

Operational Efficiency of KINFRA Industrial Parks and Its Impact on the Industrial Development of Kerala

*Thesis submitted to University of Calicut
in partial fulfilment of the award of the
Degree of Doctor of Philosophy in Economics*

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CERTIFICATE

This is to certify that the thesis entitled 'Operational Efficiency of KINFRA Industrial Parks and Its Impact on the Industrial Development of Kerala', submitted to University of Calicut in partial fulfilment of the requirements for the award of the Degree of Doctor of Philosophy in Economics, is a record of original research work done by Mr. P. Noufal, Research Scholar, Department of Economics, University of Calicut, Dr. John Matthai Centre, Trissur-680618, Kerala under my supervision and guidance and the thesis has not formed the basis for the award of any degree/diploma/Associateship/fellowship or any other similar title to any candidate for any university.

30.08.2019

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Declaration of Revision

I, P. Noufal, Research Scholar, Department of Economics, University of Calicut, Dr. John Matthai Centre, Trissur-680618, Kerala do hereby declare that I have made necessary changes in my thesis entitled 'Operational Efficiency of KINFRA Industrial Parks and Its Impact on the Industrial Development of Kerala', submitted to the University of Calicut in partial fulfilment of the requirements for the award of the Degree of Doctor of Philosophy in Economics, as suggested by the Adjudicators.

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Certificate of Revision

This is to certify Mr. P. Noufal, Research Scholar, Department of Economics, University of Calicut, Dr. John Matthai Centre, Trissur-680618, Kerala has incorporated all the changes as suggested by the Adjudicators in his thesis entitled 'Operational Efficiency of KINFRA Industrial Parks and Its Impact on the Industrial Development of Kerala', submitted to University of Calicut in partial fulfilment of the requirements for the award of the Degree of Doctor of Philosophy in Economics under my supervision and guidance.

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DECLARATION

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LIST OF ABBREVIATIONS

ASIDE	Assistance to States for the Infrastructure Development of Exports and Allied Activities.
CII	Confederation of Indian Industries.
DIC	District Industries Centres.
IDZ	Industrial Development Zones.
IGC	Industrial Growth Centres.
IIDS	Integrated Infrastructure Development Scheme.
ITES	Information Technology Enabled Services.
K-BIP	Kerala Bureau of Industrial Promotion.
KFC	Kerala Financial Corporation.
KIIFB	Kerala Infrastructure Investment Fund Board.
KINFRA	Kerala Industrial Infrastructure Development Corporation.
KPP	Kerala Perspective Plan.
KSIDC	Kerala State Industrial Development Corporation.
K-SIDCO	Kerala Small Industries Development Corporation.
MIUS	Modified Industrial Infrastructure Upgradation Scheme.
MSMEs	Micro, Small and Medium Enterprises.
NMP	National Manufacturing Policy.
PPP	Public-Private-Partnerships.
SDF	Standard Design Factories.
SEZ	Special Economic Zones.
SGDP	State Gross Domestic Product.
SLPEs	State Level Public Enterprises.
SMEs	Small and Medium Enterprises.
UNIDO	United Nations Industrial Development Organisation.

Chapter-1

Introduction and the Research Design

1.1. Introduction:

The industrial sector is deemed as a major driver of economic growth. It is vital in stimulating the growth of the economy as it is closely interconnected with the primary and tertiary sectors through its forward and backward linkages. Wooing industry is something every State in India does these days. Among the leading commercial and trading centres of India, Kerala offers a good environment for the setting up of any industry with its comparative factor advantages and the high quality of human resources. Availability of state-of-the-art infrastructure is a *sin-qua-non* of progress which increases the productivity potential of the domestic economy and attracts foreign investments as well. Kerala has made a mark on the global economic arena and is reaping huge benefits from its blossoming industrial sector. Industry and infrastructure of the State is ready to usher bright prospects and reflects the untiring efforts of the Government to showcase the State as a lucrative business hub.

Development of avant-garde infrastructure is an essential pre-requisite for rapid industrialisation. Providing an enabling and conducive environment for doing business is an important factor contributing to the industrial growth. Kerala has discerned significant strides in industrial development along with strong economic fundamentals and optimism. The Government has come forward with many structured and well-defined

policies and pioneering initiatives to transform Kerala into a vibrant entrepreneurial society with faster, inclusive and sustainable economic growth. It is trying to provide better industrial infrastructure in the form of industrial parks, industrial clusters, industrial estates, development areas and special economic zones (SEZs). The emphasis is to make the State a more efficient and user-friendly business cynosure with leading-edge infrastructure.

Being the industrial catalyst of the State, the Kerala Industrial Infrastructure Development Corporation, popularly known as KINFRA has been following an untiring effort of industrial development by promoting the concept of 'industrial parks' in Kerala. It brings together native resources and develops industrial infrastructure across the State by identifying and promoting core competency areas of each region, creating walk-in and manufacture environments and wooing potential investors from across the world. KINFRA has identified certain core competency areas and is having 22 well-defined industrial parks at present. These parks offer comprehensive infrastructure, support services, attractive incentives and concessions, single window clearance and immense opportunities for the expansion and diversification of business and thus promote a typical entrepreneurial culture in the industrial economy of Kerala.

With the objective of promoting, stimulating and facilitating the development of a strong industrial base for the State, KINFRA acts as an agency in catalysing the development of physical and social infrastructure for the constant growth of its industry. The development of industrial parks promotes the exclusive growth and development of the core industrial sectors identified by the industrial policy of the government. Foods processing parks, electronics parks, information technology parks, apparel parks, film and video parks, spices parks, marine parks, herbal and ayurveda parks are some examples for the industrial parks already set up by KINFRA.

Having been recognised the enormous development potential to revamp the State; the government has accorded special emphasis to the food processing, electronics and information technology sectors as the sunrise sectors of the economy. KINFRA has set up exclusive parks for these sectors which has obtained the 'product specific special economic zone' status from the Central Government. Using the ambience and flawless infrastructure facilities of KINFRA, these product specific special economic zones aim to create an environment for the development of a high-tech and non-polluting export-oriented industries in Kerala and thereby creating a top-notch industrial township, which could attract global players to the industrial arena of the State.

Successful industrial parks can become the growth and innovation hubs in the economy directing interactive learning and national economic development. Leveraging industrial parks as a policy instrument fosters competitiveness of the agglomeration economies and promote local supply chain development. They attempt to run-over the market and institutional imperfections, facilitate economic learning and catch-up, leverage new technologies and knowledge and accelerate rapid industrial and economic development in transition economies. When successfully managed, they can provide an environment for enterprise and innovation to flourish and significantly influence the industrial economy of the State. The present study explores the growth performance and operational efficiency of KINFRA industrial parks and its impact on the industrial development of Kerala.

1.2. Review of Literature:

Setting up of industrial parks enables to craft a peculiar entrepreneurial culture in the State and creates the much necessary impetus to the industrial promotion movement in Kerala. Literature on the economic imperative of industrial infrastructure and its impact on the national industrial development in general, and the role and efficacy of various innovative initiatives including industrial parks, industrial estates, industrial clusters, special economic zones, etc. in particular have been

extensively reviewed and made use of with particular reference to their impact on regional industrial development. Various existing sources in print and electronic media have been referred to and made use of for the purpose. An overview of the major literature on different dimensions of industrial parks is summarised below:

Kiselakova (2014) attempts to identify the key macroeconomic factors affecting the establishment of industrial parks with positive effects on sustainable regional development. Industrial parks contribute significantly to regional development and revitalise the overall economic situation of the country. It promotes job creation in regional labour market, creates favourable conditions for entrepreneurship and increases the support for innovative businesses to enhance competitiveness and support for export growth. The major localisation factors relevant to the support, establishment and management of industrial parks are mainly the status of foreign direct investments, employment of persons, governmental financial support and investment incentives, the overall readiness and availability of the industrial area with particular focus on the positive effects of regional development.

Mani (2014) observes that Kerala is one of the least industrialised States although it has all the potential of being one. The State has attracted very little industrial investments especially in its manufacturing sector and the

problem has become even more acute over the last decade. He attempts to provide an explanation of low investments in terms of four constraints, namely, land, labour, environmental concerns of the civil society and the attitude of the bureaucracy. The degree of entrepreneurship from the State is at a very low level and it has continued to be so for a very long time. Given the constraints, he devolves the type of industries that the State may encourage and argues that the government has to make concerted efforts to lessen the negative effects of these constraints if it were to promote industrialisation through the manufacturing route.

Mei-Hor (2014) discusses the cluster taxonomy in relation to competition. Industrial clusters have a prominent role to interconnect companies, specialised suppliers, service providers, firms in related industries and associated institutions in a particular field that compete but also cooperate. Clusters act as 'productivity drivers' and with certain industry linkages, they create a unique set of resources and capabilities to achieve better performance. Local industrial agglomerations provide regional specialisation of economic activities with access to better infrastructure, support services and wider markets. Thus, it is argued that industrial clusters with localised and competitive strategy should be adopted as development tools in the national as well as global economy.

Saha (2014) assays how industrial clusters allow firms to stimulate economic growth through increasing their competitiveness and performance of businesses; stimulate innovation through efficient use of research and development; promote new businesses by attracting foreign investments and increasing exports as well as employment opportunities in the domestic economy of Kerala. Industrial clusters enable the firms to increase their accessibility, power and voice in order to make investment in the specialised infrastructure and the new born enterprises can get the benefit of entering into a global market. Thus, it is argued that supporting and creating clusters is a major way for the firms to win in the globalisation race.

Jolley (2013) attempts to scout the application of 'growth pole theory' as the intellectual underpinnings of joint industrial parks, its innovative financing and revenue sharing arrangements and the lessons learned from its implementation that can be applied to other locales. They highlighted the concept of 'mini hubs' as an innovative model for the rural communities to share the cost and revenues and thus leverage the economic benefits for the poorest locales. Joint parks and mini hubs may be perceived as a growth pole with the presence of many dexterous industries whose activities directly and indirectly lead to broader regional economic growth and employment.

Hugar (2013) manifests industrial estates as important instruments of local industrial development. An industrial estate is a self-contained geographical area with superlative infrastructure facilities which are instrumental for balanced regional growth. The main targets are the high value adding small and medium industries which do not have the wherewithal to invest in developing their own basic infrastructure, but have the capacity to pay for the services. The high quality infrastructure and other support services in a well-planned layout provides a tending environment for them and thereby enhances the operational efficiency of the small and medium scale industries operating in the industrial estates.

Saleman (2013) examines how industrial parks are built and how they fail. At their best, industrial parks align infrastructure provision and agglomeration economies to jolt industrial growth. They classified the implementation failures of industrial parks into four performance categories, namely: (i) the parks do not get built, (ii) the parks are built but there is little demand from the firms to locate and invest in them, (iii) the parks are built and generate demand, but with few 'cluster effects' and (iv) the parks are successful but have a neutral or negative side effects such as 'negative spillovers' and 'crowding out' on investment climate outside the parks. The categories (i) and (ii) relate to the performance failures in terms of outputs, while (iii) and (iv) relate more to outcomes.

Mojtaba (2012) treats industrial clustering as an innovative development strategy and pinpoint the major factor affecting its competitiveness. Each firm in the industrial cluster becomes part of a large producing network which will increase the competitiveness capability of the small and medium enterprises. Clustering provides utilisation of the efficiencies of scale and aggregation as well as the efficiencies of collective efforts. It can penetrate in a more advance form in the global market and creates competitiveness advantage, economic growth and export development in the international environment. Thus, it can be stated that a fundamental and sustainable development strategy for directing the small and medium firms towards competitiveness is to develop the principle of industrial clusters.

Schwab (2012) explores the opportunities to improve the image and competitiveness of industrial parks by capitalising three contemporary concepts, namely: sustainable development with 'green' principles as well as economic stability, the 'creative class' work force and the popularity of mixed use development. Lack of amenities is a common problem among industrial parks and hence, recommendations should address issues in certain areas including beautification, mobility and connectivity, land use, economic growth and regional community development.

Boja (2011) states that economic development based on cluster models can bring multiple benefits in terms of regional development and competitiveness in an industry. The major benefits include a more facile access to resources; decreased transportation costs and supply chains; offers a higher degree of specialisation in products and services; technology cooperation or acquisitions; specialised workforce pool and better access to skilled labour; an increased market and opportunities and finally a more cooperative and highly competitive business environment. Recognising these benefits, innovative policy frameworks should be initiated to support regional industrial development through industrial clusters.

Monga (2011) contemplates that the very success of special economic zones (SEZ) in general, and that of industrial parks in particular, in many countries has motivated several other countries to launch similar initiatives. He suggests 'cluster-based industrial parks' as the most effective tool for developing competitive industries and to generate employment. The rationale is to provide special policy incentives and infrastructure to the firms that can serve as 'experimental laboratories' for new initiatives, strategies and policies. The spillovers will eventually translate into sectoral development, sustained growth, productivity increases and other financial and economic benefits for the entire economy.

Sakr (2011) beholds that the trend of clustering industries into regional estates is continuing in both developed and developing countries, especially when there is rapid industrialisation. The study examined the major success and failure factors of many of the currently operated eco-industrial parks. To them, industrial parks should be integrated into the national development planning processes. They must be linked into the national plans, budgets, sector strategies and local level implementation within a wider stakeholder community for its success and continuity.

Saikia (2011) describes regional variation in industrial development as one of the primary causes of the regional disparities in India. He examines what happened to the location concentration of industries across the States in the post-liberalisation period. Industries tend to concentrate in order to realise tangible benefits from being close to other firms and to consumers, market access, thick labour markets, available infrastructure, transportation, raw materials and resources, agglomeration benefits, knowledge and technology spillovers, externalities, etc. The post-liberalisation period has witnessed more concentration of manufacturing industries which reveals India is 'diverging' in terms of interregional distribution of manufacturing industries.

Kadokawa (2011) examines whether the 'marshallian advantages' localised in a region collectively forming an industrial cluster advantage.

Marshall proposed four localised advantages residing in industrial agglomerations: knowledge spillover, skilled labour pool, development of supporting industries and shared input resources. The study investigates whether such location benefits affect the actual location behaviour of the firms that yield unique regional advantages. The formation of local clusters is vital for the success of regional economies in terms of the benefits including specialisation of their own production, ease of procurement, diffusion of technologies and public policy support.

Srikumar (2011) sifts that the development of industrial parks by KINFRA with ready-to-use infrastructure facilities provides a strong industrial environment in the State. It covers up the inadequacy of industrial infrastructure in the backward areas and thus finds a solution to the problems of low levels of industrialisation and unemployment in Kerala. The development of such parks will encourage the pace of modernisation so that the industrial units will become much more competitive and investor friendly. KINFRA has specialised in infrastructure development with core competency in setting up splendid industrial parks in public-private-partnership (PPP) mode and explores how the State is equipped to usher into the new avenues of entrepreneurship.

Garfamy (2011) considers 'industrial districts' as a dynamic approach to regional industrial development. Industrial district as a corporation

coordinates, regulates and stabilises economic activities and simultaneously functions as a resonance for change. Geographically concentrated and specialised industrial alliances provide immense opportunities for the worker mobility, technological upgrading and infrastructure improvements. He observes that industrial policies should be reoriented for geographic concentrations for regional industrial development.

Das (2011) states that cluster development will provide competitive advantage to the firms in terms of productivity, innovation and formation of new businesses which will definitely have its impact on the rural economic and industrial development of India. Innovations like the setting up of general industrial parks, product specific industrial parks, industrial estates and special economic zones (SEZs) have been initiated by the government to give an impetus to the rural industrial base of the economy which provides opportunities for the firms to work and grow in their host place. The establishment of industrial clusters, especially as a strategy for regional economic development, helps the pro-poor growth in the country.

Lin (2010) attempts to ponder the major driving forces for the growth and development of industrial clusters. They identified local demands and factor conditions are the major causal driving forces and the factors such as related and supporting industries, firm structure, strategy, rivalry and

government support as the indirect forces leading to cluster development. Clusters can be seen as a source of national competitiveness, serving to upgrade productivity, new business formation and innovation and advance marketing or customer relations. They stimulate innovation and improve productivity and allow for the potential of inter-firm learning and cooperation.

Vidova (2010) opines that industrial parks are one of the most important factors supporting positive economy development. They represent an opportunity for an influx of foreign investment and decrease of unemployment rate by the means of creation of new jobs. The job opportunities created or transfer of technologies among companies will definitely bring certain synergic effects in the domestic industrial economy. If an industrial park is linked with a clearly defined goal and intention, it must have a positive influence on revitalising the business environment, transfer of modern technologies, creation of new working places and modernisation of the industry.

Ketels (2008) attempts to probe how clusters can be leveraged for economic policy. Cluster-based policies leverage local assets, capabilities, specialised knowledge, skills, infrastructure and supporting industries in enhancing productivity as the key determinant of sustaining high levels of prosperity in a location. One of the major characteristics of the cluster-

based economic development approach is its concern with the specific conditions present in a location or country. Clusters can enable companies to leg up the business environment quality to reach higher economic performance and thereby endow higher productivity. The dynamics of clusters can be fostered through a mix of networking, collaboration and competition.

Park (2008) examines the feasibility of shifting conventional industrial parks to eco-industrial parks by spontaneous industrial symbiosis and sustainable development policies. They describe how national policies and the developmental activities drive the global trend of innovation for converting the existing parks to eco-industrial parks. Propped by the existing symbiosis network and the gradually evolving sustainable development concept, there must be a rapid shift in the economic growth strategy – from a capital and external growth driven strategy to innovation and qualitative growth driven strategy – to enable industrial parks better materialise future opportunities.

Niu (2008) deems that the development of regional clusters facilitates the competence and competitive advantage of the firms by sharing resources, innovative capabilities and knowledge. Industrial clusters offer a relatively favourable environment for the firms to more easily pool resources, investments and synergies necessary for them to become competitive in the

global arena. Once a cluster successfully pools the resources and develops the core competences, the phenomenon of networks of clusters is likely to emerge to share complementarities across the national and geographic boundaries. The study explores the inter-cluster network structure that enhances global competitiveness and innovation of both the firms and clusters in an emphatic manner.

Lesakova (2008) discloses that industrial parks play a significant role in the economic development of any country. They enhance business and create a definite space for building economic relationships. Besides the direct effects on inflow of foreign capital and decrease in unemployment, the indirect effect of industrial parks comes in the form of an increased level of social and cultural life in the region. The economy is well connected to global networks and the domestic companies can participate with global players in all the stages of production and distribution all around the world.

Venkataramanaiah (2007) observes that industrial clusters can help the small and medium enterprises (SMEs) to improve their inter-firm relations and competitiveness by facilitating various incentives and support systems. The performance and presence of SMEs have been mended through the clusters and they could be significantly upgraded to enhance the levels of productivity and participation in international markets. Geographical

concentration of similar or complementary enterprises speeds up the dissemination of best practices through 'demonstration effect.' In India, where infrastructure and provision of finance is still largely provided and regulated through the government, the involvement of government institutions will not only be necessary but also has to be innovative to cater to the specific needs of SME clusters.

Tan (2006) divulges that industrial parks are increasingly being promoted to facilitate regional development. Within the clusters, the firms have easy access to specialised inputs and are benefited from the presence of complementarities. As a result, productivity and innovation are enhanced and the linkages confer certain competitive advantage. Qualified suppliers, skilled workers and informed investors become available which lowers the cost of entry for subsequent firms and making the area relatively more attractive. Such 'agglomeration economies' encourage growth which are created from the spin-offs in the region. Thus, as a new spatial organisational form, industrial clusters offer more flexibility in the ever changing industrial environments.

Rao (2006) explicates the role of industrial parks in the development of agro-processing industries in India. A well designed agro-industrial park with all the requisite facilities has considerable potential for commercial success. The advantages of shared investment, access to technical

information and incentives, scale of operation and the provision of services such as power, water and waste disposal are obvious, particularly when seen in retrospect. A number of agro-industrial parks have been established in India which provides networks of contacts between producers, markets and processors and the physical infrastructure required for transforming industries.

Lai (2005) pinpoints the effects of industrial clusters on the innovation capacity of firms under the framework of regional economic policies. An industrial cluster provides certain knowledge inputs which will provide further innovative initiatives in the economy. Firms located in an industrial cluster enjoy strong local demand, reduced search costs, technology spillovers, specialised labour, infrastructure benefits and informational spillovers. These factors generate positive externalities from knowledge spillovers, transactional efficiencies and cluster-level scale economies. The authorities should therefore initiate suitable policies to leverage the cluster advantages for the rapid industrial as well as regional economic development.

Hu (2005) is of the view that nurturing industrial clusters is essential for the economic development of less developed countries. The development of a knowledge-based economy, globalisation and international competitive pressure has necessitated the establishment of local innovation

clusters with agglomerative effect on the domestic economies. Location-specific clusters offer ample space for the development of small and medium enterprises (SMEs) or new start-ups which stimulate new industrial foundations for regional economic growth. Through spatial proximity and unbeaten industrial infrastructure, clusters can stimulate compatible spillover effects and thus become an effective tool for integrating industry and regional development.

Thomas (2005) observes that Kerala presents a paradox of development, with its remarkable social achievements and relative industrial backwardness. He states that Kerala's industrial backwardness is mainly due to a 'path dependent process' of industrialisation, which continue to have long-lasting implications for the industrial growth in Kerala. With the policy decision in the 1930s, industrial structure in Kerala came to be locked into a pattern that offers very little potential for inter-industry inter-linkages and industrial growth. The specific problems of a one-pronged strategy became clearer to governments, but no attempts were made to reverse or make basic changes to the existing industrial structure. It requires effective and sound policy interventions on the part of the governments in navigating the economy to the right path.

Guerrieri (2004) investigates some plausible models of evolution of the industrial districts and clusters focusing on the concept 'technological

regimes.’ The changes in technological paradigms and trajectories that crucially affect the foundations of competitiveness are increasingly shaped by the internationalisation process. Firms traditionally operating within the industrial districts need to reorganise their knowledge linkages from a cluster-based approach to a global and broader approach. Thus, systemic forms of integration are emerging to combine geographic dispersion with localised concentration.

Chakraborty (2004) construes that the appropriate framework for understanding industrial location in the post-reform India is ‘concentrated decentralisation.’ The key to long run inter-regional change is the role of industrialisation, especially its spatial manifestation, or what is being called ‘geographic concentration’ or clustering. He found that the most successful pre-reform districts are not the most successful post-reform districts. There has been a shift in geographical focus whereby new investments seek locations within the existing leading regions or clusters. The situation is aptly concentration with dispersal or ‘concentrated decentralisation.’

Lambert (2002) portrays the concept of ‘industrial ecology’ with the challenge for sustainable development, focusing on the problems of mixed industrial parks. They argue that the case of mixed industrial parks is poorly investigated although they have a major environmental and spatial

impact. The challenges are indeed far more diverse and thus, the study describes the societal and environmental problems of mixed industrial parks and proposes certain solutions. They stressed that appropriate planning and management of mixed industrial parks will become an urgent problem in the near future.

Falcke (2002) considers industrial parks as an instrument of local industrial development under the impulse of globalisation and world trade liberalisation. By clustering into industrial parks, the small, medium and even large enterprises can take advantage of public infrastructures, economise on construction and common facilities and gain access to nearby skilled labour markets and other critical inputs. It is now quite possible for the enterprises to decentralise their production and distribution activities on a global basis. Economies due to outsourcing, productivity gains and the economies of scale are identified by him as the main factors causing improvements in the economic and financial fortunes of industrial parks.

Cote (2002) states that industrial parks are large tracts of land, sub-divided and developed for the use of several business entities simultaneously and is distinguished by its shareable infrastructure and close proximity of firms. They represent the ultimate integration of economic, ecological and social dimensions of sustainable industrial development. As self designing

systems, they exhibit immense possibility and if they are seeded with sufficient diversity, they can design their own solutions to their problems. At present, industrial parks have begun to address the issue of sustainability as well as ecological integrity and efficiency.

Subramanian (2000) traces the trends in the industrial growth of Kerala against the backdrop of the overall economic growth under the influence of the ongoing economic reforms. The analysis reveals that though the manufacturing industry has improved its growth performance over time, the growth rates recorded during the nineties are not higher than the corresponding figures for the eighties. The relatively low growth profile of the manufacturing industry, when the general economy is growing remarkably well, appears a riddle of the recent growth trends under the reform process in Kerala. It is argued that inadequate growth of investment has constrained the pace of modernisation of old units and establishment of new units based on 'state-of-art' technology needed for the survival and growth of industries in a globally competitive environment. The study suggests that the lack of a clear and pragmatic approach of the state in its response to the reform process and a positive attitude in its own policies for encouraging private investment makes Kerala a less investor friendly location for manufacturing industry. It underlines the need for a new vision and strategy, which could fully utilise

Kerala's comparative advantages for accelerating the pace of its industrial growth and development.

1.3. Statement of the Problem:

The low level of industrial development in the backward regions of Kerala is one of the major developmental issues confronting the State today. Development of adequate and commendable infrastructure is an essential pre-requisite for rapid industrialisation and the inadequacy of appropriate infrastructure is a major factor hindering the industrial development of the backward regions of the State. Having been analysed various existing literature, it can be observed that the development of industrial parks has attracted the attention of policymakers as a constructive channel of industrial infrastructure. Industrial parks can develop certain synergies and a typical entrepreneurial culture in the industrial economy of any country. They generally provide an excellent institutional framework, support services and physical infrastructure and are aptly treated as policy drivers to foster sufficing investments, employment, competitiveness, sustainable business strategies and regional economic development. Though the development of industrial parks is of vital importance in the industrial economy of the country, we do not have much study to explore its economic imperative and efficacy. Thus, it becomes significant to examine the present status, growth performance and operational efficiency of

KINFRA industrial parks with particular reference to the fulfilment of its objectives as laid down in the Kerala Industrial Infrastructure Development Act, 1993.

1.4. Research Questions:

As an innovative and promising strategy to sustainable industrial development of the regional economy, industrial parks integrate business success and community connections with certain synergic network effects on the economy. KINFRA has set up exclusive parks for the development of core competency sectors and thereby entail the total economic development of the State. In working towards its goal of transforming Kerala into a vibrant industrialised State with faster, inclusive and sustainable industrial growth, KINFRA strives at its best to achieve global standards in its operations and management. Development of a typical business or entrepreneurial culture and thereby give a stimulus to Kerala's industrial development is the avowed objective of KINFRA. Within the last two and a half decades, KINFRA is busy with a mission to make Kerala the most favoured destination for competency industries with the provision of commendable infrastructure. In the context, the study attempts to address some basic questions of research pertaining to the current status, overall growth performance, operational efficiency and

major constraints of KINFRA and its industrial parks within the ambit of realisation of the objectives as listed below:

1. What is the present status of the industrial parks set up by KINFRA throughout the State?
2. What is the growth performance of KINFRA industrial parks over the last 25 years of its operation?
3. Whether KINFRA has achieved significant growth as envisaged in stimulating the industrial development of Kerala?
4. What is the operational efficiency of KINFRA industrial parks in promoting a typical business and entrepreneurial culture in Kerala?
5. What are the major problems and constraints faced by KINFRA and its industrial parks in the industrial landscape of Kerala?
6. To what extent KINFRA has fulfilled its objectives as laid down in the KINFRA Act?
7. What is the impact of KINFRA industrial parks on the industrial economy of Kerala?

1.5. Objectives of the Study:

Industrial parks are planned and developed according to a panoptic plan with provision for adequate physical and social infrastructure. KINFRA has successfully completed 25 years of its operation. The present study is to delve its achievement in promoting an orderly development of

industries by balancing the diverse needs and requirements of its various stakeholders. In the context, the major objectives of the present study are:

1. To examine the present status and growth performance of KINFRA industrial parks in Kerala.
2. To analyse the operational efficiency of KINFRA industrial parks in Kerala.
3. To examine the extent of which KINFRA has fulfilled its objectives and its basic impact on the industrial economy of Kerala.

1.6. Methodology of the Study:

The methodological design articulates the conceptual structure, theoretical framework and methods of analysis of the study. It sets the boundaries of the study by explicitly spells out the period of study, the sampling design, data sources, methods of data collection, the criteria and scale for measurement and the major tools or instruments of analysis as described below:

(a) Period of Study:

KINFRA was set up by an Act of State Legislature in February, 1993. It has completed 25 years of its operation since inception. The study takes into account a decennial period of operation of KINFRA, that is, from February 2003 to February 2015.

(b) Sampling Design:

There are a total of 22 fully operational parks set up by KINFRA as on 31st March, 2018 that spread over 10 districts of the State. The construction and completion works of some other parks are going on and there are many flagship projects on anvil. The study takes into account only those industrial parks which have been set up before the year 2010. Sample size is, therefore, 18 fully operational industrial parks which are spread over 9 districts of the State. Details of the sample parks selected for the study is listed below:

Name of the Industrial Park/Institution		Year of Establishment
1	KINFRA Export Promotion Industrial Park, Kakkanad, Eranakulam.	1996
2	KINFRA International Apparel Park, Thumba, Thiruvananthapuram.	1998
3	KINFRA Film and Video Park, Kazhakuttom, Thiruvananthapuram.	1999
4	KINFRA Food Processing Park, Kakkancherry, Malappuram.	2000
5	KINFRA Small Industries Park, Thalassery, Kannur.	2002
6	KINFRA Small Industries Park, Seethangoli, Kasargode.	2002
7	KINFRA Small Industries Park, Mazhuvannur, Eranakulam.	2002
8	KINFRA Integrated Industrial and Textile Park, Kanjikode, Palakkad.	2003
9	KINFRA Small Industries Park, Koratty, Trissur.	2003
10	KINFRA Neo Space at the KINFRA Food Processing Park, Kakkancherry.	2003
11	KINFRA Small Industries Park, Kalpetta, Wayanad.	2005

12	KINFRA Hi-Tech Park, Kalamassery, Eranakulam.	2007
13	Animation Zone (Dhrisya Building) at the KINFRA Park, Kazhakuttom.	2008
14	KINFRA Small Industries Park, Adoor, Pathanamthitta.	2009
15	KINFRA Textile Centre, Thaliparamba, Kannur.	2009
16	KINFRA Small Industries Park, Kunnamthanam, Pathanamthitta.	2009
17	Bio-Technology Incubation Centre at the KINFRA Park, Kalamassery.	2009
18	Food Processing Zone at the KINFRA Small Industries Park, Adoor.	2009
Total Number of Sample Parks		18/22

(c) Data Source(s):

The study uses both primary and secondary data. The Primary data have been collected from the Head Quarters of the Kerala Industrial Infrastructure Development Corporation (KINFRA), sample industrial parks and the entrepreneurs of the industrial units operating in the select industrial parks. To collect secondary data, various existing sources in print and electronic media have been extensively referred to and made use of. Particular acknowledgement is due to the various issues of *Economic Review* of the State Planning Board, Government of Kerala, the Annual Reports (Various), Handbooks and official websites of various bodies such as the Department of Industries and Commerce, Kerala Industrial Infrastructure Development Corporation, Kerala State Industrial Development Corporation, Kerala Financial Corporation, Kerala Bureau

of Industrial Promotion, Kerala Small Industries Development Corporation, the INKEL Limited, the MSME Development Institute under the Ministry of MSME, Government of India, the Ministry of Food Processing Industries, Government of India and the Ministry of Statistics and Programme Implementation, Government of India.

(d) Data Collection:

Two questionnaires were used for collecting data and other information for the study. The first set is used for collecting information from the Head Quarters of the Kerala Industrial Infrastructure Development Corporation (KINFRA) and the second set is used for collecting information from the sample industrial parks spread across Kerala. Both set of questionnaires consist of six sections seeking the general information, the extent of realisation of objectives, the growth performance, aspects of operational efficiency, major problems and constraints and the future operational prospects.

(e) Tools of analysis:

The study incorporates some statistical tools for the analysis and interpretation of collected data. Data have been collected and arranged by using appropriate Likert scales of different dimensions. Descriptive statistical measures such as mean and range were used in appropriate

places along with percentages and weighted scores. Karl Pearson's coefficient of correlation is used to measure the degree of association between different parameters. The Wilcoxon Median Test is used to test the major hypotheses and to interpret the data accordingly.

(f) Criteria and Scale for Measurement:

Likert scales of different dimensions were used for measuring the extent of realisation of objectives, operational efficiency and the problems and constraints of KINFRA. In order to measure the extent of realisation of objectives, a 7-point Likert scale is used having choices of effectiveness. The basic details regarding the components and the transformation of survey scales into standard scores are given in Table 1.1.

Table 1.1
7-Point Likert Scale for Measurement
 (Extent of Realisation of Objectives)

Scale Value	Choice of Evaluation	Standard Score
1	Completely Effective	100
2	Mostly Effective	83
3	Somewhat Effective	66
4	Neither Effective Nor Ineffective	50
5	Somewhat Ineffective	33
6	Mostly Ineffective	17
7	Completely Ineffective	0

In order to measure the operational efficiency of KINFRA industrial parks, a 5-point Likert scale is used having choices of effectiveness. The basic details regarding the components and the transformation of survey scales into standard scores are given in Table 1.2.

Table 1.2
5-Point Likert Scale for Measurement
(Operational Efficiency)

Scale Value	Choice of Evaluation	Standard Score
1	Completely Agree	100
2	Mostly Agree	75
3	Neither Agree Nor Disagree	50
4	Mostly Disagree	25
5	Completely Disagree	00

1.7. List of Variables for the Study:

In order to examine the basic objectives, the study uses certain set of variables. The major variables used for the specific objectives of the study such as assessing the preset status of KINFRA industrial parks, the growth performance and operational efficiency of KINFRA industrial parks, the problems and constraints faced by KINFRA and its industrial parks in their establishment, operation and management and also for exploring the extent of realisation of objectives of KINFRA are identified and listed out.

The major variables used for the study so as to get meaningful inferences on the objectives are listed as follows:

(a). Variables for Measuring the Growth Performance of KINFRA Industrial Parks:

The major variables used for assessing the growth performance of industrial parks set up by the Kerala Industrial Infrastructure Development Corporation (KINFRA) are given in Table 1.3.

Table 1.3
Growth Performance of KINFRA Industrial Parks
(List of Variables)

No.	Variable(s)
1	Number of industrial parks sanctioned.
2	Number of industrial parks established.
3	Number of operational industrial parks.
4	Number of industrial parks with the status of special economic zones (SEZ).
5	Number of industrial parks with standard design factories (SDF).
6	Number of joint venture industrial parks.
7	Total area of land acquired for the industrial parks.
8	Area of land allotted for the industrial units.
9	Number of industrial units sanctioned in the industrial parks.
10	Number of industrial units operating in the industrial parks.
11	Number of industrial parks proposed to be established within the next five years.
12	Number of joint venture industrial parks proposed to be established within the next five years.

13	Volume of investments incurred for the industrial parks.
14	Level of employment generated in the industrial parks.

(b). Variables for Measuring the Operational Efficiency of KINFRA Industrial Parks:

The study attempts to analyse the operational efficiency of KINFRA industrial parks by taking into account certain parameters of effectiveness. The major variables used for assessing the operational efficiency of KINFRA industrial parks is arranged in seven categories under each of which, there are certain sub-parameters of different dimensions of operation and management. Each major parameter is thus presumed as a composite index of its sub-parameters. Thus, the major variables for measuring the operational efficiency of KINFRA are as listed in Table 1.4.

Table 1.4
Operational Efficiency of KINFRA Industrial Parks
 (List of Variables)

No.	List of Variable(s)
1.	Ease of Doing Business:
	(i) Affordability of the lease out period and premium.
	(ii) Flexibility of the terms and conditions.
	(iii) Provision of infrastructure and support services.
	(iv) Provision of common facilities.
	(v) Maintenance of a hassle free business environment.

	(vi)	Consistent and continuous communication of key initiatives to the entrepreneurs.
2.	Support Systems and Services:	
	(i)	Better and updated information to the entrepreneurs.
	(ii)	Framework for the realisation of business objectives.
	(iii)	Better administration and initiatives for business elaboration.
	(iv)	Promotion of the creative initiatives of the entrepreneurs.
	(v)	Controls on the managerial actions of the entrepreneurs.
	(vi)	Feasible solutions to the issues and problems of the units.
3.	Client Relationship Management:	
	(i)	Existence of a cordial relationship and cooperative environment.
	(ii)	Commitment and support of the KINFRA management.
	(iii)	Professionalism and courtesy of the KINFRA team.
	(iv)	Platform for the innovative ideas and initiatives of the entrepreneurs.
	(v)	Freedom of the entrepreneurs to question the decisions and actions of the management.
	(vi)	Freedom of the entrepreneurs to revise and modify their business plans.
4.	Standards of Business Operations:	
	(i)	Affordable cost and shortest time span.
	(ii)	Fullest utilisation of capacity.
	(iii)	Optimum use of resources.
	(iv)	Management of operating risk.
	(v)	Promotional activities.
	(vi)	Quality benchmarks.
5.	Responsive Commitments:	
	(i)	Locational and localised advantages.

	(ii)	Provision of a congenial and innovative environment.
	(iii)	Provision of training and development activities.
	(iv)	Adherence to the time schedule.
	(v)	Leveraging of technology.
	(vi)	Efforts to enhance the productivity of employees.
6.	Opportunities for Sustainable Entrepreneurship:	
	(i)	Inducement to prospective entrepreneurs.
	(ii)	Scope and opportunities for business expansion.
	(iii)	Opportunities for the diversification of businesses.
	(iv)	Growing relationships with the customers.
	(v)	Community involvement and societal commitment.
	(vi)	KINFRA as a better choice to start and sustain business.
7.	Extension Services:	
	(i)	Strong focus on development.
	(ii)	Easy access for optimal performance.
	(iii)	Better and effective marketing assistance.
	(iv)	Measures for the promotion of exports.
	(v)	Better and improved way of doing things.
	(vi)	KINFRA as a good place for the prospective entrepreneurs and investors.

(c). Variables for Measuring the Extent of Realisation of Objectives of KINFRA:

There are certain explicit objectives laid down by the Kerala Industrial Infrastructure Development Act, 1993 for the operational framework of

KINFRA. Considering these objectives, the study uses certain variables for assessing the extent of which KINFRA has fulfilled its basic objectives. A snapshot of the variables used for the purpose is given in Table 1.5.

