.56) gives the evolution of $k_{(t)}$. We now consider the evolution of $d_{(t)}$. We have already defined that

$$d_{(t)} = \frac{D_{(t)}}{A_{(t)}.L_{(t)}}$$

Taking natural logarithm on both sides of the above equation and differentiating the result with respect to time, we get

$$\frac{\dot{d}_{(t)}}{d_{(t)}} = \frac{\dot{D}_{(t)}}{D_{(t)}} - \left[\frac{A_{(t)}}{A_{(t)}} + \frac{\dot{L}_{(t)}}{L_{(t)}}\right]$$

Substitution of equations (5.55.2), (5.44) and (5.45) into the above equation yields

$$\frac{\dot{d}_{(t)}}{d_{(t)}} = s_D \frac{Y_{(t)}}{D_{(t)}} - [n + g + \partial]$$

Now by dividing $\frac{Y_{(t)}}{D_{(t)}}$ in the above equation by $[A_{(t)}.L_{(t)}]$, we get,

$$\frac{\dot{d}_{(t)}}{d_{(t)}} = s_D \frac{y_{(t)}}{d_{(t)}} - [n + g + \partial]$$

We now substitute for $y_{(t)}$ from equation (5.40) into the above equation and manipulate slightly to get the following form:

$$\dot{d}_{(t)} = s_D k_{(t)}^{\alpha} d_{(t)}^{\beta} - [n + g + \partial] \qquad \text{.....(5.57)}$$

Equation (5.57) exhibits the evolution of $d_{(t)}$

5.3.3. Steady State and Balanced Growth Path

We have defined steady state and balanced growth path in the last section. With regard to equations (5.56) and (5.57), steady state happens in the case of $k_{(t)}$ and $d_{(t)}$ where $\dot{k}_{(t)} = 0$ and $\dot{d}_{(t)}$=0. This means that when $k_{(t)}$ and $d_{(t)}$ approach some particular values (k* and d*), the change in $k_{(t)}$ and $d_{(t)}$ (i.e. $\dot{k}_{(t)}$ and $\dot{d}_{(t)}$) will be zero. In other words, when $k_{(t)}$ and $d_{(t)}$ approach k* and d* respectively, $k_{(t)}$ and $d_{(t)}$ will not grow or they will be constants. To prove this we begin our analysis assuming that there exists steady state for both $k_{(t)}$ and $d_{(t)}$. In terms of equations (5.56) and (5.57) this means that $\dot{k}_{(t)}$=0 and $\dot{d}_{(t)}$=0. We represent the corresponding values (when $\dot{k}_{(t)} = \dot{d}_{(t)}$=0) of $k_{(t)}$ and $d_{(t)}$ by k* and d* respectively. Therefore equations (5.56) and (5.47) can be written as

$$s_K k^{*\alpha} .d^{*\beta} = (n + g + \partial)k^* \qquad \text{.....(5.56.1)}$$

$$s_D k^{*\alpha} .d^{*\beta} = (n + g + \partial)\partial^* \qquad \text{.....(5.57.1)}$$

When we solve these two simultaneous equations we obtain the following result:

$$d^* = \left[\frac{s_K^{\alpha} .s_D^{1-\alpha}}{(n + g + \partial)} \right]^{\frac{1}{1-\alpha-\beta}} \qquad \text{.....(5.58)}$$

and

$$k^* = \left[\frac{s_K^{1-\beta} .s_D^{\beta}}{n + g + \partial} \right]^{\frac{1}{1-\alpha-\beta}} \qquad \text{.....(5.59)}$$

Equations (5.58) and (5.59) show that in the steady state both k and d (i.e. k* and d*) depend only on the constants of the model. This proves that $k_{(t)}$ and $d_{(t)}$ will approach k* and d* [or $\dot{k}_{(t)}$=0 and $\dot{d}_{(t)}$=0 when $k_{(t)}$ and $d_{(t)}$ approach k* and d* respectively]. This implies that the district economy, at some point in time, will approach steady state.

When the representative district economy approaches steady state, equation (5.40) can be written as

$$y^* = k^{*\alpha} .d^{*\beta} \quad \text{.....(5.60)}$$

Substituting equations (5.58) and (5.59) into equations (5.60) and carrying out some manipulations we can write as follows:

$$\ln y^* = \frac{\alpha}{1-\alpha-\beta}\ln s_K + \frac{\beta}{1-\alpha-\beta}\ln s_D - \frac{(\alpha+\beta)}{1-\alpha-\beta}\ln(n+g+\partial) \quad \text{.....(5.61)}$$

Equation (5.61) implies that since every element on the right hand side is a constant, output per effective labour (i.e., $y = \frac{Y}{AL}$) grows at zero rates in the steady state. Equations (5.58) and (5.59) also imply that both k and d also grow at zero rates in the steady state. We now substitute equation (5.60) into equation (5.52). Then, consumption per effective labour can be written (in the steady state) as follows:

$$c^* = (1-s_K-s_D)y^* = (1-s_K-s_D)k^{*\alpha} .d^{*\beta} \quad \text{.....(5.62)}$$

Since every element on the right hand side of equation (5.62) is a constant, the growth rate of consumption per effective labour (c*) is also zero in the steady state. Therefore, the above analysis shows that every important variable (per effective labour) is constant in the steady state and its growth rate is zero. This was the same result we obtained in the case of Solow model.

We now consider the growth rates of output per worker ($\tilde{y}^*$), consumption per worker ($\tilde{c}^*$), capital per worker ($\tilde{d}^*$) in the steady state. Equations (5.41), (5.42) (5.43) and (5.51) imply that, in the steady state,

$$\tilde{y}^* = A^* y^* \quad \text{.....(5.63)}$$

$$\tilde{k}^* = A^* k^* \quad \text{.....(5.64)}$$

$$\tilde{d}^* = A^* d^* \quad \text{.....(5.65)}$$

$$\tilde{c}^* = A^* c^* \quad \text{.....(5.66)}$$

We know from our earlier analysis that the growth rates of y*, k* d* and c* are all equal to zero. Therefore, the growth rates of y*, k*, d* and c* are all equal to zero. Therefore, the growth rates of $\tilde{y}^*$, $\tilde{k}^*$, $\tilde{d}^*$, and $\tilde{c}^*$ are all equal to the growth rate of technology in the steady state (A*). Since technology is always growing at constant rate "g" (equation 5.7) it is always in the steady state. This implies that all relevant per capita variables are growing at the same, constant rate in the steady state. That is,

$$\frac{\dot{\tilde{y}}^*}{\tilde{y}^*} = \frac{\dot{\tilde{c}}^*}{\tilde{c}^*} = \frac{\dot{\tilde{k}}^*}{\tilde{k}^*} = \frac{\dot{A}^*}{A^*} = g \qquad \text{.....(5.67)}$$

Equation (5.61) is the final equation in the present model. However, there is little difference between the Solow Model and the present, alternatively reformulated. In both models all the relevant (per effective labour) variables are constant (and, therefore their growth rates are zero) in the steady state. Besides, in both models, all the relevant (per worker) variables are growing at the constant, exogenous rate of growth of technology, 'g'. This implies that the alternative augmentation of Solow model did not produce considerable differences in the steady state properties. However, as we will see in the next chapter, the alternatively augmented model will render considerable difference in empirical results.

5.4. Reference:

1. Robert M. Solow (1956): "A Contribution to the theory of Economic Growth", Quarterly Journal of Economics, Vol.70,Pp 65-94.

2. Mankiew, Romer and Weil (1992): "A Contribution to the Empirics of Economic Growth", Quarterly Journal of Economics, Vol.107,1992, Pp.407-437.

CHAPTER VI

ECONOMETRIC SPECIFICATION AND EMPIRICAL RESULTS.

6.1 Introduction

It is reviewed the textbook Solow model in sufficient detail in the last chapter. The final result of Solow model was that the rate of growth of the economy (i.e., the rate of growth of output per effective worker) in the steady state was zero. It also showed that the rate of growth of output per worker in the steady state was equal to the rate of growth of technology.

In the last chapter it is also developed a model through an alternative augmentation of the Solow model. The main finding of the augmented Solow model was similar to that of the Solow model. The rate of growth of output per effective labour was zero. As in the Solow model, the formulated model also showed that the rate of growth of output per worker was equal to the rate of growth of technology. Again, as in the Solow model, the growth rates of all the relevant variables (per effective worker or per worker terms) were the same. These findings show that there does not exist much theoretical difference, at least with regard to the steady state, between the Solow model and its presently developed alternative formulation. But, it should be noted that there exists considerable difference between these two models with regard to empirical results. We will see these differences in this chapter.

6.2. Econometric specification of the Solow model

We now turn to the task of empirical testing. For this, we use the final equation in Solow model (equation (5.36) and the final equation of the presently reformulated model (equation (5.61). But, before this we need to specify the econometric forms of these two equations. For this we have to transform equation (5.7). For convenience we write this equation again below:

$$\frac{\dot{A}_{(t)}}{A_{(t)}} = g$$

The solution of the above differential equation is

$$A_{(t)} = A_{(0)}.e^{gt} \qquad \text{.....(6.1)}$$

Where $A_{(0)}$ is the level of A at time t=0 or at the base time.