Table 1.5
Extent of Realisation of Objectives
(List of Variables)

No.	Variable(s)
1	Identification of appropriate industrial sites and developed land for the businesses.
2	Establishment of ready-to-use built-up spaces.
3	Development of industry-specific infrastructure and support services.
4	Allotment of developed land to the entrepreneurs on flexible terms and conditions.
5	Developing and managing the industrial estates.
6	Undertaking of different schemes for the orderly development of industries.
7	Coordination with other agencies for the provision of quality infrastructure.
8	Adherence to the time schedule from the procuring of land to its allotment.
9	Adherence to the cost estimates for the establishment and maintenance of industrial parks.
10	Generation of sufficient employment opportunities.
11	Effective organisational structure and ambience.
12	Realisation of the vision and mission.
13	Attracting entrepreneurs and investments for regional industrial development.
14	Effective control techniques and management practices.
15	Effective coordination mechanism.
16	Promotion of industrial development by developing industrial spots in competency sectors.

The study also attempts to pinpoint the major impact of KINFRA industrial parks on the industrial economy of Kerala on the basis of the major inferences derived from these variables.

1.8. Operational Definitions for the Study:

There are certain keywords generally used throughout the schematic presentation of the present study. Each of them is having their distinct meaning and implications. The most important and frequently used operational definitions and terminology through the report are listed below:

1. Industrial Infrastructure:

The sum total of all the basic physical systems, services and ambience of a business provided by the Government with the flagrant objective of achieving secular economic growth and prosperity through rapid industrialisation.

2. Industrial Policy:

The official framework and strategic effort aimed at improving the competitiveness, capabilities, growth and development of the existing industrial sector by promoting structural transformation and stronger industrial portfolios.

3. Industrial Parks:

A relatively large enclosed area of land in which there are several industrial units which are more of a homogeneous character enjoying specialised benefits of integrated infrastructure, incentives and other concessions earmarked by the Government.

4. Industrial Estates:

An area zoned and planned in strategic locations exclusively for bustling industrial development where there are many industrial units, either of a homogenous or heterogenous character, and at its best align infrastructure provision and agglomeration economies so as to promote agile industrial growth.

5. Industrial Clusters:

The production hubs or groups of interlinked companies, suppliers and associated institutions, providing a related group of products and services in a specific geographic region so as to promote capacity building, competitiveness, innovation and expeditive industrial development and economic growth.

6. Industrial Development Zones:

The ready-to-use built up spaces for the location specific and priority sector industries with world class physical and social infrastructure so as to better promote the competitiveness of enterprises by leveraging

investment and to woo the sustainable growth and development of the industrial economy.

7. Industrial Growth Centres:

The infrastructure initiative aimed at the hasty development of the industrially backward regions of the economy by providing requisite infrastructure and other support services for the setting up of specialised and identified industrial units.

8. Industrial Corridors:

An instrument for achieving accelerated industrial growth by effecting the interaction between industry and infrastructure, particularly in designated pathways so as to provide a more conducive and competitive environment for business by facilitating economic agglomeration and industrial clustering.

9. Industrial Townships:

Compact industrial areas that provide all necessary support to entrepreneurs with state-of-the-art infrastructure, support services, technology and hassle free operating environment to provide an opportune environment for the growth of potential industries.

10. Special Economic Zones:

The specifically delineated duty free enclaves in designated and self-contained geographical regions having their own well built infrastructure and support systems so as to provide a strong

incitement to the process of industrialisation and to promote an internationally competitive and hassle-free business environment for sustainable industrial growth.

11. Startups:

A springboard for the budding entrepreneurs with the objective of identifying and promoting the innovative ideas and entrepreneurial talents of the youth and students who wish to launch themselves into the world of business.

12. MSMEs:

Stands for the micro, small and medium enterprises. For those enterprises who are engaged in the manufacture or processing of goods, the ceiling of investment in plant and machinery is upto Rs. 25 lakh, between Rs. 25 lakh and below Rs. 5 crore and above Rs. 5 crore and does not exceed Rs. 10 crore for the micro, small and medium enterprises respectively. For those enterprises who are engaged in providing services, the ceiling of investment in plant and machinery is upto Rs. 10 lakh, between Rs. 10 lakh and below Rs. 2 crore and above Rs. 2 crore and does not exceed Rs. 5 crore for the micro, small and medium enterprises respectively.

13. KSIDC:

The Kerala State Industrial Development Corporation, established by the Government of Kerala in the year 1961 with the objective of

promoting, stimulating, financing and facilitating the development of large and medium scale industries and to act as a 'single point contact' for the business investments in the State.

14. KINFRA:

The Kerala Industrial Infrastructure Development Corporation, established by the Government of Kerala in the year 1993 with the objective of creating exemplary industrial infrastructure and other support systems and thereby act as the 'industrial catalyst' to make the State a competitive business investment destination and a vibrant industrial economy.

15. Single Window Clearance:

A fast track facility introduced by the Government of Kerala to expedite the issue of various clearances for new industrial projects so as to reduce the interface with various Government agencies, dwell time and the cost of doing business.

16. Operational Efficiency:

The capability of an organisation to deliver its services in a most trenchant manner while still ensuring high standards of quality in its operations, services, support and management, generally measured as the ratio between the output gained from a business and the input used to run that business.

17. Weighted Score:

The weighted score of a parameter under reference in this study is calculated by multiplying the percentage value of the standard scores as assigned by the choices of the Likert scale (weight) with the percentage value of the sample observations on the parameter (number).

18. Median Test:

A non-parametric test which tests the null hypothesis that the medians of the population from which the samples are drawn are identical. It is a special case of Pearson's chi-squared test and used to determine whether the observed frequencies in each sample differ from the expected frequencies derived from a distribution. It is used to compare the related samples or measurements on a single sample to assess whether their population mean ranks differ.

1.9. Scope and Significance of the Study:

Industrial parks provide an ambience for the enterprise and innovation to flourish and profoundly influence the regional industrial economy. KINFRA attempts to establish, develop and manage appropriate industrial sites at the strategic locations of the State for the orderly development of industries with regional concerns and prospects. To a large extent, Kerala owes its economic buoyancy to KINFRA which built top-notch

infrastructure in the crucial sectors of the economy. By pioneering the 'park' concept for collective value creation, KINFRA has slowly changed the industrial map of Kerala. In a short span of time, KINFRA industrial parks have turned out to be one of the most favoured investor destinations because of the strong brand image created in the market as well as the hassle free milieu for the setting up of an industry.

KINFRA had been set up to unleash the industrial potential of Kerala with a mandate to create conducive infrastructure and environment with state-of-the-art amenities for achieving sustainable and progressive industrial development in the State. Using the ambience provided by KINFRA, these parks aim to create a locale for the development of a high-tech, non-polluting, and export-oriented industries and thereby create a world-class industrial township in Kerala. The scope of the present study encompasses the exploration of the present status of the industrial parks, analysis of the growth performance and operational efficiency of KINFRA industrial parks and also identifying the major problems and constraints of KINFRA and its industrial parks in the State. The study looks into the impact of such industrial parks on the industrial development of the regional economy within the context of the new vision, strategy and policies adopted by the Government to promote the development of industrial parks in Kerala.

1.10. Limitations of the Study:

The tempo of industrial activity of any economy owes much to the promotional activities of the Government. There are numerous agencies or institutional arrangements by the Government for accelerating and supplementing the pace of its industrial growth so as to make the State a leading business hub with exemplary infrastructure. Though there are various explicit agencies such as the Kerala State Industrial Development Corporation (KSIDC), Kerala Financial Corporation (KFC), Kerala Bureau of Industrial Promotion (K-BIP), Kerala Small Industries Development Corporation (Kerala SIDCO) and the Department of Industries and Commerce, Government of Kerala for the industrial promotion activities of Kerala at different dimensions, the present study is primarily confined to the exploration of the growth performance and operational effectiveness of KINFRA and its industrial parks. Data have been collected only from the industrial parks set up by KINFRA. Industrial parks are taken as samples and not much significance is given to the operational efficiency of the various industrial units operating in different parks. The findings of the study may be considered appropriate to the situation prevailing in the chosen industrial parks established by KINFRA and extra care should be taken while making suggestions and generalisations.

1.11. Organisation of Chapters:

The study is presented in 7 chapters. The chapter layout and contents is given as shown below:

Chapter(s)	Title
1	Introduction and the Research Design.
2	Thrust Areas and Innovative Initiatives for Kerala's Industrial Development.
3	Role and Economic Imperative of KINFRA Industrial Parks in Kerala.
4	Growth Performance of KINFRA Industrial Parks in Kerala.
5	Operational Efficiency of KINFRA Industrial Parks in Kerala.
6	Realisation of Objectives and the Impact of KINFRA Industrial Parks in Kerala.
7	Summary and Findings.

Chapter-2

**Thrust Areas and Innovative Initiatives for
Kerala's Industrial Development**

2.1. Chapter Prologue

Kerala is rapidly urbanising and hence, the industrial and commercial policy strives to make the State a growth-oriented enterprising economy. It aims at revamping Kerala into an entrepreneurial State by encouraging the focused development of certain sectors. Having been recognised the importance of industrial development; the Government has evolved various strategies to initiate an element of dynamism in its growth process so as to make the State a leading industrial destination in India. Kerala aims to become one of the top 10 ranking States in the country as far as the 'ease of doing business' criteria is concerned. For the purpose, it identifies some thrust areas which need specific attention. Some sort of customised and industry-specific policy measures that could endeavour in reaching its objectives through state-of-the-art industrial infrastructure, encouraging eco-friendly enterprises, strengthening the MSMEs, inculcating entrepreneurship development, enhancing skills, simplification of rules and procedures, etc. are being evolved with a clear cut vision, objectives, and strategy so as to transform the State into a world-class business hub.

The government attempts to energise the industrial sector of Kerala through reviving its traditional industries, restructuring public sector undertakings and providing an impetus to the MSME sector through sufficing investments, technology upgradation, diversification and

modernisation. An overview of the organised manufacturing sector of the State in terms of the total volume of investments, employment, gross value added and profits is given in the tables numbered 2.1 to 2.4.

Table 2.1
Volume of Investments in the Manufacturing Sector of Kerala
(As on 31st March, 2017)

(Rs. Lakh)

Districts		Fixed Capital	Working Capital	Invested Capital
1	Thiruvananthapuram	106085	58179	164264
2	Kollam	161457	141802	303259
3	Pathanamthitta	58295	33005	91300
4	Alappuzha	127508	113948	241455
5	Kottayam	166612	59087	225699
6	Idukki	69722	28772	98494
7	Eranakulam	3528155	950486	4478641
8	Thrissur	150792	86647	237439
9	Palakkad	182899	124237	307136
10	Malappuram	43630	44656	88286
11	Kozhikode	100018	56329	156347
12	Wayanad	12560	3495	16055
13	Kannur	58383	42761	101145
14	Kasargod	18434	19388	37821
Total		4784549	1762792	6547340

Source: Annual Survey of Industries 2016-2017, Government of Kerala.
(Case of Organised Manufacturing Sector)

As per the Annual Survey of Industries, Government of Kerala, Ernakulam records the highest invested capital (Rs. 4478641 lakh) and Wayanad records the least (Rs. 16055 lakh) contributing approximately 68 per cent and 0.2 per cent of the State's total volume of investments in the organised manufacturing front as on 31st of March, 2017.

Table 2.2
Distribution of Employment in the Manufacturing Sector of Kerala
(As on 31st March, 2017)

Districts		Number	%
1	Thiruvananthapuram	20239	6
2	Kollam	55379	17
3	Pathanamthitta	9133	3
4	Alappuzha	30016	9
5	Kottayam	18190	6
6	Idukki	6995	2
7	Ernakulam	86946	27
8	Thrissur	22668	7
9	Palakkad	19573	6
10	Malappuram	7998	2
11	Kozhikode	13672	4
12	Wayanad	2611	1
13	Kannur	19004	6
14	Kasargod	14219	4
Total		326644	100

Source: Annual Survey of Industries 2016-2017, Government of Kerala.
(Case of Organised Manufacturing Sector)

As per the Annual Survey of Industries, there are 326644 persons engaged in the organised manufacturing sector of the State. Out of these, 79.3 per cent are workers, 19.9 per cent are employees other than workers and 0.75 per cent are unpaid family members/proprietors as on 31st of March, 2017.

Table 2.3
Volume of Gross Value Added in the Manufacturing Sector of Kerala
(As on 31st March, 2017)

(Rs. Lakh)

Districts		Gross Value Added (GVA)	% of GVA
1	Thiruvananthapuram	96291	4.19
2	Kollam	114111	4.96
3	Pathanamthitta	39810	1.73
4	Alappuzha	96047	4.18
5	Kottayam	177122	7.71
6	Idukki	73135	3.18
7	Eranakulam	1170839	50.93
8	Thrissur	160209	6.97
9	Palakkad	126294	5.49
10	Malappuram	41992	1.83
11	Kozhikode	127409	5.54
12	Wayanad	11325	0.49
13	Kannur	44635	1.94
14	Kasargod	19514	0.85
Total		2298731	100.0

Source: Annual Survey of Industries 2016-2017, Government of Kerala.
(Case of Organised Manufacturing Sector)

As gross value added is the increment to the value of goods and services contributed by the industry, the Annual Survey of Industries, Government of Kerala reveals that Ernakulam district contributes the highest of about 50.93 per cent of the total gross value added of the State's organised manufacturing front as on 31st of March, 2017.

Table 2.4
Distribution of Profits Earned by the Manufacturing Sector of Kerala
(As on 31st March, 2017)

(Rs. Lakh)

Districts		Profit	% of Profit
1	Thiruvananthapuram	16163	1.5
2	Kollam	13337	1.3
3	Pathanamthitta	9248	0.9
4	Alappuzha	15338	1.5
5	Kottayam	68260	6.5
6	Idukki	49095	4.7
7	Ernakulam	658648	63.1
8	Thrissur	74604	7.1
9	Palakkad	45023	4.3
10	Malappuram	13095	1.3
11	Kozhikode	70530	6.8
12	Wayanad	3666	0.4
13	Kannur	2968	0.3
14	Kasargod	3708	0.4
Total		1043683	100.0

Source: Annual Survey of Industries 2016-2017, Government of Kerala.
(Case of Organised Manufacturing Sector)

It is in the context; the chapter attempts to explore the major thrust areas and industrial innovations, their relative role and economic exigencies for the hasty and focused industrial development of the State. The major segments of discussion and analysis include:

1. Micro, Small and Medium Enterprises (MSME).
2. The Services and Commerce Sector.
3. The Core and Emerging Industries.
4. Industrial Cluster Development.
5. Sector-Specific and Mega Industrial Parks.
6. Industrial Estates.
7. Industrial Cooperative Societies.
8. Industrial Development Zones (IDZ).
9. Industrial Growth Centres (IGC).
10. Industrial Corridors.
11. Industrial Townships.
12. Special Economic Zones (SEZ).
13. Entrepreneurship Development.
14. The Kerala Startup Mission.
15. The WE Mission Kerala.
16. The Kerala Perspective Plan 2030 Initiatives.

2.2. Micro, Small and Medium Enterprises (MSME):

The micro, small and medium enterprises (MSME) sector in Kerala has the potential to emerge as a strong, vibrant and globally competitive sector in the State's economy. The sector is diverse in terms of its size, levels of technology employed, and range of products and services produced. They play a pivotal role in issues such as sustainability, inclusiveness, innovation, value addition, and access to global markets. Kerala, with its availability of competitive natural and skilled human resources, world-class industrial infrastructure and excellent connectivity and communication networks, is best suited for the growth of the micro, small and medium enterprises. The government encourages the MSMEs as an engine of growth as it contributes much to the process of economic growth, employment generation and balanced and equitable regional development.

In Kerala, the government is providing special support to the MSMEs due to its enormous potential of development in its industrial economy. As on 31st March, 2015, the total number of working SSIs/MSMEs registered in Kerala is 249696. Out of the total SSIs/MSMEs, about 4% were promoted by the Scheduled Castes (SCs), 0.7% by the Scheduled Tribes (STs), and 25% by women entrepreneurs. The details regarding the composition of total working SSI/MSME units registered in Kerala are given in Table 2.5.

Table 2.5
Details of Total Working SSI/MSME Units Registered in Kerala
(As on 31st March, 2015)

District		Number of Units Promoted by				
		SCs	STs	General	Total	Women
1	Thiruvananthapuram	1276	235	31961	33472	8300
2	Kollam	1145	109	16283	17537	6345
3	Pathanamthitta	768	48	9868	10684	4070
4	Alappuzha	558	89	17809	18256	5667
5	Kottayam	491	187	23788	24466	6697
6	Idukki	416	171	4839	5426	2241
7	Eranakulam	560	195	32344	33099	7277
8	Thrissur	1376	123	30585	32084	6693
9	Palakkad	1386	146	15694	17026	3811
10	Malappuram	516	95	13358	13969	2191
11	Kozhikode	612	86	18579	19307	3331
12	Wayanad	104	164	3663	3931	1477
13	Kannur	214	87	12793	13094	2764
14	Kasargod	185	102	7058	7345	1642
Total		9607	1837	238622	249696	62506

Source: Directorate of Industries and Commerce, Government of Kerala.

The small scale industries play a momentous role in the overall economic advancement of any economy on account of their inherent advantages like low capital requirement, high employment generation, decentralisation of industrial activity, utilisation of locally available resources and widening

of the entrepreneurial base. They encourage self-sufficiency, self-reliance and coordinated industrial development and are vital for ensuring equitable, inclusive, and employment-friendly economic growth. The sector contributes greatly towards domestic needs, export and foreign exchange earnings by producing variety of products ranging from traditional agricultural products to high-tech microprocessors.

The State has identified about 75 SME clusters which are at different stages of their development. The sector is diverse in terms of its size, levels of technology employed and range of products and services produced. The MSMEs are complementary to large scale industries as ancillary units and contributes much to the inclusive industrial development of the domestic economy of Kerala. They play a pivotal role in issues such as sustainability, inclusiveness, innovation, value addition and access to global markets. The sector contributes greatly towards domestic needs, export and foreign exchange earnings by producing variety of products ranging from traditional agricultural products to high-tech microprocessors. It has the potential to spread industrial growth across the country and can be a major partner in the process of inclusive growth. The details regarding total investment, value of output produced, and total employment generated in the MSME sector as on 31st March, 2015 are given in Table 2.6.

Table 2.6
**Details of Investment, Value of Output and Employment in the
 SSI/MSME Units Registered in Kerala**
(As on 31st March, 2015)

Districts		Units (Nos.)	Total Investment	Total Output	Total Employment (Nos.)
			<i>(Rs. Lakh) #</i>		
1	Thiruvananthapuram	33472	183555	356550	164791
2	Kollam	17537	120088	1004222	118391
3	Pathanamthitta	10684	68210	158027	59246
4	Alappuzha	18256	111625	238686	103070
5	Kottayam	24466	125731	287166	85448
6	Idukki	5426	49541	1290517	30691
7	Eranakulam	33099	350195	1194342	226815
8	Thrissur	32084	172366	504316	131988
9	Palakkad	17026	135862	425272	77856
10	Malappuram	13969	92716	210836	62762
11	Kozhikode	19307	125268	409356	93397
12	Wayanad	3931	24966	74712	19870
13	Kannur	13094	77482	220298	61502
14	Kasargod	7345	36253	69997	38558
Total		249696	1673858	6444297	1274385

Source: Directorate of Industries and Commerce, Government of Kerala.

Rounded off to next highest digit to eliminate decimals.

In order to promote ease of doing business for the MSMEs, the Central Government has notified a path-breaking step called 'Udyog Aadhar Memorandum (UAM)' in September, 2015 under Section 8 of the MSME

Development Act, 2006. Under the Scheme, the entrepreneurs need to just file an online entrepreneurs' memorandum to instantly get a unique 'Udyog Aadhar Number (UAN)' which replaces the filing of Entrepreneurs' Memorandum with respective States/Union Territories. The details regarding the MSME units with Udyog Aadhar Number are given in Table 2.7.

Table 2.7
Details of MSME Units with Udyog Aadhar Number
(As on 31st March, 2017)

District		Manufacturing	Services	Total
1	Thiruvananthapuram	3625	3202	6827
2	Kollam	2127	618	2745
3	Pathanamthitta	804	269	1073
4	Alappuzha	2542	552	3094
5	Kottayam	1376	538	1914
6	Idukki	563	192	755
7	Eranakulam	4390	2355	6725
8	Thrissur	2352	968	3320
9	Palakkad	1334	465	1799
10	Malappuram	1381	300	1681
11	Kozhikode	1566	414	1980
12	Wayanad	355	80	435
13	Kannur	1278	300	1578
14	Kasargod	473	119	592
Total		24166	10352	34518

Source: Directorate of Industries and Commerce, Government of Kerala.

The MSME sector contributes significantly to the socio-economic development of the economy by fostering entrepreneurship and generating large scale employment opportunities at comparatively lower capital cost. The Kerala Perspective Plan 2030, a vision document of the State Planning Board acknowledges the economic imperative of the micro, small and medium enterprises in the regional economy. It observes the MSME sector in Kerala is emerging into a knowledge-driven competitive economy with high spirit of innovation, entrepreneurship, social inclusion and diversity in its march towards a more sustainable, strong and vibrant industrial economy.¹

2.3. The Services and Commerce Sector:

The services and commerce sector dominates the industrial economy of Kerala. Its contribution to the State Gross Domestic Product (SDGP) is much higher than the manufacturing sector. Though the sector is showing a steady growth, the high potential of the sector has not been effectively utilised. In order to shape Kerala to a new model of development for faster economic growth, the Government attempts to give equal importance to the services and commerce sector by encouraging a 'services-led growth strategy' focusing on information technology, health, education, tourism, ayurveda, logistics, retail, transport, communication, financial services,

¹ Government of Kerala (2015). *Kerala Perspective Plan 2030*. Thiruvananthapuram: Kerala State Planning Board.

knowledge-based and non-polluting industries. It promotes the setting up of incubation centres in each sector so as to encourage innovative enterprises and business models in the State. The policy framework of the government focuses on converting the State into a world class commercial hub for banking, insurance, healthcare, sports, communication and other allied activities. Considering the strategic geographic location and human resource strengths unique to Kerala, there exist tremendous scope for the faster and sustainable growth of the services and commerce sector in the State.

2.4. The Core and Emerging Industries:

The present global scenario facilitates Kerala to source latest technology and practices for value addition, productivity, cost competitiveness, scale economies and consistency in quality. The government attempts to capitalise the opportunities for the benefit of its manufacturing sector and is at the same time prepares to encash the global boom in its service sector to strengthen the overall industrial as well as economic development of the State. Having been recognised the relative role of State level public enterprises (SLPEs) in employment generation, market intervention and improved service delivery, the government formulates certain comprehensive enterprise specific modernisation packages for the growth and sustenance of potentially viable public enterprises in the State. Most

public sector undertakings (PSUs) in Kerala are relevant for economic as well as social objectives and as nucleus for the spin-off of downstream and upstream industries.

Kerala has been entering into certain new and emerging industries such as food processing, forest-based industries, biotechnology and nanotechnology based industries and knowledge-based industries. The government provides adequate infrastructure, world class technology and market support for the promotion of the food processing industry by recognising its immense potential in the industrial economy of the State. It encourages forest-based industries and promotes the non-resource depleting and environment-friendly industrial development in Kerala. Biotechnology and nanotechnology have tremendous potential in the new and high-tech arena of the State and hence the government promotes the development of specialised parks and technology incubation facilities for the development and commercialisation of such products. The cutting edge technologies in areas like agriculture, power, construction, medicine, information technology, environment, etc. can revolutionise the high-tech industrial base and economy of Kerala. The importance and contribution of the MSME sector to the economic growth and prosperity of the State is also well established in terms of their role in employment generation, fostering of competitiveness and upholding of the entrepreneurial spirit and innovation in the economy.

The government attempts to set up a State level task force which will coordinate the efforts of the Department of Industries and Commerce and other development agencies for the integrated development of biotechnology, nanotechnology and other knowledge-based industries. The Kerala State Industrial Development Corporation (KSIDC) facilitates the setting up of a world class life science park called the 'Bio 360 Life Science Park' at Thiruvananthapuram to attract investments and innovation in the emerging areas such as biotechnology, nanotechnology, pharmaceuticals and medical devices, especially in its core activities like research and development, manufacturing and technical development. The park will advance science to new frontiers and will bring together science, academia, research institutions, technology and also the companies working in such fields. Its industry-specific infrastructure includes incubation centres, ready-to occupy built-up modules and other support services for corporates and start-ups in these sectors to move forward.

2.5. Industrial Clusters:

Industrial clusters are recognised as an important instrument for promoting rapid industrial development, innovation, competitiveness and economic growth. They are defined as groups of interlinked companies, suppliers and associated institutions providing a related group of products and services in a specific geographic region. They are often concentrated

in a region or a town, include companies from different industries that are related to each other in the production of certain goods and services and benefit from the cooperation with government agencies and other institutions in the national and regional innovation systems. The government has adopted 'cluster development' as a strategy for enhancing the productivity and competitiveness as well as capacity building of the micro and small enterprises in the economy.

There are many explicit advantages associated with industrial clusters. They are increasingly recognised as effective means of industrial development and promotion of small and medium enterprises as they play an important role in their inclusiveness, technology absorption, efficiency improvement and availability of common resources. The companies located in industrial clusters can operate with higher efficiency, drawing on more specialised assets and suppliers with shorter reaction times than when working alone. They can collaborate with research institutes, technology labs, productivity centres, venture capitalists and other providers of business development services. Most clusters are developed as 'production hubs' that they have the entire value chains augmented within the cluster. Each firm is specialised and is connected with other firms through production networks. This will increase the efficiency and survival rate through strong forward and backward linkages in the value chains. The combination of these potential benefits has a positive impact

on the ability of the companies to engage in global value chains and enable them to acquire new competences and access to international markets.

Thus, business formation tends to be much higher in industrial clusters as they enable small entrepreneurs to reduce cost of inputs and marketing and enables them to build strong brands that are required to compete effectively in the market. The government has adopted the 'cluster development approach' for industrialisation to reap the benefits of agglomerations through transformation of the traditional systems of activities to new networks ready for competition and innovation. It promotes cluster formation as they enable the enterprise to enjoy the benefits of economies of scale in production and distribution. In a globalised economy in which global value chains link companies across borders, industrial clusters have become an important element of regional innovation systems in the industrial economy of Kerala, along with the MSME networks, intermediary and research institutions and the government.

2.6. Sector-Specific and Mega Industrial Parks:

Industrial parks play a pivotal role in the overall industrial development of Kerala. Having been recognised its economic imperative; the government promotes the concept of 'theme parks' which are primarily the sector-specific industrial parks on an identified core sector of the industrial

economy of the State. Core industrial sectors have been identified and customised and sector-specific parks have been built by the government so as to unleash the potential of the industrial sector in the overall economic development of the State. The Kerala Industrial Infrastructure Development Corporation (KINFRA) is the nodal agency of the government for the setting up of sector-specific industrial parks in strategic locations on the identified themes as stipulated by the industrial and commercial policy of the State. The government bestows highest priority to attract investments from both domestic as well as foreign sources in these identified crucial industrial sectors to accelerate inclusive economic growth and development in a sustainable manner.

The government encourages employment-oriented, environment-friendly and non-polluting industries that have the potential to compete with global players. The food processing, electronics and information technology sectors have been identified as the emerging or sunrise sectors of the economy due to its enormous potential for development in the overall industrial development of the State. KINFRA has set up specialised parks for these sectors, namely: (i) KINFRA Food Processing and Information Technology Park at Kakkancherry in Malappuram district, (ii) KINFRA High-Tech Electronics Park at Kalamassery in Ernakulam district and (iii) KINFRA Film and Video Park at Kazhakuttom in Thiruvananthapuram district. All of these parks have obtained the

‘product specific special economic zone’ status from the Central government on account of its exemplary ambience, operational performance and economic imperative in the industrial scenario of the State.

For the accelerated industrial development and balanced regional development of the State, an integrated approach is being adopted by the government to develop the basic industrial and supportive infrastructure through the creation of ‘mega industrial parks’ in select thrust sectors of the economy with the financial assistance of the Central government. Mega industrial parks are built on the ‘cluster approach’ based on a hub and spoke model, especially in the food processing sector. There are a total of 34 mega food parks in the country as on 30th November, 2016 out of which the Mega Food Park at Alappuzha under the management of the KSIDC with a total project cost of Rs. 129.15 crore and the Mega Food Park at Palakkad under the surveillance of the KINFRA with a project cost of Rs. 119.02 crore are operating in Kerala. The government provides all the requisite clearances, necessary infrastructure, flexible and conducive labour environment, various exemptions and incentives and fast track single window facility in addition to the assistance in the procurement of suitable land for the setting up and smooth functioning of mega industrial parks in the State and to promote Kerala as a destination choice for both domestic and global investors.

2.7. Industrial Estates:

Industrial estates are the specific areas of land set aside for small scale industrial development of the State. They are the cradle zoned for industrial activities in which basic infrastructure and other utility services are provided to facilitate the growth of industries and to minimise impacts on the environment. Setting up of industrial estates enables cost savings, socio-economic exposures and advancements and environmental improvements through: (i) effective dissemination of instruments and management methods between companies located inside the estates, (ii) close cooperation of companies with respect to the economic, environmental and social issues, (iii) better and improved communication between stakeholders and customers and (iv) synergy effects through joint use of infrastructure, joint procurement of production resources and raw materials, and by-products exchange.²

Industrial estates attract industrial facilities by offering an attractive package of services that can be supplied continuously, reliably and at a cost that the entrepreneurs could not achieve on their own. The package of services is often complemented with various forms of preferential investment incentives such as exemptions from import or export duties, income tax exemptions and various other subsidies. There are two types of

² <http://www.keralasidco.com>. Retrieved on 1st January, 2017.

industrial estates in Kerala, namely: Mini Industrial Estates and Major Industrial Estates which are under the supervision and surveillance of the District Industries Centres (DIC) as well as the Kerala Small Industries Development Corporation (Kerala SIDCO) respectively. The details of mini industrial estates under the District Industries Centre as on 31st March, 2017 are given in Table 2.8.

Table 2.8
Mini Industrial Estates under the District Industries Centre
(As on 31st March, 2017)

District		Total Number of		
		Industrial Estates	Working Units	Employment
1	Thiruvananthapuram	7	31	155
2	Kollam	5	28	168
3	Pathanamthitta	2	17	60
4	Alappuzha	7	41	83
5	Kottayam	12	91	328
6	Idukki	5	35	75
7	Eranakulam	16	115	1362
8	Thrissur	7	113	472
9	Palakkad	6	53	235
10	Malappuram	5	36	120
11	Kozhikode	8	75	246
12	Wayanad	0	0	0
13	Kannur	4	24	20
14	Kasargod	5	24	76
Total		89	683	3400

Source: Directorate of Industries and Commerce, Government of Kerala.

The Kerala Small Industries Development Corporation (Kerala SIDCO) provides the basic infrastructure facilities such as land, water, work shed and distribution of scarce raw materials to the industrial units in the small scale sector. There are 36 mini industrial estates under Kerala SIDCO in which 1303 employees are working in 289 units all over the State. The details of mini industrial estates under the Kerala SIDCO are given in Table 2.9.

Table 2.9
Mini Industrial Estates under Kerala SIDCO
(As on 31st August, 2017)

District		Name of the Industrial Estate	Total Number of		Income (Lakh)*
			Units	Employees	
1	Thiruvananthapuram	Ulloor	10	65	6.27
		Anad	03	42	
		Vellanad	11	31	
		Varkala	08	35	
2	Kollam	Chithara	06	28	1.85
		Thrikkovil-Vattom	02	20	
		Chadayaman-galam	06	30	
3	Pathanamthitta	Pandalam	03	16	1.95
4	Alappuzha	Kadakarapally	08	29	0.36
		Mararikulam	12	45	
5	Kottayam	Nattakam	10	55	0.26
		Ayarkunnam	07	40	
		Pampady	04	30	

6	Idukki	Olamattom	06	43	22.1
		Kodikulam	06	30	
		Adimali	04	38	
7	Ernakulam	South Vazhakulam	13	44	6.68
		Piravam	05	38	
		Kothamangalam	05	28	
		Edathala	07	40	
		Rayamangalam	08	28	
8	Thrissur	Mala	12	44	1.06
		Kattur	13	50	
		Arimpur	15	42	
9	Palakkad	Ottapalam	11	47	6.11
		Vaniyamkulam	19	70	
		Pattambi	09	37	
10	Malappuram	Edavanna	06	17	3.44
		Oorakam	08	21	
		Kokkur	09	25	
11	Kozhikode	Kadalundi	11	60	1.72
		Perambra	12	39	
12	Wayanad	Sulthan Bathery	06	17	0.10
13	Kannur	Valapattanam	06	26	0.09
		Taliparamba	07	20	
14	Kasargod	Kanhangad	16	69	2.42
Total		36	304	1339	54.41

Source: Directorate of Industries and Commerce, Government of Kerala. * The income generated in the year 2015-2016.

There are 17 major industrial estates under the Kerala SIDCO which include 857 working units providing an employment to 7456 persons as on 31st October, 2016. The details of major industrial estates under the Kerala

SIDCO in terms of the total number of working units, employment and income generated are given in Table 2.10.

Table 2.10
Major Industrial Estates under Kerala SIDCO
(As on 31st October, 2016)

District		Name of the Industrial Estate	Total Number of		Income (Lakh)*
			Units	Employees	
1	Thiruvananthapuram	Pappanamcode	76	825	17.45
2	Kollam	Umayanallor	77	384	22.00
		Karunagappally	25	160	
3	Alappuzha	Cherthala	28	251	53.06
		Kollakadavu	48	464	
4	Kottayam	Changanacherry	73	990	11.78
		Ettumanoor	74	1270	
5	Ernakulam	Mudickal	13	060	04.31
		Palluruthy	06	110	
6	Thrissur	Ollur	145	934	75.10
		Kallettumkara	18	285	
7	Palakkad	Olavakkode	42	254	38.16
		Karakkad	49	385	
8	Malappuram	Manjeri	28	183	00.33
9	Kozhikode	West Hill	45	309	00.91
10	Kannur	Palayad	42	272	09.00
11	Kasargod	Kasaragod	68	320	28.04
Total		17	857	7456	260.14

Source: Directorate of Industries and Commerce, Government of Kerala. * The income generated in the year 2015-2016.

The government envisages the setting up of industrial estates in all the legislative constituencies with the active cooperation of local bodies for the balanced industrial growth of the State, especially the development of small and medium sectors of the economy. It also proposes common branding and promotion of MSME products. Economies of scale, economies of agglomeration, benefits of interrelatedness, low investment, availability of better infrastructure and support services, mutual cooperation and focused business, increased employment opportunities and the development of backward areas are the major advantages of industrial estates that the government is trying to reap in its march towards faster and balanced industrial development of the State.

2.8. Industrial Cooperative Societies:

Industrial cooperative societies are promoted as an important instrument of industrialisation in the State. An industrial cooperative is an association of workers who come together to provide necessary assistance and supporting services to the members by undertaking their activities collectively. They are organised, controlled and managed by the workers for maximising their benefit or welfare. The ultimate objective of industrial cooperatives is to develop self respect and self-reliance among the members on the foundation of the spirit of cooperation. In Kerala, the total number of working industrial cooperative societies as on 31st March,

2017 was 533. It is very significant to note that out of the total number of societies registered, 103 societies were registered by women. The details of registered industrial cooperative societies are given in Table 2.11.

Table 2.11
Status of Industrial Cooperative Societies in Kerala
(As on 31st March, 2017)

District		Total Number of Societies				
		SCs	STs	General	Women	Total
1	Thiruvananthapuram	18	05	39	13	75
2	Kollam	07	00	28	00	35
3	Pathanamthitta	01	00	05	01	07
4	Alappuzha	04	01	11	02	18
5	Kottayam	13	06	28	17	64
6	Idukki	01	01	04	02	08
7	Eranakulam	02	00	20	12	34
8	Thrissur	07	00	27	09	43
9	Palakkad	09	02	18	09	38
10	Malappuram	09	00	08	06	23
11	Kozhikode	01	02	19	04	26
12	Wayanad	03	05	34	28	70
13	Kannur	06	02	61	00	69
14	Kasargod	00	00	23	00	23
Total		81	24	325	103	533

Source: Directorate of Industries and Commerce, Government of Kerala.

The government attempts to reorient the industrial cooperatives operating in the State so as to improve their efficiency and professional competence

to meet the requirements of their clients. They play their pivotal role for bringing socio-economic development for inclusive growth in the State, especially in the rural economy of Kerala. Having been recognised the immense potential and leading role of industrial cooperatives, they must be treated as effective economic instruments for ensuring growth with equity and inclusiveness in our country.

2.9. Industrial Development Zones (IDZ):

In order to better promote the competitiveness of enterprises by leveraging investment in large scale manufacturing industries and promoting the economy through value-added export oriented manufacturing products, the Kerala Industrial Infrastructure Development Corporation (KINFRA) has introduced a novel initiative called the Industrial Development Zones (IDZ).³ As part of the project, KINFRA will acquire land, develop the land parcels and provide the basic and necessary infrastructure facilities. The same will be leased out to interested parties identified based on the targeted industries with development potential on long-term lease. The major objectives of the IDZ project are:

1. To establish Kerala as one of the most attractive locations for business investments in Asia through creating large-scale integrated industrial clusters.

³ <http://www.kinfra.org/industrial-development-zone>. Retrieved on 1st November, 2016.

2. To formalise the industrial and land pooling policy to promote integrated development formats.
3. To encourage private sector participation for the accelerated industrial development.
4. To provide world class physical and social infrastructure to woo the sustainable growth and development of the industrial economy of the State.

The target industries for the IDZ project are identified based on the outcomes of the 'industry filtration' technique. The initial set of industrial sectors are identified based on the export performance of these industries. The industries are then subjected to a primary sieve which identifies only non-polluting industries and weeds out the polluting industries. They are then subjected to a secondary sieve comprising of favourable factors for the industry such as availability of raw materials, policy framework, government initiatives, etc. The performance of these industries is analysed. The identified industries are further validated through its contribution to the State's economy to arrive at the final set of industries for each of the delineated industrial development zones (IDZ).