Substitution of equation (5.1) into equation (5.36) yields the following result:

$$\ln \tilde{y}^* = \ln\left[A_{(0)}.e^{gt}\right] + \frac{\alpha}{1-\alpha}\ln s_K - \frac{\alpha}{1-\alpha}\ln(n+g+\partial)$$

$$\ln \tilde{y}^* = \ln A_{(0)} + gt + \frac{\alpha}{1-\alpha}\ln s_K - \frac{\alpha}{1-\alpha}\ln(n+g+\partial) \qquad \text{.....(6.2)}$$

When we take the steady state level of output per worker, the time 't' that appears with 'g' on the right hand side of equation (6.2) is immaterial and so it can be considered as zero. So the term g.t disappears. Therefore equation (6.2) can be written as

$$\ln \tilde{y}^* = \ln A_{(0)} + \frac{\alpha}{1-\alpha}\ln s_K - \frac{\alpha}{1-\alpha}\ln(n+g+\partial) \qquad \text{.....(6.3)}$$

When we assume that the district economy is always on the steady state, the star (*) on $\tilde{y}^*$ is actually redundant and can be omitted. Therefore, equation (6.3) becomes

$$\ln \tilde{y} = \ln A_{(0)} + \frac{\alpha}{1-\alpha}\ln s_K - \frac{\alpha}{1-\alpha}\ln(n+g+\partial) \qquad \text{.....(6.4)}$$

We now require an alternative expression for ln $A_{(0)}$. Assume that ln $A_{(0)}$ takes the following form:

$$\ln A_{(0)} = \alpha_0 + \varepsilon \qquad \text{.....(6.5)}$$

where, α_0 is constant and ε is a district specific shock. Substitution of equation (6.5) into equation (6.4) yields

$$\ln \tilde{y} = \alpha_0 + \frac{\alpha}{1-\alpha}\ln s_K - \frac{\alpha}{1-\alpha}\ln(n+g+\partial) + \varepsilon \qquad \text{.....(6.6)}$$

Equation (6.6) shows the log of output per worker in the representative district economy. Output data are concerned with 14 district economies and one state

economy. In order to represent any of these total 15 economies, we use the subscript 'i' on equation (6.6). So equation (6.6) becomes

$$\ln \tilde{y}_i = \alpha_0 + \frac{\alpha}{1-\alpha} \ln s_{K_i} - \frac{\alpha}{1-\alpha} \ln(n_i + g + \partial) + \varepsilon_i \quad \text{.....(6.7)}$$

As can be found in many other studies in growth theory, we also assume that $g+\partial=0.05$ or five per cent for every district economy. Therefore, we can write equation (6.7) as

$$\ln \tilde{y}_i = \alpha_0 + \frac{\alpha}{1-\alpha} \ln s_{K_i} - \frac{\alpha}{1-\alpha} \ln(n_i + 0.05) + \varepsilon_i \quad \text{.....(6.8)}$$

Equation (6.8) is the empirical or econometric specification of equation (5.46) (in the Solow Model).

6.3. Econometric Specification of the Reformulated Model

The final equation in the reformulated model developed in the present study is given in (5.61). We now have to specify the econometric form of this equation. This is done below. Using the same conditions and assumptions that we used in the derivation of equation (6.8), we can write, skipping the necessary algebra involved the empirical or econometric form of equation (5.61) as given below:

$$\ln \tilde{y}_i = \alpha_0 + \frac{\alpha}{1-\alpha-\beta} \ln s_{Ki} + \frac{\beta}{1-\alpha-\beta} \ln s_{Di} - \frac{\alpha+\beta l}{1-\alpha-\beta} \ln(n_i + 0.05) + \varepsilon_i \quad \text{.....(6.9)}$$

Equation (6.9) is the empirical or econometric specification of equation (5.61) in the reformulated model. We will use equations (6.8) and (6.9) in the section on empirical results.

6.4. Data

Solow's alternatively augmented model requires data about four variables. Most of the data collected belong to the period from 1982-83 to 2000-2001, for a period of nineteen years, though DIC's were established in 1978. This model is based on the secondary data. All these data are taken at current rate. The four different types of data are: -

6.4.1. District Gross Domestic Industrial Product (DGDIP): DGDIP is the most important and widely accepted single index of overall economic development of the district. It indicates district's income from the manufacturing or secondary sector. There are 14 districts in Kerala. The entire 14 districts were taken into account. The State was also taken as another unit. Thus there are 15 observations. Income from manufacturing sector is divided into two: income from registered sector and income from unregistered sector. DGDIP comprises of both income from registered and unregistered sectors.

6.4.2. District's Investment in Secondary sector: This is the district's investment in the industrial sector or manufacturing sector. Year wise and district wise data about the investment were collected about all 14 districts and the state.

6.4.3. Employment in the Industrial Sector: This data is related to the total labour force in the manufacturing or the secondary sector. It is collected from 14 districts.

6.4.4. Year-wise expenditure made by DIC: Every year DIC gets fund allotment from Central and State governments to provide various incentives and implement schemes. These data were collected from the performance reports of DICs.

There are fifteen time series data table comprising five columns. The first column shows year, second column shows DGDIP, third and fourth columns show investment and employment in the manufacturing sector and the last column shows DIC's expenditure and each row shows the chronological change in each variable. Then each year DGDIP, capital or investment, and DIC's expenditure were divided with the number of labours and is represented as $\tilde{y}, s_D,$ and s_K .These types of manipulations were done for total number of 15 observations. By adding all $\tilde{y}, s_D,$ and s_K ., we get $\sum\tilde{y}, \sum s_D,$ and $\sum s_K$. Then $\sum\tilde{y}, \sum s_D,$ and $\sum s_K$ were divided with number of years and its logarithm form is shown in the Table.6.1.

The last column lnn is calculated as follows:

$$L_{(t)} = L_{(0)}e^{nt}$$

$$\ln L_{(t)} = \ln L_{(0)} + \ln e.n.t.$$

$\ln e = 1$

$$\ln L_{(t)} = \ln L_{(0)} + .n.t.$$

$L_{(t)}$ = *Labour* in the current year

$L_{(0)}$ = Labour in the base year

t = Number of years

$$n = \frac{\ln L_{(t)} - \ln L_{(0)}}{t}$$

Then change the n into lnn. Then apply any software of regression. We have applied 'stata' software and the results are shown in Table 6.1.

Table 6.1

Table showing logarithmic values of $\tilde{y}, s_K, s_D$ and n

Name of the Districts	$\ln \tilde{y}$	$\ln s_K$	$\ln s_D$	lnn
Thiruvananthapuram	10.36942	-1.21301	-5.02069	-1.6874
Kollam	10.6582	-1.88717	-4.89285	-1.61949
Pathanamthitta	10.40428	-2.03256	-5.40368	-1.41059
Alappuzha	10.7416	-1.76609	-5.05146	-1.80181
Kottayam	10.53316	-1.4065	-4.50986	-1.87732
Idukki	10.37349	-2.31264	-4.82831	-1.56065
Ernakulam	10.94005	-1.20397	-5.49677	-1.8579
Trichur	10.88294	-1.80789	-4.96185	-1.80181
Palakkad	10.44407	-1.29975	-4.42285	-1.67131
Malappuram	10.08581	-1.42712	-3.68888	-1.87732
Kozhikode	10.89229	-1.55353	-5.36019	-1.82635
Wyanad	10.51867	-2.59027	-3.20153	-1.66601
Kannur	10.57132	-1.6399	-4.96185	-1.88388
Kasargode	10.92863	-2.60369	-4.82831	-1.7148
Kerala	10.52406	-1.27297	--4.76769	-1.77786

Source: Computed

6.5. Empirical Results

We are now ready to test the equations (6.8) and (6.9). For this we use the ordinary least squares regression with the data discussed in the last section. We first consider the empirical test of the textbook. Solow model is given in equation (6.8). The result of this test is presented in Table 6.2.

Table.6.2

Model: Equation (6.8)

Independent Variables	Coefficients	Standard Error	Computed 't' Value
$\ln s_K$	-0.1849	0.1583	-1.168
ln (n+0.05)	-0.7923	0.5530	-1.433
Constant	8.8954	1.1215	7.932

Number of Observations =15
Degrees of Freedom =12
Table't' value for 12 degrees of freedom and for 5 per cent confidence level=2.179
R^2= 0.1633, and Adjusted R^2= 0.0238.

Table 6.2 shows output per worker ($\tilde{y}$) declines by about 0.19 per cent when saving rate increases by one per cent. It also shows that output per worker declines by about 0.8 per cent when population growth plus depreciation rate together increases by one per cent. But the computed 't' values for the two independent variables are -1.168 and -1.433 respectively. These computed 't' values are far less than the table 't' value (2.179) for 12 degrees of freedom and for 5 per cent confidence level. This implies that we accept the null hypothesis that independent variables do not influence the dependent variable ($\tilde{y}$). But, as can be seen from the Table 6.2, the relationship between the dependent variables and the independent variables are inverse. It can also be seen from Table 6.1 that R^2 is only about 16 per cent. This implies that the regression explains only about 16 per cent of the total variation in output per worker ($\tilde{y}$). This means that the assimilation of Solow model to a representative district economy cannot explain much of the variations in the district economy's output per worker.

It should be noted that the sign on the coefficient of population growth rate in Table 6.2 is negative. This is in accordance with the sign that Solow model predicts [as can be seen from Equation (6.8)]. The theoretical explanation for this is that higher

population growth and depreciation rates tend to reduce output per worker. It should also be noted from Table 6.1 that the sign on the rate of savings (s_K) is negative. This is contrary to Solow model (equation (6.8), where the sign is positive. The negative sign obtained in the empirical result may be due to the influence of many factors such as misallocation of capital, misutilisation of capital and so on.

We now turn to the empirical test of the reformulated Solow model developed in the present study. For this purpose, we use equation (6.9), the data provided earlier, and the ordinary linear least squares regression. The result is provided in Table 6.3.

Table 6.3

Model: Equation (6.9)

Independent Variables	Coefficients	Standard Error	Computed Value
$\ln s_K$	-0.3429	0.1162	-2.951
$\ln s_D$	-0.2979	0.0784	-3.812
ln (n+0.05)	-1.1773	0.3923	-3.001
Constant	6.5352	0.9827	6.621

Number of Observations =15

Degrees of freedom = 11

Table 't' value for 11 degrees of freedom and for five per cent confidence interval =2.201

R^2 =0.6395 and

Adjusted R^2 =0.5412

As Table 6.3 shows, output per worker ($\tilde{y}$) falls by about 0.34 per cent, when saving rate (s_K) rises by one per cent. It also shows that output per worker declines by about 0.3 per cent when DIC expenditures rate (s_D) rises by one per cent. It can also be seen from Table 6.3 that output per worker diminishes by about 0.8 per cent when population growth rate and rate of depreciation together increases by one per cent. This means that all the variables exhibit negative influence on output per worker. But, Table 6.3 shows that he computed 't' values for the three independent variables are -2.951, -3.812 and -3.001 respectively. These computed 't' values are far higher than the table 't' value for 11 degrees of freedom and for 5 per cent confidence level. This implies that we reject the null hypothesis that these independent variables do not have

influence on the dependent variable. In fact, the influence is much significant. However, this influence is inverse. It can also be seen from Table 6.3 that the R^2 is approximately 0.64. This implies that the model explains about 64 per cent variation in output per worker. This is a remarkable result as compared to the result for Solow model. All these imply that the reformulated Solow model developed in the present study succeeds well in explaining the variations in output per worker in the district economy. This pinpoints the success of the reformulated Solow model.

However, it must be noted that the sign of coefficient of ln (n +0.05) is negative in the Table 6.3. This is in accordance with the reformulated model predicts (as can be seen from equation (6.9). The theoretical explanation for this, as in the empirical result for the Solow model, is that higher depreciation and population growth rates tend to reduce output per worker. It must also be noted form Table 6.3 that the signs of the coefficients of $\ln s_K$ and $\ln s_D$ are also negative. This is in sharp contrast to the reformulated model (equation (6.9), where these signs are positive. This kind of a result is no wonder in the case of Kerala economy. Many non-theoretical studies have already obtained such negatively influencing relationships. Many other studies have also pointed out glaring inefficiencies and low levels of productivity in different sectors of Kerala economy. Therefore, the negative signs that we obtained in our empirical result may be due to the influence of many factors such as inefficiencies, low productivity etc. that usually arise from misallocation of resources, misutilization of these resources, labour unrest and so on.

CHAPTER VII

SUMMARY, FINDINGS AND RECOMMENDATIONS

The programmes oriented towards supporting small scale industries appeared soon after independence. The Indian government created a very elaborate promotional scheme based on a different rationale and oriented towards slightly different goals under the influence of Gandhian thinking and belief.

7.1. Development policies of Small Scale Industries

The first chapter deals with evolution of approaches for promoting small scale production and the growth of small scale industries in India. The developing countries face the problems like sluggish growth, capital shortages, high levels of unemployment, enormous rural-urban economic disparities, regional inequalities, increasing concentration of capital and chronic difficulties in the export sector. It examines various strategic issues relating to the promotion of small scale industries in an attempt to find a solution to the above mentioned problems. It also examines the industrial scenario of Kerala and the need for industrial development of Kerala. This chapter includes statement of the problem, hypothesis, objectives of the study and chapterisation.

7.2. Review of Literature and Methodology

Review of Literature and Methodology of the study are presented in the second chapter. In the survey of existing literature it was found that only a few studies had already been conducted with respect to different aspects of DICs and their functioning. It also reveals that most of these studies arrived at the general conclusion that the DICs were not effective to the extent to which they were expected of. They failed to achieve the objectives for which they were established. Many of these studies were naïve and devoid of reasonable theoretical foundations. Methodology of the study, thus, comprises two methods one is theoretical and the other non-theoretical. After non-theoretical analysis of data, to know whether that conclusions are correct or not, theoretical analysis was also made. For theoretical analysis Solow model is used, by using DIC as a variable, Solow model was augmented. The objective of the theoretical

analysis is to examine whether the findings of the non-theoretical analysis are in accordance with the theoretical findings.

7.3. Emergence of District Industries Centres (DIC)

In the third chapter an attempt has been made to make an in-depth study of the emergence and growth of District Industries Centres. It includes the background, origin, conceptualization, rationale, functions, objectives and role of DIC programme. Monitoring the programme of the DIC, Delegation of powers to the DICs, Restructuring of DIC programme and various package of assistance both pre and post-investment incentives and assistances provided by DICs were also discussed.

7.4. Organisational Structure of DICs

In the chapter IV (part 4.1) an attempt was made to study the organisational structure of DICs, functions and responsibilities assigned to the functional mangers and performance of the functionaries. Organizational weaknesses were identified based on the views of the functionaries and also of the beneficiaries. The study is only descriptive. The objective is to identify the lacunae in the DIC set-up and make suitable recommendations. An analysis of the organizational structure of DICs and their strengths and weaknesses brought out the following observations:

There is an inherent organizational weakness in the DIC set-up. Each DIC is headed by one General Manager and four functional managers assigned with too many responsibilities. As a result they failed to assist beneficiaries efficiently. When the Central Government restructured the DIC organization by reducing the number of functional managers from seven to four, it recommended the appointment of three project managers. But the Government of Kerala has not appointed the project managers. This hampered the effective functioning of DICs.

The appointment of functional managers by promoting officials of the Industries Department based on seniority as adopted in Kerala proved to be counter productive and adversely affected the effective functioning of DICs, since the initiative and zeal associated with young recruits was absent in promotees.

Conducting techno-economic survey of the district and preparation of project profiles calls for the services of expert personnel as Managers--Economic Investigation, Information and Infrastructure. It also calls for lying down of scientific norms for conducting techno-economic surveys. But, unfortunately, these functions could not be discharged by the functional managers (EI & I) efficiently as they were not having the desired level of skill or expertise for conducting techno-economic surveys.

At the commencement of the DIC programme the practice was to draft credit managers from the lead bank on deputation. With their banking background they were expected to assist entrepreneurs in the appraisal of project proposals for facilitating the easy sanction of credit. This practice has been given up subsequently, which proved detrimental to the interests of beneficiaries. This is because some of the persons appointed as managers (credit) were not having any exposure to the banking practices.

In the preparation of project feasibility reports and appraisal of the projects for recommending to commercial banks for providing credit, it is observed that the mangers (credit) failed to follow any objective criteria. As a result, most of the projects proposals processed and forwarded by the DICs for credit were rejected by the commercial banks. This created lot of hardships to the applicants.

The bank officials were also critical of the DIC functioning. They complained that the DIC officials were not assisting them during the post-investment stage, that too in the recovery of loans.

Training and technical assistance to village industries and artisans is not satisfactory. The method of training rural youth by sponsoring them to nearby industrial units for training with low stipend is acting as disincentive to the trainees, as they are not in a position to make more earning by way of taking up casual employment. Some of the trainees also complained that the industrial units were using them as casual labourers rather than imparting any training.

Manager (Village Industries & Training) in the DIC is supposed to coordinate with a large number of agencies associated with development of village industries such as KVIB, Handicrafts Development Corporation, DRDA, etc. A large

number of beneficiaries contacted by the researcher reported that the DICs have not assisted them in any significant manner except in supply of tools free of cost, but complained that the tools supplied by the DICs were obsolete.

Extension Officers and Technical Assistants are the main functionaries behind making the DIC programme a success, but most of the Extension Officers complained that their jurisdiction was too unwieldy for rendering effective service. They complained that Travelling Allowance paid to them was not sufficient to discharge their responsibilities effectively. Some of the beneficiaries contacted by the researcher complained that the Extension Officers were showing interest only in the case of parties who are financially sound.

7.5. Performance of DICs in Kerala – A Macro Analysis

The important findings of the analysis are as follows:-

7.5.1. The growth of SSI in the state was very high during the period 1958 to 1977-78 (pre-DIC Period) as compared to the 1977-78 to 1999-2000 (DIC period). The compound growth of SSI units established was 27.97 per cent, employment generated 12.31 per cent and investment increased at the rate of 58.9 per cent. The main reason for this high growth during 1958 to 1977-78 was that the State, was in its formative stage, had there was a strong industrial base in Travancore-Cochin area and the importance of industry given in Second Five Year Plans. The other obvious reasons for phenomenal growth in small scale sector was the satisfactory performance of agriculture and the existence of better power surplus during the period.

During the period, 1977-78 to 2000-2002, i.e. after the DICs had come into existence, the growth of SSI sector has not shown a better performance, though; it provided many incentives and assistance under a single roof. In this period the number ofSSI units increased at compound growth rate of 14.85 per cent only as compared to the 7.97 per cent during the pre-DIC period; employment in the DIC period increased at a rate of 9.85 per cent only as compared to the 12.31 in the pre-DIC period; and investment at current value increased at the rate of 14.95 per cent in the DIC period, but

during pre- DIC period, it increased at a rate of 58.9 per cent. Thus, in the case of investment also, pre-DIC period showed a better performance compared to DIC period. This was due to the increase in the investment levels in the definition of Small Scale Industries from 5 lakhs in 1950 to 300 lakhs in 1997 and reduced to 100 lakhs in 1998.