The target industries currently identified for the project based on the said methodology are: (i) Food and agro-based industry, (ii) Engineering industry, (iii) Gems and jewellery industry, (iv) IT, ITES and the electronic

hardware segments industry and the (v) Textile segments industry. The project has identified a total of 2580 acres of land with an initial estimated cost of Rs. 1591.44 crore. The details regarding the Industrial Development Zones (IDZ) are given in Table 2.12.

Table 2.12
Industrial Development Zones (IDZ) in Kerala

Name of the IDZ	Place	Thrust Area(s)
IDZ-1	Kannur	Food Processing, Textiles/Garments.
IDZ-2	Kozhikode	Food Processing, IT/ITES, Manufacturing.
IDZ-3	Eranakulam	Food Processing, IT/ITES, Textiles/Garments, Gems & Jewellery.
IDZ-4	Thiruvananthapuram	Food and Agro Industries, IT/ITES, Manufacturing, Textiles/Garments.

Source: Formulated on the information obtained from <http://www.kinfra.org/industrial-development-zone>. Retrieved on 1st January, 2017.

2.10. Industrial Growth Centres (IGC):

Industrial growth centre (IGC) is a joint industrial infrastructure project of the Government of Kerala with the Government of India. It aims at the development of industrially backward regions of the State in select districts. As per the scheme announced by the Central government, the State government has entrusted the Kerala State Industrial Development

Corporation (KSIDC) for developing and managing industrial growth centres in various locations. Accordingly, the KSIDC has acquired land at four industrially backward locations of the State spread in Kannur, Kozhikode, Malappuram and Alappuzha districts. Basic infrastructural facilities are put in place in all the centres and industrial plots and built-up areas are available for the setting up of specialised industrial units on long lease, that is, for a period of thirty years. The details regarding the industrial growth centres (IGC) are given in Table 2.13.

Table 2.13
Industrial Growth Centres (IGC) in Kerala

District	Place	Area (Acres)	Thrust Area(s)
Kannur	Kuthuparamba	251	Light Engineering
			Food Processing
			Rubber-based Industries
Kozhikode	Kinalur	308	Food Processing
			Sports
			Health Care Projects
Malappuram	Panakkad	258	Food Processing
			Furniture
			Rubber-based Industries
Alappuzha	Cherthala	258	Coir Clusters
			Marine Products
			Cement-based Industries

Source: Formulated on the information obtained from <http://www.emerging.kerala.gov.in/industrial.php>. Retrieved on 1st January, 2017.

The industrial growth centres (IGC) at the select locations are under various stages of development. Basic industrial infrastructure such as

roads, water supply, power, telecommunications, administrative buildings, and other support services are already put in place and steps are being taken to improve the existing facilities. Multi-storied industrial complexes called standard design factory (SDF) has been constructed for accommodating the small and medium enterprises. All the units coming up in the IGCs are explicitly supported by the single window clearance mechanism of the State government.

2.11. Industrial Corridors:

Industrial corridors are being increasingly promoted as effective instruments for achieving accelerated industrial growth by effecting the integration between industry and infrastructure. It entails the creation of globally comparable infrastructure in a designated pathway so as to provide a more conducive and competitive environment for the setting up of businesses. Industrial corridors enable optimal utilisation of a region's potential for growth by facilitating economic agglomeration and industrial clustering. It is a package of infrastructure spending allocated to a specific geographic area with the aim of stimulating rapid industrial development. The concept is conceived as an integral part of the infrastructure-supported industrial policy in Kerala.

Industrial corridors help in flourishing industrial development by ensuring seamless connectivity of roads, rail, air or sea for the manufacturing

clusters and ancillary industries. They are normally conceived along with major transport arteries as they provide vital connectivity to the area and facilitate the efficient movement of freight and people with reduced freight and transportation costs. At present, the government proposes three zones in the State as industrial corridors which would also qualify as 'commercial districts' namely:

1. The IT and ITES corridor from Kazhakuttom to Kovalam and from Kazhakuttom to Kollam along the national highway bypass.
2. The biotechnology and hi-tech electronics corridor along the seaport-airport road at Kochi.
3. The food processing and textile corridor from Kanjikode to Walayar along the national highway at Palakkad.

2.12. Industrial Townships:

The National Manufacturing Policy, 2011 envisages the setting up of 'national investment and manufacturing zones (NIMZ)' throughout the country so as to give a strong impetus to the growth of manufacturing industries in the country. The policy is based on the principle of industrial growth in active partnership with the States. The Central government will create the enabling policy framework and provide the required incentives for infrastructure development on a public private partnership (PPP) basis

through appropriate financing instruments. The State governments are encouraged to adopt the instrumentalities of the policy.

In line with the policy and to encourage the growth of its manufacturing sector, Government of Kerala encourages the setting up of certain 'industrial townships' which are the compact industrial areas providing necessary support to industrial entrepreneurs with state-of-the-art infrastructure, land zoning, clean and efficient technology, skill development facilities and other necessary social infrastructure to provide an opportune environment for the rapid growth of potential industries in the State. The Palakkad Industrial Township Area Project and the development of 'knowledge cities' in select districts of the State are being envisaged by the government to give a strong incitement to its process of industrialisation.

2.13. Special Economic Zones (SEZ):

In line with the Special Economic Zone Act passed by the Government of India in the year 2005, the State government is also envisaged the development of an internationally competitive and hassle-free industrial environment in designated zones so as to speed up its process of industrial development. It aims at to overcome the shortcomings experienced on account of multiplicity of controls and clearances, absence of world-class infrastructure, the unstable fiscal regime and with a view to attract larger

domestic as well as foreign investments. SEZs are the specifically delineated duty free enclaves for the purpose of trade, operations and duty and tariffs. They are the self-contained and integrated geographical regions having their own well built infrastructure and support services.

Kerala was the first State in India to set up a Special Economic Zone (SEZ). The Government attempts to make SEZs an engine of growth that can boost manufacturing, augment exports and generate employment. They are supported by quality infrastructure complemented by attractive fiscal packages, both at the Centre and the State level with simplified procedures, less regulations and restrictions, and other numerous exemptions and incentives. The main objectives of the SEZ Act, 2005⁴ are:

1. Generation of additional economic activity.
2. Promotion of exports of goods and services.
3. Promotion of investment from domestic and foreign sources.
4. Creation of employment opportunities.
5. Development of infrastructure facilities.

The SEZ policy is expected to trigger a large flow of foreign and domestic investments in the designated special economic zones in infrastructure and productive capacity, thus leading to generation of additional economic

⁴ <http://sezindia.gov.in/about-introduction.asp>. Retrieved on 1st November, 2016.

activity and creation of employment opportunities which will ultimately paves the way for faster and sustainable industrial growth in the economy. The major incentives and facilities offered to the units operating in SEZs may be listed below:

1. Duty free import or domestic procurement of goods for the smooth development, operation and maintenance of the SEZ units.
2. 100 per cent income tax exemption on export income for the SEZ units for the first five years; 50 per cent for the next five years thereafter and 50 per cent of the ploughed back export profit for the next five years.
3. Exemption from Minimum Alternate Tax.
4. Exemption from Central Sales Tax.
5. Exemption from Service Tax.
6. Exemption from State Sales Tax and other levies as extended by the State governments.
7. External Commercial Borrowings by the SEZ units upto \$ 500 million in a year without any maturity restriction through recognised banking channels.
8. Single Window Clearance for the Central and State level approvals.

Special economic zones (SEZ) normally minimise the costs through fiscal incentives and administrative efficiencies, provide access to serviced land and a more reliable infrastructure, reduce risk and provide a vibrant

atmosphere of operational and strategic flexibility. Considering all these benefits and its impact on the industrial economy, the State Government of Kerala is encouraging the development of special economic zones. SEZs are an acknowledgment of the potential ‘export-led development strategy’ in accelerating competitiveness and regional economic growth. As per the estimates of the Ministry of Commerce and Industry, Government of India, there are 16 operational SEZs in Kerala as on 1st September, 2016. The details regarding the operational SEZs in Kerala are given in Table 2.14.

Table 2.14
Special Economic Zones (SEZ) in Kerala
(As on 1st September, 2016)

Name of the SEZ		Place/District	Thrust Area
1	Cochin Special Economic Zone	Kochi, Ernakulam	Multiproduct
2	Cochin Port Trust	Vallarpadom, Ernakulam	Port-based
3	Cochin Port Trust	Puthuvypeen, Ernakulam	Port-based
4	Infopark	Kakkanad, Ernakulam	IT/ITES
5	Infopark	Kunnathunadu, Ernakulam	IT/ITES
6	Electronics Technology Park SEZ-1	Thiruvananthapuram	IT/ITES
7	Electronics Technology Park SEZ-2	Thiruvananthapuram	IT/ITES
8	Electronics Technology Park (Technopark)	Thiruvananthapuram	IT/ITES
9	KINFRA Film and Video Park	Kazhakuttom, Thiruvananthapuram	Animation and Gaming

10	KINFRA Hi-Tech Electronics Park	Kalamassery, Eranakulam	Electronics Industries
11	KINFRA Food Processing Park	Kakkancherry, Malappuram	Food Processing
12	Kerala State Information Technology Infrastructure Ltd.	Cherthala, Alappuzha	IT/ITES
13	Kerala State Information Technology Infrastructure Ltd.	Mulavana, Kollam	IT/ITES
14	Kerala State Information Technology Infrastructure Ltd.	Nellikode, Kozhikode	IT/ITES
15	Carborundum Universal Ltd.	Thrikkakara North, Eranakulam	Solar Photovaltaic
16	Sutherland Global Services Private Ltd.	Thrikkakara North, Eranakulam	IT/ITES

Source: Ministry of Commerce and Industry, Government of India.

In addition to this, many other projects got formal approval from the Government. The most important among them is the Smart City Kochi, an information technology special economic zone, which started its first phase of operations in May, 2016 and is expected to be fully operational by the year 2020.

2.14. Entrepreneurship Development:

Kerala is traditionally been a wage earning society. One of the greatest challenge before the government is to convert the State into a promising 'entrepreneurial society' so as to inculcate the positive aspects of industrial development, economic growth and societal welfare. The industrial and commercial policy of the government attempts to transform the State into

a vibrant entrepreneurial society with innovative strategies and practices needed for its inclusive, environment-friendly and sustainable economic growth. Given the realities of the rapidly changing economic landscape, entrepreneurship opportunities have emerged as an important source of meeting the aspirations of the youth. Accelerating entrepreneurship, especially based on novelties and innovations is crucial for the large scale employment generation in the domestic economy of Kerala.

Skills, knowledge and entrepreneurship are the driving forces of economic growth and social development for any country. The government encourages and supports all the pillars that are essential for an ideal entrepreneurial environment in the State such as: (i) entrepreneurial culture, (ii) supportive regulatory and tax regimes, (iii) educational systems that support entrepreneurial mindsets, (iv) better access to funding and (v) a coordinated approach that links the public, private and voluntary sectors. A business-friendly environment with easy entry and exit procedures that exists in Kerala encourages the entrepreneurial activity of the State to a large extent.

Entrepreneurship, based on innovations has immense growth potential for the regional economy of Kerala. The government envisages a paradigm shift from being an entrepreneur supply side to an entrepreneur demand side. As the economy moves progressively towards becoming a 'global

knowledge economy’, it addresses the rising aspirations of its youth. It encourages ‘entrepreneurship and innovation’ among the youngsters through numerous flagship programmes in line with the National Policy for Skill Development and Entrepreneurship, 2015 initiated by the Government of India. Its vision is to create an ecosystem of empowerment by skilling on large scale with high standards and to promote a culture of innovation based entrepreneurship so as to ensure sustainable livelihoods for all citizens of the country.⁵

In Kerala, many government and non-government organisations are playing decisive roles on the various elements of vibrant entrepreneurship. The prominent institutional support mechanisms for the skill and entrepreneurship development in Kerala includes: (i) MSME Development Institute in Trissur, (ii) Kerala Institute for Entrepreneurship Development (KIED) in Kochi and (iii) Kerala Academy for Skills Excellence (KASE) in Thiruvananthapuram. Thus, it can be observed that an all inclusive approach to strengthen the entrepreneurship development scenario of the economy which is competent, quality conscious, market savvy, innovative and has globally competitive entrepreneurs, needs to be carefully mentored and encouraged for promoting rapid industrialisation and thus the overall economic development of the State.

⁵ Government of India (2015). *National Policy for Skill Development and Entrepreneurship, 2015*. New Delhi: Ministry of Skill Development and Entrepreneurship.

2.15. The Kerala Startup Mission:

Kerala Startup Mission, formerly known as the ‘Technopark Technology Business Incubator’ is India’s first and most successful non-academic business incubator, hosted and housed inside the Technopark (Asia’s largest IT Park) in Thiruvananthapuram with leading-edge IT infrastructure. The Technopark Technology Business Incubator (T-TBI) is a joint venture of the Technopark, Government of Kerala and the Department of Science and Technology (DST), Government of India which started its operation in the year 2006 to help the technology business start-ups in the State. In 2012, it was taken up by the Government of Kerala and in the year 2015, the T-TBI was rebranded as ‘Kerala Startup Mission’ as the nodal agency for implementing the Technology Startup Policy of the Government. Its avowed objective is to identify the entrepreneurial talents among youths and students to promote an entrepreneurial culture in the State. Since its launching, it has incubated more than 200 of India’s most promising startups.

Kerala Startup Mission is the pioneer champion in the industrial scenario of Kerala with a vision to support and nurture technology startups in the State. It is designed to provide a springboard to budding entrepreneurs who wish to launch themselves into the world of technology-based business and career. The entrepreneurs’ bright and innovative ideas to

develop a product or service using advanced technology solutions can find a fertile ground in the Kerala Startup Mission.⁶ The highly innovative and productive environment of the Kerala Startup Mission provides prospective entrepreneurs the right ambiance to build up technology ventures at international standards. The mission encourages student entrepreneurship as well and has come up with various schemes for its effective implementation. The vision is to promote true innovators and entrepreneurial talents and to bring excellence through value enhancement services of technology and business incubation so as to make them successful technopreneurs.

The Kerala Startup Mission is the implementing body for the Kerala Technology Startup Policy, 2014 that supports the startup system by means of nine components⁷ such as:

1. Infrastructure Incubators.
2. Infrastructure Accelerators.
3. Human Capital Development.
4. Funding.
5. State Support.
6. Governance.
7. Public Private Partnership.

⁶ <http://www.startupmission.kerala.gov.in>. Retrieved on 1st January, 2017.

⁷ <http://www.entrepreneur.com/article/283391>. Retrieved on 1st January, 2017.

8. Scaling the existing and establishing new incubators.
9. Startup and Scale up Model for moving fast from Ideas to IPO.

The Mission offers explicit support to startup entrepreneurs to implement their innovative ideas from the ideation stage and will provide mentoring, infrastructure facilities, entrepreneurship development programmes, seed fund assistance, industry association and other exposure programmes besides research and prototype development in their respective fields. Having been recognised a vibrant entrepreneurial ecosystem as the future roadmap, the Government of Kerala offers another flagship initiative called the 'Technology Innovation Zone.' It is the next step towards entrepreneurial development which starts from building a talent pipeline from schools and colleges and ending with initial public offer (IPO) for the startups.

The Kerala Startup Mission is the nodal for the Technology Innovation Zone which has been built over an area of 14 acres of land at the KINFRA High-Tech Electronics Park in Kalamassery, Kochi. It is a joint venture of the Government of Kerala with the Government of India and envisioned as a 'one stop shop' for technology innovation, where everything from the consolidating of the idea to its incubation, mentor support and to flourishing into a successful enterprise.⁸ The zone acts as a self sustained

⁸ <http://www.entrepreneur.com/article/283391>. Retrieved on 1st January, 2017.

ecosystem which serves all the interests of the young innovators and entrepreneurs, so that all the time and energy that they have goes into product development in an efficient and productive manner. Simply, it can be seen that the Kerala Startup Mission initiated a wide range of activities that touches every youngster from academia to an entrepreneur.

2.16. The WE Mission Kerala:

Having been recognised women entrepreneurs as one of the key areas of the industrial growth of Kerala, the Kerala State Industrial Development Corporation (KSIDC) has embarked upon a path-breaking initiative called the 'WE Mission Kerala' which aims at scaling up the women-led endeavours through comprehensive support measures. It is an initiative to identify, promote and provide a complete range of support to women entrepreneurs for scaling up their business ventures. It is targeted at developing a new culture of entrepreneurial thinking among the women in Kerala and is being executed in association with the Kudumbasree, MSME Development Institute and the Confederation of Indian Industry (CII). The mission attempts to bring about more women into entrepreneurship and motivating the existing ones to scale up their business activities. The official launch of the mission was held in May, 2015 at Malappuram and comes up with a five-pronged strategy⁹ as:

⁹ <http://www.wemissionkerala.org>. Retrieved on 1st January, 2017.

1. Mentoring support for women entrepreneurs.
2. Exposure visits to successful women enterprises.
3. Financial assistance from KSIDC.
4. Arranging necessary infrastructure and incubation support.
5. Collaborating and networking the business ventures.

To promote and provide support for existing women entrepreneurs in the State, the mission organised an event called the 'WE Summit' on the International Women Entrepreneurship Day, on 19th November, 2015 at Kochi. The summit showcased the remarkable achievement of Kerala in women entrepreneurship to the global community and to further strengthen the cause of women entrepreneurs by collaborating and networking. Fostering the growth of entrepreneurship among women and creating an enabling environment for business ventures was the highlight of the event. As the first ever women entrepreneurs summit in the country, it had attracted wide spread attention from different sectors and has succeeded in creating a new entrepreneurship culture and thinking in Kerala among the women entrepreneurs in the State.

2.17. The Kerala Perspective Plan 2030 Initiatives:

The Kerala Perspective Plan (KPP) 2030, prepared by the Kerala State Planning Board in 2015 is a strategic articulation of the development vision, mission, goals and objectives of the State. It provides a strategic

framework of resources, competencies and capacities for sustainable and inclusive growth and sets the benchmarks for Kerala to achieve in line with the best regional and international practices. The KPP 2030 explicitly spells out certain action plan for the industrial development of the State. The mission outlined is to evolve Kerala into a knowledge-driven competitive economy with the spirit of entrepreneurship, innovation, social inclusion, tolerance and diversity. The major schemes initiated in the Kerala Perspective Plan ¹⁰ in the industrial front are:

1. Improving infrastructure in the existing development areas/plots.
2. Construction of multi-storied industrial estates.
3. Assistance for promoting industrial areas/plots in the private sector.
4. Infrastructure investments in PPP mode.
5. Promoting mutual trust between the government and entrepreneurs through partnerships.
6. Involve real world entrepreneurs and promote private investments.
7. Develop eco-friendly industrial parks.
8. Encourage technology upgradation and productive innovation.
9. Promotion of microfinance.
10. Promotion of better entrepreneurial learning.
11. Increase the visibility and emphasise the role of entrepreneurship in creating new jobs.

¹⁰ Government of Kerala (2015). *Kerala Perspective Plan 2030*. Kerala State Planning Board.

2.18. Chapter Conclusion:

Kerala is making rapid strides on its manufacturing front and the industries operating in the State have acquired global competence in quality and the ability to deliver its best. Core competency sectors and thrust areas for industrial development are being identified and better and revised policy frameworks are devised time to time to match the changing requirements and expectations of the industrial sector. The Government implements various schemes for nurturing and better improving its industrial environment through the development of specialised industrial infrastructure, innovations and entrepreneurship, acquisition of new capacities and the promotion of research and development attuned to the peculiar industrial needs of the economy. A highly focused approach towards spearheading innovations and initiatives really provides a strong competitive edge to the State.

Chapter-3

**Role and Economic Imperative of
KINFRA Industrial Parks in Kerala**

3.1. Chapter Prologue:

Promoting industrialisation and economic growth in an increasingly globalised and technologically advancing world is a multi-dimensional complex task that requires coordination at various levels. Establishment of industrial parks with exclusive and competitive benefits is an innovative step taken by the Governments for the rapid industrial development of any economy. By providing a strong legal and institutional framework, industrial parks pool resources and reduce costs, risks and the delays associated with land acquisition, zoning and permitting. At their best, they align infrastructure provision and agglomeration economies to jolt industrial growth. As an innovative industrial initiative, the establishment of industrial parks attempts to explore an ecosystem where productive and innovative entrepreneurship germinates, sustains and grows leading to the creation of a more vibrant and dynamic industrial economy in Kerala. In the context, the chapter presents the role and economic imperative of industrial parks with particular reference to the relative role and efficacy of the Kerala Industrial Infrastructure Development Corporation (KINFRA). Within 25 years of functioning, KINFRA has ventured many industrial parks in the fast growing core competency sectors of Kerala. The chapter thus provides a contour of the various industrial parks and other institutional arrangements set up by KINFRA for the hasty industrial development of the State.

3.2. Concept and Rationale of Industrial Parks:

The idea of industrial parks is based on a philosophy of integration. The United Nations Industrial Development Organisation (UNIDO) defines industrial park as “a tract of land developed and subdivided into plots according to a comprehensive plan with or without built-up facilities, sometimes with common facilities for the use of a group of industries.” They are designed specifically in an easy and well-in-start manner with the confidence of decent return on investments. Buyers, producers, and suppliers can operate in the same location and thus cutting the transaction costs of economic learning while establishing new standards and customised norms of entrepreneurial behaviour. The co-located firms generate agglomeration economies and so the public goods should be concentrated on areas of co-location. The provision of infrastructure will somehow induce the firms and exemptions can be made that will further entice them and create better competitiveness.

The rationale for industrial parks has traditionally been twofold: First, the provision of functional infrastructure is much easier to plan in a geographically limited space, particularly for the delivery constrained Governments.¹¹ Second, the concentration of firms can provide significant spillover effects both inside and outside the park – information spillovers,

¹¹ Marshall, Alfred (1920). *Principles of Economics*. London: Macmillan.

including knowledge and technology, the specialisation and division of labour among enterprises, the development of skilled labour markets and the development of markets around the parks.¹² Today, industrial parks are the part and parcel of the industrial development strategy of any economy and are generally located on the outskirts of a city with specialised and coordinated plant designs, especially for regional and balanced industrial development.

3.3. Historical Background of the Development of Industrial Parks:

Regarding the historical background of the development of industrial parks, it can be observed that the ‘first generation of industrial parks’ was established in early 1970s. These parks were driven by public sector development and operated with government subsidies for services and facilities. They were basic compared to modern standards with simplistic architecture offering halls and space for storage. Over the decades, the scope of services provided by the industrial parks has become more sophisticated and holistic. In the late 1970s and 1980s, the ‘second generation of industrial parks’ was built with a challenging and more complicated architecture and greater attention given to the requirements of science, technology and business.

¹² Sonobe, Tetushi and Otsuka, K. (2006). *Cluster-Based Industrial Development: An East Asian Model*. New York: Palgrave Macmillan.

During 1990s, the 'third generation industrial parks' emerged with greater flexibility in the use of buildings and space and a wider range of support services to its clients. These were typical by the extensive use of the area and a wide portfolio of services. There was a gradual shift from the ad-hoc private sector licensing to planned and coordinated public-private partnerships which led to improved and better services, greater product differentiation and non-price competition. The industrial parks constructed since year 2000 are designated as 'fourth generation industrial parks.' They are designed to promote new innovative industries, infrastructure and technologies. The private sector develops, owns and operates the park on a cost-recovery basis. The authority only regulates the activities within the confines of the park and outsources core functions to the private sector.

Over the decades, industrial parks have become increasingly flexible and have expanded the range of facilities and support services provided to the firms and individuals they host. More sophisticated industrial parks offer a wide range of common facilities and support services, such as information services, financial services, consultancy, technical guidance, training, joint research facilities and business support services to satisfy the specific and customised needs of the tenants. Further, sector-specific industrial parks are emerging and are more and more common today since they can create a critical mass and justify the provision of dedicated services, infrastructure and utilities.

3.4. Operational Mechanism of Industrial Parks:

There is no one-size-fits-all model of industrial park as far as the regional economies are concerned. On the basis of specific needs assessment, they should be integrated into the regional innovation framework that recognises the social, economic, cultural and environmental characteristics of each region and community as well as the local governance competences and capabilities. For decades, the State-level industrial development corporations have been building industrial parks. Various schemes and policies are being framed by the Central Government also. The most visible recent attempt was the Special Economic Zone (SEZ) Programme, launched in the year 2005. Many successful industrial parks have been built through both the Centre and State initiatives.

Today, industry may be treated as a catalyst sector of most economies, especially in the wake of globalisation. Establishment of industrial parks are also considered as strategic tools for industrialisation as they will have a definite impact on positive economy development. Industrial parks operating at present are actually a part of global networked cooperating parks. This international framework will guide the policymakers and practitioners on critical elements of the development of industrial parks that will help the government and private players work together for the successful establishment and operation of industrial parks. Thus, the major

steps involved in the successful operation of industrial parks ¹³ can be enumerated as follows:

1. Identification of the park location.
2. Identification of potential demand and overall dimensions.
3. Procurement of land.
4. Design and dimensioning within the park (Master Planning).
5. Financing.
6. Financial structuring and planning.
7. Procurement of infrastructure building.
8. Construction of infrastructure.
9. Operation and maintenance.
10. Monitoring and evaluation.

These roles have been shared in many different ways between the national, regional and local levels of the Government. There are as many as four types of entities for demand estimation and the designing and financing of the parks, namely: (i) 'developers' who typically prepare the master plan for the industrial parks, (ii) 'constructors' who construct the parks, (iii) 'operators' who manage the operation and maintenance of the parks and (iv) 'users' who are the entrepreneurs occupying the parks themselves. In Kerala, the functional role of the first three categories of operation (that

¹³ Saleman, Yannick and Luke Simon Jordan (2013). *The Implementation of Industrial Parks—Some Lessons Learned in India*. Washington, DC: World Bank.

is, of the developers, constructors, and operators) is mainly performed by the Kerala Industrial Infrastructure Development Corporation (KINFRA) on behalf of the Government.

3.5. Role and Mission of the Kerala Industrial Infrastructure Development Corporation (KINFRA):

The Kerala Industrial Infrastructure Development Corporation, popularly known as KINFRA, is a statutory body set up by an Act of State Legislature in February, 1993. It stands as a flagship of Kerala's industrial fleet as it ventures into the high seas of global commerce. Since inception, KINFRA has mainly identified itself with the land acquisition and development of groovy industrial infrastructure for the easy start-up and smooth functioning of industrial units with minimum time and cost. It has catered to the industry-specific infrastructure requirements of the State by creating walk-in and manufacture environments in ready-to-use industrial complexes that provide all the facilities required in the starting and nurturing of an industry. It is proud to be a front runner in leading the industrial promotion in the State by creating 'industrial spots' in the relatively backward areas for industries. KINFRA is headquartered in Thiruvananthapuram, the State Capital of Kerala.

Being the industrial catalyst of the State, the vision of KINFRA is to create a Kerala where industry thrives in the midst of the rich green environs and

where people flourish in an achievement that fosters growth and the freedom to innovate. Its mission is to enable development across Kerala by identifying and promoting core competency industries of each region, creating walk-in and manufacture environments and wooing discerning investors from across the world.

(a). Major Functions of KINFRA:

KINFRA acquires land at strategic locations for the orderly development of industries by balancing the social, regional and ecological requirements. It is dedicated to catalyse the industrial growth in Kerala and takes utmost care to achieve global standards in every domain of providing exemplary industry-specific infrastructure. The major functions as envisaged in the KINFRA Act, 1993 for KINFRA are:

1. To identify appropriate industrial sites, acquire them, and tie up the required infrastructure and support services for the easy startup of industries.
2. To develop industrial areas selected by the government and make them available for suitable undertakings.
3. To establish, maintain, develop and manage the industrial estates at places selected by the government.
4. To allot the developed plots or sheds to the entrepreneurs on terms and conditions as may be determined by the corporation.

5. To procure land on behalf of medium or large scale industries outside the industrial estates or areas by purchase, lease or exchange and to upgrade the facilities of existing industrial areas or estates transferred to the corporation.
6. To undertake the schemes for providing the industrial units with such structures and facilities as may be necessary for their orderly establishment, growth and development.
7. To coordinate with other government departments or agencies to ensure provision of good quality infrastructure within the shortest possible time and affordable cost.
8. To act as a 'single point contact' for clearances required from different agencies or departments.
9. To promote, organise, sponsor or undertake schemes or works either by itself or jointly with other corporate bodies or institutions or with the government or local authorities or on an agency basis in furtherance of the purpose for which the Corporation is established and all matters connected therewith.
10. Such other functions as are necessary in furtherance of the objectives of the corporation.

KINFRA aims at the economic development of the industrially backward regions of the State by the setting up of industrial segments that provide all

facilities required for the entrepreneurs in starting an industry in the thrust sectors identified by the industrial policy of the government.

(b). KINFRA as the Nodal Agency of the Government:

KINFRA is the nodal agency for the Ministry of Industries and Commerce, Government of Kerala and encourages the rapid development of industries so as to transform Kerala into a vibrant industrial economy and to make it a competitive investment destination with globally accepted standards in technology, quality, and management. KINFRA promotes an investment friendly climate and contribute significantly to the economic growth and development Kerala. The Department of Commerce and Industries, Government of India has appointed KINFRA as its nodal agency for the State for implementing a flagship scheme called 'Assistance to States for Infrastructure Development of Exports and Allied Activities (ASIDE).' The scheme is being implemented since 2002-2003 in cooperation with the State governments.

KINFRA is the nodal agency for the Ministry of Food Processing Industries, Government of India for its various schemes for the development of processed food sector in Kerala. A part of the proactive policy in promoting food processing industry in the State, an autonomous society called 'Agency for the Development of Food Processing Industries in Kerala (ADFIK)' has been formed under KINFRA in the year 2004. It

plays the pivotal role as a catalyst, partnering with stakeholders of the food processing sector to make processed food as part of staple food 'of the consumer' and 'for the consumer.' Recently, the Government of Kerala has also appointed KINFRA as the nodal agency for the development of its two pioneer public-private-partnership (PPP) initiatives: the Kannur International Airport and the Kochi Metro Rail Project.

3.6. A Contour of KINFRA Industrial Parks in Kerala:

KINFRA is the nodal agency of the Government for the development of industrial infrastructure in the State. It has made successful reflections in the industrial arena of the State by providing necessary and comprehensive infrastructure for the rapid growth of industries. With the objective of boosting industrial growth, KINFRA has been promoting the concept of 'theme parks.' Industrial parks have been set up for the exclusive growth and development of the chosen and specified industrial sectors of the State, kick-starting an orderly and balanced industrial development in line with the provisions of the Industrial Policy of the Government.

KINFRA industrial parks are the welcome hubs in Kerala for the entrepreneurs. Since its inception in the year 1993, KINFRA has successfully completed 25 years of its operation. Having been realised the potential for growth, it has identified the core and emerging industrial sectors of the economy and has developed sector-specific and customised

parks so as to utilise efficiently the resources available in the State and to offer immense opportunities for the diversification of its industrial structure. An overview of the institutional arrangements set up by KINFRA and the glittering opportunities offered by them for the rapid industrial development of the State may be analysed under three heads, namely:

- (a). Fully operational industrial parks.
- (b). Premier ongoing projects.
- (c). Major projects on anvil.

(a). Fully Operational Industrial Parks:

KINFRA is credited for powering the industrial growth across Kerala through the establishment of industrial parks and industry-specific infrastructure. Fully operational industrial parks are those parks which are fully functional in its operations as envisaged by KINFRA. They are actively providing the entire required infrastructure and other support services to the prospective entrepreneurs and to the industrial units for the easy start up and management of their business. Built up spaces will be leased out along with many concessions and other incentives. The parks established by KINFRA include specialised theme parks, multi-purpose parks, small industries parks and exclusive zones for particular segments. The details of fully operational industrial parks are given in Table 3.1.

Table 3.1
Fully Operational Industrial Parks of KINFRA
(As on 31st July, 2018)

	Name of the Industrial Park	Year of Establishment
1	KINFRA Export Promotion Industrial Park, Kakkanad, Eranakulam.	1996
2	KINFRA International Apparel Park, Thumba, Thiruvananthapuram.	1998
3	KINFRA Film and Video Park, Kazhakuttom, Thiruvananthapuram.	1999
4	KINFRA Food Processing Park, Kakkancherry, Malappuram.	2000
5	KINFRA Small Industries Park, Thalassery, Kannur.	2002
6	KINFRA Small Industries Park, Seethangoli, Kasargode.	2002
7	KINFRA Small Industries Park, Nellad, Eranakulam.	2002
8	KINFRA Integrated Industrial and Textile Park, Kanjikode, Palakkad.	2003
9	KINFRA Small Industries Park, Koratty, Trissur.	2003
10	KINFRA Neo Space at the KINFRA Food Processing Park, Kakkancherry, Malappuram.	2003
11	KINFRA Small Industries Park, Kalpetta, Wayanad.	2005
12	KINFRA Hi-Tech Park, Kalamassery, Eranakulam.	2007
13	Animation Zone (Dhrisya Building) at the KINFRA Film and Video Park, Kazhakuttom, Trivandrum.	2008
14	KINFRA Small Industries Park, Adoor, Pathanamthitta.	2009
15	KINFRA Textile Centre, Nadukani, Kannur.	2009
16	KINFRA Small Industries Park, Kunnamthanam, Pathanamthitta.	2009
17	Bio-Technology Incubation Centre at the KINFRA Hi-Tech Park, Kalamassery, Eranakulam.	2009
18	Food Processing Zone at the KINFRA Small Industries Park, Adoor.	2009

19	The WISE KINFRA Park, Kanjikode, Palakkad.	2012
20	KINFRA Rubber Park, Irapuram, Eranakulam.	2015
21	KINFRA Integrated Industrial Park, Ottapalam, Palakkad.	2015
22	KINFRA Industrial Park, Piravanthoor, Kollam.	2015
Total		22

Source: KINFRA.

(1). KINFRA Export Promotion Industrial Park, Kakkanad:

The Export Promotion Industrial Park at Kakkanad in Eranakulam district is one of the first parks set up by KINFRA. It was established in the year 1996 with a total area of 281 acres. It was developed under the Export Promotion Industrial Park Scheme of the Government of India. The thrust area of the park is manufacturing and engineering. It offers comprehensive infrastructure facilities of high standards to be used by the export-oriented units including common bonded warehouse, power and water distribution and the single window clearance facility along with other common supporting amenities. The park has its own power distribution system which ensures the units are provided with uninterrupted and quality power all the time. The park caters specifically to the needs of the exported oriented industrial units of the State.

The park hosts many companies that are unique and meet global quality standards and are having their significant share in the export basket of the

State. The first company which was established in the park was Kerala Chemicals and Proteins Limited, which later became Nitta Gelatin Limited with Japanese collaboration. Bash-P International, the first Indian company to produce marine safety equipments is operating in the park. The company makes use of the immense potential and glittering opportunities provided by the Cochin Shipyard Limited and the Vallarpadam International Container Transshipment Terminal. There are some biotechnology companies having immense growth potential and solid stand in the industrial and export scenario of the regional economy of Kerala. Kera Fibretex is another most successful company in Kerala which started as a small unit in the park in 1995 and has grown to become one of the largest manufacturers of coir-based products. The company in which 95 per cent stake is held by an Italian company is a 100 per cent export unit, having its mark on the industrial landscape of Kerala in general and that of KINFRA industrial parks in particular.

(2). KINFRA International Apparel Park, Thumba:

KINFRA has identified the apparel sector as one of the potential sectors contributing significantly to the industrial development of the State. On the basis of the comparative advantage of the geographic location, it has set up the International Apparel Park in the year 1998 in 90 acres of land with a Standard Design Factory (SDF) of 3.14 lakh sq. ft. at Thumba in

Thiruvananthapuram district. The thrust area of this park is apparel or garment manufacturing and thus hosts mainly the garment manufacturing units in an eco-friendly ambience. KINFRA provides all the necessary and supporting infrastructure for the promotion of the apparel and garment manufacturing segments including common bonded warehouse, crèche, effluent treatment plant for hazardous waste disposal, power and water distribution and amenities like canteen, health centre, bank and hostel for women employees, along with the single window clearance mechanism.

The park is a real trend-setter from mass employment to fashion designing courses so as to facilitate futuristic industries and has now become a centre that has revitalised the local economy. It employs women in thousands and trains fashion designers and technologists who now command a premium in the market. The Bombay Rayons Fashion Limited is one of the leading garment making companies that employs more than 2500 people and majority of them are the womenfolk from nearby villages. The unit of the Apparel Training and Design Centre (ATDC), India's largest vocational training network, located in the park produces almost 300 professionals every year who are fashion designers and textile technologists as the meisteerstuck of KINFRA International Apparel Park.

Thus, it can be observed that the park has created an excellent and congenial environment for the units to thrive and stand in the globalised

and highly competitive industrial arena. It has marked its place in the overall industrial development of Kerala in general, and that of the apparel and garment manufacturing segments in particular. The leading-edge infrastructure, most modern technology, mechanism for efficient waste disposal and the eco-friendly ambience, all have contributed much to the remarkable success of the park especially in the local economy of Kerala.

(3). KINFRA Film and Video Park, Kazhakuttom:

The KINFRA Film and Video Park that came upon 75 acres of the stunningly positioned slopes of Kazhakuttom in Thiruvananthapuram district was the country's first integrated one-stop-shop for the infotainment industry. It was established in the year 1999. The concept broke the mould and offers cutting edge cross-over technology in motion capture and animation to its clients in the context where traditional film-based cinema production is progressively heading to new digital directions. The thrust areas of the park include film, animation, information technology and its enabled services. The unique facilities available in the park include built-up spaces, incubation centre for animation and gaming, motion capture studios, uninterrupted power and water supplies and the single window clearance facility. The park offers access to common facilities such as conference room, projection room, cafeteria and round-the-clock security.

The park has accorded the Special Economic Zone (SEZ) status by the Government of India. Its focus is mainly infotainment. Being India's first infotainment industrial park, the KINFRA Film and Video Park caters exclusively to the infotainment industry and has matured into a complete ecosystem for the digital animation and cinema sector. It draws up plans to leverage the potential of the digital cinema and animation sectors. Investment opportunities are there in video studios, outdoor shooting facilities, animation and special effect studios, teleport facilities, and digital cinema production. The park also hosts an exclusive 'Animation Zone' called the 'Dhrisya Building' with an area of 1 lakh square feet for animation, IT and ITES.