7.5.2. Agro-, Forest-, Animal- and based industries together accounted for 48.26 per cent of units, 47.72 per cent of investment and 62.29 per cent of employment as on 31-3-1979. In other words nearly half of the industrial activity was dominated by these two sectors. But by 1999-2000 it can be observed that the percentage of units in these industries showed only a slight change; their share is 43.14, 44.21 and 57.38 per cent in the case of units, investment and employment respectively. In the case of Rubber, Petroleum, Chemical and Non-metallic, mineral industry, it is 22.02 per cent of units, 21.31 per cent of investments and 13.43 per cent of employment as on 31-3-1979. But this only increased to 24.63 per cent of units, 23.63 per cent of investments, 16.09 per cent employment as on 31-3-2000; i.e. significant shifts cannot be observed in this sector also. The share of Iron and Steel and metal-based industries and Manufacturing of machinery and Transport equipment and servicing and repairing industries have also showed a slight increase in case of all the three indicators between 1979-2000. Thus it can be inferred that, agro-, forest-, animal- and based industries constitute nearly half of the total industrial activities.

Thus after the establishment DICs, it failed to make a structural shift in favour of industries other than agro-, animal-, forest-, and based industries.

7.5.3. Analysis of the performance of DICs based on nine selected characteristics shows that the DICs in Kerala are not relatively better than the all India averages in respect of all eight variables and in the cash subsidies Kerala averages is at par with all India averages. The co-efficient of variation in Kerala is very high in respect of most of the indicators compared to the all India performance.

7.5.4. The DICs have not succeeded in assisting the socially down-trodden classes. The number of registration given, SSI units established and employment generated is not increased gradually over the years.

7.5.5. Inter-regional comparisons of the performance DICs show that the performance of DICs in Kochi region is better than the rest. The DICs in backward Malabar region failed to provide the desired level of assistance.

7.5.6. District-wise performance of DICs measured through performance index, indicates that Thrissur district stands first, whereas Kasargode is at the bottom. Better performance of DICs, of Thrissur and Ernakulam, is due to the agglomeration advantages enjoyed by the industrial units

7.5.7. It can also be noted that performance of DICs in districts with strong industrial base and relatively developed is better than the rest.

It is clear from the analysis that the performance of DICs in Kerala is far below the all India performance. An inter-regional analysis of the performance of DICs also suggests that in backward region like Malabar DIC failed to accelerate the process of industrialization. Across the districts, the performance of DICs in developed districts is better than in backward districts. This shows that the benefits of industrial development, after commencement of DIC programme, could not percolate down to the backward region and districts adequately. Therefore it is suggested that efforts should be made by DICs to concentrate on the development of backward districts and regions. If necessary, more funds are to be allocated and DIC personnel should work with greater vigour and zeal. It can also be noted that the DICs, no doubt, have not succeeded in assisting SC, ST beneficiaries in establishing SSI and artisan units.

7.6. Performance of DIC-assisted SSI units

In this section an attempt has been made to evaluate the performance of DIC-assisted SSI units. The analysis is based on primary survey conducted by the researcher. A sample survey is conducted in three districts, viz, Malappuram, Ernakulam and Thiruvananthapuram. The above analysis brings the following findings:

7.6.1. The DICs have not succeeded in attracting young and educated entrepreneurs to establish industrial units. In the Sample study 77 per cent of the unitholders are below Pre degree and SSLC and only 23 per cent constitutes graduates and

postgraduates and 70 per cent of the entrepreneurs belong to the age group of above 30.

7.6.2. The DICs were not successful in attracting unemployed people to start industrial units. Only 9.6 per cent of the total sample units comes from "no job" category. Thus it indicates that only few new entrepreneurs entered into the area of industry.

7.6.3. Economic performance of SSI units in the selected districts shows that the performance of SSI units in Ernakulam district is far better than that of the units in other districts. The performance of units in Malappuram district is very poor in terms of all the three structural ratios.

7.6.4. Only 20 per cent of the funds invested in SSI units have come from term lending institutions. The units are mostly dependent upon own funds and commercial and scheduled banks.

7.6.5. Linkage effects show that both backward and forward linkages of the units with the district hinterland are very weak.

7.6.6. Personal preference has a high degree of influence in the selection of location of units.

7.6.7. The choice of line of activity is mostly influenced by self-motivation and the influence of DIC in the selection of line of activity is very weak.

7.6.8. The reaction of the entrepreneurs about the DIC assistance shows that they have to make a large number of visits to the DIC office to get permanent registration and DIC also failed to provide training to a substantial number of entrepreneurs.

7.6.9. Majority of the entrepreneurs reported that there is inordinate delay in processing, appraisal and sanction of loans and also that loans sanctioned by the banks and other agencies are inadequate. About 70 per cent of the unitholders are of the opinion that the performance of the DICs in credit assistance is not satisfactory.

7.6.10. Only very few units availed raw materials assistance and those units approached DIC are critical about DIC assistance.

7.6.11. In the context of marketing assistance and in allotting Stalls in the industrial exhibitions SSI unitholders are critical about DIC.

7.6.12. There is no activity, which gives a high degree of satisfaction in DIC assistances to the unitholders. The degree of satisfaction is very low as regards counselling, information and supplying machines, supply of the product, marketing assistance and raw-material assistance.

7.6.13. Marketing: In allotting stalls in the industrial exhibitions SSI unitholders complain that they are given stalls at corners of the exhibition ground without any rent.

7.6.14. DIC as Nodal Agency: There is no uniformity in the nodal agency meetings held in selected DICs. It shows that DICs are not strictly following the directions of DC, SSI. The meetings were held in routine and casual manner. The absences of seriousness to the issues are glaring. It is also observed that the entrepreneurs, whose applications are taken up for discussions, are not invited to the meeting to present their case.

After the establishment of the DICs very few number of young and educated entrepreneurs entered into the field of industry and it is to be noted that majority of the entrepreneurs were of the opinion that DICs are a failure, because DICs failed to assist in a meaningful manner. Thus it can be inferred that the DICs are a failure, and there is need for improving the performance of DICs by strengthening them organizationally. It is suggested that the DIC should follow a result-oriented approach rather than target-oriented approach as it is practised now.

It is also observed that the influence of DICs on the choice of activity and the location of unit by the beneficiaries is very less. This is also a very unhealthy sign. The beneficiaries based on the hunches of family influence established industrial units. Even the choice of locating the units is based upon personal preference or nearness to native place. Thus the improper selection of line of activity and improper location of the unit became detrimental to the success of the ventures. It is this factor, which is responsible for the weak linkages of the units with the hinterland. Therefore it is very clear that DICs

failed to play a decisive role both in the selection of the project and also in the selection of their locations. The DICs also failed to take into account the availability of raw materials and existence of markets before they give registrations to the industrial units. This shows that the techno-economic surveys were insufficient and inappropriate in identifying industries which have the potential for development. They also failed in preparing sound project and product profiles. The expectations of entrepreneurs from the DICs are very high and the satisfaction is very low. This is mainly due to the lack of motivation, expertise and inadequate staff with the DICs. Hence it is suggested that the organizational structure of DICs have to be improved upon.

7.7. Theoretical Analysis for the performance of DICs: An Application of Alternatively augmented Solow Model

The main objective of the present study is to assess the contribution of the functions of DICs to economic growth of different districts in Kerala. Specifically, we attempt, through the present study, to judge whether these institutions were effective in fostering economic growth to the extent to which they were expected of. In chapter IV, we have done this through a non theoretical framework. However, in chapter V we attempted to develop a purely theoretical model with the aim to analyze the performance of DICs in Kerala. The model that developed was an augmented version of the famous model of economic growth developed by Robert M. Solow (1956). This alternative augmentation would closely follow another augmented version of Solow model using human capital developed by Mankiew, Romer and Weil (MRW) in 1992. Instead of human capital as in MRW model, the present model incorporates DIC's investments and expenditures as one of the explanatory variables.

Solow augmented production function can be expressed as

$$Y_t = F(K_t, D_t, A_tL_t) \quad \text{.....(1)}$$

Y_t = District Industrial Gross Domestic Product (DIGDP), D_t = DIC's Contribution

K_t = District Capital Stock in the Industrial sector, A_t = Level of Technology

L_t = Level of Employment in the district (Total Stock of District's Labour force)

A_tL_t = Level of (stock of) effective or efficient stock of labour; Effective labour is that labour which has technical knowledge.

Then it is changed into output per effective labour

$$y_t = F(k_t.d_t) \quad \text{.....(2)}$$

Change the production function into specific form. Let the specific form we give to (1) is that of generalized Cobb-Douglas production function given below.

$$Y_t = K_t^{\alpha}.D_t^{\beta}.[A_tL_t]^{1-\alpha-\beta} \quad \text{.....(3)}$$

$0 < \alpha < 1., 0 < \beta < 1., and 0 < \alpha + \beta < 1$, where, $\alpha + \beta + (1 - \alpha - \beta) = 1$

Properties of Equation (3)

1. Output per effective labour of Equation (3)

$$y_t = k_t^{\alpha}.d_t^{\beta} \quad \text{.....(4)}$$

2. Change into output per labour.

$$\hat{y}_t = A_t k_t^{\alpha}.d_t^{\beta} \quad \text{.....(5)}$$

Behaviour District Economy

Assumption of the District economy

$$\frac{\dot{L}_t}{L_t} = n \text{ -- (6)}, \qquad \frac{\dot{A}_t}{A_t} = g \quad \text{.....(7)}$$

$$Y=C_A+S_K+S_D \quad \text{.....(8),}$$

How physical capital (K_t) and DIC expenditure (D_t) grow overtime is derived from equation (8) and shown below:

$$\dot{K}_t = S_K - \partial\ K_t = I_K - \partial\ K_t = s_k Y_t - \partial\ K_t \quad \text{.....(9)}$$

$$\dot{D}_t = S_D - \partial\ D_t = s_D Y_t - \partial\ D_t \quad \text{.....(10)}$$

Growth of District Economy

According to the Eq. (4) at any point of time 't' the rate of growth of y_t will be determined by those of k_t and d_t (since α & β are constants). Therefore we consider the growth of k_t and d_t.

$$y_t = k_t^{\alpha} . d_t^{\beta} \quad (4)$$

First Consider k_t

$$k_t = \frac{K_t}{A_t L_t}$$

From this we can derive

$$\dot{k}_t = s_k k_t^{\alpha} d_t^{\beta} - [n + g + \partial] k_t \quad \text{.....(11)}$$

Secondly consider d_t $\qquad d_t = \frac{D_t}{A_t L_t}$

$$\dot{d}_t = s_D k_t^{\alpha} d_t^{\beta} - [n + g + \partial] d_t \quad \text{.....(12)}$$

Balanced Growth Path or Steady Growth Path

At BGP $\rightarrow \dot{k}_t = 0$ and $\dot{d}_t = 0$. The corresponding $\dot{k}_t$ and $\dot{d}_t$ can be represented as k* and d*. Thus the k* is the value of $\dot{k}_t$; where $\dot{k}_t = 0$ and d* is the value of $\dot{d}_t$, where $\dot{d}_t = 0$. From the equations

$$s_k k^{*\alpha} d^{*\beta} - [n + g + \partial] k^* = 0 \quad \text{.....(13)}$$

$$s_D k^{*\alpha} d^{*\beta} - [n + g + \partial] d^* = 0 \quad \text{.....(14)}$$

we can derive

$$d^* = \left[\frac{s_D}{n + g + \partial}\right]^{\frac{1}{1-\beta}} k^{*\frac{\alpha}{1-\beta}} \quad \text{.....(15)}$$

$$k^* = \left[\frac{s_k}{n + g + \partial}\right]^{\frac{1}{1-\alpha}} d^{*\frac{\beta}{1-\alpha}} \quad \text{.....(16)}$$

$$s_k k^{*\alpha} d^{*\beta} = [n + g + \partial] k^*$$

$$s_D k^{*\alpha} d^{*\beta} = [n + g + \partial] d^*$$

$$d^* = \left[\frac{s_k^{\alpha} s_D^{1-\alpha}}{n + g + \partial}\right]^{\frac{1}{1-\alpha-\beta}} \quad \text{.....(17)}$$

$$k^* = \left[\frac{s_D^{\beta} s_k^{1-\beta}}{n+g+\partial}\right]^{\frac{1}{1-\alpha-\beta}} \quad \text{.....(18)}$$

$$y^* = k^{*\alpha} d^{*\beta} \quad \text{.....(19)}$$

$$\text{i.e., } y^* = \left[\frac{s_D^{\beta} s_k^{1-\beta}}{n+g+\partial}\right]^{\frac{1}{1-\alpha-\beta}} \left[\frac{s_k^{\alpha} s_D^{1-\alpha}}{n+g+\partial}\right]^{\frac{1}{1-\alpha-\beta}}$$

$$y^* = s_k^{\frac{\alpha}{1-\alpha-\beta}} s_D^{\frac{\beta}{1-\alpha-\beta}} x^{\frac{-(\alpha+\beta)}{1-\alpha-\beta}} \quad \text{.....(20)}$$

$$\ln y^* = \frac{\alpha}{1-\alpha-\beta}\ln s_k + \frac{\beta}{1-\alpha-\beta}\ln s_D - \frac{\alpha+\beta}{1-\alpha-\beta}\ln(n+g+\partial) \quad \text{.....(21)}$$

Analysis of the equation (21)

1. Since every element on the R.H.S. is a constant, its growth rate must be zero.
2. So the growth rate of R.H.S. is zero.
3. Thus y^* (which is equal to $\frac{y_t}{A_t L_t}$ or $\frac{Y}{AL}$) also grows at zero rate in the steady state.
4. Refer equation (8), i.e., $\hat{y}_t = A_t k_t^{\alpha} . d_t^{\beta}$

   Thus, $\dot{y}$ $\qquad \hat{y} = A_t y^*$ .....(22)
5. Taking logarithms of both sides of (22), we get,

   $$\ln \hat{y}^* = \ln A_t + \ln y_t \quad \text{.....(23)}$$
6. Now substituting (21) in (23) we get,

   $$\ln \hat{y}^* = \ln A_t + \frac{\alpha}{1-\alpha-\beta}\ln s_k + \frac{\beta}{1-\alpha-\beta}\ln s_D - \frac{\alpha+\beta}{1-\alpha-\beta}\ln[n+g+\partial] \quad \text{.....(24)}$$
7. Since there is no 't' in all terms, except in $\ln A_t$ on the R.H.S., the derivatives of the term on the RHS w.r.t. time will be zero, except that of $\ln A_t$
8. Therefore, differentiation of equation (24) w.r.t. time yields $\frac{\dot{\hat{y}}_t}{\hat{y}_t} = \frac{\dot{A}_t}{A_t}$ -(25)

   Since $\frac{\dot{A}_t}{A_t} = g$, equation (25) can be written as $\frac{\dot{\hat{y}}_t}{\hat{y}_t} = \frac{\dot{A}_t}{A_t} = g$ - (26)

8. Analyze equation (26)

viii) It implies that output per worker (not effective worker) grows in the steady state at the rate of growth of technology (i.e., 'g').

ix) Now let in the steady state $\frac{\dot{A}_t}{A_t} = 0$, then g=0, this means that technology does not grow in the steady state.

x) Thus equations (26) imply $\frac{\dot{\hat{y}}^*}{\hat{y}^*} = \frac{\dot{A}^*}{A^*} = 0$, which means that if technology does not grow then both y and $\hat{y}$ will not grow (i.e., $\frac{\dot{y}}{y} = \frac{\dot{\hat{y}}}{\hat{y}} = 0$) and their growth rates will both be equal to zero.

7.8. Econometric Specification and Empirical Results

The analysis carried out in the present study is based on R.M.Solow model of economic growth. The general production function used by Solow was:

$$Y_t = F(K_{(t)}, A_{(t)}.L_{(t)})$$

The specific form used by Solow was of Cobb-Douglas as given below:

$$Y_{(t)} = K^{\alpha}_{(t)}[A_{(t)}.L_{(t)}]^{1-\alpha}$$

In the present study we propose to augment the above Solow formulation as given below:

$$Y_{(t)} = F(K_{(t)}, D_{(t)}, A_{(t)}.L_{(t)})$$

and

$$Y_{(t)} = K^{\alpha}_{(t)}.D^{\beta}_{(t)}.[A_{(t)}.L_{(t)}]^{1-\alpha-\beta}$$

After some mathematical manipulations we can derive the empirical or econometric specification of the above model as given below in equation (1)

$$\ln \hat{y}_i = \alpha_0 + \frac{\alpha}{1-\alpha-\beta}\ln s_{k_i} + \frac{\beta}{1-\alpha-\beta}\ln s_{D_i} - \frac{\alpha+\beta}{1-\alpha-\beta}\ln[n_i + 0.05] + \in_i \quad \text{.....(1)}$$

This is the econometric specification of the district economy, on the basis of this Model we are attempting to find, how far $\hat{y}_i$ is dependent on s_k & s_D (In other words, how far the dependent variable district income is depend of the DIC expenditure and capital stock)

The findings are as follows:-

7.8.1. -0.34 coefficients show that as k (capital stock) increases by one unit outputdecreases by 0.34 units. Moreover the computed 't' value is 2.951, which is higher than the table 't' value 2.131 (for n=15 and at 5 per cent confidence interval). Therefore, we reject the hypothesis that 'k' (capital stock) does not have any influence on Y. This means that s_k is influencing y (in an inverse way) and the influence is significant.

7.8.2. –0.3 co-efficient shows that as'd' (DIC expenditure) increases by one unit output decreases by 0.3 units. Moreover, the computed 't" value is –3.812 which is higher than the table 't' value 2.131 (for n=15 and 5 per cent confidence interval). Therefore we reject the hypothesis that s_D (DIC Expenditure) does not have any influence on Y. This means that DIC expenditure s_D is influencing Y in an inverse way and the influence is significant.

7.8.3. 1.17 coefficient shows that as n=0.05 (employment increases by one unit, output decreases by 1.17 unit. Moreover the computed 't' value is 3.001, which is higher than the table 't' value 2.131 (for n=15 and at 5 per cent confidence interval). Therefore we reject the hypothesis that n+0.05 (employment) doesn't have any influence of Y. This means that 'n' is influencing Y (in any inverse way) and the influence is significant.

The reason for negative signs on the co-efficient of 'k' and 'd' could be the misallocations of resources by DICs, the mismanagement of resources by industrial units, labour problems etc.

Now R^2 is around 64 per cent and, therefore, the regression explains about 64 per cent of total variations in the dependent variable. Therefore the theoretical

analysis carried out suggests that the functions of DIC were not just effective, but had negatively influenced the district industrial growth.

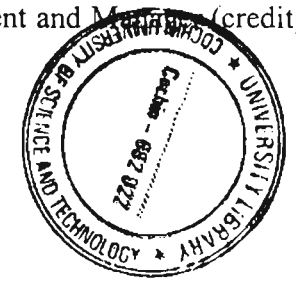
7.9. Recommendations

In recent years, the world global economy has undergone major changes in some of the fundamental, which underlie economic behaviour. They are: a) an information revolution in the context of an accelerated rate of technical progress b) an enlarged market in a world drawn together by major advances in telecommunication and transportation. Competition stimulated by policy liberalisation less segmented markets, larger investment flows and a growing acquiescence to universal rules has become more intense, demanding from firms a global presence. The use of internet has given a new dimension to the understanding and utility of knowledge which is to be created and intelligently used as it is becoming the foundation of competitiveness. In this context agencies like DIC can play a significant role.