(4). KINFRA Food Processing Park, Kakkancherry:

The KINFRA Food Processing Park was established in the year 2000 at Kakkancherry in Malappuram district. It is a pioneering initiative that aims at crystallising all that is good about the food processing industry – creating massive employment, encouraging entrepreneurship and promoting local agriculture and economy. The park was developed with the assistance of the Ministry of Food Processing Industry, Government of India. Out of the total 100 acres of the KINFRA Techno Industrial Park, 90 acres are exclusively meant for the food processing industry where 30

acres are allotted for the Special Economic Zone (SEZ) for Food Processing and 60 acres are for Non-SEZ Food Processing.

The thrust area of the park is food processing. It primarily caters to the fruits and vegetables processing, milk and dairy products, poultry and meat products, grain processing and nutrition foods, ready-to-eat snacks, spice extracts and jams, non-alcoholic beverages, soft drinks and ice cream units. It offers the food incubation facility, quality control labs, common bonded warehouse, effluent treatment plants, uninterrupted power and water supplies, single window clearance facility and the fast growing Special Economic Zone (SEZ) for food processing. Kerala's very high record in personal hygiene, a very essential pre-requisite for the food processing industry helps the units thrive in the domestic economy of the State.

The park has made use of most of the advantages Kerala has in the food processing industry – that is, a clean environment, availability of quality raw materials in the local market and a large pool of skilled human resource. The units in the park source raw materials from the local communities and make value added products. In the process, they immensely support the local economy by creating large number of jobs and majority of the employees are women from the nearby places. Besides the food processing units, the park hosts many units which produce ready-

to-cook and ready-to-eat food products by sourcing technology from the Defence Foods Research Laboratory and the Central Food Technological Research Institute. The Central Warehousing Corporation has set up a cold storage facility and quality assurance lab in the park. The park has immensely contributed to the growth of the realty sector in the region and is poised for enormous growth in the future.

(5). KINFRA Small Industries Park, Thalassery:

Thalassery has been known for its proud history of cricket, circus and cuisine. The KINFRA small industries park, established in the year 2002 in the middle of the bustling town of Thalassery adds the thriving industrial sector of Northern Kerala with special thrust on the furniture, food processing and other general manufacturing industries. The park spreads over 50 acres of land with all supporting infrastructure including a 60000 sq. ft. standard design factory (SDF). It hosts several furniture making units which has made raw materials such as rubber wood a viable proposition and treated rubber wood is being made into furniture. Rubco is the most prominent among the furniture making companies located in the park which employs more than 300 people from around the area and thus significantly influences the local economy of the region.

There are some dyeing and weaving units in the park which can dye and weave all the natural fibres such as wool, cotton, jute, etc. and employs

nearly 100 workers. In addition, there are some prominent companies including Parco which is the only company in South India capable of making an entire suit of kitchen and bakery equipments. The company is making use of the latest technology to make the most of the booming food processing industry. It combines know-how from electrical, mechanical and electronic streams and makes 100 per cent value addition to the raw materials and thereby benefits the potential regional economy.

(6). KINFRA Small Industries Park, Seethangoli:

The KINFRA small industries park at Seethangoli in Kasaragod district is really a paradox. It was established in the year 2002 and hosts units that use technologies varying from avionics to primordial and complex metals to the leaves of arecanut trees. The park which spreads over 270 acres of land with thrust on general manufacturing offers exemplary infrastructure and all other supporting amenities including the single window clearance. Though the park hosts several prominent food processing and other general manufacturing units, the presence of Hindustan Aeronautics Limited (HAL), the makers of fighter aircrafts enables the park to take wings for its dreams. As the second defence establishment in Kerala, the strategic electronics manufacturing unit of HAL is operating in 200 acres of land in the park on a 99 year lease by KINFRA and provides immense opportunities for growth.

As an extension of the Hyderabad Avionics Division, the strategic electronics manufacturing unit of the HAL engages in the manufacture of a wide variety of electronic equipments in the areas of communication, radar, navigation, computers and electronic warfare. The facility is to test, assemble and manufacture six types of air-borne mission computers and to produce systems and sub-systems of various aircrafts such as medium lift helicopters and the fifth generation aircrafts. It is interesting to note the paradox that while HAL is busy to develop and empower India's air firepower, on the other side of the park is the eco-friendly units providing definite value addition to the farmers by converting leaves of arecanut trees into plates that can hold tasty dishes keeping all the food safety standards. The coexistence of diverse industrial establishments in the park offers immense possibilities for growth and thus satisfies the varied interests of the local economy in its march to development.

(7). KINFRA Small Industries Park, Nellad:

KINFRA small industries park, Nellad in Eranakulam district serve a range of customers varying from the local population to premium foreign customers of value added products. The park was established in the year 2002 in an area of 67 acres of land under the Integrated Infrastructure Development Scheme of the Government of India with special focus on the promotion of small scale industrial units in food processing and

manufacturing. The companies located in the park are mostly in the sectors as diverse as manufacturing, ayurveda, herbal extracts, polymers and agro-based industries. The major facilities offered by the park include excellent cold storage, standard design factory, effluent treatment plant, uninterrupted power and water distribution and the single window clearance.

Around 30 acres of the park has been earmarked for the projects in the food processing sector. The industrial units located in the park meets global standards in food processing, be it the production plant, quality control, raw materials, or even the locale of the park. Many of the companies has been started just as procurement stations, but are now turned into the manufacturing and marketing hubs for the entire South Asian market. Establishment of the park has brought about qualitative changes in the lives of the local population. It is not just industrial development, but the development of a sleepy village into a buzzing town that has come with the park.

**(8). KINFRA Integrated Industrial and Textile Park,
Kanjikode:**

The KINFRA Integrated Industrial and Textile Park, set up in 164 acres at Kanjikode in Palakkad district adds glamour to the industrial landscape of the district where agriculture and industry thrive together. The thrust areas

of the park are general industries, manufacturing, textiles and garments. The park consists of most modern facilities ranging from common infrastructure to captive power and effluent treatment plants. Having been integrated with the private sector, the park hosts spinning mills, weaving units, knitting units, units for yarn and cloth processing, units for women garments and knit wears and integrated plants for weaving, processing and made-ups manufacturing. Besides the textiles and garment units, the park also hosts several leading manufacturing companies including the first major defence production unit in Kerala. The arrival of BEML Limited, a 'Miniratna-Category-1' Central Public Sector Undertaking and a leading defence manufacturing unit adds allure to the park.

(9). KINFRA Industrial Park, Koratty:

Having been recognised the vital importance of small and medium scale industries in the industrial landscape of Trissur district, KINFRA has set up a small industries park at Koratty in the year 2003. The thrust area of the park is general non-polluting industries. The park is spread over 33 acres of land and is equipped with comprehensive infrastructure and other support services so as to uphold the principle of ease of doing business for Kerala' industrial development. Dedicated and uninterrupted power, continuous water supply, excellent communication, better connectivity and the single window clearance mechanism facilitates a plug and play

arrangement for the easy start up and maintenance of industrial units in the park. It hosts a standard design factory (SDF) with an area of 37000 sq. ft. of ready-to-use built-up spaces at par with global standards for the prospective entrepreneurs. The park offers immense scope for development to the small and medium enterprises and thus provides a new face to the rapid industrial development of the regional economy.

(10). KINFRA Neo Space, Kakkancherry:

KINFRA Neo Space is the first major IT infrastructure park in the Malabar region of the State. It was established in the year 2003 and is a 7 storied smart space with a total built up module of 85000 sq. ft. with software and web development, IT enabled services, electronics and biotechnology as the thrust areas. There are nearly 30 IT companies which employs more than 400 professionals. Neo Space is situated in the KINFRA Techno Industrial Park at Kakkancherry in Malappuram district which is a 100 acre industrial park where 30 acres are allotted for the Special Economic Zone (SEZ) for Food Processing, 60 acres for Non-SEZ Food Processing and 10 acres for Information Technology.

Neo Space is poised for big growth. Cost effectiveness and connectivity are the major plus points of the Neo Space. The companies operating in the Neo Space range from those working with the State Information Infrastructure Project to the units providing software solutions to domestic

and international business firms. They engage in a wide variety of activities which include software development, web designing, e-business applications, web hosting applications and business process outsourcing. Some of them offer computer training, assembling and maintenance, management consultancy tools, advertisement and designing services, business management system softwares, information and communication technology solutions, services and consultancy, business intelligence website development and animation.

Majority of the companies are Kerala based but are having foreign collaborations and are evincing a keen interest to establish their presence in the Neo Space. KINFRA proposes a further expansion of the Neo Space with a minimum 1.5 lakh sq. ft. of smart space and a separate commercial complex with a minimum 1 lakh sq. ft. built up area. Thus, it can be seen that from a modest cluster of food processing units since inception, KINFRA Techno Industrial Park has now boomed into a promising IT and ITES hub in Kerala.

(11). KINFRA Small Industries Park, Kalpetta:

KINFRA small industries park, established in the year 2005 at Kalpetta is trying to bring the good news of industrialisation to Wayanad district. The hilly district continues to be one of most backward in the State. As much as 35 per cent area of the district is forests and farming continues to be the

most important economic activity. With the establishment of KINFRA small industries park, the district today hosts some of the most forward-looking industries with special thrust on food processing, furniture and other general manufacturing. The park spreads over 50 acres of land with exemplary infrastructure including cold storage with a capacity of 25 tonne, excellent power and water distribution, single window clearance etc. along with all other support services. The infrastructure and the natural advantage of cool climate are really a boon for the entrepreneurs.

The park hosts food processing units, industrial products as well as raw materials and furniture. Some units make use of the unique agrarian richness of the hilly district while some others bank on the unique climate that adds to their productivity. Being the largest district of producing banana in the State, the food processing units in the park concentrates on value added products from this highly perishable and seasonal fruit. The park hosts some other companies and most modern plants specialising in the production of soap noodles which are the key ingredient to the production of toilet soaps. There are units that convert industrial by products into useful products. They make use of the cashew shells and produce double refined oils which can be a raw material for industrial paints. Thus, with the coming up of the small industries park at Kalpetta, the industrial scenario of Wayanad district has tremendously changed and is showing signs of prosperity in its cool industrial landscape.

(12). KINFRA Hi-Tech Park, Kalamassery:

KINFRA Hi-Tech Park, located on 243 acres of the picturesque land of Kalamassery in Ernakulam district offers exemplary infrastructure and prodigious opportunities for the sunrise sectors of Kerala economy such as biotechnology, electronics hardware, information technology and its enabled services, gems and jewellery and education, preparing themselves for the go at the niche segments of the economy. It was established in the year 2007. The thrust area of the park is hi-tech non-polluting industry. The park hosts a series of innovative initiatives like the biotechnology park, biotechnology incubation centre, SEZ for electronics hardware, world-class hardware manufacturing park and the SEZ for IT and ITES along with excellent basic and common facilities including single window clearance.

In order to harness the potential of global biotechnology industry and to accelerate its growth in Kerala, a Biotechnology Park was established in 50 acres of land at the KINFRA Hi-Tech Park. It is a joint venture with TCG Urban Infrastructure Holdings Private Limited, Kolkata. The park hosts a dedicated 'Biotechnology Incubation Centre' with the financial assistance of the Department of Biotechnology, Government of India. The centre provides common equipment and instrument facilities like greenhouse and hardening facilities, tissue culture facilities, analytical and quality control

labs, extraction facilities for plant-based value added materials and bioinformatics and patent facilitation centres. It also offers fully furnished R&D wet lab modules with provision for water, power and drainage for lease to industry.

Having been recognised the boundless possibilities of the information technology, an exclusive IT and ITES Park was set up in 25 acres of land at the KINFRA Hi-Tech Park, Kalamassery. It has obtained the Special Economic Zone (SEZ) status facilitating the immense opportunities of the sector in global business. Further, in order to make a definite impact of the electronics hardware sector on the industrial landscape of Kerala, a SEZ for Electronics Hardware is also there in the Hi-Tech Park and proposals from private players are there to set up an eco-friendly world-class hardware manufacturing park in 10 lakh sq. ft. powered by solar infrastructure and by providing employment to more than 12000 people at its completion. The primary treatment of all effluents to the common system will be undertaken by the industries themselves at their own premises as per the norms of the State Pollution Control Board.

(13). KINFRA Animation Zone, Kazhakuttom:

The KINFRA Film and Video Park at Kazhakuttom hosts an exclusive 'Animation Zone' called the 'Dhrisya Building' with an area of 1 lakh square feet for animation, IT and ITES. It was established in the year

2008. The zone has created a niche for itself by setting up a floor on which motion pictures can be easily animated without the need of their being shot in the actual. The park also hosts an 'International Animation School' to mould the talents and creativity of the youth so as to overcome the shortage of properly trained animators in the country. The park conveys many reputed and world-class post-production and sound recording studio complexes and related industrial units.

(14). KINFRA Small Industries Park, Adoor:

KINFRA small industries park at Adoor in Pathanamthitta district was developed with the financial assistance of the Ministry of Food Processing Industries, Government of India. The thrust areas of the park are food processing and general non-polluting industries. The total area of the park is 85 acres, out of which an extent of 37 acres is exclusively allotted for the setting up of an Integrated Infrastructure Development Centre (IIDC) under the Integrated Infrastructure Development Scheme of the Ministry of Small Scale Industries, Government of India with a view to give a Philip to the growth of small and tiny village enterprises in the potential and promising regions of the country. The park emphasises primarily on the creation of infrastructure facilities including quality control labs and effluent treatment plants for the manufacture and marketing of value added food products.

(15). KINFRA Textile Centre, Nadukani:

KINFRA has identified the textile sector as one of the prime sectors of the economy contributing significantly to the industrial development of the State. It has set up a Textile Centre in the year 2009 at Thaliparamba in Kannur district and is spread over 124.85 acres of land with a standard design factory (SDF) of 1.24 lakh sq. ft. The thrust area of the park is apparel or garment manufacturing. The KINFRA Textile Centre offers a series of facilities for the entrepreneurs in the district which is a land of handlooms that conquered global markets. The workmanship of weavers, quality of raw materials and the entrepreneurial spirit of the people helped the district to assert its supremacy in handloom exports which is around Rs. 300 crore a year.¹⁴ The centre was developed under the Integrated Infrastructure Development Scheme of the Central Government at Nadukani in Thaliparamba to boost the textile industry in the Kannur district to achieve a target of Rs. 1000 crore worth exports. It was part of the planned 'textile town' set up at a cost of Rs. 45 crore, of which Rs. 20 crore is the contribution of the State Government.

KINFRA provides a 'walk in and manufacture' environment to the entrepreneurs in the textile and garment related industries sector at the Textile Centre. It provides the entire facilitating infrastructure for the

¹⁴ <http://www.kinfra.org>. Retrieved on 1st January, 2017.

promotion of the textile sector including common dyeing house, crèche, effluent treatment plant, common bonded warehouse, power and water distribution, waste disposal, and amenities like canteen, health centre and bank, along with the single window clearance mechanism. Simply, the centre offers six main operational units all linked to the textile and garment production such as:

1. Wet processing plant for dyeing and winding.
2. Common effluent treatment plant.
3. Bonded warehouse.
4. Water harvesting pond.
5. Hazardous waste disposal plant.
6. Standard design factory.

The dyeing and winding plant is set up at a cost of Rs. 24 crore which is made available from the Assistance to States for Development of Export Infrastructure and Allied Activities (ASIDE) Scheme of the Government of India. The plant can process 15 tonne yarn and 70000 metres of fabric a day. The common effluent treatment plant can treat 750 cubic metres of effluents a day which is really a boon for the units located in the centre. KINFRA has already allotted land to 24 entrepreneurs and about 30 acres of land at the centre has been reserved for the setting up of weaving units. Acquiring of another 200 acres of land is planned and the process is going on considering the demand and immense growth potential of the industry

in the State. The Textile Centre has been envisaged as a comprehensive textile industries park under the aegis of KINFRA International Apparel Park, Thumba in Thiruvananthapuram.

(16). KINFRA Small Industries Park, Kunnamthanam:

KINFRA has developed a small industries park to cater exclusively to the small scale industries in sectors like building materials, plastic products, general engineering, ceramic products etc. in 39 acres of prime land at Kunnamthanam in Pathanamthitta district in the year 2009. The thrust area of the park is general non-polluting industries. It was set up with the financial assistance of the Ministry of Small Scale Industries, Government of India under its Integrated Infrastructure Development Centre (IIDC) Scheme. The park offers excellent infrastructure and other supporting amenities for the promotion and strengthening of small scale industries especially that are having potential for enormous development and are having regional competitive advantages.

(17). Biotechnology Incubation Centre, Kalamassery:

The biotechnology incubation centre, established in the year 2009 at the KINFRA Hi-Tech Park, Kalamassery is a starting step for the proposed bio-technology park by KINFRA. The major objective is to foster the development of technology for the use of advancement of mankind and to

provide an exclusive environment that fosters creativity in biotechnology. As part of the first phase of the proposed, biotechnology park, an incubation centre which started its operations in area of about 50000 sq. ft. The centre can house about 15 units and are ready with common equipments and amenities like greenhouse and hardening facilities, tissue culture, analytical and quality control laboratories and patent facilitation centres. The centre provides fully furnished incubation spaces and research and development labs for the biotechnology startups to kick start their operations. The centre is operating under the purview of a registered society called the Kerala Startup Mission–Rajiv Gandhi Centre for Biotechnology Innovation and Bio-incubation Society.

(18). KINFRA Food Processing Zone, Adoor:

KINFRA has set up an exclusive food processing zone in the year 2009 at the KINFRA Small Industries Park, Adoor. The zone has been developed in an area of about 50 acres of land with the financial assistance of the Ministry of Food Processing Industries, Government of India. The zone aims at the development of the food processing industry by strengthening the backward linkages of the industry, by facilitating the development of incubation centres with facilities like trial production as well as facilities for research and development for product improvement, packaging and the development of new products. The zone is envisaged to offer technical

assistance for the setting up of cold chains, quality certification, patent registration and for the modernisation and technology upgradation to the entrepreneurs.

(19). WISE KINFRA Park, Kanjikode:

The WISE KINFRA park is a joint venture of WISE Infrastructure Limited and the KINFRA sprawling over 200 acres of land at Kanjikode in Palakkad district. It is an integrated 'industrial township' giving importance to general manufacturing industries, keeping in mind the latent potential for industrial development in the State. WISE Infrastructure Limited was set up in the year 1994 with the vision to develop world class integrated industrial townships. With the equity participation of the State Government, the park aims to promote and assist the industrial development of Kerala by providing common infrastructure and facilities so as to enable the occupants get a higher competitive advantage. The Principal Secretary (Industries), Government of Kerala is the Chairman and the Managing Director of KINFRA is one of the board members of the company.

(20). KINFRA Industrial Park, Piravanthur:

Having been recognised the needs of the small and medium scale entrepreneurs of the Kollam district, KINFRA has set up an industrial

park at Piravanthur in about 65 acres of land belonging to the Travancore Plywood Industries which has been transferred to KINFRA by the Government. Works for the development of the park started in the year 2014 and the thrust area of the park is general and wood-based industries. It provides industry-specific infrastructure at par with global standards along with all the necessary support services for the rapid growth of the industrial units located in the park. Small and medium scale entrepreneurs are promoted by giving them various incentives and concessions for the easy start up and maintenance of their business in the park. The setting up of an industrial park along with a standard design factory (SDF) of about 65000 sq. ft. Piravanthur is a decisive and first time initiative on the part of KINFRA in Kollam district.

(21). KINFRA Rubber Park, Irapuram:

KINFRA Rubber Park or the Rubber Park India (P) Ltd. is a joint venture company of the Government of India and Government of Kerala, set up with the objective of powering the progress of rubber-based industries in the country. It is promoted by the Rubber Board and KINFRA representing the Central and State Governments with equal equity of Rs. 10 crore each. Sprawling over an area of 107 acres of land, the Rubber Park is ideally located at Irapuram in Eranakulam district. Set up with the vision to establish the most modern and futuristically planned world class

industrial environment exclusively to serve the rubber and rubber wood based industries, the park is the first of its kind in the world. Despite being fully owned by the Government, the park is registered as a Private Limited Company to ensure maximum administrative efficiency and its management vests with a Board of Directors nominated by the promoters.

The park offers amenities that live up to the most uncompromising expectations of the investors. The major facilities include fully integrated office space, an efficient and well connected network of roads wide enough for smooth container movement, fully equipped testing and certification centres, state-of-the-art communication facilities, tooling and support services at the rapid prototype development centre, uninterrupted power, quality water, common effluent treatment and total waste management, technology sourcing, market development and export promotion supports all along with the single window clearance mechanism. At a time when Kerala is wooing investors, KINFRA Rubber Park attempts to uplift the changing investment scenario of the State and of course it is going to be a major landmark in its industrial development.

(22). KINFRA Integrated Industrial Park, Ottapalam:

KINFRA has set up an integrated industrial park at Lakkidi near Ottapalam to accelerate the industrial growth of Palakkad district. The park commenced its operations in the year 2015 and is spread over an area

of 82 acres. The thrust area of the park is the environment-friendly and non-polluting general manufacturing industries. It provides almost all the required infrastructure and other support services for the easy starting of industries including rain water harvesting, potable water supply systems and a green belt. Government provides exemption from stamp duty and registration fee for documentation inside the park. The single window clearance system at the park facilitates the easy routing and obtaining of various permits and licences from various Government agencies and departments. The park will definitely help Ottapalam to occupy a key position on the industrial map of Kerala.

(b). Premier Ongoing Projects:

KINFRA has made successful reflections in the industrial arena of the State and is a pioneer in making rapid strides in its efforts for achieving a focused industrial development of Kerala. It encourages the fast growing competency industries of the State by giving due importance for their orderly and balanced development. In its efforts to enhance the industrial growth of the State, KINFRA has identified certain thrust areas and industrial parks with laudable infrastructure and other support systems are being developed in the industrial landscape of Kerala. Some of the parks are at its approval stage and some others are progressing fast for their completion. The details of major projects are shown in Table 3.2.

Table 3.2
Premier Ongoing Projects of KINFRA
(As on 31st July, 2018)

Name of the Project		Thrust Area(s)
1	KINFRA Seafood Park, Aroor, Alappuzha.	Seafood Processing
2	KINFRA Electronics Manufacturing Cluster, Kakkanad, Ernakulam.	Electronics Hardwares
3	KINFRA Port and Container Terminal, Muttam, Kottayam.	Inland Waterway Port
4	KINFRA Spices Park, Thodupuzha, Idukki.	Spices Products Processing
5	KINFRA Defence Park, Ottapalam, Palakkad.	Defence Equipments
6	KINFRA Mega Food Park, Palakkad.	Food Processing
7	KINFRA Petrochemical Park, Ambalamughal, Ernakulam.	Petrochemical Products
Total		07

Source: Survey Information.

(1). KINFRA Seafood Park, Aroor:

Being the industrial infrastructure development arm of the State Government, KINFRA is entrusted with a mission to make Kerala the most favoured destination for food processing industry in the country. It has different food parks spread across all over the State. The first food park was located in the northern part of Kerala at Kakkancherry in Malappuram district. The second park for the food processing sector was set up in central Kerala at Mazhuvannur in Ernakulam district. Considering the enormous potential and development opportunities of the

seafood processing industry, KINFRA has set up an exclusive seafood park at Aroor in Alappuzha district as its third prominent initiative in the food processing sector. It was a joint venture of KINFRA with the Union Ministry of Industries and Commerce through the Marine Products Infrastructure Development Corporation (MPIDC), the Marine Products Export Development Authority (MPEDA) and the Seafood Exporters' Association of India to upgrade the quality of Indian seafood processing facilities to international standards.

Ten seafood exporters contributed 74 per cent to the equity for the project. The Government of Kerala and the Union Ministry of Industries and Commerce have pitched in 26 per cent. The total project cost was estimated at Rs. 11.96 crore out of which the Union Ministry of Food Processing Industry has extended a grant of Rs. 2.65 crore. The park started its operations with all necessary and supporting infrastructure for the seafood processing industry and has the capacity for processing about 75000 kgs of seafood per day for 200 days in a year.

The park comprises peeling sheds and pre-processing centres with common facilities such as uninterrupted power and water supply, cold storage, common warehouses, excellent drainage, water treatment and effluent treatment plants, weigh bridges, packing units, food business incubation centres, round the clock security and the single window

clearance mechanism. It has full-fledged quality control laboratories set up with the assistance of the Union Ministry of Industries and Commerce under the Assistance to States in Developing Export Infrastructure and Allied Activities (ASIDE) Scheme.

(2). KINFRA Electronic Manufacturing Cluster, Kakkanad:

KINFRA proposes to develop an 'electronic manufacturing cluster' in area of 66.87 acres of land at Kakkanad in Eranakulam district with proximity to Info Park and Smart City. It aims at fostering entrepreneurship and innovative ventures in electronics-based industrial segments which may be considered as a leading sector of Kerala. The project is proposed to be implemented under the Electronic Manufacturing Cluster (EMC) Scheme of the Ministry of Electronics and Information Technology, Government of India and has accorded its final approval in August, 2016 with KINFRA as the Chief Promoter. The total approved project cost is Rs. 140.01 crore (excluding land cost) with the means of finance as follows:

Means of Finance		Amount (Crore)
1	Grant from Government of India	50.00
2	Equity from KINFRA	13.68
3	Term Loan from the Bank	37.39
4	Equity from Constituent Units	38.94
Total		140.01

Source: <http://www.kinfra.org>. Retrieved on 15th August, 2017.

The Memorandum of Agreement has been executed between KINFRA and the Ministry of Electronics and Information Technology, Government of India on 30th of December, 2016.

(3). KINFRA Port and Container Terminal, Kottayam:

First-of-its-kind in Kerala, an inland container depot is nearing completion at Muttam in Kottayam district on public-private-participation by a joint venture company named the Kottayam Port and Container Terminal Services Private Limited (KPACT) promoted by KIFNRA and the South Indian Chamber of Commerce and Industry (SICCI). It is an export promotion initiative of the Government being set up under the Assistance to States for Developing Export Infrastructure and Allied Activities (ASIDE) scheme of the Ministry of Commerce and Industry, Government of India. The project has the uniqueness being the 'first inland water way port' in India.

(4). KINFRA Spices Park, Thodupuzha:

Kerala enjoys a considerable stake in the spices industry of the country. KINFRA has obtained in-principle clearance from the Union government for the setting up of a spices processing cluster mainly for the processing and value addition of spices and spice products at par with global standards at Thodupuzha in Idukki district with an estimated initial

project cost of Rs. 12.5 crore excluding the land price. The crop-specific spices park will have an integrated operation for encouraging post-harvesting, processing for value addition, packaging, storage and exports of spices and spice products by meeting the quality specifications of the consuming segments. The park is coming up in 15 acres of land and will be funded through Rs. 6 crore available under the Integrated Infrastructure Development Scheme of the Government of India and the remaining from the State Government. It will be a joint venture between the Spices Board, Government of India and KINFRA.

(5). KINFRA Defence Park, Ottapalam:

KINFRA Defence Park at Ottapalam in Palakkad district is conceived as one of the most prominent efforts of the State Government of Kerala under the 'Make in India–Make in Kerala' initiative. The project is intended to create an exclusive 'defence park' with state-of-the-art facilities for the defence equipment manufacturers with the financial assistance of the Central Government under the 'Modified Industrial Infrastructure Upgradation (MIIU) Scheme. The scheme is implemented by the Department of Industrial Policy and Promotion, Government of India. The project has obtained its final approval in January, 2016 with a total project cost of Rs. 231.35 crore, out of which Rs. 50 crore is the grant from the Central Government under the MIIU Scheme. KINFRA is in

possession of 60 acres of land to establish a cluster of industrial units earmarked for the defence park.

KINFRA proposes to develop shared infrastructure facilities in the defence park. It would manufacture night vision equipments, components of rotary and fixed wing aircrafts, defence navigation products, components of warship, defence IT systems and solutions, avionics, tactical communication systems, space robotics maintenance, microsatellites and protective clothing and personnel equipments like parachutes, flying suites, diving suites. The major facilities proposed in the park include dedicated power, continuous water supply, training and logistics counters, compressed air facility, paint booths, rapid prototyping, electrical workshops for winding, baking and testing, warehouses, tool rooms, technical library, logistics movement support, testing and quality assurance labs. The park is also envisaged to create facilities for instant global access through state-of-the-art communication networks.

(6). KINFRA Mega Food Park, Palakkad:

Food processing has been accorded the priority sector status by the Government, both at the national and state levels as it holds tremendous scope to become an integral component of the agricultural development of the country. The KINFRA Mega Food Park in Palakkad is a sector-specific project for the food processing sector of Kerala which is being

implemented in accordance with the Mega Food Park Scheme of the Ministry of Food Processing Industries (MOFPI), Government of India. Under the scheme, each project is assisted with a grant-in-aid support to the extent of 50 per cent of the eligible project cost, subject to a maximum amount of Rs. 50 crore from the MOFPI. The estimated total project cost of the KINFRA Mega Food Park at Palakkad is Rs. 121.92 crore with an assistance of Rs. 50 crore from the Ministry of Food Processing Industries, Government of India.

The 'project zone' for KINFRA Mega Food Park would extend over the region around Palakkad district along with five other districts of Wayanad, Kozhikode, Malappuram, Trissur and Eranakulam. In addition to the raw materials from these districts, materials from the Odachatram market in Tamil Nadu near the project zone has also been taken into consideration to supplement the raw material base for the KINFRA Mega Food Park. The prospective units in the park are expected to be engaged in the production of value-added products from the raw materials sourced directly from the farmers in the 'project zone.'

The Mega Food Park Scheme envisages the setting up of a three-tier structure consisting: (i) Centralised Processing Centre (CPC) with infrastructure facilities for the food processing activities involving higher-end value-addition, (ii) Primary Processing Centres (PPCs) with

infrastructure facilities for pre-processing activities or lower-end food processing and (iii) Collection Centres (CCs) for facilitating convenient collection of raw materials from the farmers.

The Centralised Processing Centre of the park with developed land for the food processing industry will be set up in an area of about 79.42 acres at Elapully and Pudussery villages near Walayar in Palakkad district. Besides, four Primary Processing Centres are being set up at the KINFRA parks in Mazhuvannoor in Eranakulam district, Koratty in Trissur district, Kakkancherry in Malappuram district and Kalpetta in Wayanad district. The CPC and PPCs would be supported by about 15 Collection Centres in the 'project zone' for facilitating convenient collection of raw materials from the farmers.

The KINFRA Mega Food Park would provide all the common infrastructure facilities called the 'core processing infrastructure' that are specifically designed for the food processing sector. The developed land in the CPC would be allotted as ready-to-use plots with all basic infrastructural requirements such as roads, power, treated water, drainage and the single window clearance. About 49.78 acres of land is available for allotment in the Central Processing Centre along with standard design factories (SDF) with a built-up space of 4300 sq. m. for the 'plug and play' model of business operations for small enterprises. The core facilities

provided in the CPC include cold storage, ripening chamber, raw material warehouse, finished product warehouse, silos, pack houses, spice processing facilities, quality control labs and reefer vehicles. The facilities provided in the PPCs for pre-processing include pack houses (with facilities for sorting, grading and packing), ripening chamber and dry warehouses. The Mega Food Park Scheme facilitate the operations of food processing units by providing core processing facilities and other support services, particularly for establishing backward linkages with the farmers.

(7). KINFRA Petrochemical Park, Ambalamughal:

First-of-its-kind in the State, KINFRA has signed a Memorandum of Association (MoU) with the Fertilisers and Chemicals Travancore (FACT) for the setting up of a petrochemical park at Ambalamughal in Ernakulam district with a total project cost of Rs. 1864 crore. The park will be set up in an area of about 482 acres of land with the FACT and the State Government will provide funding through the Kerala Infrastructure Investment Fund Board (KIIFB). The aim of the park is to provide a facility for manufacturing derivatives of the propylene produced by the Kochi Refinery of the Bharat Petroleum Corporation Limited (BPCL), which is the anchor investor of the project. The park may be touted as a sea of opportunities for the investors across the world and is expected to significantly boost the economy of the State.

(c). Major Projects on Anvil:

Having been recognised the immense potential for growth or the emerging trends of certain sectors, KINFRA prepares a blueprint of projects to be initiated in the industrial landscape of the State within a couple of years. Today, the Government is thinking of setting specialised industrial parks instead of developing a cluster of different kinds of units under one park. The details of major projects on anvil are shown in Table 3.3.

Table 3.3
Major Projects of KINFRA on Anvil
(As on 31st July, 2018)

Name of the Project		Thrust Area(s)
1	KINFRA Marine Park, Beypore, Kozhikode.	Marine Products Processing
2	KINFRA Kera Park, Kodakara, Trissur.	Coconut Products Processing
3	KINFRA Footwear Park, Ramanattukara, Kozhikode.	Footwear Manufacturing
4	KINFRA Gem and Jewellery Park, Puzhakkalpadam, Trissur.	Jewellery Manufacturing
5	KINFRA Print Village, Walayar, Palakkad.	Printing and Publishing
6	KINFRA Advanced Knowledge and Technology Park, Ramanattukara, Kozhikode.	Knowledge-based Industries
7	International Exhibition and Convention Centres, Kochi and Kozhikode.	Exhibitions cum Conventions
8	KINFRA International Furniture Hub, Kalamassery, Ernakulam.	Furniture Manufacturing
9	KINFRA Global Ayurveda Village, Thiruvananthapuram.	Ayurvedic Health Care
Total		08

Source: Survey Information.

(1). KINFRA Marine Park, Beypore:

KINFRA proposes to establish an exclusive Marine Park in an area of about 25 acres of land close to the fishing harbour at Beypore in Kozhikode district. The main objective is to establish a dedicated industrial park with all the required facilities and technology for the processing and value added production of the marine products with the financial assistance of the Government of India under the Assistance to States for Infrastructure Development of Exports and Allied Activities (ASIDE) scheme. The project will support the huge fisherman population of the district who sustains on fisheries business without adequate facilities and resources. The local processing and value addition facilities will encourage the business and definitely give a fillip to the sector.

(2). KINFRA Kera Park, Kodakara:

Value addition and effective marketing are expected to provide support to the sagging fortunes of the coconut sector in Kerala. In order to give a fillip to the sector, KINFRA proposes to set up an exclusive Kera Park at Kodakara in Trissur district and is in association with the Coconut Development Board. The park will be a well-defined processing and value addition zone containing state-of-the-art infrastructure, support services and well established supply chains. It is intended to provide a platform to bring farmers, processors and retailers together and link agricultural

production to the market as to maximise value addition, minimise wastage and improve the farmers' income. The park aims at the establishment of an integrated value chain that will put to full commercial use of all parts of the coconut tree.

(3). KINFRA Footwear Park, Ramanattukara:

In order to give a major boost to the footwear manufacturing industry of the Malabar area, KINFRA proposes to set up a Footwear Park at Ramanattukara in Kozhikode district with an estimated project cost of Rs. 107 crore. The park will be spread over an area of 30 acres and is being set up in association with the Footwear Cluster Community under the Mega Leather Cluster Scheme of the Central Government. The output from the proposed park could increase the indigenous production of leather components that would have a major impact on the economy. KINFRA also proposes to develop a 'Footwear Institute' in area of 5 acres adjacent to the footwear park for training, design and innovations in the footwear manufacturing industry.

(4). KINFRA Gem and Jewellery Park, Puzhakkalpadam:

KINFRA proposes to set up a Gem and Jewellery Park in an area of 10 acres of land at Puzhakkalpadam in Trissur district with the financial assistance of the Ministry of Commerce and Industry, Government of

India. It will be a joint venture between KINFRA and the World Gold Council. The project proposes to have full-fledged infrastructure and support services for the ornament making and its allied activities with an estimated project cost of Rs. 100 crore. The park would be a one-stop destination for the entrepreneurs in the area of processing of gold and gems and manufacturing of jewellery.

(5). KINFRA Print Village, Walayar:

With an objective of establishing a 'printing township' with state-of-the-art technology in Kerala, KINFRA proposes to develop a Print Village, which will be the first of its kind in Asia. The village will consist of components like printing division, advertisement division, manufacturing division, packaging division, research and development wing, training centre and other common amenities, all housed under one roof. The project is envisaged in 100 acres of land, which forms part of the KINFRA Industrial Development Zone (IDZ) near Walayar in Palakkad district.

**(6). KINFRA Advanced Knowledge and Technology Park,
Ramanattukara:**

KINFRA has earmarked 10 acres of land at Ramanattukara in Kozhikode district for the setting up an advanced knowledge and technology park so as to reap the immense potential and opportunities of the knowledge-based

industries. The park will provide the entire required infrastructure at par with global standards and in a plug and play mode so as to foster the optimal application of knowledge in all the sectors of the economy. The estimated project cost is Rs. 45 crore, excluding the land cost. The park will facilitate knowledge-enabling and knowledge-empowering and thereby accelerate the industrial development of the State, highlighting the socio-economic imperative and prospects of knowledge-based industries and services.

**(7). KINFRA International Exhibition cum Convention
Centres, Kochi and Kozhikode:**

Having been considered the vitality and immense commercial potential of arranging meetings, conventions and exhibitions for the business sector, KINFRA proposes to set up International Exhibition and Convention Centres at select locations of the State with private sector participation. The centres being envisaged as of international standards and facilities, will be the permanent venues for trade fairs, exhibitions, conferences and other business promotion activities. KINFRA has earmarked land at strategic locales of Ernakulam and Kozhikode districts and will be developed in Kerala style of architecture with inculcable infrastructure and other support services like theatres, restaurants, internet zones and banking services.

(8). KINFRA International Furniture Hub, Kalamassery:

KINFRA has received in-principle nod to set up an 'international furniture hub' at its High-tech Park at Kalamassery. The hub is planned in 3.5 acres of land with an estimated project cost of Rs. 86 crore, out of which Rs. 43 crore will be the grant from the Central Government. Though Kerala has immense potential for the furniture industry, the sector remains almost unorganised. With the coming up of the hub, international standards practices will be set for the industry so as to enable it to compete in the global market. It will be a cluster-based project and is expected to boost the manufacturing and export potential of the furniture industry of the State. The furniture hub will have a permanent hall, convention and meeting spaces, design and innovation zones, training centres and warehouses with commendable infrastructure and support systems.

(9). Global Ayurveda Village, Thiruvananthapuram:

KINFRA proposes to set up a 'global ayurveda village' in the outskirts of Thiruvananthapuram city with the motive to transform Kerala as the 'World Capital of Ayurveda.' It is actually a cross-sectorial concept leveraging the Interlinkages between industries and health care. The project attempts to incorporate the most modern scientific developments in diagnostic and all other treatment aspects of classical ayurveda and to

overcome the challenges of this system of medicine in the path of global recognition. The village is to be set up in two sites: one is at Thonnakkal in an area of 7.5 acres and another at Varkala in an area of about 60 acres with enabling infrastructure and expanding opportunities with value added services. Preliminary discussions are being held with Rajiv Gandhi Centre for Biotechnology, Thiruvananthapuram as they have expressed their desire to associate with the project.

Thus, it can be observed that KINFRA has made untiring efforts in the establishment of industrial parks since its inception. It has catered to the industry-specific infrastructure requirements of the State in all the twentyfive years of its efforts. India's first international apparel park established at Menamkulam in Thiruvananthapuram, India's first export promotion industrial park established at Kakkanad in Eranakulam, India's first infotainment park established at Kazhakuttom in Thiruvananthapuram, India's first food processing industrial park established at Kakkancherry in Malappuram, India's first herbal park at Vythiri in Wayanad, India's first rubber park (Joint venture company with the Rubber Board, Government of India) established at Irapuram in Eranakulam, India's first marine park (Joint venture company with the Marine Products Export Development Authority–MPEDA, Government of India) established at Aroor in Alappuzha and the high-tech

bio-Technology and electronics park at Kalamassery in Eranakulam are some of the notable achievements of KINFRA over the years.

3.7. Chapter Conclusion:

Today, industrial parks are being pursued with unprecedented vigour and gaining wide recognition in the business, academic and government circles as an innovative strategy towards feasible and sustainable industrial development. They are grown in quality in comparison with the parks built up in the past. The establishment of industrial parks in Kerala is seen as an important strategic tool to expedite the growth of industries, especially in the relatively backward regions of the State. KINFRA has an enviable record of kick-starting the growth in core competency industrial sectors where the State has an edge by way of natural or human resources. It stands by the honour it has achieved over the years by catering to the industry-specific infrastructure requirements of the State. The industrial parks have begun to address issues of economic efficiency, sustainability and ecological integrity as far as regional as well as national economic development is concerned. The future focus of KINFRA will be to consolidate the gains made in the past twentyfive years and to build a more responsive and dynamic system to attract larger investments and thereby creating an environment for existing industries to consolidate and new industries to come up on a more viable and sustainable basis.

Chapter-4

**The Growth Performance of
KINFRA Industrial Parks in Kerala**

4.1. Chapter Prologue:

The strategy for building a strong industrial base for Kerala needs certain innovative steps to modernise and diversify its existing industrial structure. The locational and competitive advantages of the State necessitate the identification and setting up of industries in its priority and core competency sectors. For a positive transformation of the industrial scenario of Kerala, the government seek ways to promote entrepreneurship in the State by the initiation of certain initiatives. Establishment of theme-based industrial parks in the emerging sectors is an innovative step taken by the Government for the rapid industrial development of the State. It is in the context, there comes the role and economic imperative of KINFRA as the catalyst of Kerala's industrial development. Being an active facilitator and functional arm of the government, KINFRA provides comprehensive infrastructure support to prospective entrepreneurs and facilitates continuous interactions between the government and the industrial sector and its stakeholders. In the context, the chapter presents the growth performance of KINFRA industrial parks in terms of its existing structure, nature way of operations, peculiar facilities and systems, magnitude of investments and employment and also the changing the dimensions of its operations and management, within the particular framework of its operational effectiveness on the industrial economy of Kerala.

4.2. Overall Status of KINFRA Industrial Parks:

KINFRA may be considered as the industrial development accelerator of Kerala. Its main aim is to facilitate the development of industrial infrastructure in the State and as such, it has successfully completed two and a half decades of excellence. Certain core competency sectors as envisaged by the Industrial and Commercial Policy of the Government have been identified and feasible strategies and course of action for Kerala's industrial development have been enunciated by KINFRA over the entire years of its operation. Development of 'theme-based' and 'multi-purpose' industrial parks is one of the most prominent operational strategies of KINFRA for the rapid industrial development of the State. The overall status of industrial parks and other institutional arrangements established by KINFRA over the years is given in Table 4.1.

Table 4.1
Overall Status of KINFRA Industrial Parks
(As on 31st July, 2018)

Category of Arrangements		Number
1	Fully operational parks.	22
2	Premier ongoing projects.	07
3	Major proposals on anvil.	09
Total		38

Source: Survey Information.

It can be observed that there are a total of 38 institutions established by KINFRA as on 31st July, 2018. The major institutional arrangements include 22 fully operational industrial parks with exemplary infrastructure and 7 premier ongoing projects in identified core sectors which are at different stages of their development and are to be completed within a couple of years. There are 9 flagship proposals on anvil for KINFRA so as to further boost the momentum of rapid industrialisation in Kerala.

KINFRA has at its credit 22 fully operational industrial parks over the last twentyfive years of its operation. The immense potential and opportunities of different sectors on the industrial landscape of Kerala have been identified and theme-based parks have been set up by KINFRA so as to boost the growth momentum of those industries. By the setting up of the industrial parks in the relatively backward regions of the State, KINFRA provides good fortunes for Kerala's industrial development. An overview of the fully operational industrial parks set up by KINFRA over the last twentyfive years of its operation is given in Table 4.2.

Table 4.2
Fully Operational Industrial Parks
(As on 31st July, 2018)

	Name of the Park/Institution	Year	Thrust Area
1	KINFRA Export Promotion Industrial Park, Kakkanad, Eranakulam.	1996	General Manufacturing
2	KINFRA International Apparel Park, Thumba, Thiruvananthapuram.	1998	Apparel and Garments

3	KINFRA Film and Video Park, Kazhakuttom, Thiruvananthapuram.	1999	Infotainment
4	KINFRA Food Processing Park, Kakkancherry, Malappuram.	2000	Food Processing
5	KINFRA Small Industries Park, Thalassery, Kannur.	2002	General Manufacturing
6	KINFRA Small Industries Park, Seethangoli, Kasargode.	2002	General Manufacturing
7	KINFRA Small Industries Park, Mazhuvannur, Ernakulam.	2002	General Manufacturing
8	KINFRA Integrated Industrial and Textile Park, Kanjikode, Palakkad.	2003	Textiles and Garments
9	KINFRA Small Industries Park, Koratty, Trissur.	2003	General Manufacturing
10	KINFRA Neo Space at the KINFRA Food Processing Park, Kakkancherry.	2003	IT and ITES
11	KINFRA Small Industries Park, Kalpetta, Wayanad.	2005	General Manufacturing
12	KINFRA Hi-Tech Park, Kalamassery, Ernakulam.	2007	Electronics and IT
13	Animation Zone (Dhrisya Building) at the KINFRA Park, Kazhakuttom	2008	Film and Animation
14	KINFRA Small Industries Park, Adoor, Pathanamthitta.	2009	General Manufacturing
15	KINFRA Textile Centre, Thaliparamba, Kannur.	2009	Textiles and Garments
16	KINFRA Small Industries Park, Kunnamthanam, Pathanamthitta.	2009	General Manufacturing
17	Bio-Technology Incubation Centre at the KINFRA Park, Kalamassery.	2009	Biotechnology
18	Food Processing Zone at the KINFRA Small Industries Park, Adoor.	2009	Food Processing
19	The WISE KINFRA Park, Kanjikode, Palakkad.	2012	General Manufacturing
20	KINFRA Industrial Park, Piravanthur, Kollam.	2014	General Manufacturing
21	KINFRA Rubber Park, Irapuram, Kottayam.	2015	Rubber-based Products
22	KINFRA Integrated Industrial Park, Ottapalam, Palakkad.	2015	General Manufacturing
Total Number of Fully Operational Parks			22

Source: Survey Information.

Besides the general industrial parks that spread across the State, KINFRA has set up highly specialised theme-based parks in the core competency sectors of the industrial economy of Kerala. Over the entire period of its operation, KINFRA took a lead in boosting the focused industrial development of Kerala by promoting the concept of ‘theme parks’ in the industrial landscape of the State. Out of the fully operational industrial parks, the Neo Space at KINFRA Techno Industrial Park, Kakkancherry, the Animation Zone at KINFRA Film and Animation Park, Kazhakuttom, the Bio-Technology Incubation Centre at KINFRA Hi-Tech Park, Kalamassery and the Food Processing Zone at KINFRA Small Industries Park, Adoor are the major landmark extensions in the existing industrial parks.

KINFRA has 7 flagship ongoing projects at its credit which are at different stages of its development. Innovative segments that have definite impact on the industrial economy of Kerala are being chosen and tremendous efforts are being taken by KINFRA for their development. Seafood processing, spices processing, electronic hardware industries, defence-based industries, petrochemical industries and an inland water port and container terminal are some of the major innovative projects of KINFRA which are on their way of making rapid strides in the industrial scenario of the State. A snapshot of the major ongoing projects of KINFRA is given in Table 4.3.

Table 4.3
Premier Ongoing Projects
(As on 31st July, 2018)

Name of the Project		Year	Thrust Area
1	KINFRA Seafood Park, Aroor, Alappuzha.	2015	Seafood Processing
2	KINFRA Electronics Manufacturing Cluster, Kakkanad, Eranakulam.	2016	Electronics Hardwares
3	KINFRA Port and Container Terminal, Muttam, Kottayam.	2016	Inland Water Port
4	KINFRA Spices Park, Thodupuzha, Idukki.	2016	Spices Processing
5	KINFRA Defence Park, Ottapalam, Palakkad.	2016	Defence Equipments
6	KINFRA Mega Food Park, Palakkad.	2017	Food Processing
7	KINFRA Petrochemical Park, Ambalamughal, Eranakulam.	2018	Petrochemical Products
Total Number of Ongoing Projects			07

Source: Survey Information.

The parks are at different stages of their development. Some of them are nearing completion and some others have started their operations in the near past. Further, KINFRA has prepared a blueprint of projects to be set up in the coming future. Though the potential of certain sectors have often been highlighted, it is yet to be fully tapped. Thus, KINFRA is expected to expand and diversify its operations by entering into certain novel industrial spheres with the explicit objective of promoting a typical industrial and entrepreneurial culture in Kerala. Details of the major projects on anvil are given in Table 4.4.

Table 4.4
Major Projects on Anvil
(As on 31st July, 2018)

Name of the Project		Thrust Area
1	KINFRA Marine Park, Beypore, Kozhikode.	Marine Products Processing
2	KINFRA Kera Park, Kodakara, Trissur.	Coconut Products Processing
3	KINFRA Footwear Park, Ramanattukara, Kozhikode.	Footwear Manufacturing
4	KINFRA Gem and Jewellery Park, Puzhakkalpadam, Trissur.	Jewellery Manufacturing
5	KINFRA Print Village, Walayar, Palakkad.	Printing and Publishing
6	KINFRA Advanced Knowledge and Technology Park, Kozhikode.	Knowledge-based Industries
7	International Exhibition and Convention Centres, Kochi and Kozhikode.	Exhibitions cum Conventions
8	KINFRA International Furniture Hub, Kalamassery, Eranakulam.	Furniture Manufacturing
9	KINFRA Global Ayurveda Village, Thiruvananthapuram.	Ayurvedic Health Care
Total Number of Projects on Anvil		09

Source: Survey Information.

Thus, as far as the overall status and growth performance of industrial parks are concerned, it can be observed that KINFRA's main aim is to facilitate the development of industrial infrastructure in the State and as such, it has successfully completed twentyfive years of outstanding operation in the field. KINFRA is actually busy with a mission to make Kerala the most favoured destination for the setting up and operation of novel and emerging industries at par with global standards in the country.

4.3. Industrial Parks on the Basis of Nature of Business:

KINFRA specialises in infrastructure development by the setting up of industrial parks with most modern facilities across the State. With the objective of boosting the pace of Kerala's industrial growth, KINFRA promotes the concept of 'industrial parks' and is entering new avenues of business and entrepreneurship. As on 31st July, 2018, there are 22 fully operational and 7 ongoing industrial parks in Kerala. Some of them are specialised theme-based parks and others are general industrial parks. KINFRA identifies certain core competency sectors of the economy and exclusive parks are being set up in those sectors so as to reap the maximum for Kerala's industrial development. The split up of industrial parks on the basis of their nature of business is given in Table 4.5.

Table 4.5
Industrial Parks on the Basis of Nature of Business
(As on 31st July, 2018)

Category of Industrial Parks		Number	Per Cent
1	Theme-based parks	18	62
2	General parks	11	38
Total		29	100

Source: Survey Information.

Now a day, KINFRA is thinking of the setting up of specialised industrial parks instead of bringing a cluster of different kinds of industries under one

park. The theme-based industrial parks set up by KINFRA specialises its operations in certain emerging areas of business such as IT and ITES, electronics, bio-technology, knowledge-based industries, manufacturing of defence equipments, infotainment, film and animation, petrochemical industries, apparel and garments, rubber-based industries and food processing. These parks take into account the immense potential of these core competency sectors and its probable impact and development opportunities in the industrial landscape of Kerala.

Setting up and management of theme-based industrial parks for the exclusive growth of the core and emerging industries and the resultant overall industrial development of Kerala is one of the major objectives of the industrial and commercial policy of the State. As compared to the general industrial parks set up by KINFRA for the development of the small industries sector, the theme-based parks offer an ambience of highly specialised and focused development of the emerging industries of the State. Provision of industry-specific infrastructure and support services at par with global standards for the specific development of the core competency industries create certain synergies for the rapid growth of such sectors. This will, in turn, produces some positive network effects justifying the focused industrial development of the State. A snapshot of the major theme-based industrial parks set up by KINFRA is given in Table 4.6.

Table 4.6
Theme-based Industrial Parks of KINFRA
(As on 31st July, 2018)

Name of the Industrial Park		Thrust Area
1	KINFRA International Apparel Park, Thumba, Thiruvananthapuram.	Apparel and Garments
2	KINFRA Film and Video Park, Kazhakuttom, Thiruvananthapuram.	Infotainment
3	KINFRA Techno-Industrial Park, Kakkancherry, Malappuram.	Food Processing and IT
4	KINFRA Integrated Industrial and Textile Park, Kanjikode, Palakkad.	Textiles and Garments
5	KINFRA Neo Space, Kakkancherry, Malappuram	IT and ITES
6	KINFRA Hi-Tech Park, Kalamassery, Ernakulam.	Electronics and IT
7	Animation Zone, Kazhakuttom, Thiruvananthapuram.	Film and Animation
8	KINFRA Textile Centre, Thaliparamba, Kannur.	Textiles and Garments
9	Bio-Technology Incubation Centre, Kalamassery, Ernakulam.	Biotechnology
10	Food Processing Zone, Adoor, Pathanamthitta.	Food Processing
11	KINFRA Rubber Park, Irapuram, Kottayam.	Rubber-based Industries
12	KINFRA Seafood Park, Aroor, Alappuzha.	Seafood Processing
13	KINFRA Electronics Manufacturing Cluster, Kakkanad, Ernakulam.	Electronics Hardwares
14	KINFRA Port and Container Terminal, Muttam, Kottayam.	Inland Water Port
15	KINFRA Spices Park, Thodupuzha, Idukki.	Spices Processing
16	KINFRA Defence Park, Ottapalam, Palakkad.	Defence Equipments
17	KINFRA Mega Food Park, Palakkad.	Food Processing
18	KINFRA Petrochemical Park, Ambalamughal, Ernakulam.	Petrochemical Industries
Total Number of Theme-based Parks		18

Source: Survey Information.

Besides the theme-based parks, there are 11 general industrial parks set up by KINFRA for the exclusive growth and development of small scale industries. They concentrate their operations mainly on different general manufacturing industries which are highly export-oriented and non-polluting in character. A snapshot of the major general industrial parks set up by KINFRA as on 31st July, 2018 is given in Table 4.7.

Table 4.7
General Industrial Parks of KINFRA
(As on 31st July, 2018)

Name of the Industrial Park		District
1	KINFRA Export Promotion Industrial Park, Kakkanad.	Eranakulam
2	KINFRA Small Industries Park, Thalassery.	Kannur
3	KINFRA Small Industries Park, Seethangoli.	Kasargode
4	KINFRA Small Industries Park, Mazhuvannur.	Eranakulam
5	KINFRA Small Industries Park, Koratty.	Trissur
6	KINFRA Small Industries Park, Kalpetta.	Wayanad
7	KINFRA Small Industries Park, Adoor.	Pathanamthitta
8	KINFRA Small Industries Park, Kunnamthanam.	Pathanamthitta
9	KINFRA Small Industries Park, Kanjikode.	Palakkad
10	KINFRA Small Industries Park, Ottapalam.	Palakkad
11	KINFRA Small Industries Park, Piravanthur.	Kollam
Total Number of General Industrial Parks		11

Source: Survey Information.

Besides the Export Promotion Industrial Park established at Kakkanad in Eranakulam district, there are 10 Small Industries Parks that spread over the Kasargode, Kannur, Wayanad, Palakkad, Trissur, Eranakulam and Pathanamthitta districts. KINFRA develops the 'small industries parks' under the Integrated Infrastructure Development Centre (IIDC) Scheme of the Department of Small Scale Industries, Government of India. Each of these parks offer comprehensive infrastructure and support services and thus, small industries with immense growth potential and export-orientation are getting stupendous opportunities for their development and are significantly influencing the regional industrial development of the State.

4.4. Industrial Parks with Standard Design Factories (SDF):

Standard design factories (SDF) are the ready to use built up spaces in industrial complexes with comprehensive infrastructure for the exclusive design and development of products and services. It provides an overwhelming industrial environment and ambience through innovative technology, research and development for the entrepreneurs and thus facilitates an easy start up and management of their businesses. Having been realised the increased demand for ready to use spaces in its various industrial parks, KINFRA builds standard design factories at par with global standards in its industrial parks. The SDFs attracts entrepreneurs to

start their business in a hasty and hassle free manner by utilising the commendable infrastructure offered by the industrial parks. The details of standard design factories available in the various industrial parks of KINFRA are given in Table 4.8.

Table 4.8
Industrial Parks with Standard Design Factories (SDF)
(As on 31st July, 2018)

Name of the Industrial Parks with SDF		Area of SDF (Sq. Ft.)
1	KINFRA International Apparel Park, Thumba, Thiruvananthapuram.	314000
2	Dhrisya Building at the KINFRA Film and Video Park, Kazhakuttom, Thiruvananthapuram.	100000
3	Bio-Technology Incubation Centre at KINFRA Hi-Tech Park, Kalamassery, Ernakulam.	100000
4	KINFRA Food and Spices Park, Thodupuzha, Idukki.	35000
5	KINFRA Small Industries Park, Nellad, Ernakulam.	150000
6	KINFRA Mega Food Park, Palakkad.	125000
7	KINFRA Defence Park, Ottapalam, Palakkad.	125000
8	KINFRA Small Industries Park, Koratty, Trissur.	37000
9	Neo Space at the KINFRA Food Processing Park, Kakkancherry, Malappuram.	150000
10	KINFRA Small Industries Park, Thalassery, Kannur.	60000
11	KINFRA Industrial Park, Piravanthur, Kollam.	65000
12	KINFRA Textile Centre, Nadukani, Kannur.	120000
Total Area of SDF		1381000

Source: Survey Information.

The total area of SDFs available with KINFRA as on 31st July, 2018 is 1381000 sq. ft. The setting up of standard design factories and other built up modules facilitate the development of a quintessential entrepreneurial culture in the industrial landscape and the development strategem of the Kerala economy.

4.5. Joint Venture Industrial Parks:

Generally, KINFRA establishes its industrial parks with the financial assistance of the State and Central Governments. Many of the parks have obtained assistance from the Central Government through its various schemes. The most prominent among them include: (i) the Export Promotion Industrial Park Scheme of the Ministry of Commerce and Industry, (ii) the Mega Food Park Scheme of the Ministry of Food Processing Industries, (iii) the Integrated Infrastructure Development Scheme of the Ministry of Small Scale Industries, (iv) the Assistance to States for Development of Export Infrastructure and Allied Activities (ASIDE) Scheme of the Ministry of Commerce and Industry, and (v) the Modified Industrial Infrastructure Development Scheme of the Department of Industrial Policy and Promotion. Currently, KINFRA utilises the possibilities and prospects of joint venturing and public-private-partnerships (PPP) for the establishment and maintenance of its recently developed or proposed parks. Joint venturing is seen as a plausible

solution as it provides new insights, expertise and better resources to the Corporation. The details of joint venture industrial parks of KINFRA are given in Table 4.9.

Table 4.9
KINFRA Joint Venture Industrial Parks
(As on 31st July, 2018)

Name of the Joint Venture Parks		Joint Venture Partner	
1	KINFRA Seafood Park, Aroor, Alappuzha.	(a)	The Government of India*.
		(b)	The Seafood Exporters Association of India.
2	KINFRA Rubber Park, Irapuram, Eranakulam.	The Rubber Board, Government of India.	
3	KINFRA Food and Spices Park, Thodupuzha, Idukki.	The Spices Board, Government of India.	
4	WISE KINFRA Park, Kanjikode, Palakkad.	The WISE Infrastructure Limited.	
5	KINFRA Petrochemical Park, Ambalamughal, Eranakulam.	The Fertilisers and Chemicals Travancore (FACT), Government of India.	
Total Number of Joint Venture Parks		05	

Source: Survey Information.

* Through (i) the Marine Products Infrastructure Development Authority & (ii) the Marine Products Export Development Authority.

Having been recognised the catalytic role of KINFRA in Kerala's industrial development, it has been appointed as the nodal agency for the State for implementing the 'Assistance to States for Infrastructure Development of Exports and Allied Activities (ASIDE)' scheme of the Government of India. It is being implemented since the year 2002-2003 and is exclusively meant for creating critical infrastructure for an

overwhelming export growth. The total fund received by KINFRA under this scheme for developing industry-specific infrastructure requirements of Kerala during the period 2002-2015 is Rs. 174.26 crore. KINFRA has the track record of effectively utilising the fund for the setting up theme-based industrial parks for the emerging and potential industrial sectors of the State.

4.6. The Special Economic Zone (SEZ) Status Industrial Parks:

KINFRA aims at the economic development of the industrially backward regions of the State by the provision of necessary infrastructure and support services. Because of their immense potential and growth prospects, the Government has identified certain core competency sectors such as food processing, electronics and information technology as the 'sunrise sectors' of the economy. Exclusive parks for these sectors were established by KINFRA at strategic locations of the State. Having been recognised the enormous development potential of these sectors in the overall industrial development of the State and because of the flawless ambience and industry-specific infrastructure available in the parks, some of the industrial set up by KINFRA have been accorded the 'Product Specific Special Economic Zone' status by the Government of India. The details of the parks with special economic zone status are given in Table 4.10.

Table 4.10
The Special Economic Zone (SEZ) Status Industrial Parks
(As on 31st March, 2018)

Name of the SEZ Status Industrial Parks		Thrust Area(s)
1	KINFRA Film and Video Park, Kazhakuttom.	Infotainment
2	KINFRA High-Tech Park, Kalamassery.	Electronics & IT
3	KINFRA Food Processing Park, Kakkancherry.	Food Processing
Total		03

Source: Survey Information.

The Special Economic Zone (SEZ) status obtained by these industrial parks enables to create an exemplary business environment for the development of the identified 'sunrise sectors' and thereby create avenues of world-class business exposure to these high tech, non-polluting and export-oriented industries in Kerala.

4.7. Infrastructure and Support Services in the Industrial Parks:

Being a Government body, KINFRA is entrusted with the mandate for facilitating the industrial development of Kerala. Setting up of industrial parks may be considered as one of the most feasible models for developing industries in the State. Recognising the competitive advantages of different locales of the State, KINFRA identifies the potential segments and appropriate measures are being evolved for the establishment of industrial

parks with state-of-the-art infrastructure and support services. The parks set up by KINFRA have all the requisite infrastructure like developed land or built up spaces, dedicated and uninterrupted power, continuous water supply, better sewerage networks, sufficient storage and warehouses and excellent communication and connectivity systems. Almost all the fully operational industrial parks of KINFRA are having all these facilities with proper layout and standards.

Along with commendable infrastructure, the industrial parks are having excellent support services such as administrative blocks, banks, cafeteria, health care centres, proper street lighting and round the clock security. KINFRA is expanding the range of services to conference halls, training centres, space for start ups and business incubations and hostels for employees. Majority of the parks have the 'single window clearance mechanism' which facilitates the speedy issue of various licences, clearances and certificates required for the start-up, nurturing and management of different industries in the State.

Standard Design Factories (SDF) have been developed in select industrial parks for providing plug and play arrangements for the easy start up of industries at minimum time and cost. KINFRA attempts to expand the establishment of SDFs in all the industrial parks with a view to attract prospective entrepreneurs to the State. The infrastructure quality,

abundance of workforce from nearby places, easier access, connectivity, power and water availability, sewage and environmental protection, secure and peaceful environment, local people support and efficient management of the parks, all helped to build and sustain confidence among the investors. In terms of the provision of infrastructure and other support services, KINFRA has proved to be a success in the industrial arena of the State.

4.8. Details of Land Acquired and Allotted by KINFRA:

KINFRA is one of the most prominent land banks for the exclusive promotion and development of industries in the identified core competency sectors of the State. Since inception, it has mainly identified itself with the land acquisition and development of industrial infrastructure in the form of industrial parks, industrial estates, development areas or plots, industrial townships and industrial zones so as to boost the industrial as well as economic development of the State. It acquires land at strategic locations for the orderly and balanced development of industries and also taking into account the regional, social and ecological considerations. KINFRA leases out the land in possession to the eligible entrepreneurs with all necessary infrastructure and support services so as to enable them to start their businesses with minimum time and cost. The details of land acquired and allotted by KINFRA are given in Table 4.11.

Table 4.11
Land Acquired and Allotted by KINFRA (Fully Operational Parks)
(As on 31st March, 2018)

Name of the Industrial Park		Acres of Land	
		Acquired	Allotted
1	KINFRA Export Promotion Industrial Park, Kakkanad.	281	281
2	KINFRA International Apparel Park, Thumba.	090	086
3	KINFRA Film and Video Park, Kazhakuttom.	075	075
4	KINFRA Food Processing Park, Kakkancherry.	072	057
5	KINFRA Small Industries Park, Thalassery.	050	046
6	KINFRA Small Industries Park, Seethangoli.	270	264
7	KINFRA Small Industries Park, Nellad.	065	061
8	KINFRA Integrated Industrial and Textile Park, Kanjikode.	164	136
9	KINFRA Small Industries Park, Koratty.	033	030
10	KINFRA Small Industries Park, Kalpetta.	050	044
11	KINFRA Hi-Tech Park, Kalamassery.	243	221
12	KINFRA Small Industries Park, Adoor.	085	060
13	KINFRA Textile Centre, Nadukani.	125	071
14	KINFRA Small Industries Park, Kunnamthanam.	039	037
15	WISE KINFRA Park, Kanjikode.	200	182
16	KINFRA Rubber Park, Irapuram.	105	068
17	KINFRA Integrated Industrial Park, Lakkidi.	082	072
18	KINFRA Industrial Park, Piravanthur.	065	044
Total		2094	1835

Source: Survey Information.

As far as the fully operational parks are concerned, the total acres of land acquired by KINFRA are 2094 acres spread across the State. Out of this, 1835 acres of land is allotted to various industrial parks as on 31st March, 2018. The mean value of total land acquired by KINFRA for its fully operational industrial parks is 116.33 acres with a minimum value of 33 acres and a maximum value of 281 acres. The mean value of total land allotted by KINFRA for its fully operational industrial parks is 101.94 acres with a minimum value of 30 acres and a maximum value of 281 acres. Besides for the fully operational industrial parks, KINFRA has also acquired 717 acres of land in various locales of Kerala for the development of its presently ongoing projects. The details of land acquired by KINFRA for its premier ongoing projects are given in table 4.12.

Table 4.12
Land Acquired by KINFRA (Ongoing Projects)
(As on 31st March, 2018)

Name of the Park/Institution		Acres of Land Acquired
1	KINFRA Seafood Park, Aroor.	004
2	KINFRA Electronics Manufacturing Cluster, Kakkanad.	067
3	KINFRA Port and Container Terminal, Muttam.	010
4	KINFRA Spices Park, Thodupuzha.	015
5	KINFRA Defence Park, Ottapalam.	060
6	KINFRA Mega Food Park, Palakkad.	080
7	KINFRA Petrochemical Park, Ambalamughal.	481
Total		717

Source: Survey Information.

Thus, the total area of land acquired by KINFRA for the fully operational as well as ongoing projects is 2817 acres as on 31st March, 2018. Regarding the allotment of land, entrepreneurs have to submit a formal application for allotment (Form A) with project profile. The proposal is to be then placed before the District Industries Land Allotment Committee for perusal. Once the proposal is cleared by the Committee, intimation letter (Form B) will be issued to the allottee and the allottee shall remit 10 per cent of the total amount of lease premium as 'Earnest Money Deposit (EMD)' within 15 days. The lease out period is normally 30 years. On remitting the EMD, an allotment letter (Form D) will be issued and the allottee shall remit 50 per cent of the lease premium within 15 days. On remitting the lease premium, licence agreement (Form E) is executed between KINFRA and the allottee. The validity of the licence agreement is for 24 months, during which the allottee has to submit the drawings, construct the building, installation of plant and machinery and the unit shall be ready for commercial operation. The balance lease premium is to be remitted in two equal instalments with interest at 12.5 per cent or such rate fixed by KINFRA from time to time, within 24 months. Once the unit is ready for commercial production, the lease deed (Form F) will be executed for 28 years. All deeds are exempted from stamp duty and registration. In case of cancellation of the allotment, 10 per cent of the EMD will be forfeited.

The typical business environment offered by the industrial parks attracts investors with suitable projects to start their business ventures in the industrial parks. Thus, it becomes imperative to analyse the land utilisation pattern of KINFRA industrial parks. The proportion of land utilisation is calculated as [Acres of land allotted/Acres of land acquired]. An analysis of the land utilisation pattern of the fully operational industrial parks of KINFRA has given the following results as shown in Table 4.13.

Table 4.13
Proportion of Land Utilisation in Industrial Parks
(As on 31st March, 2018)

Name of the Industrial Park		Proportion	Per Cent
1	KINFRA Export Promotion Industrial Park, Kakkanad.	281/281	100
2	KINFRA International Apparel Park, Thumba.	086/090	96
3	KINFRA Film and Video Park, Kazhakuttom.	075/075	100
4	KINFRA Food Processing Park, Kakkancherry.	057/072	79
5	KINFRA Small Industries Park, Thalassery.	046/050	92
6	KINFRA Small Industries Park, Seethangoli.	264/270	98
7	KINFRA Small Industries Park, Nellad.	061/065	94
8	KINFRA Integrated Industrial and Textile Park, Kanjikode.	136/164	83
9	KINFRA Small Industries Park, Koratty.	030/033	91
10	KINFRA Small Industries Park, Kalpetta.	044/050	88
11	KINFRA Hi-Tech Park, Kalamassery.	221/243	91

12	KINFRA Small Industries Park, Adoor.	060/085	71
13	KINFRA Textile Centre, Nadukani.	071/125	57
14	KINFRA Small Industries Park, Kunnamthanam.	037/039	95
15	WISE KINFRA Park, Kanjikode.	182/200	91
16	KINFRA Rubber Park, Irapuram.	068/105	65
17	KINFRA Integrated Industrial Park, Lakkidi.	072/082	88
18	KINFRA Industrial Park, Piravanthur.	044/065	68
Total		1835/2094	88

Source: Survey Information.

As far as the land utilisation pattern of KINFRA is concerned, it can be observed that 88 per cent of the total land acquired for the fully operational industrial parks has been allotted for various ventures. Because of the affordable premium and better lease out period, there exists a strong demand for the developed land or built up spaces of KINFRA among the prospective entrepreneurs. The flexible terms and conditions, incentives and concessions and the typical business ambience supported by exemplary infrastructure offered by KINFRA attracts prospective entrepreneurs to its premises and thereby contribute positively to the regional industrial development of the State. A measure of the degree of association between the acres of land acquired and acres of land allotted for the industrial parks acknowledges the fact. The details of correlation are shown in Table 4.14.

Table 4.14
Degree of Association between Land Acquired and Land Allotted
 (Fully Operational Parks)

Measure of Association	Formula	Coefficient
Karl Pearson's Coefficient of Correlation.	$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{[n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2]}}$	0.98
Observation	There exists a high degree of positive correlation between the land acquired and land allotted for the industrial parks.	

Source: Computed from the Survey Data.

Now, KINFRA is gearing up for acquiring another 3000 acres of land across the State for the setting up of Industrial Development Zones (IDZ). With this, it would become one of the largest land bank holders in Kerala for its rapid and sustainable industrial development. The land acquisition, its development and its allotment in ready-to-use condition by KINFRA contribute positively to the faster, inclusive and sustainable industrial development of Kerala.

4.9. Magnitude of Investment in KINFRA Industrial Parks:

Being the industrial catalyst of the State, KINFRA operates with the mandate of making Kerala one of the most favoured destinations for industrial investments in the country. It is funded by various schemes under the Government of India and through direct funding provided by the Government of Kerala through its budgetary allocations. From time to

time, the Government earmarks funds for the development of industrial infrastructure in the State. KINFRA incurs significant volume of investments for making the requisite arrangements in the industrial parks for the starting and nurturing of business ventures at par with global standards.

Definitely, there are certain multiplier effects in the industrial economy of the State by the investments in the industrial parks. As an active facilitator of industrial development, KINFRA explores the investment potentials so as to channelise them into the industrial economy of the State. Establishment of industrial parks in the identified and core competency sectors of the State necessitates investments. Being the industrial facilitator and functional arm of the Government, KINFRA utilises various schemes of both the Central and State governments for the establishment, maintenance, expansion and diversification of industrial parks throughout the State. Rapid strides are there on the part of KINFRA to explore the investment potentials opportunities so as to realise the avowed objective of making Kerala the most favoured destination for industrial investments in the country. Its mandate is to transform the State into a most vibrant and investor-friendly business hub with exemplary infrastructure and support services at par with global standards. Thus, it becomes imperative to analyse the investment pattern of KINFRA for its industrial parks and the details for the study period are given in Table 4.15.

Table 4.15
Magnitude of Investments in KINFRA Industrial Parks
 (2003-2015)

(Rs. Crore)

Financial Year	Amount
2003-2004	36.282
2004-2005	21.714
2005-2006	19.270
2006-2007	26.189
2007-2008	23.079
2008-2009	31.940
2009-2010	20.536
2010-2011	71.617
2011-2012	152.75
2012-2013	100.59
2013-2014	322.20
2014-2015	32.117
Total	858.28

Source: KINFRA.

As far as the period of study (2003-2015) is concerned, the total volume of investment made by KINFRA for the establishment and management of its industrial parks is about Rs. 858.28 crore. The mean value of total investments made by KINFRA for the period 2003-2015 is Rs. 71.52 crore with a minimum value of Rs. 19.27 crore and a maximum value of Rs. 322.20 crore. The volume of total investments made by KINFRA for

the establishment and management of its industrial parks across the State is Rs. 1837.56 crore as on 31st March, 2018.

4.10. Volume of Employment in KINFRA Industrial Parks:

The setting up of industrial parks throughout the domestic economy of Kerala provides immense scope for employment. They offer employment potential and opportunities, directly and indirectly, to the regional population. Industrial parks open up diverse venues of employment to the workforce of the region which will, in turn, create certain positive externalities in the regional economy of the State. The details of employment made by KINFRA in its fully operational industrial parks are given in Table 4.16.

Table 4.16
Employment in KINFRA Industrial Parks (Fully Operational Parks)
(As on 31st March, 2018)

Name of the Industrial Park		Employment (Number)
1	KINFRA Export Promotion Industrial Park, Kakkanad.	0773
2	KINFRA International Apparel Park, Thumba.	3608
3	KINFRA Film and Video Park, Kazhakuttom.	0540
4	KINFRA Food Processing Park, Kakkancherry.	3207
5	KINFRA Small Industries Park, Thalassery.	1126
6	KINFRA Small Industries Park, Seethangoli.	1280

7	KINFRA Small Industries Park, Nellad.	1282
8	KINFRA Integrated Industrial and Textile Park, Kanjikode.	4003
9	KINFRA Small Industries Park, Koratty.	0704
10	KINFRA Small Industries Park, Kalpetta.	0561
11	KINFRA Hi-Tech Park, Kalamassery.	0103
12	KINFRA Small Industries Park, Adoor.	0266
13	KINFRA Textile Centre, Nadukani.	0142
14	KINFRA Small Industries Park, Kunnamthanam.	0522
15	WISE KINFRA Park, Kanjikode.	1358
16	KINFRA Rubber Park, Irapuram.	0124
17	KINFRA Integrated Industrial Park, Lakkidi.	0276
18	KINFRA Industrial Park, Piravanthur.	0142
Total		20017

Source: KINFRA.

As far the employment generation status of the fully operational industrial parks is concerned, it can be seen that the total volume of employment generated is 20017 as on 31st March, 2018. It provides opportunities for numerous indirect employment to the regional population as well. Thus, it can be observed that the magnitude of total investment and employment generated in the industrial parks is significant as far as the total volume of investment and employment in the industrial economy is concerned.