7.9.1. Restructuring the Organizational Structure DICs

From the foregoing analysis it is clear that the institutional framework of DICs appears to be the weakest and there is an apparent need to strengthen it organisationally. The task of the four functional managers has become too gigantic to be effective. Therefore, to improve the working of DICs it is recommended that the government should appointment the project managers immediately.

The existing pattern of appointing functional managers by promotion should be discontinued forthwith, as it is not serving any its purpose. The functional managers are to be recruited either by direct recruitment or by deputing expert personnel from other departments connected with industrial promotion. The process of recruitment should also take into account the distinct knowledge, skill and expertise required for the specific responsibilities assigned to each one of them. In this context it is suggested that the Manager (EI&I) should possess technical background, Manager (RM&M) should possess background of Master of Business of Administration (MBA) and marketing. Manager (EI&I) should have the background of rural development and Manager (credit) should have the knowledge of banking and banking practices.



Slowly and steadily the "Inspector Raj" should be discontinued. It should not be used to harass the SSIs. The association members should be taken into confidence for proper follow up

7.9.2. Entrepreneurship

Entrepreneurship should be developed by proper education and training. Educational system should be devised in a manner which would give a fillip to the pace of industrialization. The need is to focus on imparting entrepreneurship training especially to the educated unemployed youth, so that they are trained and made available to take up their own ventures. In order to develop awareness in the minds of the people regarding the package of assistance/incentives being offered by DICs and other concerned agencies, Entrepreneur's Development Programme (EDP) Cells should be established in most of the educational institutions. Fully trained and experienced officials should be selected to impart training under such programmes. The rates of stipend being given to entrepreneurs during the course of training should be enhanced in order to attract more and more entrepreneurs for training courses. Management courses should be organized by the DICs. The courses are recommended for short duration, so that managers may not feel any sort of problem in attending the courses.

7.9.3. Dispersion of Units

Regional imbalance has been found regarding dispersion of units, investment, employment and annual production. The DICs should take all efforts for the dispersion of industries among other districts of State. For this purpose, the DICs should identify the industries having scope for development in other districts of the state. Special treatment of less developed districts should be assured by easy availability of finance, raw materials and other government patronage.

7.9.4. Finance

Though the flow of credit to the SSI sector has increased, there is however a need to concentrate on developing the business of discounting the bills of the SSIs in underdeveloped regions, creating and enabling environment for mobilising low cost funds both in the domestic market as well as abroad through tax free bonds etc. There

is a need to formulate policies that would provide sufficiently strong incentives for banks and other players in the business of credit provision to the SSI sector.

Lack of adequate finance has remained one of the serious bottlenecks with the emerging units. There should be satisfactory coordination between DICs and financial agencies. Both these agencies have different sets of norms for the financial appraisal of the cases. As a result, a lot of confusion, delay and red-tapism have been created. It is therefore suggested that both should evolve a common strategy for the financial appraisal of cases. It is ironical to find that small scale sector, though declared as a priority sector does not get the due treatment from the lending institutions. To arrest this tendency and to accord due and rightful place to this sector, it is suggested that financial agencies should provide the advances by keeping their commitments. DIC should make realistic feasibility reports, so that other agencies like financial institutions have no difficulty in accommodating the units for purpose of financial assistance. The time gap between the DIC recommendation and actual sanction of loans by financial institutions is too wide. This gap should be bridged down. For this purpose, the lending institutions will have to simplify their lending procedures and dispose of the applications within a reasonable period of time. The present procedure of recommending the cases of entrepreneurs under self employment programme is self defeating. Though DIC recommends the loan under a self employment scheme, banks will not sanction it. To make the self employment programmes more successful, the limit of loans should be maximised. The DICs should provide margin money loan to the unitholders. The researcher feels that this would help in boosting the tempo of industrial activity among the educated unemployed youth in which case they will also be exempted from the repayment of margin money.

7.9.5. Raw Materials.

Each DIC should possess its own "Raw Material Banks" in order to supply raw material of required quality and quantity when needed by the unit holders. In order to minimise the procedural delay, it is recommended that the General Managers of DICs should be empowered to recommend the cases directly to the concerned agencies for the supply of raw materials. The raw materials as required by the small scale sector, should be exempted from sales tax. It is suggested that a ten-year holiday may be given to

small industries set up in backward areas and Central Excise exemption should be granted to tiny sector units.

7.9.6. Marketing

DICs should undertake the responsibility of sales campaign on behalf of unit holders in order to attract more and more customers. DIC should organise "Motivational Seminars" at district levels. Awards should be given to unit holders showing maximum production and higher sale of their products. DIC should extent the assistance in the field of exports. In this connection the functions of DICs inter alias should include dissemination of information about the foreign markets and consultancy services in the matters of export procedures and package of incentives being offered by the government. DIC should organize training programmes, meetings and seminars on export promotion, maintaining liaison with concerned export development agencies.

7.9.7. Power

The state government should ensure an un-interrupted power supply for at least 10 hours a day to the unitholders. The voltage of power supply should be according to the requirement of unitholders, so that efficiency of machinery may not be adversely affected. Instead of providing subsidy on Diesel Generator sets to small scale units, DICs should establish High Power Generator Sets in Industrial Areas and Industrial Estates of the district.

7.9.8. Subsidies

During the field survey, the entrepreneurs stated that they feel it better to forego various subsidies and concessions on the reason of corruption and procedural delay. Therefore the procedural delay in the payment of subsidies should be controlled. In this connection, it is recommended that various subsidies/incentives payable to unitholder should be adjusted by the government against the dues payable by the unitholder in the shape of electricity charges, rent, sales tax etc.

7.9.9. Supply of Machinery on Hire Purchase

National Small Industries Corporation (NSIC) should set up its office in all districts of the State to facilitate the hire purchase of machinery and it should be equipped with sufficient staff of field inspectors. They should work in close cooperation with DICs and other concerned agencies in the State. Technology clinics may be organized every month by DIC, SISI, NSIC and Technical Services Centres with co-ordination of engineering college staff and technical university. The role of NSIC should be to assist SSI with various schemes such as hire purchase, leasing, marketing, raw material assistance, single point registration, export, bill discounting and providing trained extension centres located all over the country. In the next few years NSIC will set up four SSI bank at metropolitan cities of Delhi, Calcutta, Mumbai and Chennai exclusively for SSIs. The role of SIDO and NSIC has to be remodelled in providing an enabling environment for the industry to setup joint ventures, to help Indian firms in securing subcontracting work in the international area etc. rather than performing traditional functions. The proliferation of institutions needs to be stopped.

7.9.10. Single Window Committee

The meetings of single window committee are held at the pleasure and convenience of members which is totally in disregard to the interests of unitholders. So the meetings should be held at least once a month. The DIC has to be developed as the single window agency to save the trouble of the entrepreneurs to deal with the multiplicity of agencies. Young professional drawn from the industry may be deputed for a short period to make use of the capabilities that are available in the private sector.

7.9.11. Industrial Estates

World wide experience suggests that there is a need to formulate policies for regional development with the government intervention through the promotion clustering and networking.

The industrial estates of the state do not meet the requirements of modern industrial estates. They are deficient in many necessary inputs like lack of drainage system, water supply, communication facilities, street lights etc. Efforts should be made

to provide all infrastructural facilities within industrial estates. SSI units in industrial estates should contribute some funds for infrastructure like road, water and drainage.

7.9.12. Researches and Development (R&D)

Researches and Development (R&D) are vital to a nation's economic development. It is the key for technology upgradation, innovation, productivity and growth for international competitiveness of the industry and will also help to improve management. Financial assistance has to be provided to such R & D institutions engaged in developing indigenous technology for commercial application.

University-Industry Linkages as has been seen in the case of UK, Korea and other countries, there needs to be a greater encouragement for links between IITs, Engineering colleges and local manufacturers.

7.10. Conclusion

The role of DICs as the Prime Industrial Planning and Promotional Agency at the district level is well established. However, an evaluation of the performance of DICs in Kerala undertaken by the researcher shows that there are inherent weaknesses in its working. Both theoretical and non theoretical analyses reach the same conclusion that DICs are not effective to the extent to which they were expected of. Thus DIC is an area which needs serious attention because all the incentives and assistance to small scale sector are delivered through DICs. Only if the DICs have a well established organizational structure equipped with substantial power delegated to the functionaries they can succeed in realizing the objectives for which they are established.

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APPENDIX

Appendix Table 1

Malappuram

Weightages of Motivational factors for Location of units

W / F	Very High	High	Fair	Moderate	Low	Very Low	No influence	Total
PP	18x6=108	14x5=70	6x4=24	5x3=15	0x2=0	0x1=0	0x0=0	217/43=5.05
ARS	8x6=48	6x5=30	8x4=32	1x3=3	4x2=8	10x1=10	6x0=0	131/43=3.05
AIFS	4x6=24	5x5=25	6x4=24	5x3=15	8x2=16	13x1=13	2x0=0	115/43=2.67
PRM	3x6=18	4x5=20	6x4=24	7x3=21	8x2=16	5x1=5	10x0=0	104/43=2.42
PMK	3x6=18	7x5=35	5x4=20	11x3=33	6x2=12	6x1=6	5x0=0	124/43=2.90
ASL	2x6=12	2x5=10	5x4=20	6x3=18	8x2=16	5x1=5	15x0=0	81/43=1.88
INC	5x6=30	5x5=25	7x4=28	8x3=24	9x2=18	4x1=4	5x0=0	129/43=3.00
Total	43x6=258	43x5=215	43x4=172	43x3=129	43x2=96	43x1=43	43x0=0	

Source: Calculated from primary data

W = Weightages.