4.11. Chapter Conclusion:

KINFRA has a saga of success over the entire period of its operation in the industrial landscape of Kerala. It has 22 full fledged parks along with 7 premier projects and 9 major projects on anvil on the priority and competency sectors of the State. The potential for different industries of the economy have been explored and opportunities for their focused development have been provided by the Corporation over the entire period of its operation. There are exclusive 'theme-based' as well as general industrial parks stimulating a typical entrepreneurial or business culture in Kerala. The standard design factories (SDF) available with the industrial parks offer a highly conducive and hassle free business environment for the entrepreneurs. At present KINFRA explores the possibilities and prospects of joint venturing for the establishment and development of its industrial parks. Some of its parks have been accorded the 'special economic zone' status by the Government of India, signifying the merit and operational effectiveness of KINFRA industrial parks in the emerging industrial sectors. KINFRA is one of the most prominent land banks in Kerala for the rapid and exclusive development of its industries. There exists a high degree of positive correlation between the land acquired and allotted by KINFRA. In terms of investments and employment generated in the industrial economy, KINFRA took a lead as an active facilitator and catalyst of Kerala's industrial development.

Chapter-5

**Operational Efficiency of
KINFRA Industrial Parks in Kerala**

5.1. Chapter Prologue:

Kerala aims to become one of the top 10 ranking States in the country in terms of ease of doing business and in promotion of a typical business and entrepreneurial culture at par with global standards. The Industrial and Commercial Policy of the State visualises the setting up and strengthening of theme-based industrial parks in the core competency sectors of the State so as to achieve a 10 per cent industrial growth rate within a couple of years. The vision is to transform Kerala into a vibrant investment destination with an effervescent entrepreneurial society through inclusive and sustainable industrial growth strategies and practices.¹⁵ It is in the context, the chapter attempts to explore the operational efficiency and performance of the industrial parks set up by the Kerala Industrial Infrastructure Development Corporation (KINFRA) and its impact on the industrial economy of Kerala. Certain major parameters of operational effectiveness are identified with certain sub-parameters to draw inferences on their operational effectiveness. Responses were gathered on each of the sub-parameters and the observance status and the weighted score of the major parameter is obtained by using a 5-point likert scale. The operational efficiency of KINFRA industrial parks in terms of the select parameters is tested and interpreted by using Wilcoxon Signed Rank Test.

¹⁵ Government of Kerala (2018). *Kerala Industrial and Commercial Policy 2018*. Thiruvananthapuram: Department of Industries and Commerce.

5.2. Operational Efficiency of KINFRA Industrial Parks in Kerala:

Operational efficiency encompasses the major strategies and practices meant to improve a company's processes to accomplish the goal of providing consistent and quality services to its stakeholders. It looks at an organisation's capabilities and performance measured against certain prescribed indicators of effectiveness. It is often achieved by streamlining a company's core processes in order to more effectively respond to the changing market requirements. Being the industrial catalyst of the State, KINFRA is credited for powering the industrial growth across Kerala through the establishment of industrial parks and the provision of industry-specific infrastructure. In order to measure the operational efficiency of KINFRA industrial parks, as much as seven major parameters of effectiveness were identified as follows:

1. Ease of doing business.
2. Support systems and services.
3. Client relationship management.
4. Standards of business operations.
5. Responsive commitments.
6. Opportunities for sustainable entrepreneurship.
7. Extension services.

The operational efficiency of KINFRA industrial parks with respect to these parameters were examined by splitting up these parameters into various sub-parameters. The majority proportion and weighted scores of the sample respondents were taken into account for each of the sub-parameters. By using the Wilcoxon Signed Rank Test, the relative significance of the major parameter is checked and spelled out. The analysis may be listed under the following heads:

(a). Ease of Doing Business:

Ease of doing business is one among the parameters selected for measuring the operational efficiency of KINFRA industrial parks. KINFRA plays a pivotal role as the industrial catalyst of the State and as such, it provides a conducive environment for the existing industries to consolidate and new industries to come up. By enabling growth and a typical entrepreneurial as well as business culture, KINFRA industrial parks assure quality standards and a conducive environment for the easy starting and sustainable growth of industries in the State. Thus, it becomes imperative to explore the viability of the business environment provided by KINFRA with respect to the 'ease of doing business' which is presumed as a composite index having certain parameters addressing the operational effectiveness of KINFRA. The major aspects and the responses obtained on the ease of doing business are given in Tables 5.1 and 5.2.

Table 5.1
Ease of Doing Business
 (Aspects for Evaluation)

Parameters	Description
1	Affordable premium and better lease out period.
2	Flexible terms and conditions for the entrepreneurs.
3	Excellent infrastructure and other support services.
4	Excellent common facilities for smooth business.
5	Well organised and hassle free business environment.
6	Consistent and continuous communication of the key initiatives.

Table 5.2
Ease of Doing Business
 (Operational Efficiency)

Evaluation Parameters	Scale and Proportion					Majority	
	1	2	3	4	5	Response	Per Cent
Parameter-1	06	12	00	00	00	Mostly Agree	66.7
	(33.3)	(66.7)	--	--	--		
Parameter-2	07	11	00	00	00	Mostly Agree	61.1
	(38.9)	(61.1)	--	--	--		
Parameter-3	12	06	00	00	00	Completely Agree	66.7
	(66.7)	(33.3)	--	--	--		
Parameter-4	05	10	03	00	00	Mostly Agree	55.5
	(27.8)	(55.5)	(16.7)	--	--		
Parameter-5	06	11	01	00	00	Mostly Agree	61.1
	(33.3)	(61.1)	(05.6)	--	--		
Parameter-6	04	12	02	00	00	Mostly Agree	66.7
	(22.2)	(66.7)	(11.1)	--	--		

Source: Survey Information.

Table Summary & Observations:
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(1).

Category	Ease of doing business.	
Parameter	Affordable premium and better lease out period.	
Status of Operational Efficiency	Mostly Effective	
Majority Proportion	66.70	
Standard Score	75.00	
Weighted Score [(1 x 33.3) + (0.75 x 66.7)]	83.33	

(2).

Category	Ease of doing business.	
Parameter	Flexible terms and conditions for the entrepreneurs.	
Status of Operational Efficiency	Mostly Effective	
Majority Proportion	61.10	
Standard Score	75.00	
Weighted Score [(1 x 38.9) + (0.75 x 61.1)]	84.73	

(3).

Category	Ease of doing business.	
Parameter	Excellent infrastructure and other support services.	
Status of Operational Efficiency	Completely Effective	
Majority Proportion	66.70	
Standard Score	100.0	
Weighted Score [(1 x 66.7) + (0.75 x 33.3)]	91.68	

(4).

Category	Ease of doing business.	
Parameter	Excellent common facilities for smooth business.	
Status of Operational Efficiency	Mostly Effective	
Majority Proportion	55.50	
Standard Score	75.00	
Weighted Score [(1 x 27.8) + (0.75 x 55.5) + (0.5 x 16.7)]	77.78	

(5).

Category	Ease of doing business.	
Parameter	Well organised and hassle free business environment.	
Status of Operational Efficiency	Mostly Effective	
Majority Proportion	61.10	
Standard Score	75.00	
Weighted Score [(1 x 33.3) + (0.75 x 61.1) + (0.5 x 5.6)]	81.93	

(6).

Category	Ease of doing business.	
Parameter	Consistent and continuous communication of the key initiatives.	
Status of Operational Efficiency	Mostly Effective	
Majority Proportion	66.70	
Standard Score	75.00	
Weighted Score [(1 x 22.2) + (0.75 x 66.7) + (0.5 x 11.1)]	77.78	

Statistical Testing and Interpretation

H₀	The operational efficiency of KINFRA industrial parks in terms of “ease of doing business” is nugatory.
Test	Wilcoxon Signed Rank (Median) Test
Hypothetical Median	3
P-value	6.699 ⁻⁵
Observed Median	2 (True location is less than 3)
Decision	Reject the null hypothesis (H ₀) and accept the alternative hypothesis (H ₁).
H₁	The operational efficiency of KINFRA industrial parks in terms of “ease of doing business” is ‘mostly effective.’

The responses on each of the select parameters of the criteria ‘ease of doing business’ is analysed and the status of operational efficiency in terms of the chosen parameters is recorded with corresponding scores. Having been set the null hypothesis as ‘the operational performance of KINFRA industrial parks in terms of “ease of doing business” is nugatory’, the study uses Wilcoxon Signed Rank Test for testing the hypothesis. Assuming a hypothetical median value of 3 in a 5-point likert scale, the observed median is 2 with a P-value of 6.699⁻⁵. The null hypothesis is therefore rejected and the study accepts the alternative hypothesis, signifying the operational performance of KINFRA industrial parks in terms of the parameter ‘ease of doing business’ is mostly effective.

(b). Support Systems and Services:

KINFRA attempts to ensure a friendly and supportive environment for those who wish to pursue new businesses in the State. It strives to achieve its avowed objectives through a gamut of operations and services to the entrepreneurs catering to their specific requirements. It provides the most specific and tailor-made assistance to the entrepreneurs in promoting the growth and development of their industrial units through the services ranging from the areas of entrepreneurship, technology, information, education, management, policy and extension. KINFRA stimulates the formation of new businesses in its parks and by expanding the industrial parks further with its coordinated efforts will definitely strengthens its support systems and services. Need-based and specialised systems and practices are offered for the smooth and responsible operations of different units located in different industrial parks. KINFRA always attempts to drive the direction and pace of innovation for its future growth.

Thus, it becomes necessary to explore the efficiency of the business ambience provided by KINFRA with respect to the parameter 'support systems and services' which is presumed as a composite index having certain aspects addressing the operational effectiveness of KINFRA. The major aspects and the responses obtained on the support systems and services of KINFRA are given in Tables 5.3 and 5.4.

Table 5.3
Support Systems and Services
 (Aspects for Evaluation)

Parameters	Description
1	Required and updated information for the industrial units.
2	Proper framework for the realisation of business objectives.
3	Better administration and initiatives for business elaboration.
4	Well defined areas of work and operation for promoting the creative initiatives of the entrepreneurs.
5	Controls on the managerial actions of the entrepreneurs.
6	Addressing and resolving the issues and problems of the industrial units.

Table 5.4
Support Systems and Services
 (Operational Efficiency)

Evaluation Parameters	Scale and Proportion					Majority	
	1	2	3	4	5	Response	Per Cent
Parameter-1	06	10	00	00	00	Mostly Agree	55.6
	(33.3)	(55.6)	--	--	--		
Parameter-2	04	11	03	00	00	Mostly Agree	61.1
	(22.2)	(61.1)	(16.7)	--	--		
Parameter-3	05	12	01	00	00	Mostly Agree	66.7
	(27.8)	(66.7)	(05.5)	--	--		
Parameter-4	04	11	03	00	00	Mostly Agree	61.1
	(22.2)	(61.1)	(16.7)	--	--		
Parameter-5	00	02	04	12	00	Mostly Disagree	66.7
	--	(11.1)	(22.2)	(66.7)	--		
Parameter-6	06	12	00	00	00	Mostly Agree	66.7
	(33.3)	(66.7)	--	--	--		

Source: Survey Information.

Table Summary & Observations:
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(1).

Category	Support Systems and Services.	
Parameter	Required and updated information for the industrial units.	
Status of Operational Efficiency	Mostly Effective	
Majority Proportion	55.60	
Standard Score	75.00	
Weighted Score [(1 x 33.3) + (0.75 x 55.6)]	75.00	

(2).

Category	Support Systems and Services.	
Parameter	Proper framework for realising the business objectives.	
Status of Operational Efficiency	Mostly Effective	
Majority Proportion	61.10	
Standard Score	75.00	
Weighted Score [(1 x 22.2) + (0.75 x 61.1) + (0.5 x 16.7)]	76.38	

(3).

Category	Support Systems and Services.	
Parameter	Better administration and initiatives for business elaboration.	
Status of Operational Efficiency	Mostly Effective	
Majority Proportion	66.70	
Standard Score	75.00	
Weighted Score [(1 x 27.8) + (0.75 x 66.7) + (0.5 x 5.5)]	80.58	

(4).

Category	Support Systems and Services.	
Parameter	Well defined areas of work and operation for promoting the creative initiatives of the entrepreneurs.	
Status of Operational Efficiency	Mostly Effective	
Majority Proportion	61.10	
Standard Score	75.00	
Weighted Score [(1 x 22.2) + (0.75 x 61.1) + (0.5 x 16.7)]	76.38	

(5).

Category	Support Systems and Services.	
Parameter	Controls on the managerial actions of the entrepreneurs.	
Status of Operational Efficiency	Mostly Ineffective	
Majority Proportion	66.70	
Standard Score	25.00	
Weighted Score [(0.75 x 11.1) + (0.5 x 22.2) + (0.25 x 66.7)]	36.10	

(6).

Category	Support Systems and Services.	
Parameter	Addressing and resolving the issues and problems of the industrial units.	
Status of Operational Efficiency	Mostly Effective	
Majority Proportion	66.70	
Standard Score	75.00	
Weighted Score [(1 x 33.3) + (0.75 x 66.7)]	83.33	

Statistical Testing and Interpretation

H₀	The operational efficiency of KINFRA industrial parks in terms of “support systems and services” is nugatory.
Test	Wilcoxon Signed Rank (Median) Test
Hypothetical Median	3
P-value	4.404 ⁻⁵
Observed Median	2 (True location is less than 3)
Decision	Reject the null hypothesis (H ₀) and accept the alternative hypothesis (H ₁).
H₁	The operational efficiency of KINFRA industrial parks in terms of “support systems and services” is ‘mostly effective.’

The responses on each of the select parameters of the criteria ‘support systems and services’ is analysed and the status of operational efficiency in terms of the chosen parameters is recorded with corresponding scores. Having been set the null hypothesis as ‘the operational performance of KINFRA industrial parks in terms of “support systems and services” is nugatory’, the study uses Wilcoxon Signed Rank Test for testing the hypothesis. Assuming a hypothetical median of 3 in a 5-point likert scale, the observed median is 2 with a P-value of 4.404⁻⁵. The null hypothesis is therefore rejected and the study accepts the alternative hypothesis, signifying the operational performance of KINFRA industrial parks in terms of the parameter ‘support systems and services’ is mostly effective.

(c). Client Relationship Management:

Client relationship management refers to the basic strategies and practices that the companies generally use to manage and analyse customer interactions with the goal of improving service relationships. The quality of services offered by KINFRA industrial parks are rated as one of the best in the country. It encourages the growth of diverse industries and attracts new business by providing an integrated infrastructure in select locales of the State. KINFRA is entrusted with the mandate of ensuring an investor friendly climate in its industrial parks and thus contributes significantly to the State's economy.

At present KINFRA is entering into new avenues of entrepreneurship and business in the core competency sectors of the State by specifically exploring the beneficial possibilities and prospects of public-private partnership. It attempts to uphold a better client relationship management strategy in all its operations and the performance of KINFRA for over 25 years in the industrial economy of Kerala acknowledges the fact. It is in the context, the study attempts to explore the 'client relationship management' of KINFRA and its industrial parks which is presumed as a composite index having certain aspects addressing its overall operational effectiveness. The major aspects and the responses obtained on the client relationship management of KINFRA are given Tables 5.5 and 5.6.

Table 5.5
Client Relationship Management
 (Aspects for Evaluation)

Parameters	Description
1	Cordial relationship between KINFRA and the industrial units.
2	Commitment and support on the part of the KINFRA team.
3	Professionalism and courtesy of the KINFRA team.
4	Effective platform for the ideas and innovations of the entrepreneurs.
5	Freedom of the entrepreneurs to question the decisions and actions of KINFRA.
6	Freedom of the entrepreneurs to revise and modify their business plans for their betterment.

Table 5.6
Client Relationship Management
 (Operational Efficiency)

Evaluation Parameters	Scale and Proportion					Majority	
	1	2	3	4	5	Response	Per Cent
Parameter-1	13	05	00	00	00	Completely Agree	72.2
	(72.2)	(27.8)	--	--	--		
Parameter-2	11	07	00	00	00	Completely Agree	61.1
	(61.1)	(38.9)	--	--	--		
Parameter-3	12	06	00	00	00	Completely Agree	66.7
	(66.7)	(33.3)	--	--	--		
Parameter-4	02	12	04	00	00	Mostly Agree	66.7
	(11.1)	(66.7)	(22.2)	--	--		
Parameter-5	00	03	05	10	00	Mostly Disagree	55.6
	--	(16.6)	(27.8)	(55.6)	--		
Parameter-6	07	11	00	00	00	Mostly Agree	61.1
	(38.9)	(61.1)	--	-	--		

Source: Survey Information.

Table Summary and Observations:
--

(1).

Category	Client Relationship Management.	
Parameter	Cordial relationship between KINFRA and the industrial units.	
Status of Operational Efficiency	Completely Effective	
Majority Proportion	62.20	
Standard Score	100.0	
Weighted Score [(1 x 72.2) + (0.75 x 27.8)]	93.05	

(2).

Category	Client Relationship Management.	
Parameter	Commitment and support on the part of the KINFRA team.	
Status of Operational Efficiency	Completely Effective	
Majority Proportion	61.10	
Standard Score	100.0	
Weighted Score [(1 x 61.1) + (0.75 x 38.9)]	90.28	

(3).

Category	Client Relationship Management.	
Parameter	Professionalism and courtesy of the KINFRA team.	
Status of Operational Efficiency	Completely Effective	
Majority Proportion	66.70	
Standard Score	100.0	
Weighted Score [(1 x 66.7) + (0.75 x 33.3)]	91.68	

(4).

Category	Client Relationship Management.	
Parameter	Effective platform for the ideas and innovations of the entrepreneurs.	
Status of Operational Efficiency	Mostly Effective	
Majority Proportion	66.70	
Standard Score	75.00	
Weighted Score [(1 x 11.1) + (0.75 x 66.7) + (0.5 x 22.2)]	72.23	

(5).

Category	Client Relationship Management.	
Parameter	Freedom of the entrepreneurs to question the decisions and actions of KINFRA.	
Status of Operational Efficiency	Mostly Ineffective	
Majority Proportion	55.60	
Standard Score	25.00	
Weighted Score [(0.75 x 16.6) + (0.5 x 27.8) + (0.25 x 55.6)]	40.25	

(6).

Category	Client Relationship Management.	
Parameter	Freedom of the entrepreneurs to revise and modify their business plans for their betterment.	
Status of Operational Efficiency	Mostly Effective	
Majority Proportion	61.10	
Standard Score	75.00	
Weighted Score [(1 x 38.9) + (0.75 x 61.1)]	84.73	

Statistical Testing and Interpretation

H₀	The operational efficiency of KINFRA industrial parks in terms of “client relationship management” is nugatory.
Test	Wilcoxon Signed Rank (Median) Test
Hypothetical Median	3
P-value	8.046 ⁻⁵
Observed Median	1.75 (True location is less than 3)
Decision	Reject the null hypothesis (H ₀) and accept the alternative hypothesis (H ₁).
H₁	The operational efficiency of KINFRA industrial parks in terms of “client relationship management” is ‘mostly effective.’

The responses on each of the select parameters of the criteria ‘client relationship management’ is analysed and the status of operational efficiency in terms of the chosen parameters is recorded with scores. Having been set the null hypothesis as ‘the operational performance of KINFRA industrial parks in terms of “client relationship management” is nugatory’, the study uses Wilcoxon Signed Rank Test for testing the hypothesis. Assuming a hypothetical median of 3 in a 5-point likert scale, the observed median is 1.75 with a P-value of 8.046⁻⁵. The null hypothesis is therefore rejected and the study accepts the alternative hypothesis, signifying the operational performance of KINFRA industrial parks in terms of ‘client relationship management’ is mostly effective.

(d). Standards of Business Operations:

Most businesses experience some operational issues that can be resolved with the identification of certain best practices called the standards of business operations. Being the industrial facilitator of the State, KINFRA generally follows some standard ways of doing things complying with the requirements of its stakeholders. It aims at producing superior results with its strategic planning and best practice methods. KINFRA always attempts to make both quantitative and qualitative improvements in the industry-specific infrastructure requirements of the State, by complying certain benchmarks and standards of operations.

By stimulating diverse avenues of business, KINFRA drives the direction and pace of innovation that underpins the future industrial growth of the State. The industrial parks set up by KINFRA are actually the innovation hubs of the State for its diverse and dynamic industrial development. Keeping strict adherence to quality and other standards of operations, KINFRA took the lead in promoting a typical business or entrepreneurial culture in Kerala. The study presumes 'standards of business operations' as a composite index having certain aspects which can be used to obtain some basic reflections on the operational efficiency of KINFRA. The major aspects and the responses on the parameter 'standards of business operations' are given in Tables 5.7 and 5.8.

Table 5.7
Standards of Business Operations
 (Aspects for Evaluation)

Parameters	Description
1	Excellent facilities and environment at affordable cost and shortest time span.
2	Fullest utilisation of the capacity of industrial units.
3	Optimum use of resources and technology for the industrial units.
4	Support to the entrepreneurs to manage their operating risk.
5	Promotional activities for the betterment of industrial units.
6	Support to the entrepreneurs to deliver high standards of quality in their businesses.

Table 5.8
Standards of Business Operations
 (Operational Efficiency)

Evaluation Parameters	Scale and Proportion					Majority	
	1	2	3	4	5	Response	Per Cent
Parameter-1	11	07	00	00	00	Completely Agree	61.1
	(61.1)	(38.9)	--	--	--		
Parameter-2	05	10	03	00	00	Mostly Agree	55.6
	(27.7)	(55.6)	(16.7)	--	--		
Parameter-3	04	12	02	00	00	Mostly Agree	66.7
	(22.2)	(66.7)	(11.1)	--	--		
Parameter-4	00	04	04	10	00	Mostly Disagree	55.6
	--	(22.2)	(22.2)	(55.6)	--		
Parameter-5	11	07	00	00	00	Completely Agree	61.1
	(61.1)	(38.9)	--	--	--		
Parameter-6	06	12	00	00	00	Mostly Agree	66.7
	(33.3)	(66.7)	--	--	--		

Source: Survey Information.

Table Summary and Observations:
--

(1).

Category	Standards of Business Operations.	
Parameter	Excellent facilities and environment at affordable cost and shortest time span.	
Status of Operational Efficiency	Completely Effective	
Majority Proportion	61.10	
Standard Score	100.0	
Weighted Score [(1 x 61.1) + (0.75 x 38.9)]	90.28	

(2).

Category	Standards of Business Operations.	
Parameter	Fullest utilisation of the capacity of industrial units.	
Status of Operational Efficiency	Mostly Effective	
Majority Proportion	55.60	
Standard Score	75.00	
Weighted Score [(1 x 27.7) + (0.75 x 55.6) + (0.5 x 16.7)]	77.75	

(3).

Category	Standards of Business Operations.	
Parameter	Optimum use of resources and technology for the industrial units.	
Status of Operational Efficiency	Mostly Effective	
Majority Proportion	66.70	
Standard Score	75.00	
Weighted Score [(1 x 22.2) + (0.75 x 66.7) + (0.5 x 11.1)]	77.78	

(4).

Category	Standards of Business Operations.	
Parameter	Support to the entrepreneurs to manage their operating risk.	
Status of Operational Efficiency	Mostly Ineffective	
Majority Proportion	55.60	
Standard Score	25.00	
Weighted Score [(0.75 x 22.2) + (0.5 x 22.2) + (0.25 x 55.6)]	41.65	

(5).

Category	Standards of Business Operations.	
Parameter	Promotional activities for the betterment of industrial units.	
Status of Operational Efficiency	Completely Effective	
Majority Proportion	61.10	
Standard Score	100.0	
Weighted Score [(1 x 61.1) + (0.75 x 38.9)]	90.28	

(6).

Category	Standards of Business Operations.	
Parameter	Support to the entrepreneurs to deliver high standards of quality in their businesses.	
Status of Operational Efficiency	Mostly Effective	
Majority Proportion	66.70	
Standard Score	75.00	
Weighted Score [(1 x 33.3) + (0.75 x 66.7)]	83.33	

Statistical Testing and Interpretation:
--

H₀	The operational efficiency of KINFRA industrial parks in terms of “standards of business operations” is nugatory.
Test	Wilcoxon Signed Rank (Median) Test
Hypothetical Median	3
P-value	5.339 ⁻⁵
Observed Median	2 (True location is less than 3)
Decision	Reject the null hypothesis (H ₀) and accept the alternative hypothesis (H ₁).
H₁	The operational efficiency of KINFRA industrial parks in terms of “standards of business operations” is ‘mostly effective.’

The responses on each of the select parameters of the criteria ‘standards of business operations’ is analysed and the status of operational efficiency in terms of the chosen parameters is recorded with corresponding scores. Having been set the null hypothesis as ‘the operational performance of KINFRA industrial parks in terms of “standards of business operations” is nugatory’, the study uses Wilcoxon Signed Rank Test for testing the hypothesis. Assuming a hypothetical median value of 3 in a 5-point likert scale, the observed median is 2 with a P-value of 5.339⁻⁵. The null hypothesis is therefore rejected and the study accepts the alternative hypothesis, signifying the operational performance of KINFRA industrial parks in terms of ‘standards of business operations’ is mostly effective.

(e). Responsive Commitments:

KINFRA aims at transforming the industrial landscape of Kerala from its mediocre current status to a full-fledged and vibrant sector of the State. It works on the lines of the Industrial and Commercial Policy of the Government and is operating in accordance with certain values and vision. It significantly influences the industrial development of the State and is committed for delivering excellence in its operations. KINFRA continually seeks to improve its commitments by regular reviews on its working and makes revisions in its plans and responsibilities in order to maintain its operational excellences and success. The result is the emergence of the organisation as a genuinely purpose-led, values-driven and market-leading entity with responsive commitments and endurance to deliver quality to its stakeholders.

KINFRA industrial parks helps the entrepreneurs for sharing common infrastructure and support services, innovative technology and a conducive business environment at par with global standards. It is in the context, the study presumes 'responsive commitments' as a composite index covering certain aspects which can be used to obtain some insights on the operational efficiency of KINFRA. The major aspects and the responses on the parameter 'responsive commitments' are given in Tables 5.9 and 5.10.

Table 5.9
Responsive Commitments
 (Aspects for Evaluation)

Parameters	Description
1	Locational and localised advantages to the entrepreneurs for their business.
2	Congenial environment for the entrepreneurs towards their ideas, products and services.
3	Basic training and development activities for the entrepreneurs.
4	Strict adherence to the timeliness of various services to the entrepreneurs.
5	Leveraging of technology for the betterment of the entrepreneurs.
6	Efforts to enhance the productivity of employees of the industrial parks.

Table 5.10
Responsive Commitments
 (Operational Efficiency)

Evaluation Parameters	Scale and Proportion					Majority	
	1	2	3	4	5	Response	Per Cent
Parameter-1	13	05	00	00	00	Completely Agree	72.2
	(72.2)	(27.8)	--	--	--		
Parameter-2	03	10	05	00	00	Mostly Agree	55.6
	(16.7)	(55.6)	(27.7)	--	--		
Parameter-3	03	12	03	00	00	Mostly Agree	66.6
	(16.7)	(66.6)	(16.7)	--	--		
Parameter-4	04	14	00	00	00	Mostly Agree	77.7
	(22.2)	(77.8)	--	--	--		
Parameter-5	02	11	05	00	00	Mostly Agree	61.1
	(11.1)	(61.1)	(27.8)	--	--		
Parameter-6	00	02	06	10	00	Mostly Disagree	55.6
	--	(11.1)	(33.3)	(55.6)	--		

Source: Survey Information.

Table Summary and Observations:
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(1).

Category	Responsive Commitments.	
Parameter	Locational and localised advantages to the entrepreneurs for their business.	
Status of Operational Efficiency	Completely Effective	
Majority Proportion	72.20	
Standard Score	100.0	
Weighted Score [(1 x 72.2) + (0.75 x 27.8)]	93.05	

(2).

Category	Responsive Commitments.	
Parameter	Congenial environment for the entrepreneurs towards their ideas, products and services.	
Status of Operational Efficiency	Mostly Effective	
Majority Proportion	55.60	
Standard Score	75.00	
Weighted Score [(1 x 16.7) + (0.75 x 55.6) + (0.5 x 27.7)]	72.25	

(3).

Category	Responsive Commitments.	
Parameter	Basic training and development activities for the entrepreneurs.	
Status of Operational Efficiency	Mostly Effective	
Majority Proportion	66.60	
Standard Score	75.00	
Weighted Score [(1 x 16.7) + (0.75 x 66.6) + (0.5 x 16.7)]	75.00	

(4).

Category	Responsive Commitments.	
Parameter	Strict adherence to the timeliness of various services to the entrepreneurs.	
Status of Operational Efficiency	Mostly Effective	
Majority Proportion	77.70	
Standard Score	75.00	
Weighted Score [(1 x 22.2) + (0.75 x 77.7)]	80.48	

(5).

Category	Responsive Commitments.	
Parameter	Leveraging technology for the betterment of the entrepreneurs.	
Status of Operational Efficiency	Mostly Effective	
Majority Proportion	61.10	
Standard Score	75.00	
Weighted Score [(1 x 11.1) + (0.75 x 61.1) + (0.5 x 27.8)]	70.83	

(6).

Category	Responsive Commitments.	
Parameter	Efforts to enhance the productivity of employees of the industrial parks.	
Status of Operational Efficiency	Mostly Ineffective	
Majority Proportion	55.60	
Standard Score	25.00	
Weighted Score [(0.75 x 11.1) + (0.5 x 33.3) + (0.25 x 55.6)]	38.88	

Statistical Testing and Interpretation:
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H₀	The operational efficiency of KINFRA industrial parks in terms of “responsive commitments” is nugatory.
Test	Wilcoxon Signed Rank (Median) Test
Hypothetical Median	3
P-value	3.510^{-5}
Observed Median	2 (True location is less than 3)
Decision	Reject the null hypothesis (H ₀) and accept the alternative hypothesis (H ₁).
H₁	The operational efficiency of KINFRA industrial parks in terms of “responsive commitments” is ‘mostly effective.’

The responses on each of the select parameters of the criteria ‘responsive commitments’ is analysed and the status of operational efficiency in terms of the chosen parameters is recorded with corresponding scores. Having been set the null hypothesis as ‘the operational performance of KINFRA industrial parks in terms of “responsive commitments” is nugatory’, the study uses Wilcoxon Signed Rank Test for testing the hypothesis. Assuming a hypothetical median value of 3 in a 5-point likert scale, the observed median is 2 with a P-value of 3.510^{-5} . The null hypothesis is therefore rejected and the study accepts the alternative hypothesis, signifying the operational performance of KINFRA industrial parks in terms of ‘responsive commitments’ is mostly effective.

(f). Opportunities for Sustainable Entrepreneurship:

Entrepreneurship is often considered as an important economic function of any economy, particularly in driving innovations and resource allocation for industrial development. Governments always attempt to promote sustainable entrepreneurship in the State with the promotion of different initiatives on entrepreneurship development. KINFRA plays a pivotal role in promoting a typical entrepreneurial culture in Kerala by attracting prospective entrepreneurs and investors to the core competency sectors of the State. Being the functional arm of the Government, KINFRA provides immense opportunities of entrepreneurship and galvanises investments so as to positively transform the industrial scenario of the State into a much more dynamic and vibrant one. The industrial parks set up by KINFRA throughout the State are actually the welcome hubs for the prospective entrepreneurs to the State and as such stand for the deployment of entrepreneurial innovations. Thus, it becomes imperative to explore the avenues of sustainable entrepreneurship in Kerala with respect to the operational efficiency of KINFRA. The study presumes 'opportunities for sustainable entrepreneurship' as a composite index having certain aspects which can be related to the operational effectiveness of KINFRA. The major aspects and the responses obtained on the parameter 'opportunities for sustainable entrepreneurship' are given in Tables 5.11 and 5.12.

Table 5.11
Opportunities for Sustainable Entrepreneurship
 (Aspects for Evaluation)

Parameters	Description
1	Different schemes and programmes for attracting prospective entrepreneurs.
2	Immense scope and opportunities for the expansion of industrial units.
3	Ample space for the diversification activities of the industrial units.
4	Possibilities for maintaining growing relationships with the customers.
5	Managing the community involvement and societal commitment of the entrepreneurs.
6	KINFRA parks are a better choice for the entrepreneurs to start and sustain their business.

Table 5.12
Opportunities for Sustainable Entrepreneurship
 (Operational Efficiency)

Evaluation Parameters	Scale and Proportion					Majority	
	1	2	3	4	5	Response	Per Cent
Parameter-1	12	06	00	00	00	Completely Agree	66.7
	(66.7)	(33.3)	--	--	--		
Parameter-2	14	04	00	00	00	Completely Agree	77.8
	(77.8)	(22.2)	--	--	--		
Parameter-3	07	11	00	00	00	Mostly Agree	61.1
	(38.9)	(61.1)	--	--	--		
Parameter-4	04	11	03	00	00	Mostly Agree	61.1
	(22.2)	(61.1)	(16.7)	--	--		
Parameter-5	00	03	05	10	00	Mostly Disagree	55.6
	--	(16.7)	(27.7)	(55.6)	--		
Parameter-6	11	07	00	00	00	Completely Agree	61.1
	(61.1)	(38.9)	--	--	--		

Source: Survey Information.

Table Summary and Observations:
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(1).

Category	Opportunities for Sustainable Entrepreneurship.	
Parameter	Different schemes and programmes for attracting prospective entrepreneurs.	
Status of Operational Efficiency	Completely Effective	
Majority Proportion	66.70	
Standard Score	100.0	
Weighted Score [(1 x 66.7) + (0.75 x 33.3)]	91.68	

(2).

Category	Opportunities for Sustainable Entrepreneurship.	
Parameter	Immense scope and opportunities for the expansion of industrial units.	
Status of Operational Efficiency	Completely Effective	
Majority Proportion	77.80	
Standard Score	100.0	
Weighted Score [(1 x 77.8) + (0.75 x 22.2)]	94.45	

(3).

Category	Opportunities for Sustainable Entrepreneurship.	
Parameter	Ample space for the diversification activities of the industrial units.	
Status of Operational Efficiency	Mostly Effective	
Majority Proportion	61.10	
Standard Score	75.00	
Weighted Score [(1 x 38.9) + (0.75 x 61.1)]	84.73	

(4).

Category	Opportunities for Sustainable Entrepreneurship.	
Parameter	Possibilities for maintaining growing relationships with the customers.	
Status of Operational Efficiency	Mostly Effective	
Majority Proportion	61.10	
Standard Score	75.00	
Weighted Score [(1 x 22.2) + (0.75 x 61.1) + (0.5 x 16.7)]	76.38	

(5).

Category	Opportunities for Sustainable Entrepreneurship.	
Parameter	Managing the community involvement and societal commitment of the entrepreneurs.	
Status of Operational Efficiency	Mostly Ineffective	
Majority Proportion	55.60	
Standard Score	25.00	
Weighted Score [(0.75 x 16.7) + (0.5 x 27.7) + (0.25 x 55.6)]	34.70	

(6).

Category	Opportunities for Sustainable Entrepreneurship.	
Parameter	KINFRA parks are a better choice for the entrepreneurs to start and sustain their business.	
Status of Operational Efficiency	Completely Effective	
Majority Proportion	61.10	
Standard Score	100.0	
Weighted Score [(1 x 61.1) + (0.75 x 38.9)]	90.28	

Statistical Testing and Interpretation:
--

H₀	The operational efficiency of KINFRA industrial parks in terms of “opportunities for sustainable entrepreneurship” is nugatory.
Test	Wilcoxon Signed Rank (Median) Test
Hypothetical Median	3
P-value	8.790 ⁻⁵
Observed Median	1.5 (True location is less than 3)
Decision	Reject the null hypothesis (H ₀) and accept the alternative hypothesis (H ₁).
H₁	The operational efficiency of KINFRA industrial parks in terms of “opportunities for sustainable entrepreneurship” is ‘mostly effective.’

The responses on each of the select parameters of the criteria ‘opportunities for sustainable entrepreneurship’ is analysed and the status of operational efficiency in terms of the chosen parameters is recorded. Having been set the null hypothesis as ‘the operational performance of KINFRA industrial parks in terms of “opportunities for sustainable entrepreneurship” is nugatory’, the study uses Wilcoxon Signed Rank Test for testing the hypothesis. Assuming a hypothetical median of 3 in a 5-point likert scale, the observed median is 1.5 with a P-value of 8.790⁻⁵. The null hypothesis is rejected and the study accepts the alternative hypothesis, signifying the operational performance of KINFRA industrial parks in terms of the criteria is mostly effective.

(g). Extension Services:

KINFRA acts as a powerful facilitator for the sustained industrial development in Kerala. Being the industrial catalyst of the State, it provides certain extension services which help the entrepreneurs in identifying viable opportunities and assessing their own capabilities for doing better business. Being an important functional entity of the Government, KINFRA inculcates and synergises the positive aspects of industrialisation by the provision of entrepreneur-friendly incentives and services. The customised and need-based services and assistance to the entrepreneurs enable them to reduce their operating costs, help them to reap excellence in their respective businesses and thereby realise the avowed objectives of the Corporation.

KINFRA always attempts to provide the entrepreneurs opportunities for the sustained growth, expansion and diversification of their businesses with specific thrust to the development of the core competency sectors of the State. It works without affecting the ecology and environment of the industrial economy of Kerala. Thus, it is necessary to explore the operational efficiency of KINFRA with respect to its 'extension services' which is presumed as a composite index having certain aspects. The major aspects and the responses obtained on the parameter 'extension services' of KINFRA are given in Tables 5.13 and 5.14.

Table 5.13
Extension Services of KINFRA
 (Aspects for Evaluation)

Parameters	Description
1	Strong focus on the development of the parks and its industrial units.
2	Easy access of the industrial units to the supplies and equipments for their optimal performance.
3	Better and effective marketing assistance to the industrial units.
4	Measures for promoting export of the products of the industrial units.
5	Appropriate ambience and incentives for the improved way of doing things.
6	KINFRA as a good place for prospective entrepreneurs to go ahead with their businesses.

Table 5.14
Extension Services of KINFRA
 (Operational Efficiency)

Evaluation Parameters	Scale and Proportion					Majority	
	1	2	3	4	5	Response	Per Cent
Parameter-1	12	06	00	00	00	Completely Agree	66.7
	(66.7)	(33.3)	--	--	--		
Parameter-2	11	07	00	00	00	Completely Agree	61.1
	(61.1)	(38.9)	--	--	--		
Parameter-3	00	04	04	10	00	Mostly Disagree	55.6
	--	(22.2)	(22.2)	(55.6)	--		
Parameter-4	00	02	06	10	00	Mostly Disagree	55.6
	--	(11.1)	(33.3)	(55.6)	--		
Parameter-5	12	06	00	00	00	Completely Agree	66.7
	(66.7)	(33.3)	--	--	--		
Parameter-6	14	04	0	00	00	Completely Agree	77.8
	(77.8)	(22.2)	--	--	--		

Source: Survey Information.

Table Summary and Observations:
--

(1).

Category	Extension services of KINFRA.	
Parameter	Strong focus on the development of the parks and its industrial units.	
Status of Operational Efficiency	Completely Effective	
Majority Proportion	66.70	
Standard Score	100.0	
Weighted Score [(1 x 66.7) + (0.75 x 33.3)]	91.68	

(2).

Category	Extension services of KINFRA.	
Parameter	Easy access of the industrial units to the supplies and equipments for their optimal performance.	
Status of Operational Efficiency	Completely Effective	
Majority Proportion	61.10	
Standard Score	100.0	
Weighted Score [(1 x 61.1) + (0.75 x 38.9)]	90.28	

(3).

Category	Extension services of KINFRA.	
Parameter	Better and effective marketing assistance to the industrial units.	
Status of Operational Efficiency	Mostly Ineffective	
Majority Proportion	55.60	
Standard Score	25.00	
Weighted Score [(0.75 x 22.2) + (0.5 x 22.2) + (0.25 x 55.6)]	41.65	

(4).

Category	Extension services of KINFRA.	
Parameter	Measures for promoting export of the products of the industrial units.	
Status of Operational Efficiency	Mostly Ineffective	
Majority Proportion	55.60	
Standard Score	25.00	
Weighted Score [(0.75 x 11.1) + (0.5 x 33.3) + (0.25 x 55.6)]	38.88	

(5).

Category	Extension services of KINFRA.	
Parameter	Appropriate ambience and incentives for the improved way of doing things.	
Status of Operational Efficiency	Completely Effective	
Majority Proportion	66.70	
Standard Score	100.0	
Weighted Score [(1 x 66.7) + (0.75 x 33.3)]	91.68	

(6).

Category	Extension services of KINFRA.	
Parameter	KINFRA as a good place for prospective entrepreneurs to go ahead with their businesses.	
Status of Operational Efficiency	Completely Effective	
Majority Proportion	77.80	
Standard Score	100.0	
Weighted Score [(1 x 77.8) + (0.75 x 22.2)]	94.45	

Statistical Testing and Interpretation:
--

H₀	The operational efficiency of KINFRA industrial parks in terms of “extension services” is nugatory.
Test	Wilcoxon Signed Rank (Median) Test
Hypothetical Median	3
P-value	8.615 ⁻⁵
Observed Median	1.5 (True location is less than 3)
Decision	Reject the null hypothesis (H ₀) and accept the alternative hypothesis (H ₁).
H₁	The operational efficiency of KINFRA industrial parks in terms of “extension services” is ‘mostly effective.’

The responses on each of the select parameters of the criteria ‘extension services’ is analysed and the status of operational efficiency in terms of the chosen parameters is recorded with corresponding scores. Having been set the null hypothesis as ‘the operational performance of KINFRA industrial parks in terms of “extension services” is nugatory’, the study uses Wilcoxon Signed Rank Test for testing the hypothesis. Assuming a hypothetical median value of 3 in a 5-point likert scale, the observed median is 1.5 with a P-value of 8.615⁻⁵. The null hypothesis is therefore rejected and the study accepts the alternative hypothesis, signifying the operational performance of KINFRA industrial parks in terms of the parameter ‘extension services’ is mostly effective.

5.3. Summary of Responses:

Having been analysed the categories with all its specified parameters, a snapshot of the operational efficiency of KINFRA industrial parks across the State over the entire period of its operation is given in Table 5.15.

Table 5.15
Operational Efficiency of KINFRA Industrial Parks
 (Summary of Responses)

Parameter(s) of Operational Efficiency		Status
1	Ease of doing business.	Mostly Effective
2	Support systems and services.	Mostly Effective
3	Client relationship management.	Mostly Effective
4	Standards of business operations.	Mostly Effective
5	Responsive commitments.	Mostly Effective
6	Opportunities for sustainable entrepreneurship	Mostly Effective
7	Extension services.	Mostly Effective

5.4. The Friedman Test for Equality of Values:

The study uses as much as 7 major parameters for measuring the operational efficiency of KINFRA industrial parks. Each of the major parameter consists of certain sub-parameters of importance. In order to get an accurate picture of operational efficiency, the independency of the responses is checked by using the Friedman test for equality of values. The result of the test in a pair-wise analysis is shown below:

The Friedman Test for Equality of Values (The Pair-wise Analysis)						
H₀	The responses for measuring the operational efficiency of KINFRA industrial parks are interdependent.					
Base: Median of Category-1						
To →	Median of Cat-2	Median of Cat-3	Median of Cat-4	Median of Cat-5	Median of Cat-6	Median of Cat-7
P-value	0.034	0.377	0.377	0.052	0.078	0.117
Base: Median of Category-2						
To →	Median of Cat-3	Median of Cat-4	Median of Cat-5	Median of Cat-6	Median of Cat-7	
P-value	0.031	0.557	0.564	0.010	0.012	
Base: Median of Category-3						
To →	Median of Category-4	Median of Category-5	Median of Category-6	Median of Category-7		
P-value	0.103	0.022	0.308	0.585		
Base: Median of Category-4						
To →	Median of Category-5	Median of Category-6	Median of Category-7			
P-value	0.380	0.004	0.017			
Base: Median of Category-5						
To →	Median of Category-6	Median of Category-7				
P-value	0.007	0.004				
Base: Median of Category-6						
To →	Median of Category-7					
P-value	0.017					
Decision	Reject the null hypothesis (H ₀) and accept the alternative hypothesis (H ₁).					
H₁	The responses on different categories for the operational efficiency of KINFRA industrial parks are independent.					

5.5. Major Constraints of KINFRA and Its Industrial Parks:

KINFRA operates with certain explicit objectives so as to give an impetus to Kerala's industrial development. As an innovative strategy for the industrial development of the regional economy, it facilitates the setting up and management of theme-based industrial parks in the core competency sectors of the State. Within the ambit of its operational framework, it can be observed that KINFRA often faces the problems of (i) delay in the establishment of standard design factories (SDF) in its existing industrial parks, (ii) exceeding of actual cost of the project over its estimated cost, (iii) delay in the timely completion and commissioning of industrial parks and (iv) the cost escalation and the subsequent rise in the revenue expenditure. Lack of sufficient autonomy for its operations and management and deficient budget allocation are the other notable constraints faced by KINFRA occasionally in its operational framework and management. Identification of priority sectors for business, transparency and stability of the policies, removal of administrative barriers, sufficient autonomy in operations and management and market attractiveness are some of the major parameters that must be taken into account by the policymakers and Government so as to reap better results and strengthen the Corporation and its way of operations in the industrial landscape of Kerala.

5.6. Chapter Conclusion:

Providing exemplary industrial infrastructure to meet the demands of emerging businesses is one of the major challenges facing by the industrial economy of Kerala. KINFRA operates with a mandate of creating a feasible and conducive business environment with state-of-the-art infrastructure so as to boost the process of hasty industrial development in the State. It has successfully completed 25 years of operation in the provision and development of quality industrial infrastructure with benchmarks of global standards. In terms of the parameters ease of doing business, support systems and services, client relationship management, standards of business operations. Responsive commitments, opportunities for sustainable entrepreneurship and extension services, the operational efficiency and performance of KINFRA industrial parks is marked as mostly effective. KINFRA has proved the premise that a cluster of competing and complementary industries has more to offer on the industrial arena of the State than the very same industries taken in isolation from one another. Being the industrial facilitator of the State, KINFRA has manifested its diverse impact on the industrial economy of Kerala.

Chapter-6

**Realisation of Objectives and the Impact of
KINFRA Industrial Parks in Kerala**

6.1. Chapter Prologue:

Infrastructure plays a catalytic role in the industrial development and performance of any economy. The process of economic growth is predominantly driven by certain parameters such as entrepreneurship, industrial upgrading, continuous economic diversification, innovative business strategies and technological innovations and practices. Being an important functional entity of the Government, KINFRA inculcates and synergises the positive aspects of industrialisation in Kerala. It attempts to revitalise and to give a fillip to the industrial growth of the State and thus supports the upward cumulative process of industrial development. Establishment of industrial parks is an innovative step taken by the Government as they align infrastructure provision and agglomeration economies to jolt the industrial growth of the State. In the context, the chapter explores the economic imperative and operational performance of the Kerala Industrial Infrastructure Development Corporation (KINFRA) in terms of the extent of realisation of its specified objectives within the particular framework of the industrial development of Kerala. As KINFRA acts as a facilitator for the sustained industrial development, creating and extending infrastructure requirements for the development of industries and promoting entrepreneurship for industrial sustainability, the chapter also attempts to highlight the impact of KINFRA industrial parks on the industrial economy of Kerala.

6.2. Extent of Realisation of Objectives:

KINFRA has laid down certain explicit objectives within the purview of Kerala's industrial development. Considering the objectives, as much as 16 parameters such as (i) identification of appropriate industrial sites, (ii) establishment of ready-to-use built up spaces, (iii) development of industry-specific infrastructure and other support services, (iv) allotment of developed land to entrepreneurs on flexible terms and conditions, (v) developing and managing the industrial estates, (vi) undertaking of different schemes for the orderly development of industrial parks, (vii) coordination with other agencies for the provision of quality infrastructure, (viii) adherence to the time schedule from the procuring of land to its allotment, (ix) strict adherence to the cost estimates for the establishment and maintenance of industrial parks, (x) generation of sufficient employment opportunities, (xi) effective organisational structure, (xii) realisation of vision and mission, (xiii) attracting entrepreneurs and investments for regional industrial development, (xiv) effective control techniques and management practices, (xv) effective coordination mechanism and (xvi) promotion of industrial development by developing industrial spots in competency sectors of the economy were identified. The operational effectiveness of these parameters were examined on a 7-point Likert scale and tested with appropriate statistical tools.

An exploration and analysis of the operational effectiveness of the identified parameters with respect to the specified objectives of KINFRA is given in different tables of the following section:

Table 6.1
Extent of Realisation of Objectives
 (Parameter-1)

Parameter-1: Identification and acquisition of appropriate industrial sites for the easy start up of industries in Kerala.				
Choice of Evaluation		Standard Score (%)	Response(s)	
			Number	Per Cent
1	Completely Effective	100	06	33.3
2	Mostly Effective	83	10	55.6
3	Somewhat Effective	66	02	11.1
4	Neither Effective Nor Ineffective	50	00	00.0
5	Somewhat Ineffective	33	00	00.0
6	Mostly Ineffective	17	00	00.0
7	Completely Ineffective	00	00	00.0
Total			18	100.0
Weighted Score: [(0.66 x 11.1) + (0.83 x 55.6) + (1 x 33.3)]				86.77
Observation: The operational performance of KINFRA in realising its objectives with reference to this parameter is ' mostly effective ' with the following specifications:				
Majority Proportion		55.60		
Standard Score		83.00		
Weighted Score		86.77		

Source: Survey Information.

As far as the parameter 'identification and acquisition of appropriate industrial sites for the easy start up of industries in Kerala' is concerned, the responses spread over the positive range of the scale starting from 'somewhat effective' to 'completely effective.' Instead of spreading industries to all nooks and corners, certain core competency sectors with immense potential for development have been identified for the State by targeting and utilising their comparative and competitive advantages. One-third of the total respondents opined KINFRA's work on identifying and acquiring of suitable industrial sites is 'completely effective' and about 56 per cent of the responses acknowledges the operational performance of KINFRA with respect to the specified objective is 'mostly effective.'

After identifying the potential locales, significant works are being carried out by KINFRA for developing them as appropriate industrial sites for the easy and hassle free establishment of different industries in the industrial landscape of Kerala. Being the industrial catalyst of the State, KINFRA acts with the mandate of rapid industrialisation of the State and thus, the next task comes before KINFRA is to develop ready-to-use infrastructure and other built-up spaces that would attract prospective entrepreneurs to start their industries in the core competency areas of the State. The operational effectiveness of KINFRA in terms of 'establishing proper and ready-to-use built-up spaces in the identified industrial sites across the State' is given in Table 6.2.

Table 6.2
Extent of Realisation of Objectives
 (Parameter-2)

Parameter-2: Establishment of proper and ready-to-use built up spaces in the indentified industrial sites across the State.				
Choice of Evaluation		Standard Score (%)	Response(s)	
			Number	Per Cent
1	Completely Effective	100	07	38.9
2	Mostly Effective	83	11	61.1
3	Somewhat Effective	66	00	00.0
4	Neither Effective Nor Ineffective	50	00	00.0
5	Somewhat Ineffective	33	00	00.0
6	Mostly Ineffective	17	00	00.0
7	Completely Ineffective	00	00	00.0
Total			18	100.0
Weighted Score: [(0.83 x 61.1) + (1 x 38.9)]				89.61
Observation: The operational performance of KINFRA in realising its objectives with reference to this parameter is ' mostly effective ' with the following specifications:				
Majority Proportion		61.10		
Standard Score		83.00		
Weighted Score		89.61		

Source: Survey Information.

Specialised industrial parks have been set up by KINFRA across the State with ready-to-use built up spaces and other institutional arrangements and thereby providing opportunities for the rapid industrial development of Kerala. As far as the parameter 'establishment of proper and ready-to-use

built up spaces in the identified industrial sites across the State' is concerned, the responses falls on the 'mostly effective' and 'completely effective' categories of choice. While 61 per cent of the responses acknowledge the operational performance of KINFRA as 'mostly effective', the remaining 39 per cent affirm it as 'completely effective.' The responses show that KINFRA is highly successful in establishing the ready-to-use built up space in the identified industrial sites across the State.

Exemplary infrastructure at par with global standards is available in almost all the fully operational parks spread across the State. Further extension and quality enhancement arrangements are being made by KINFRA in these parks for reaping maximum benefits. Necessary institutional arrangements are being made by the Corporation in its ongoing industrial parks at different locales of the State. There are several premier projects on anvil upon which KINFRA has explicit infrastructure plans and designs exclusively catering the changing needs and requirements of Kerala industry. Thus, being the industrial catalyst of the State, KINFRA stands as one of the most significant industrial infrastructure provider in the industrial landscape of Kerala.

The operational effectiveness of KINFRA in terms of 'development of industry-specific infrastructure and other support services in the industrial parks' is given in Table 6.3.

Table 6.3
Extent of Realisation of Objectives
(Parameter-3)

Parameter-3: Development of industry-specific infrastructure and other support services in the industrial parks.				
Choice of Evaluation		Standard Score (%)	Response(s)	
			Number	Per Cent
1	Completely Effective	100	08	44.4
2	Mostly Effective	83	10	55.6
3	Somewhat Effective	66	00	00.0
4	Neither Effective Nor Ineffective	50	00	00.0
5	Somewhat Ineffective	33	00	00.0
6	Mostly Ineffective	17	00	00.0
7	Completely Ineffective	00	00	00.0
Total			18	100.0
Weighted Score: [(0.83 x 55.6) + (1 x 44.4)]				90.55
Observation: The operational performance of KINFRA in realising its objectives with reference to this parameter is ' mostly effective ' with the following specifications:				
Majority Proportion		55.60		
Standard Score		83.00		
Weighted Score		90.55		

Source: Survey Information.

As far as the parameter 'development of industry-specific infrastructure and other support services in the industrial parks' is concerned, the responses falls again on the highly positive ranges of the 'mostly effective' and 'completely effective' categories. There is not much significant

difference between the chosen categories as about 56 per cent of the responses highlight the operational performance of KINFRA as ‘mostly effective’ and about 45 per cent support it as ‘completely effective.’ Significant and untiring efforts are being made by KINFRA for the provision of leading-edge industrial infrastructure in Kerala so as to augment the process of its industrial development.

The link between infrastructure and industrial development is actually a continuous process. A robust economy needs a robust infrastructure and the progress in industrial development has to be preceded, accompanied and followed by the progress in infrastructure. Being a Government body with a mandate for facilitating the industrial development of the State, KINFRA has created commendable infrastructure for the easy start up of industries in its priority sectors. Realising the potential of different sectors, KINFRA took the lead in setting up the first of its kind industrial parks of the country in the identified sectors with exemplary infrastructure and support services. With better and attractive lease out period and premium, KINFRA offers its built-up spaces to prospective entrepreneurs with all plug and play arrangements for the start up of their industries.

The operational effectiveness of KINFRA in terms of ‘making available the developed land and other built-up spaces to the entrepreneurs on flexible terms and conditions’ is given in Table 6.4.

Table 6.4
Extent of Realisation of Objectives
 (Parameter-4)

Parameter-4: Making available the developed land and built up spaces to the entrepreneurs on flexible terms and conditions.				
Choice of Evaluation		Standard Score (%)	Response(s)	
			Number	Per Cent
1	Completely Effective	100	03	16.7
2	Mostly Effective	83	08	44.4
3	Somewhat Effective	66	07	38.9
4	Neither Effective Nor Ineffective	50	00	00.0
5	Somewhat Ineffective	33	00	00.0
6	Mostly Ineffective	17	00	00.0
7	Completely Ineffective	00	00	00.0
Total			18	100.0
Weighted Score: [(0.66 x 38.9) + (0.83 x 44.4) + (1 x 16.7)]				79.23
Observation: The operational performance of KINFRA in realising its objectives with reference to this parameter is ' mostly effective ' with the following specifications:				
Majority Proportion		44.40		
Standard Score		83.00		
Weighted Score		79.23		

Source: Survey Information.

As far as the parameter 'making available the developed land and other built up spaces to the entrepreneurs on flexible terms and conditions' is concerned, the responses spread over the range starting from 'somewhat effective' to 'completely effective.' There is not much significant difference

between the categories of 'somewhat effective' and 'mostly effective' as about 39 per cent of the responses highlight the operational performance of KINFRA with particular reference to this parameter as 'somewhat effective' and not a much higher proportion, that is, about 45 per cent endorse it as 'mostly effective.'

It can be observed that KINFRA attempts to provide its developed land and other built up spaces to the entrepreneurs on the most flexible and affordable terms and conditions as prescribed by the Government. The strong demand for the developed land in the industrial parks ratifies the acceptance of the terms and conditions of KINFRA among the entrepreneurs and investors. Further, about 90 per cent of the developed land in KINFRA industrial parks has already been allotted for ventures of different type, which also validate the working environment and the terms and conditions of KINFRA. By providing a congenial environment for a typical business culture in the State, KINFRA upholds the provisions of the Industrial and Commercial Policy of the Government from time to time and thereby accelerates the prospects and dynamics of Kerala's industrial development.

The operational effectiveness of KINFRA in terms of 'developing and properly managing the industrial estates at select locales of the State' is given in Table 6.5.

Table 6.5
Extent of Realisation of Objectives
 (Parameter-5)

Parameter-5: Developing and properly managing the industrial estates at select locales of the State.				
Choice of Evaluation		Standard Score (%)	Response(s)	
			Number	Per Cent
1	Completely Effective	100	00	00.0
2	Mostly Effective	83	06	33.3
3	Somewhat Effective	66	12	66.7
4	Neither Effective Nor Ineffective	50	00	00.0
5	Somewhat Ineffective	33	00	00.0
6	Mostly Ineffective	17	00	00.0
7	Completely Ineffective	00	00	00.0
Total			18	100.0
Weighted Score: [(0.66 x 66.7) + (0.83 x 33.3)]				71.66
Observation: The operational performance of KINFRA in realising its objectives with reference to this parameter is ' somewhat effective ' with the following specifications:				
Majority Proportion		66.70		
Standard Score		66.00		
Weighted Score		71.66		

Source: Survey Information.

KINFRA acknowledges the prospects of industrial clustering in facilitating the development and improving the overall sustainability and competitiveness of the key industrial sectors of Kerala. Though it upholds the setting up of industrial estates, foremost importance is for the

establishment of theme-based industrial parks across the State. As far as the parameter 'developing and managing the industrial estates at select locales of the State' is concerned, the responses falls on the choices of the 'somewhat effective' and 'mostly effective.' While about 67 per cent assent the operational performance of KINFRA in realising its objectives with particular reference to the developing and properly managing of the industrial estates, 33 per cent have acknowledged the performance as 'mostly effective.' The present day practice of KINFRA is to encourage the setting up of specialised industrial parks than the establishing different industries under one roof as in the case of industrial estates.

In Kerala, the establishment and management of industrial estates are primarily under the surveillance of the Department of Industries and Commerce and the Kerala Small Industries Development Corporation (K-SIDCO). KINFRA provides certain operational and policy guidance to them and thereby upholds the prospects of clustering in the State. It has come long way in the setting up and management of specialised industrial parks which have grown and come to stay as uncompromising business hubs for the speedy industrialisation of the State.

The operational effectiveness of KINFRA in terms of 'undertaking of different schemes for the establishment and management of industrial parks across the State' is given in Table 6.6.

Table 6.6
Extent of Realisation of Objectives
 (Parameter-6)

Parameter-6: Undertaking of different schemes for the establishment and managing of industrial parks across the State.				
Choice of Evaluation		Standard Score (%)	Response(s)	
			Number	Per Cent
1	Completely Effective	100	02	11.1
2	Mostly Effective	83	04	22.2
3	Somewhat Effective	66	12	66.7
4	Neither Effective Nor Ineffective	50	00	00.0
5	Somewhat Ineffective	33	00	00.0
6	Mostly Ineffective	17	00	00.0
7	Completely Ineffective	00	00	00.0
			18	100.0
Weighted Score: [(0.66 x 66.7) + (0.83 x 22.2) + (1 x 11.1)]				73.55
Observation: The operational performance of KINFRA in realising its objectives with reference to this parameter is ' somewhat effective ' with the following specifications:				
Majority Proportion		66.70		
Standard Score		66.00		
Weighted Score		73.55		

Source: Survey Information.

As far as the parameter 'undertaking of different schemes for the orderly establishment as well as managing of industrial parks across the State' is concerned, the responses spread over the positive ranges starting from 'somewhat effective' to 'completely effective.' The overall status on the

operational performance of KINFRA with particular reference to undertaking of various schemes for the industrial parks is 'somewhat effective' with a proportion of about 67 per cent. KINFRA acts as the nodal agency for various departments and agencies of the Central and State governments for their different schemes for the establishment and maintenance of industrial parks across the State.

Being the nodal agency of the Central and State Governments for their various schemes for the rapid industrial development of the State, KINFRA actively facilitates different schemes of the Ministries of Commerce and Industry, Food Processing Industries and the Electronics and Information Technology, Government of India along with the numerous schemes of the Department of Industries and Commerce of the Government of Kerala. By undertaking such schemes for fostering the industrial development of the State, KINFRA takes advantage of the agglomerations of different industries and various MSMEs and thus contribute more strongly to the industrial as well as the regional economic development of the State.

KINFRA has come long way as the industrial catalyst and nodal of various agencies for the rapid and sustainable industrial development of the State. The industrial parks set up by KINFRA are today recognised as an important instrument for promoting industrial development,

innovation, competitiveness and growth of the regional economy. The operational effectiveness of KINFRA in terms of 'effective and proper coordination with other agencies and departments of the Government for the provision of quality industrial infrastructure' is given in Table 6.7.

Table 6.7
Extent of Realisation of Objectives
(Parameter-7)

Parameter-7: Effective and proper coordination with other agencies and departments of the Government for the provision of quality industrial infrastructure.				
Choice of Evaluation		Standard Score (%)	Response(s)	
			Number	Per Cent
1	Completely Effective	100	08	44.4
2	Mostly Effective	83	09	50.0
3	Somewhat Effective	66	01	05.6
4	Neither Effective Nor Ineffective	50	00	00.0
5	Somewhat Ineffective	33	00	00.0
6	Mostly Ineffective	17	00	00.0
7	Completely Ineffective	00	00	00.0
Total			18	100.0
Weighted Score: [(0.66 x 5.6) + (0.83 x 50.0) + (1 x 44.4)]				89.60
Observation: The operational performance of KINFRA in realising its objectives with reference to this parameter is ' mostly effective ' with the following specifications:				
Majority Proportion		50.00		
Standard Score		83.00		
Weighted Score		89.60		

Source: Survey Information.

Availability and accessibility of adequate infrastructure at par with global standards is an indicator of better industrial development and quality of life. Development of quality industrial infrastructure creates huge positive externalities in any economy. Having been realised the economic imperative and potential of sufficing industrial infrastructure, KINFRA took the lead for the creation of splendid infrastructure so as to fillip the industrial momentum of the State. As far as the parameter 'effective coordination with other agencies and departments of the Government for the provision of quality industrial infrastructure' is concerned, the responses spread over the range starting from 'somewhat effective' to 'completely effective.' There is not much significant difference between the categories of 'mostly effective' and 'completely effective.' Together, the responses constitute about 95 per cent which indicates that the coordination of KINFRA with other agencies for the provision of state-of-the-art infrastructure for Kerala's industrial development is highly appreciable.

KINFRA has realised a series of competing and complementary industrial infrastructure in the industrial arena of the State with definite and explicit spillovers on its industrial development. The operational effectiveness of KINFRA in terms of 'adherence to the time schedule from the procuring of land and its allotment to the entrepreneurs as ready-to-use industrial complexes' is given in Table 6.8.

Table 6.8
Extent of Realisation of Objectives
 (Parameter-8)

Parameter-8: Adherence to the time schedule from the procuring of land and its allotment to the entrepreneurs as ready-to-use complexes.				
Choice of Evaluation		Standard Score (%)	Response(s)	
			Number	Per Cent
1	Completely Effective	100	00	00.0
2	Mostly Effective	83	05	27.8
3	Somewhat Effective	66	13	72.2
4	Neither Effective Nor Ineffective	50	00	00.0
5	Somewhat Ineffective	33	00	00.0
6	Mostly Ineffective	17	00	00.0
7	Completely Ineffective	00	00	00.0
Total			18	100.0
Weighted Score: [(0.66 x 77.2) + (0.83 x 27.8)]				74.03
Observation: The operational performance of KINFRA in realising its objectives with reference to this parameter is ' somewhat effective ' with the following specifications:				
Majority Proportion		72.20		
Standard Score		66.00		
Weighted Score		74.03		

Source: Survey Information.

Every economy needs a steady stream of new, exciting and innovative businesses. KINFRA operates with the mandate of ensuring a proper and supportive industrial environment for the prospective entrepreneurs who wish to pursue their businesses in the State. KINFRA always plans,

attempts to devise sound strategies and tap new opportunities for arranging a conducive environment for starting businesses in the core competency sectors of the State. As far as the parameter 'adherence to the time schedule from the procuring of land and its allotment to the entrepreneurs as ready-to-use industrial complexes' is concerned, the responses falls on the choices of the 'somewhat effective' and 'mostly effective.' While about 73 per cent validate the operational performance of KINFRA in realising its objectives with particular reference to keeping the time schedules as 'somewhat effective', about 28 per cent accredit the performance as 'mostly effective.'

Though there are some lapses from the envisaged time schedules in some occasions, KINFRA attempts to keep strict adherence to its time schedule from the acquiring of land for industrial sites and its allotment to the entrepreneurs as ready-to-use industrial complexes with leading-edge infrastructure and support services. It recognises the time value of its operations in business and as such follows an explicit plan, framework and operational strategies along with definite time schedules to reap excellence in its operations.

The operational effectiveness of KINFRA in terms of 'strict adherence to the cost estimates for the establishment and maintenance of industrial parks across the State' is given in Table 6.9.

Table 6.9
Extent of Realisation of Objectives
 (Parameter-9)

Parameter-9: Strict adherence to the cost estimates for the establishment and maintenance of industrial parks across the State.				
Choice of Evaluation		Standard Score (%)	Response(s)	
			Number	Per Cent
1	Completely Effective	100	00	00.0
2	Mostly Effective	83	04	22.2
3	Somewhat Effective	66	11	61.1
4	Neither Effective Nor Ineffective	50	03	16.7
5	Somewhat Ineffective	33	00	00.0
6	Mostly Ineffective	17	00	00.0
7	Completely Ineffective	00	00	00.0
Total			18	100.0
Weighted Score: [(0.50 x 16.7) + (0.66 x 61.1) + (0.83 x 22.2)]				67.10
Observation: The operational performance of KINFRA in realising its objectives with reference to this parameter is ' somewhat effective ' with the following specifications:				
Majority Proportion		61.10		
Standard Score		66.00		
Weighted Score		67.10		

Source: Survey Information.

Without sufficing infrastructure, industry and business cannot thrive and does not create the required technologies needed for inclusive and sustainable development. Initiation of infrastructure projects opens up opportunities for a plethora of economic activities and will have definite

impact on the industrial landscape of any economy. Being the industrial facilitator of the State, KINFRA plays a lead role in its momentum of hasty industrial development by providing leading-edge infrastructure at par with global standards and practices. KINFRA always have explicit plans, vision and the associated strategies and estimates for the establishment and maintenance of theme-based industrial parks in the core competency sectors of the State

As far as the parameter 'strict adherence to the cost estimates for the establishment and maintenance of industrial parks across the State' is concerned, majority of the responses falls on the category 'somewhat effective' with a proportion of 61 per cent of the total responses. The categories 'somewhat effective' and 'mostly effective' together constitute about 83 per cent on the operational effectiveness of KINFRA with respect to this parameter. This implies KINFRA follows strict adherence to its cost estimates for the establishment and maintenance of its industrial parks across the State. Even though there are some lapses from the estimates because of the problem of cost escalation in course of time, KINFRA always attempts to keep the cost within the estimates.

The operational effectiveness of KINFRA in terms of 'generation of sufficient employment opportunities (directly and indirectly), especially for the regional local population' is given in Table 6.10.

Table 6.10
Extent of Realisation of Objectives
 (Parameter-10)

Parameter-10: Generation of sufficient employment opportunities (directly and indirectly), especially for the regional local population.				
Choice of Evaluation		Standard Score (%)	Response(s)	
			Number	Per Cent
1	Completely Effective	100	05	27.7
2	Mostly Effective	83	12	66.7
3	Somewhat Effective	66	01	05.6
4	Neither Effective Nor Ineffective	50	00	00.0
5	Somewhat Ineffective	33	00	00.0
6	Mostly Ineffective	17	00	00.0
7	Completely Ineffective	00	00	00.0
Total			18	100.0
Weighted Score: [(0.66 x 5.6) + (0.83 x 66.7) + (1 x 27.7)]				86.76
Observation: The operational performance of KINFRA in realising its objectives with reference to this parameter is ' mostly effective ' with the following specifications:				
Majority Proportion		66.70		
Standard Score		83.00		
Weighted Score		86.76		

Source: Survey Information.

KINFRA acts as a facilitator for the sustained industrial development of the State. Availability of adequate and efficient infrastructural set up not only promotes rapid industrialisation but also improves the quality of life of the people. Clustering of different industrial enterprises enables the

adoption of new technologies and practices through the smooth flow of information and learning spillovers. The skilled labour force working in different levels of various enterprises of industrial parks enhance the diffusion of different information and learning processes and thus contribute positively to the overall industrial output and efficiency. Thus, the initiation of infrastructure projects by KINFRA paves the way for a plethora of activities by the creation of gainful employment and generation of income in the economy.

As far as the parameter 'generation of adequate and gainful employment opportunities, especially to the regional local population' is concerned, it is revealed that the operational performance of KINFRA is 'mostly effective' with about 67 per cent of the total responses. About 28 per cent of them have exalted the performance as 'completely effective.' With the establishment of industrial parks at the select locales of the State, KINFRA provides immense employment opportunities, especially for the local population including women. Further, there are definite enhancement of the productivity and efficiency of the labour force with the setting up of specialised industrial parks. The choices of 'mostly effective' and 'completely effective' together represent about 95 per cent of the total responses which clearly ascertains the effectiveness of KINFRA as a provider of large scale employment opportunities, both directly and indirectly, especially to the regional population.

The operational effectiveness of KINFRA in terms of 'better organisational structure and coordination mechanism for the fulfilment of objectives' is given in Table 6.11.

Table 6.11
Extent of Realisation of Objectives
 (Parameter-11)

Parameter-11: Better organisational structure and coordination mechanism for the fulfilment of all its objectives.				
Choice of Evaluation		Standard Score (%)	Response(s)	
			Number	Per Cent
1	Completely Effective	100	14	77.8
2	Mostly Effective	83	04	22.2
3	Somewhat Effective	66	00	00.0
4	Neither Effective Nor Ineffective	50	00	00.0
5	Somewhat Ineffective	33	00	00.0
6	Mostly Ineffective	17	00	00.0
7	Completely Ineffective	00	00	00.0
Total			18	100.0
Weighted Score: [(0.83 x 22.2) + (1 x 77.8)]				85.58
Observation: The operational performance of KINFRA in realising its objectives with reference to this parameter is ' completely effective ' with the following specifications:				
Majority Proportion		77.80		
Standard Score		100.0		
Weighted Score		85.58		

Source: Survey Information.

KINFRA is a government body having an excellent organisational structure and explicit coordination mechanism with the mandate of transforming Kerala into a vibrant and sustainable industrial economy. It was established by the Kerala Industrial Infrastructure Development Act, 1993. As far as the parameter 'the organisational structure and coordination mechanism of for the fulfilment of its objectives' is concerned, the responses gives immense confidence on the operational performance of KINFRA. It falls only on the 'mostly effective' and 'completely effective' categories. While about 78 per cent of the responses applaud the operational performance of KINFRA as 'completely effective', only 22 per cent remaining on the choice of 'mostly effective.'

KINFRA is having a Board of Directors which shall consist of not more than 15 members as per the provisions of the Kerala Industrial Infrastructure Development Act, 1993. It has a galaxy of officials at its administrative and managerial cadres so as to facilitate its operations in a responsive manner. The responses on this parameter ennoble the strengths of the organisation in fulfilling its objectives for Kerala's rapid industrial development with its well defined policies, performance and infrastructure.

The operational effectiveness of KINFRA in terms of 'realising the vision through its mission for the speedy industrial development of the State' is given in Table 6.12.

Table 6.12
Extent of Realisation of Objectives
 (Parameter-12)

Parameter-12: Realising the vision through its mission for the speedy industrial development of the State.				
Choice of Evaluation		Standard Score (%)	Response(s)	
			Number	Per Cent
1	Completely Effective	100	05	27.8
2	Mostly Effective	83	11	61.1
3	Somewhat Effective	66	02	11.1
4	Neither Effective Nor Ineffective	50	00	00.0
5	Somewhat Ineffective	33	00	00.0
6	Mostly Ineffective	17	00	00.0
7	Completely Ineffective	00	00	00.0
Total			18	100.0
Weighted Score: [(0.66 x 11.1) + (0.83 x 61.1) + (1 x 27.8)]				85.84
Observation: The operational performance of KINFRA in realising its objectives with reference to this parameter is ' mostly effective ' with the following specifications:				
Majority Proportion		61.10		
Standard Score		83.00		
Weighted Score		85.84		

Source: Survey Information.

The Government may from time to time issue KINFRA such general or special directions as they deem necessary or expedient for the purpose of carrying out the objects of the Kerala Industrial Infrastructure Development Act, 1993. Being the industrial catalyst of the State, the

vision of KINFRA is to create a Kerala where industry thrives and innovation flourishes for a faster and sustainable industrial development of the State. Its mission is to enable development across Kerala by identifying and promoting core competency industries of each region, creating walk-in and manufacture environments and wooing discerning investors from across the world.

As far as the parameter 'realising the vision through its mission for the speedy industrial development of the State' is concerned, the responses spread over the ranges starting from 'somewhat effective' to 'completely effective.' The category 'mostly effective' accords the highest position of choice with a proportion of 61 per cent. Along with a proportion of about 28 per cent under the category 'completely effective', the responses on highest effectiveness constitute about 89 per cent of the aggregate responses. It can be observed that KINFRA has realised its vision for accentuating the industrial development of Kerala by identifying the core and competency sectors, creating plug and play business environments and attracting potential investors, all through the consistently enforced and effective execution of its mission.

The operational effectiveness of KINFRA in terms of 'attracting entrepreneurs and investments for accelerating the process of industrial development' is given in Table 6.13.

Table 6.13
Extent of Realisation of Objectives
 (Parameter-13)

Parameter-13: Attracting entrepreneurs and investments for accelerating the process of industrial development.				
Choice of Evaluation		Standard Score (%)	Response(s)	
			Number	Per Cent
1	Completely Effective	100	10	55.6
2	Mostly Effective	83	08	44.4
3	Somewhat Effective	66	00	00.0
4	Neither Effective Nor Ineffective	50	00	00.0
5	Somewhat Ineffective	33	00	00.0
6	Mostly Ineffective	17	00	00.0
7	Completely Ineffective	00	00	00.0
Total			18	100.0
Weighted Score: [(0.83 x 44.4) + (1 x 55.6)]				92.45
Observation: The operational performance of KINFRA in realising its objectives with reference to this parameter is ' completely effective ' with the following specifications:				
Majority Proportion		55.60		
Standard Score		100.0		
Weighted Score		92.45		

Source: Survey Information.

Availability of good quality infrastructure is a crucial factor in attracting industrial investments for any economy. KINFRA has at its credit commendable infrastructure and support services for attracting prospective investors so as to transform the State into a promising industrial as well as

entrepreneurial economy. As far as the parameter 'attracting entrepreneurs and investors for accelerating the process of industrial development in Kerala' is concerned, the responses fall only on the 'mostly effective' and 'completely effective' categories. There is not much significant difference between the categories as about 56 per cent of the responses ascertain the operational performance of KINFRA as 'completely effective' and 44 per cent signifies the performance as 'mostly effective.'

Thus, it can be observed that the operational performance of KINFRA is highly effective in developing world class infrastructure and ready-to-use built up spaces for the easy start up and management of industries and thus attracting prospective and potential investors from across the world to the core competency industrial sectors of Kerala. The industrial parks set up by KINFRA are recognised as important instruments for promoting specialised industrial development of the State by the creation of improved opportunities for business formation, innovation, competitiveness, productivity and growth. Certain synergies leading to improved economic gains and enhancement of quality are always associated with KINFRA industrial parks across the State.

The operational effectiveness of KINFRA in terms of 'effective control techniques, practices and management for developing a typical entrepreneurial culture in Kerala' is given in Table 6.14.