F = Factors

PP = Personal Preference.

ARS = Availability of ready shed.

AIF = Availability of Infrastructure.

ASL = Availability of Skilled Labour

PRM = Proximity of Raw Materials

PMK = Proximity of Market.

INC = Incentives

Appendix Table 2

Ernakulam

Weight ages of Motivational factors for Location of units

W / F	Very High	High	Fair	Moderate	Low	Very Low	No influence	Total
PP	37x6=222	26x5=130	15x4=60	14x3=42	15x2=30	8x1=8	0x0=0	492/115=4.28
ARS	27x6=162	27x5=135	9x4=36	17x3=51	17x2=34	12x1=12	6x0=0	430/115=3.74
AIFS	19x6=114	13x5=65	39x4=156	11x3=33	9x2=18	14x1=14	10x0=0	400/115=3.48
PRM	7x6=42	12x5=60	12x4=48	37x3=111	18x2=36	8x1=8	21x0=0	305/115=2.65
PMK	11x6=66	17x5=85	18x4=72	15x3=45	40x2=80	11x1=11	3x0=0	359/115=3.12
AKL	5x6=30	14x5=70	12x4=48	9x3=27	7x2=14	21x1=21	47x0=0	210/115=1.83
INC	9x6=54	6x5=30	10x4=40	12x3=36	9x2=18	41x1=41	28x0=0	219/115=1.90
Total	115x6=690	115x5=575	115x4=460	115x3=345	115x2=230	115x1=115	115x0=0	2415

Source; Calculated from Primary Data

W = Weight ages

F = Factors

PP = Personal Preference

ARS = Availability of ready shed.

AIF = Availability of Infrastructure.

PRM = Proximity of Raw Materials

PMK = Proximity of Market.

ASL = Availability of Skilled Labour

INC = Incentives

Appendix Table 3

Thiruvananthapuram

Weight ages of Motivational factors for location of units

W / F	Very High	High	Fair	Moderate	Low	Very Low	No influence	Total
PP	22x6=132	15x5=75	16x4=64	12x3=36	8x2=16	13x1=13	6x0=0	336/92=3.65
ARS	10x6=60	10x5=50	14x4=56	15x3=45	19x2=38	14x1=14	10x0=0	263/92=2.86
AIF	8x6=48	10x5=50	14x=4=56	11x3=33	15x2=30	24x1=24	10x0=0	241/92=2.62
PRM	5x6=30	9x5=45	14x4=56	18x3=54	16x2=32	13x1=13	17x0=0	230/92=2.5
PMK	34x6=204	25x5=125	15x4=60	8x3=24	4x2=8	3x1=3	3x0=0	424/92=4.61
ASL	6x6=36	8x5=40	9x4=36	13x3=39	18x2=36	11x1=11	27x0=0	198/92=2.15
INC	7x6=42	15x5=75	10x4=40	15x3=45	12x2=24	14x1=14	19x0=0	240/92=2.61
Total	92x6=552	92x5=460	92x4=368	92x3=276	92x2=184	92x1=92	92x0=0	1932

Source: Calculated from Primary Data

W = Weightages

PP = Personal Preference

ARS = Availability of ready shed.

F = Factors

AIF = Availability of Infrastructure.

PRM = Proximity of Raw Materials

PMK = Proximity of Market.

ASL = Availability of Skilled Labour

INC = Incentives

Appendix Table 4

Total Sample (Average)

Weight ages of location of units

W / F	Malappuram	Eranakulam	Thiruvanatha-Puram	Total
PP	217	492	336	1045/250=4.2
ARS	131	430	263	824/250=3.3
AIF	116	400	241	756/250=3.03
PRM	104	305	230	639/250=2.6
PMK	125	359	424	907/250=3.6
ASL	81	210	193	484/250=1.94
INC	129	219	240	588/250=2.35

W = Weightages
PP = Personal Preference
ARS = Availability of ready shed.
F = Factors
AIF = Availability of Infrastructure.
PRM = Proximity of Raw Materials
PMK = Proximity of Market.
ASL = Availability of Skilled Labour
INC = Incentives

Appendix Table 5

(Malappuram)

Wight ages for motivational factors for selection of line of activity

W / F	High	Moderate	Low	Zero	Total
Self Motivation	29x3=87	6x2=12	5x1=5	3x0=0	104/43=2.42
DIC	1x3=3	12x2=24	21x1=21	9x0=0	48/43=1.12
Other Agencies	7x3=21	22x2=44	8x1=8	6x0=0	73/43=1.7
Father/Brother Friends/Relatives	6x3=18	3x2=6	9x1=9	25x0=0	33/43=0.77
Total	43x3=129	43x2=86	43x1=43	43x0=0	258

Source: Calculated from Primary Data

W= Weight ages

F = Factors

Appendix Table 6

(Ernakulam)

Weight ages for motivational factors for selection of line activity

W / F	High	Moderate	Low	Zero	Total
Self Motivation	70x3=210	30x2=60	6x1=6	9x0=0	276/115=2.4
DIC	8x3=24	9x2=18	44x1=44	54x0=0	86/115=0.75
Other Agencies	18x3=54	64x2=128	7x1=7	26x0=0	189/115=1.64
Father/Brother Friends/Relatives	19x3=57	12x2=24	58x1=58	26x0=0	139/115=1.21
Total	115x3=345	115x2=230	115x1=115	115x0=0	690

Calculated From the Primary Data

W= Weight ages

F = Factors

Appendix Table 7
Thiruvananthapuram
Weight ages for motivational factors for selection of line activity

W / F	High	Moderate	Low	Zero	Total
Self Motivation	48x3=144	16x2=32	12x1=12	16x0=0	188/92=2.04
DIC	11x3=33	11x2=22	38x1=38	32x0=0	93/92=1.01
Other Agencies	20x3=60	52x2=104	8x1=8	12x0=0	172/92=1.87
Father/Brothers Friends/Relatives	13x3=39	13x2=26	34x1=34	32x0=0	99/92=1.07
Total	92x3=276	92x2=184	92x1=92	92x0=0	552

Calculated from the Primary Data

W = Weightages

F = Factors

Appendix Table 8
Total sample average.

D / F	Malappuram	Ernakulam	Thiruvanathapuram	Total
Self Motivation	104	276	188	568/250=2.27
DIC	48	86	93	227/250=0.91
Other Agencies	73	189	172	434/250=1.74
Father/Brother Friends/Relatives	33	139	97	269/250=1.08

Calculated from Primary Data

D = Districts

F = Factors

Appendix Table 9

(Malappuram)

Types of Assistance Received from DIC

W / A	High	Moderate	Low	Zero	Total
SPP	10x3=30	0x2=0	28x1=28	5x0=0	58/43=1.35
SP	4x3=12	1x2=2	27x1=27	11x0=0	41/43=0.95
PA	1x3=3	2x2=4	36x1=36	4x0=0	43/43=1.0
FRP	3x3=9	9x2=18	16x1=16	15x0=0	43/43=1.0
FPA	6x3=18	7x2=14	13x1=13	17x0=0	45/43=1.05
IMS	4x3=12	5x2=10	18x1=18	16x0=0	40/43=0.93
PPR	0x3=0	3x2=6	40x1=40	0x0=0	46/43=1.07
RMA	1x3=3	2x2=4	18x1=18	22x0=0	25/43=0.58
REI	2x3=6	3x2=6	24x1=24	14x0=0	36/43=0.84
MA	1x3=3	2x2=4	16x1=16	24x0=0	23/43=0.53
COU	1x3=3	4x2=8	26x1=26	12x0=0	37/43=0.86
Total	33x3=99	38x2=76	262x1=262	142x0=0	437

Calculated from the Primary Data A = Assistance, W = Weightages

SPP = Suggesting the Project Profile

SP = Supply of the Product

PA = Procedural Aspect

FRP = Feasibility Report Preparation

FPA = Feasibility Report Appraisal

IMS = Information and Machine Supplies

PPR = Permanent and Provisional Registration

RMA= Raw Material Assistance

REI = Recommendation for Eligible Incentives

MA = Marketing Assistance

COU = Counselling

Appendix Table 10

(Ernakulam)

Types of Assistance Received from DIC

W / A	High	Moderate	Low	Zero	Total
SPP	29x3=87	9x2=18	54x1=54	23x0=0	159/115=1.38
SP	1x3=3	3x2=6	68x1=68	43x0=0	77/115=0.67
PA	2x3=6	21x2=42	84x1=84	8x0=0	132/115=1.15
FPP	10x3=30	28x2=56	55x1=55	22x0=0	141/115=1.23
FPA	12x3=36	21x2=42	57x1=57	25x0=0	135/115=1.17
IMS	4x3=12	13x2=26	74x1=74	24x0=0	112/115=0.97
PPR	7x3=21	41x2=82	67x1=67	0x0=0	170/115=1.49
RMA	1x3=3	8x2=16	40x1=40	66x0=0	59/115=0.51
REI	2x3=6	7x2=14	94x1=94	12x0=0	114/115=0.99
MA	2x3=6	1x2=2	69x1=69	43x0=0	77/115=0.67
COU	7x3=21	4x2=8	12x1=12	92x0=0	41/115=0.36
Total	77x3=231	156x2=312	674x1=674	358x0=0	1217

Calculated from the Primary Data

A = Assistance,
W = Weight ages
SPP = Suggesting the Project Profile
SP = Supply of the Product
PA = Procedural Aspect
FRP = Feasibility Report Preparation
FPA = Feasibility Report Appraisal
IMS = Information and Machine Supplies
PPR = Permanent and Provisional Registration
RMA = Raw Material Assistance
REI = Recommendation for Eligible Incentives
MA = Marketing Assistance
COU = Counselling

Appendix Table 11

(Thiruvananthapuram)

Types of Assistance received from DIC

A \ W	High	Moderate	Low	Zero	Total
SPP	18x3=54	2x2=4	28x1=28	44x0=0	86/92=0.93
SP	9x3=27	3x2=6	9x1=9	71x0=0	42/92=0.46
PA	8x3=24	12x2=24	70x1=70	2x0=0	118/92=1.28
FPP	10x3=30	16x2=32	16x1=16	50x0=0	78/92=0.85
FPA	10x3=30	29x2=58	41x1=41	12x0=0	129/92=1.40
IMS	6x3=18	6x2=12	21x1=21	59x0=0	51/92=0.55
PPR	7x3=21	9x2=18	76x1=76	0x0=0	115/92=1.25
RMA	4x3=12	4x2=8	15x1=15	69x0=0	35/92=0.38
REI	9x3=27	27x2=54	51x1=51	5x0=0	132/92=1.43
MA	4x3=12	4x2=8	9x1=9	75x0=0	29/92=.0.32
COU	15x3=45	25x2=50	49x1=49	3x0=0	144/92=1.57
Total	100x3=300	137x2=274	385x1=385	390x0=0	959

Calculated from Primary Data

A = Assistances
W = Weight ages
SPP = Suggesting the Project Profile
SP = Supply of the Product
PA = Procedural Aspect
FRP = Feasibility Report Preparation
FPA = Feasibility Report Appraisal
IMS = Information and Machine Supplies
PPR = Permanent and Provisional Registration
RMA = Raw Material Assistance
REI = Recommendation for Eligible Incentives
MA = Marketing Assistance
COU = Counselling

Appendix Table 12

(Total Sample average)

Types assistance Received form DIC

D / A	MPM	EKM	TPM	Total
SPP	58	159	88	305/250=1.22
SP	41	77	42	160/250=0.64
PA	43	132	118	293/250=1.17
FPP	43	141	78	262/250=1.05
FPA	45	135	129	309/250=1.24
IMS	40	112	51	203/250=0.81
PPR	46	170	115	331/250=1.32
RMA	25	59	35	119/250=0.48
REI	36	114	132	282/250=1.13
MA	23	77	29	129/250=0.52
COU	37	41	144	222/250=0.89

Calculated from Primary Data

D = Districts

A =Assistances

MPM = Malappuram

EKM = Ernakulam

TPM = Thiruvananthapuram

SPP = Suggesting the Project Profile

SP = Supply of the Product

PA = Procedural Aspect

FRP = Feasibility Report Preparation

FPA = Feasibility Report Appraisal

IMS = Information and Machine Supplies

PPR = Permanent and Provisional Registration

RMA = Raw Material Assistance

REI = Recommendation for Eligible Incentives

MA = Marketing Assistance

COU = Counselling

THE PERFORMANCE EVALUATION OF DIC PROGRAMME IN KERALA

QUESTIONNAIRE

1. Name of the unit;
2. Details of the entrepreneur:

Name and address	Age	Educational status	Experience and training	Previous job	Job of the family	Why unit started?	SC/ST/ women/ Exservice men and others	Any other

3. Is the unit working as ancillary to any other unit?

4. Date of Establishment and type of organization

Date of Establishment	Project Report agency	Your opinion on the report	Date of starting production	Type of Organization
				Proprietary Private Ltd.Co. Partner Co.op Society Others

5. Is your unit registered with DIC?

6. What prompted you to start the unit? 1.Own ambition 2.Friends and Relatives 3.DIC. 4. Other Source
(Mark the order of preference) (...) (...) (....) (...)

7. Who suggested you this trade line? 1.own choice.2.DIC 3.Other Source.4.Ideas from the seminar.5.personal visits to places

Registration

8. What help you got in getting the unit registered?

9. Are you satisfied with the performance of DIC, If not, why?

10. How much time has taken in getting your unit registered with DIC?

11. Do you face any one of the following problems while seeking registration of the unit? (Give only main problems)

1.Official Delay 2.Bad attitude 3.Any other

12. No. of visits made by you for permanent and provisional registration?

1 2 3 4 More than 5

13. Do you think that DIC registration serves some purposes in various concerned agencies? (Please give details)

14. Where you give any training by the SSI/DIC/KITCO/NISIET before the establishment of the unit?

Production

15. Products Manufactured

16. Annual Installed Capacity on single shift basis. Actually utilized capacity

Items	Quantity/Rupees	Items	Quantity/Rupees

17. If you don't produce to the full capacity, what are the main reasons?

1.Less Demand 2.Raw material Problem. 3.Financial Problem
4.Power /Labor problem 5.Any other problem

18. What measures did you take to increase the capacity utilization?

Raw materials

19. Items of raw materials Sources of raw materials

20. How do you purchase raw materials

1.Own efforts 2.Through DIC 3.Other Agency (specify)

21. Whether you availed raw material assistance? Yes/No

22. If not, then what percentage you get from the concerned agencies of your requirement?

Incentives and Assistances

23. Whether you availed

1.Central/state investment subsidy. 2.Interest subsidy 3,Concessional finance

4.Seed capital/Margin money loan 5.Power subsidy. 6. Water subsidy.

7. KSFC Loan 8.Generator Subsidy

24. What general problems do you face in respect of raw materials?

Marketing

25. Which is your market?

1.District 2.State. 3. Out side the state 4. Export

26. How do you sell your product?

1. Through own efforts 2.Through Sid co 3,Other agency

27. Do you purchase in Central Government purchase programme? If not, why?

28. Do you have sufficient demand for your product? Yes/no
If not, why?

1,competition 2.Poor quality 3.In adequate market information 4. Any other.

29. Do you get immediate information from DIC about the opportunity of your products?

30. Do you adopt sales campaign techniques in various markets? If yes, what are they? If not , why?

31. What is your pricing method?

Employment and Wages.

32. Details of Laborers

No of skilled laborers	No. of unskilled of laborers	Administrative and managerial laborers	Total	No. of employees local	No. of employees outside the district	No of employees out side the state.	Total amount wage

33. Do you face labour problem? Yes/No

34. If yes, what are they? (specify)

1.Nonavailability skilled labor 2.Labour turn over 3.Training 4. Unionization 4.Absenteeism 5.Any other

35. How do you solve them?

Finance

36. Total Investment (_____)= Fixed capital (_____) + working capital (_____)

37. Whether you availed financial assistances from bank? Yes or No

38. Whether the availed loan amount is adequate/inadequate

39. Sources of investment

Proprietors contribution	Loan from Banks	Government agencies/industrial department	Financial intermediaries	Relatives and others
		KSFC KSIDCO NSIC OTHER AGENCIES		

40. How much time has taken for appraisal and sanction of loan? Long/Prompt/reasonable

41. Whether cost increased due to delay in loan sanction Yes /no

42. Whether the procedural aspect is cumbersome/simple

43. What is your opinion about repayment schedule convenient? convenient/not

44. What was the amount of loan recommended by DIC?

45. Whether DIC involved in getting credit assistance? Yes/No

46. If yes, the role of DIC was very helpful /helpful/not helpful

47. What was the amount sanctioned by financial agency?

48. What was the attitude of financial agencies?

Expansion of the Unit

49. Has the unit been expanded since its inception Yes/No

50. What help you received from DIC in this respect?

51. Was the expansion effective? If not why?

Manufacture of the product

52. Did you add any new line? Yes/No

53. What factors did influence you to do so.

54. What help you got from DIC in this respect?

55. Was the establishment of new line profitable? If not, why?

Machinery

56. What problems did you face in the procurement of machinery?

57. Are the existing machinery adequate?

58. What help did you seek from DIC in this respect?

DIC supervision

59. Did any DIC official visit in your unit? yes/No

60. If yes, how often?

1.once in month 2.twice in a month 3.more than twice 4.never

Government policy

61. Did you satisfy with government policy? Yes.No

62. If not please give reasons

63. Are you well acquainted with all kinds of incentives and facilities available to small scale unit holders?

64. Please mention the agencies with which you deal

65. Did you avail of all incentives/facilities being offered by various agencies including DIC?

66. If not, why?

67. Please explain the attitude of various agencies

Factory accommodation

68. Own shed hired shed within industrial estate

69. Whether accommodation adequate or inadequate?

70. Why location of unit here?
1. Personal preference (...)
2.Availability of ready shed (....)
3.Availability skilled labour (....)
4.Availability of infrastructure(....)
(Mark the order of Preference)
5.Proximity of raw materials (.....)
6.Proximity of market(.....)
7.Incentives (....)

71. Did you favor the establishment of your unit within industrial estate?

Power

72. Do you use power Yes /No

73. If yes, is the supply satisfactory Yes/no

74. What general problems did you face in respect of power.

1. High cost 2. Scarcity 3.uncertainity 4.other problems

75. Is the unit working at profit or loss?

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76. Types of assistances received

1.	Project profile	Low/Medium/ High
2.	Supply of the Product	Low/ Medium/High
3.	Procedural aspects	Low/Medium/High
4.	Feasibility report Preparation.	Low /Medium/High
5.	Feasibility report appraisal	Low/Medium/High
6.	Information of Machine supplies	Low/medium/High
7.	Permanent and provisional registration	Low/Medium/High
8.	Raw material assistance	Low/Medium/High
9.	Marketing assistance	Low/Medium/High
10.	Recommending for eligible incentives	Low/Medium/High
11.	Counselling	Low/Medium/High

77. Any other suggestions, or remarks would you like to give?