Table 6.14
Extent of Realisation of Objectives
 (Parameter-14)

Parameter-14: Effective control techniques, practices and management for developing a typical entrepreneurial culture in Kerala.				
Choice of Evaluation		Standard Score (%)	Response(s)	
			Number	Per Cent
1	Completely Effective	100	03	16.7
2	Mostly Effective	83	13	72.2
3	Somewhat Effective	66	02	11.1
4	Neither Effective Nor Ineffective	50	00	00.0
5	Somewhat Ineffective	33	00	00.0
6	Mostly Ineffective	17	00	00.0
7	Completely Ineffective	00	00	00.0
Total			18	100.0
Weighted Score: [(0.66 x 11.1) + (0.83 x 72.2) + (1 x 16.7)]				83.95
Observation: The operational performance of KINFRA in realising its objectives with reference to this parameter is ' mostly effective ' with the following specifications:				
Majority Proportion		72.20		
Standard Score		83.00		
Weighted Score		83.95		

Source: Survey Information.

KINFRA has its own way of operations including the coordination as well as control techniques and the practices and strategies for the successful management of its parks for the promotion of a typical business culture in the State. The Kerala Industrial Infrastructure Development Act, 1993

stipulates the constitution of a Board of Directors for KINFRA. The board shall consist of not more than 15 members. Further, there is a galaxy of administrative and managerial officials at different cadres for the smooth functioning of the industrial parks across the State. The details regarding constitution of the Board of Directors are given below:

Board of Directors of KINFRA		
Member(s)		Position
1	Chief Secretary to the Government.	Chairman
2	Secretary to the Government, Industries Department.	Director
3	Secretary to the Government, Finance Department.	Director
4	Chairman, Kerala State Electricity Board (KSEB).	Director
5	Director, Department of Industries and Commerce.	Director
6	Managing Director, Kerala State Industrial Development Corporation (KSIDC).	Director
7	Managing Director, Kerala State Financial Corporation (KFC).	Director
8	Chief Town Planner, Town Planning Department.	Director
9	Chairman, Kerala State Pollution Control Board.	Director
10	Labour Commissioner.	Director
11	Managing Director, KINFRA (Appointed under Section-6 of the Act).	Director
The remaining members shall be the representatives of professional bodies and financing institutions nominated by the Government for such term as may be prescribed.		Director(s)
Total Members		15

Each industrial park is assigned under the supervisory jurisdiction of a Project Manager who is responsible for the overall management of the park. The project managers are the direct liaison for the entrepreneurs for the starting of their industrial enterprises in the parks. The project managers are under the close supervision and guidance of the Managing Director of the Corporation who is the chief administrative official and liaison between the Government and the Corporation. Thus, as far as the parameter 'effective control techniques, practices and management for developing a typical entrepreneurial culture in Kerala' is concerned, 72 per cent of the responses corroborate the operational performance of KINFRA as 'mostly effective' with about 17 per cent and 11 per cent falls on the categories of 'completely effective' and 'somewhat effective' respectively.

With a strong and vibrant official hierarchy, KINFRA devises sound and feasible strategies for the successful development and management of its industrial parks. Appropriate control techniques, proper management practices and an effective coordination mechanism enable the Corporation to undertake different activities so that they can support one another to deliver the best results in time.

The operational effectiveness of KINFRA in terms of 'effective coordination mechanism for providing a better business exposure and ambience in Kerala' is given in Table 6.15.

Table 6.15
Extent of Realisation of Objectives
 (Parameter-15)

Parameter-15: Effective coordination mechanism for providing a better business exposure and ambience in Kerala.				
Choice of Evaluation		Standard Score (%)	Response(s)	
			Number	Per Cent
1	Completely Effective	100	06	33.3
2	Mostly Effective	83	12	66.7
3	Somewhat Effective	66	00	00.0
4	Neither Effective Nor Ineffective	50	00	00.0
5	Somewhat Ineffective	33	00	00.0
6	Mostly Ineffective	17	00	00.0
7	Completely Ineffective	00	00	00.0
Total			18	100.0
Weighted Score: [(0.83 x 66.7) + (1 x 33.3)]				88.66
Observation: The operational performance of KINFRA in realising its objectives with reference to this parameter is ' mostly effective ' with the following specifications:				
Majority Proportion		66.70		
Standard Score		83.00		
Weighted Score		88.66		

Source: Survey Information.

KINFRA attempts to make Kerala a leading industrial destination in the country by providing an uncompromising business exposure to those who wish to pursue their businesses in the State. Being an industrial facilitator, KINFRA catalyses the industrial growth of the State by making available

industry-specific infrastructure and support services at par with international standards. As far as the parameter 'effective coordination mechanism for providing a better business exposure and ambience in Kerala' is concerned, the responses fall again on the highly positive ranges of the scale. While about 67 per cent glorifies the operational performance of KINFRA as 'mostly effective', the remaining 33 per cent ratifies it as 'completely effective' which indicates that the coordination mechanism of KINFRA is really good and it activates its various functions and makes them effective and purposeful.

KINFRA opens up better avenues to the entrepreneurs and investors from across the world to the industrial landscape of Kerala by the provision of a commendable business exposure. It provides an utmost liberalised business environment with better incentives and support services including attractive lease out period and premium. The plug and play arrangements and the coordination mechanism enable the Corporation to synchronise all its efforts for accomplishing its goals. KINFRA always attempts to deliver its best to the entrepreneurs operating in the industrial parks and thereby contribute positively to the industrial development of Kerala.

The operational effectiveness of KINFRA in terms of 'accelerating the industrial development of the State by promoting industrial spots in core competency sectors' is given in Table 6.16.

Table 6.16
Extent of Realisation of Objectives
 (Parameter-16)

Parameter-16: Accelerating the industrial development of the State by promoting industrial spots in core competency sectors.				
Choice of Evaluation		Standard Score (%)	Response(s)	
			Number	Per Cent
1	Completely Effective	100	13	72.2
2	Mostly Effective	83	05	27.8
3	Somewhat Effective	66	00	00.0
4	Neither Effective Nor Ineffective	50	00	00.0
5	Somewhat Ineffective	33	00	00.0
6	Mostly Ineffective	17	00	00.0
7	Completely Ineffective	00	00	00.0
Total			18	100.0
Weighted Score: [(0.83 x 27.8) + (1 x 72.2)]				95.27
Observation: The operational performance of KINFRA in realising its objectives with reference to this parameter is ' completely effective ' with the following specifications:				
Majority Proportion		72.20		
Standard Score		100.0		
Weighted Score		95.27		

Source: Survey Information.

The tempo of industrial activity of any economy owes much to the potential and prospective activities of the Government for industrial promotion. Being the industrial catalyst of the State, KINFRA attempts to provide the infrastructure requirements of the State to keep pace with the

burgeoning needs of different sectors of the economy. Certain core competency sectors have been identified and a focused approach for the development of these priority sectors have been facilitated by the Government so as to give a fillip to its industrial development. KINFRA actively engages with the establishment of specialised 'industrial spots' for the promotion of industries in the core competency sectors of the State. With definite spillovers on the regional economy, these industrial spots provide immense scope for Kerala's industrial development.

As far as the parameter 'accelerating the industrial development of the State by promoting industrial spots in core competency sectors' is concerned, the responses covers the categories 'completely effective' and 'mostly effective' with a proportion of about 72 per cent and 28 per cent respectively. The responses idolise the operational performance of KINFRA as highly effective in its march of identifying and developing appropriate and purposeful industrial sites across the State. KINFRA is successful in establishing differentiated industrial parks with commendable infrastructure and support services for developing a peculiar business and entrepreneurial culture in Kerala. Working in line with the provisions of the Industrial and Commercial Policy of the Government, KINFRA really acts as the industrial catalyst of the State for achieving the goal of progressive, balanced and sustainable industrial development through its innovative practices, policies and management.

6.3. Summary of Responses and the Statistical Interpretation:

With the objective of boosting the pace of industrial growth in Kerala, KINFRA has been promoting the concept of industrial parks and has taken the lead in the setting up of specialised industrial parks throughout the State. The corporation has been established with certain explicit objectives as specified in the KINFRA Act, 1993. Being the industrial facilitator of the State, KINFRA always attempts to fulfil its objectives maximum so as to give a fillip to the industrial development of Kerala. KINFRA is equipped to usher better and new avenues of entrepreneurship for the State and has commendable success at its credit throughout the entire period of its operation.

Based on its objectives, as much as 16 parameters were identified for the extent of realisation of objectives and thereby examining the operational performance of KINFRA in the industrial landscape of Kerala. The responses were measured on a 7-point likert scale. The most significant observation is that the responses on any of the parameters never fall on the negative range of the scale. The responses spread on 'completely effective' (3 parameters), 'mostly effective' (9 parameters) and 'somewhat effective' (4 parameters). None of the parameters fall on the ineffective zones of the scale. The details are given in Table 6.17.

Table 6.17
Extent of Realisation of Objectives by KINFRA
 (Summary of Responses)

Parameter(s)		Observation(s)		
		Status	Proportion (%)	Weighted Score (%)
1	Parameter-01	Mostly Effective	55.60	86.77
2	Parameter-02	Mostly Effective	61.10	89.61
3	Parameter-03	Mostly Effective	55.60	90.55
4	Parameter-04	Mostly Effective	44.40	79.23
5	Parameter-05	Somewhat Effective	66.70	71.66
6	Parameter-06	Somewhat Effective	66.70	73.55
7	Parameter-07	Mostly Effective	50.00	89.60
8	Parameter-08	Somewhat Effective	72.20	74.03
9	Parameter-09	Somewhat Effective	61.10	67.10
10	Parameter-10	Mostly Effective	66.70	86.76
11	Parameter-11	Completely Effective	77.80	85.58
12	Parameter-12	Mostly Effective	61.10	85.84
13	Parameter-13	Completely Effective	55.60	92.45
14	Parameter-14	Mostly Effective	72.20	83.95
15	Parameter-15	Mostly Effective	66.70	88.66
16	Parameter-16	Completely Effective	72.20	95.27

Source: Survey Information.

Based on the responses obtained on select parameters of the objectives, certain statistical testing has been made on the data. The details of testing and its interpretation are given in Table 6.18.

Table 6.18
Extent of Realisation of Objectives by KINFRA
 (Statistical Testing & Interpretation)

H₀	The operational performance of KINFRA in realising its objectives is nugatory.
Test	Wilcoxon Signed Rank (Median) Test
Hypothetical Median	4
P-value	1.233 ⁻⁵
Observed Median	2 (True location is less than 4)
Decision	Reject the null hypothesis (H ₀) and accept the alternative hypothesis (H ₁).
H₁	The operational performance of KINFRA in realising its objectives is ‘mostly effective’ with a standard score of 83 per cent.

Having been set the null hypothesis as ‘the operational performance of KINFRA in realising its objectives is nugatory’, the study uses Wilcoxon Median Test for testing the hypothesis. Assuming a hypothetical median value of 4 in a 7-point likert scale, the observed median is 2 with a P-value of 1.233⁻⁵. The null hypothesis is therefore rejected and the study accepts the alternative hypothesis, signifying ‘the operational performance of KINFRA in realising its objectives is mostly effective.’

6.4. Impact of KINFRA Industrial Parks on the Industrial Economy of Kerala:

Adequate quantity, quality and reliability of infrastructure are the key to the growth and development of any economy. Well-built and sound infrastructure increases the efficiency and competitiveness of the industrial sector of the economy. As far as the industrial economy of Kerala is concerned, the Government attempts to initiate an element of dynamism in its growth process and particular emphasis have been given to the development of specialised infrastructure so as to boost the industrial efficiency of the economy. Instead of spreading industry to all nooks and corners, the potential and prospective growth of identified sectors must be taken into account while providing necessary and supporting infrastructure.

The industrial parks set up by KINFRA throughout the State have undoubtedly a positive influence and impact on the revitalisation of the business environment, debut of innovative initiatives, transfer of modern technologies and the restructuring and modernisation of Kerala industry. They may be treated as one of the most important factors supporting positive and progressive industrial development of the State. Industrial parks are receiving increasing attention in the sustainability discourse and the basic mandate of KINFRA industrial parks is to nurture

appropriate industries along with expanding the industrial base of the economy with global standards in quality, technology and management. The major benefits or potential impact of KINFRA industrial parks on the regional economy of Kerala is presented under two heads, namely: (a) impact on the business and (b) impact on the community.

(a). Impact on the Business:

KINFRA industrial parks bring together businesses that enable to minimise the resource use and function in accordance with the principles of economic viability. They attempt to spread the idea of a more efficient and sustainable industrial development so as to transform the State into a vibrant industrial and entrepreneurial economy with faster, inclusive and sustainable economic growth. The major benefits or potential impact of industrial parks within the perspective of business are listed below:

1. KINFRA industrial parks provide better ambience and support for the businesses and thereby ensure higher profitability.
2. KINFRA industrial parks offer an enhanced market image for the businesses and enable them to reap better economic results.
3. KINFRA industrial parks create high performance workplaces with exemplary infrastructure for the industrial units.
4. KINFRA industrial parks enable improved and higher economic efficiency for the businesses.

5. KINFRA industrial parks offer greater regulatory flexibility in its operations for the smooth functioning of the industrial units.
6. KINFRA industrial parks create favourable conditions and better avenues for entrepreneurship.
7. KINFRA industrial parks provide avenues of better quality, competitiveness and management for the industrial units.
8. KINFRA industrial parks create specialised business niches suitable for the customised growth of identified industrial sectors.
9. KINFRA industrial parks enable the industrial units to reduce their operating and waste disposal costs.
10. KINFRA industrial parks uphold improved public image for industries by reducing environmental liabilities.
11. KINFRA industrial parks enable to strengthen the industrial base of small and medium sized towns.
12. KINFRA industrial parks attempt to increase the efficiency of urban land use for sustainable industrialisation.
13. KINFRA industrial parks provide opportunities for the local companies to collaborate with the firms in the industrial parks.
14. KINFRA industrial parks enable opportunities for subcontracting networks with large businesses.
15. KINFRA industrial parks provide economic freedom for the development of small and medium enterprises.

16. KINFRA industrial parks support business incubations and startups and provide them better competitiveness.
17. KINFRA industrial parks provide increasing support for innovative businesses and technology innovations to enhance competitiveness.
18. KINFRA industrial parks enable the improvement of modern management systems, processes and skills for better business.
19. KINFRA industrial parks provide opportunities for the influx of national and international investments.
20. KINFRA industrial parks enable diffusion of economic learning to a wider business community by the creation of certain forward and backward business linkages.

(b). Impact on the Community:

The industrial parks set up by KINFRA offers a much more competitive and efficient environment for the industrial development of the State. They create conditions for certain cooperation and have a positive effect on the cooperativeness ability, labour productivity, increase of employment and expansion in the research capabilities of a particular industrial region. Establishment of industrial parks will bring certain synergic effects on the regional industrial economy and will ultimately have a progressive impact and influence on the community. The major benefits of KINFRA industrial parks within the community perspective are listed below:

1. KINFRA industrial parks enable to expand the local business opportunities and its networking effects.
2. KINFRA industrial parks promote the cooperativeness ability of the industrial units and will result in better performance and output.
3. KINFRA industrial parks enable better and improved community partnership with business.
4. KINFRA industrial parks enable to enhance the quality of life of the neighbourhood communities or locales.
5. KINFRA industrial parks enable to decrease unemployment by creating job opportunities to the local community.
6. KINFRA industrial parks enable to enhance labour productivity under a systematic business environment.
7. KINFRA industrial parks enable to reduce the uncertainty in the adoption of better and new technologies.
8. KINFRA industrial parks facilitate easy transfer of technologies and its synergic effects on the regional economy.
9. KINFRA industrial parks enable human resource development and the specific development of regional labour market.
10. KINFRA industrial parks enable reduction of transaction costs, sharing of risks and better matching of skills to jobs.
11. KINFRA industrial parks promote research capabilities of particular industrial regions and explore regional economic development.

12. KINFRA industrial parks foster the information and technology spillovers as its localisation externalities.

Thus, it can be observed that KINFRA industrial parks seek to ensure the industrial development of the State by bringing together a wide array of economic, social and environmental benefits to the regional economy. They are beneficial in the fact that they apply modern technologies and innovations, bring economic and innovative potential or internationally well-proven know-how and thus support the process of reconstruction and modernisation of the industry. Industrial parks contribute greatly to the improvement and revitalisation of the economic situation of the region and thereby contribute positively to its overall industrial as well as economic development.

Being the industrial catalyst of the State, KINFRA facilitates the setting up and management of theme-based industrial parks so as to modernise and diversify the industrial economy of Kerala. As an innovative and promising strategy to sustainable industrial development of the regional economy, industrial parks integrate business success, environmental excellence and community connections with certain cascading effects on the regional economy of the State.

6.5. Chapter Conclusion:

KINFRA has realised its objectives in a most effective manner and is having definite impact on the industrial economy of Kerala by building resilient infrastructure, fostering innovation and promoting inclusive and sustainable industrialisation. The infrastructure and support services offered by KINFRA industrial parks attract entrepreneurs from across the world to the industrial landscape of Kerala and have positively contributed to its industrial development. The study acknowledges Marshallian concept of 'industrial districts.' He states that concentration of specialised industries in particular regions provides certain 'localisation economies' and once the localisation and specialisation processes had got under way, it becomes cumulative and socialised in the locality. Geographical proximity and concentration provides specialised labour, stimulates innovative activity, enables technological and information spillovers nurtures subsidiary industries.¹⁶ Economies of agglomeration, benefits of interrelatedness, availability of better infrastructure and support services, mutual cooperation, increased employment opportunities and the development of backward regions are the major advantages of industrial parks that KINFRA is trying to reap in its march towards a much faster, sustainable and balanced industrial development of the State.

¹⁶ Marshall, Alfred (1890). *Principles of Economics*. London: Macmillan

Chapter-7

Summary, Findings and Conclusion

7.1. Summary:

Industrial parks can become the growth and innovation hubs in the industrial economy of Kerala. As a policy instrument of industrial development, industrial parks foster competitiveness, facilitate economic learning and catch-up, leverage new technologies and knowledge and accelerate the economic development of the State through rapid industrialisation. They provide a most conducive environment for the industries in the core competency sectors to start, flourish and significantly contribute positively to the domestic economy of the State. In the context, the study attempted to examine the present status, growth performance, operational efficiency, problems and the extent of realisation of objectives of KINFRA industrial parks within the framework of Kerala's industrial development. It has almost six objectives covering all these aspects. There are a total of 22 fully operational parks spread across the State and the study takes into account only those industrial parks which have been set up before the year 2010. So, the total number of sample industrial parks selected is 18 and the period of study selected is 2003-2015. Structured questionnaires built on specific likert scales were used for data collection and simple statistical tools and tests were used for data analysis. The operational effectiveness of KINFRA and its industrial parks is explored and analysed within the framework of its impact on the overall industrial development of Kerala.

7.2. Major Findings of the Study:

KINFRA had been set up to unleash the industrial potential of the State with the mandate of creating a conducive environment for the progressive industrial development of Kerala. In the context, the major findings of the study with particular reference to the present status, growth performance, operational efficiency, problems and the impact of KINFRA industrial parks on the industrial economy of Kerala may be summarised as follows:

1. KINFRA is a statutory body set up by the Kerala Industrial Infrastructure Development Act, 1993. It has catered to the industry-specific infrastructure requirements of the State by creating walk-in and manufacture environments with state-of-the-art facilities in ready-to-use industrial complexes.
2. KINFRA is the nodal agency for the Department of Industries and Commerce, Government of Kerala. It also serves as the nodal agency for the Ministry of Commerce and Industry, Ministry of Food Processing Industries and the Ministry of Electronics and Information Technology of the Government of India for their various schemes for the promotion of rapid industrialisation in Kerala. Besides, the State Government appoints KINFRA as the nodal for its prestigious projects and the galaxy includes Kochi Metro Rail Project and Kannur International Airport.

3. KINFRA industrial parks attempts to explore a typical business system in the State where productive and innovative entrepreneurship germinates, sustains and grows leading to the creation of a more vibrant and dynamic industrial economy for Kerala.
4. Being the industrial catalyst, KINFRA aims at the economic development of the industrially backward regions of the State by the setting up of 'industrial parks' with exemplary infrastructure and support services so as to promote a typical entrepreneurial culture in Kerala.
5. KINFRA encourages the rapid development of potential industries in the core competency sectors so as to transform the State into a most favoured investor-friendly business hub with globally accepted standards in quality, technology and management.
6. KINFRA has successfully completed 25 years of its operation and has at its credit 22 fully operational parks, 7 premier ongoing projects and 9 major flagship projects on anvil.
7. The galaxy of industrial parks set up by KINFRA includes specialised 'theme-based' parks, general small industries parks and exclusive zones for the development of particular industries.
8. Considering the fully operational industrial parks and the premier ongoing projects, KINFRA has a total of 18 'theme-based' parks throughout the State. They specialises their operations in emerging

areas like food processing, IT and ITES, electronics, infotainment, film and animation, apparel and garments, bio-technology, knowledge-based industries, manufacturing of defence equipments, rubber-based industries and petrochemical industries.

9. Besides the 'theme-based' parks, KINFRA is having 11 general small industries parks for the exclusive growth and development of the small scale sector of the State. They were established under the Integrated Infrastructure Development Centre (IIDC) Scheme of the Department of Small Scale Industries, Government of India.
10. India's first international apparel park established at Menamkulam in Thiruvananthapuram, India's first export promotion industrial park established at Kakkanad in Ernakulam, India's first food processing industrial park established at Kakkancherry in Malappuram, India's first infotainment park established at Kazhakuttom in Thiruvananthapuram, India's first herbal park at Vythiri in Wayanad, India's first rubber park established at Irapuram in Ernakulam, India's first marine park established at Aroor in Alappuzha and the high-tech bio-Technology and electronics park at Kalamassery in Ernakulam are some of the notable achievements of KINFRA over the years.
11. Out of the fully operational industrial parks, the Neo Space at KINFRA Techno Industrial Park, Kakkancherry, the Animation

Zone at KINFRA Film and Video Park, Kazhakuttom, the Biotechnology Incubation Centre at KINFRA Hi-Tech Park, Kalamassery and the Food Processing Zone at KINFRA Small Industries Park, Adoor are the major landmark extensions made by KINFRA in its existing parks.

12. KINFRA has 7 flagship ongoing projects at present. They are KINFRA Seafood Park, Aroor, KINFRA Electronics Manufacturing Cluster, Kakkanad, KINFRA Port and Container Terminal, Muttam, KINFRA Spices Park, Thodupuzha, KINFRA Defence Park, Ottapalam, KINFRA Mega Food Park, Palakkad and KINFRA Petrochemical Park, Ambalamughal.
13. Besides the ongoing projects, KINFRA has at its credit 9 major projects on anvil at present. They are KINFRA Marine Park, Beypore, KINFRA Kera Park, Kodakara, KINFRA Footwear Park, Ramanattukara, KINFRA Print Village, Walayar, KINFRA Advanced Knowledge and Technology Park, Kozhikode, KINFRA Gem and Jewellery Park, Puzhakkalpadam, KINFRA International Exhibition and Convention Centres at Kochi and Kozhikode, KINFRA International Furniture Hub, Kalamassery and KINFRA Global Ayurveda Village, Thiruvananthapuram.
14. Having been recognised the increased demand for the ready-to-use built up spaces, KINFRA has set up Standard Design Factories

(SDF) in 12 of its industrial parks with a total area of 1381000 sq. ft.

The SDFs provide plug and play arrangements for the easy start up of industries with minimum time and cost.

15. For the establishment of industrial parks at the priority sectors of the State, KINFRA receives assistance from the Central Government through its specialised schemes such as the Export Promotion Industrial Park Scheme of the Ministry of Commerce and Industry, the Mega Food Park Scheme of the Ministry of Food Processing Industries, the Integrated Infrastructure Development Scheme of the Ministry of Small Scale Industries, the Assistance to States for the Development of Export Infrastructure and Allied Activities and the Modified Industrial infrastructure Development Scheme of the Department of Industrial Policy and Promotion.
16. At present, KINFRA utilises the possibilities and prospects of joint venturing and public-private-partnerships (PPP) for the establishment and maintenance of its industrial parks. It has 5 joint venture parks as KINFRA Seafood Park, Aroor, KINFRA Rubber Park, Irapuram, KINFRA Food and Spices Park, Thodupuzha, WISE KINFRA Park, Kanjikode and KINFRA Petrochemical Park, Ambalamughal.
17. Having been recognised the flawless ambience and the industry-specific infrastructure available, 3 of the industrial parks set up by KINFRA have accorded the 'Product Specific Special Economic

Zone' status by the Government of India. They are KINFRA Film and Video Park, Kazhakuttom, KINFRA Hi-Tech Park, Kalamassery and KINFRA Food Processing Park, Kakkancherry.

18. The industrial parks set up by KINFRA have all the requisite infrastructure for the easy start up of industries such as developed land or built up spaces, dedicated and uninterrupted power, continuous water supply, better sewerage networks, sufficient storage and warehouses and excellent communication and connectivity systems.
19. Along with commendable infrastructure, KINFRA industrial parks are having excellent support services also such as administrative blocks, conference halls, training centres, banks, cafeteria, health care centres, space for startups and business incubations, hostel for employees, proper street lighting and round the clock security.
20. There exists a 'single window clearance mechanism' in all the parks which facilitates the speedy issue of various licences, clearances and certificates required for different industries.
21. KINFRA is a prominent land bank holder for the exclusive development of industries in the State. It acquires land at strategic locales for the orderly and balanced development of industries by taking into account the regional, social and ecological considerations.

22. As far as the fully operational industrial parks are concerned, the total acres of land acquired by KINFRA is 2094 acres. Out of this, 1835 acres of land is allotted to various industrial parks as on 31st March, 2018.
23. The mean value of total land acquired by KINFRA for its fully operational industrial parks is 116.33 acres with a minimum value of 33 acres and a maximum value of 281 acres.
24. The mean value of total land allotted by KINFRA for its fully operational industrial parks is 101.94 acres with a minimum value of 30 acres and a maximum value of 281 acres.
25. Besides for the fully operational parks, KINFRA has also acquired 717 acres of land at different locales of Kerala for its ongoing projects. Thus, the total area of land acquired by KINFRA for its fully operational as well as ongoing projects is 2817 acres as on 31st March, 2018.
26. As far as the land utilisation pattern of KINFRA is concerned, it can be observed that 88 per cent of the total land acquired has been allotted for different industrial units in the fully operational parks.
27. The degree of association between land acquired and allotted is 0.98 which reveals that there exists a high degree of positive correlation between the land acquired and land allotted by KINFRA for its industrial parks.

28. At present, KINFRA is gearing up for acquiring another 3000 acres of land for the setting up of Industrial Development Zones (IDZ) at select locales of the State. With this, KINFRA would become one of the largest land bank holders in Kerala for its rapid and sustainable industrial development.
29. There exists a strong demand for the developed land or built up spaces of KINFRA among the entrepreneurs because of the flexible terms and conditions, incentives and concessions and also of the typical business ambience offered in the industrial parks. The lease out period is normally 30 years.
30. KINFRA obtains direct funding from the Government of Kerala through its budgetary allocations. It also receives funds from the Central Government through its various schemes. Out of which, the total volume of investments made by KINFRA for the establishment and management of industrial parks is Rs. 858.28 crore for the study period 2003-2015.
31. The mean value of the total investments made by KINFRA for the period 2003-2015 is Rs. 71.52 crore with a minimum value of Rs. 19.27 crore and a maximum value of Rs. 322.20 crore. The total volume of investments made by KINFRA for its industrial parks is Rs. 1837.56 crore as on 31st March, 2018.

32. KINFRA industrial parks offer numerous employment opportunities, both directly and indirectly, to the regional local population. The total volume of direct employment in the fully operational industrial parks of KINFRA is 20017 as on 31st March, 2018.
33. The infrastructure quality, abundance of workforce from nearby places, easier access, connectivity, power and water availability, sewage and environmental protection, secure and peaceful environment, local people support and efficient management, all helped to build and sustain confidence among the investors on KINFRA and its industrial parks.
34. Ease of doing business, support systems and services, client relationship management, standards of business operations, responsive commitments, opportunities for sustainable entrepreneurship and extension services are the major parameters used in the study for measuring the operational efficiency of KINFRA industrial parks. Each parameter is considered as a composite index as they are having a subset of related aspects for their measurement.
35. In terms of the parameter 'ease of doing business', it is observed that the operational efficiency of KINFRA industrial parks is 'mostly effective.' By providing a typical business ambience at par with global standards, KINFRA industrial parks assure quality standards and

environment for the start up and sustainable growth of industries in Kerala.

36. In terms of the parameter 'support systems and services', it is observed that the operational efficiency of KINFRA industrial parks is 'mostly effective.' KINFRA industrial parks provide the most specific assistance to the entrepreneurs for the growth and development of their industries through the services ranging from information, management, technology, entrepreneurship, policy and extension.
37. In terms of the parameter 'client relationship management', it is observed that the operational efficiency of KINFRA industrial parks is 'mostly effective.' KINFRA attempts to uphold better client relationship management strategies over the entire period of its operations in the State.
38. In terms of the parameter 'standards of business operations', it is observed that the operational efficiency of KINFRA industrial parks is 'mostly effective.' KINFRA stimulates diverse avenues of business by following certain quality benchmarks and standard ways of doing things and ultimately drives the direction and pace of innovation that underpins the industrial growth of the State.
39. In terms of the parameter 'responsive commitments', it is observed that the operational efficiency of KINFRA industrial parks is 'mostly

effective.’ KINFRA works in line with the Industrial and Commercial Policy of the Government and thus, continually seeks to improve its services so as to make it as a genuinely purpose-led organisation with responsive commitments.

40. In terms of the parameter ‘opportunities for sustainable entrepreneurship’, it is observed that the operational efficiency of KINFRA industrial parks is ‘mostly effective.’ KINFRA plays a pivotal role in promoting a typical entrepreneurial culture in Kerala and drives innovations so as to contribute positively to the industrial development of the State.
41. In terms of the parameter ‘extension services’, it is observed that the operational efficiency of KINFRA industrial parks is ‘mostly effective.’ KINFRA always attempts to provide the entrepreneurs opportunities for assessing their own capabilities for the sustained growth, expansion and diversification of their businesses.
42. Thus, by taking into account the operational effectiveness of KINFRA industrial parks in terms of the select parameters, it can be inferred that KINFRA has proved the premise that a cluster of competing and complementary industries has more to offer on the industrial arena of the State than the very same industries taken in isolation.

43. It can be observed that KINFRA 'often' faces the problems of (i) delay in the establishment of standard design factories (SDF) in the existing industrial parks, (ii) exceeding of actual cost of the project over its estimated cost, (iii) delay in the timely completion and commissioning of industrial parks and (iv) the cost escalation and the subsequent rise in revenue expenditure. Lack of sufficient autonomy for its operations and management and deficient budget allocation are the other notable problems faced by KINFRA 'occasionally' in its operational framework and management.
44. Identification of priority sectors for business, transparency and stability of the policies, removal of administrative barriers, sufficient autonomy in operations and management and market attractiveness are some of the parameters that must be taken into account so as to strengthen KINFRA and its way of operations.
45. Regarding the extent of realisation of objectives of KINFRA, 16 parameters based on the explicit objectives as laid down in the KINFRA Act were identified. Observance status of these parameters were explored and analysed within the framework of the operational effectiveness and performance of KINFRA.
46. The operational performance of KINFRA in realising its objectives with reference to the parameter 'identification and acquisition of appropriate industrial sites for the easy start up of industries in

Kerala' is 'mostly effective' with a majority proportion of about 56 per cent. About 33 per cent acknowledge it as 'completely effective' and about 11 per cent mark the extent as 'somewhat effective.'

47. The operational performance of KINFRA in realising its objectives with reference to the parameter 'establishment of proper and ready-to-use built-up spaces in the identified industrial sites across the State' is 'mostly effective' with a majority proportion of about 61 per cent. Remaining 39 per cent ascertained it as 'completely effective', signifying the role of KINFRA is highly successful.
48. The operational performance of KINFRA in realising its objectives with reference to the parameter 'development of industry-specific infrastructure and other support services in the industrial parks' is 'mostly effective' with a majority proportion of about 56 per cent. The remaining 44 per cent ratify it as 'completely effective' showing that untiring efforts are being made by KINFRA for the provision of leading-edge infrastructure and support services in its parks.
49. The operational performance of KINFRA in realising its objectives with reference to the parameter 'making available the developed land and built-up spaces to the entrepreneurs on flexible terms and conditions' is 'mostly effective' with a majority proportion of about 44 per cent. While about 39 per cent ascertained it as 'somewhat effective', about 17 per cent acknowledge it as 'completely effective.'

50. The operational performance of KINFRA in realising its objectives with reference to the parameter 'developing and properly managing the industrial estates at select locales of the State' is 'somewhat effective' with a majority proportion of about 67 per cent. The remaining 33 per cent ascertained it as 'mostly effective', signifying the fact that KINFRA acknowledges the prospects of industrial clustering for achieving the overall sustainability and competitiveness of the industrial sector of Kerala.
51. The operational performance of KINFRA in realising its objectives with reference to the parameter 'undertaking of different schemes for the establishment and managing of industrial parks across the State' is 'somewhat effective' with a majority proportion of about 67 per cent. About 22 per cent ratify it as 'mostly effective' and about 11 per cent ascertain it as 'completely effective', revealing the fact that KINFRA has come long way as the industrial catalyst and nodal of various agencies for the rapid industrial development of Kerala.
52. Being the nodal of the Central and State Governments for their various schemes for the industrial development of the State, KINFRA actively facilitates different schemes of the Ministries of Commerce and Industry, Food Processing Industries and the Electronics and Information Technology, Government of India along

with the diverse schemes of the Department of Industries and Commerce of the Government of Kerala.

- 53.** The operational performance of KINFRA in realising its objectives with reference to the parameter 'effective and proper coordination with other agencies and departments of the Government for the provision of quality industrial infrastructure' is 'mostly effective' with a majority proportion of 50 per cent. While about 6 per cent mark it as 'somewhat effective', about 44 per cent ascertain it as 'completely effective', indicating the fact that the coordination of KINFRA with other agencies for the provision of state-of-the-art infrastructure is highly appreciable.
- 54.** The operational performance of KINFRA in realising its objectives with reference to the parameter 'adherence to the time schedule from the procuring of land and its allotment to the entrepreneurs as ready-to-use industrial complexes' is 'somewhat effective' with a majority proportion of about 72 per cent. The remaining 28 per cent mark it as 'completely effective', signifying the fact that KINFRA follows explicit plans, framework and strategies to reap excellence in its operations in stipulated timeframes.
- 55.** The operational performance of KINFRA in realising its objectives with reference to the parameter 'strict adherence to the cost estimates for the establishment and maintenance of industrial parks across the

State' is 'somewhat effective' with a majority proportion of about 61 per cent. About 22 per cent mark it as 'mostly effective'; but about 17 per cent acknowledge it as 'neither effective nor ineffective.'

- 56.** The operational performance of KINFRA in realising its objectives with reference to the parameter 'generation of sufficient employment opportunities (directly and indirectly), especially for the regional local population' is 'mostly effective' with a majority proportion of about 66 per cent. While about 6 per cent mark it as 'somewhat effective', about 28 per cent ascertain it as 'completely effective', signifying the fact that KINFRA paves the way for a plethora of economic activities including generation of employment and income, especially to the regional population.
- 57.** The operational performance of KINFRA in realising its objectives with reference to the parameter 'better organisational structure and coordination mechanism for the fulfilment of its objectives' is 'completely effective' with a majority proportion of about 78 per cent. The remaining 22 per cent mark it as 'mostly effective.' This ennobles the strengths of KINFRA in fulfilling its objectives with its well defined policies, performance, coordination, organisational set up and management.
- 58.** The operational performance of KINFRA in realising its objectives with reference to the parameter 'realising the vision through its

mission for the speedy industrial development of the State' is 'mostly effective' with a majority proportion of about 61 per cent. While about 11 per cent mark it as 'somewhat effective', about 28 per cent acknowledge it as 'completely effective', explicitly indicating KINFRA has realised its vision for accentuating the industrial development of Kerala through the effective execution of its mission.

- 59.** The operational performance of KINFRA in realising its objectives with reference to the parameter 'attracting entrepreneurs and investments for accelerating the process of industrial development' is 'completely effective' with a majority proportion of about 56 per cent. The remaining 44 per cent mark it as 'mostly effective', revealing the fact that KINFRA is highly effective in developing world class infrastructure and ambience for attracting prospective entrepreneurs and investors from across the world.
- 60.** The operational performance of KINFRA in realising its objectives with reference to the parameter 'effective control techniques, practices and management for developing a typical entrepreneurial culture in Kerala' is 'mostly effective' with a majority proportion of about 72 per cent. While about 11 per cent mark it as 'somewhat effective', about 17 per cent ascertain it as 'completely effective.'
- 61.** The operational performance of KINFRA in realising its objectives with reference to the parameter 'effective coordination mechanism

for providing a better business exposure and ambience in Kerala' is 'mostly effective' with a majority proportion of about 67 per cent. The remaining 33 per cent mark it as 'completely effective.' This acknowledges the fact that the coordination mechanism of KINFRA is really good in creating better avenues to the entrepreneurs and investors in the industrial landscape of Kerala.

- 62.** The operational performance of KINFRA in realising its objectives with reference to the parameter 'accelerating the industrial development of the State by promoting industrial spots in core competency sectors' is 'completely effective' with a majority proportion of about 72 per cent. The remaining 28 per cent mark it as 'mostly effective.' This idolises the fact that the operational performance of KINFRA is highly effective in its march towards identifying and developing appropriate industrial spots across the State.
- 63.** As far as the entire parameters for measuring the extent of realisation of objectives are concerned, it can be observed that the responses on any of the parameters never fall on the ineffective zones of the scale. They spread only on 'completely effective' (3 parameters), 'mostly effective' (9 parameters) and 'somewhat effective' (4 parameters). The Wilcoxon Median Test acknowledges the operational performance of

KINFRA in realising its objectives is 'mostly effective' with a standard score of 83 per cent.

- 64.** The industrial parks set up by KINFRA will have definite influence and positive impact on the restructalisation and modernisation of Kerala industry with global standards in quality, technology, innovative initiatives and management. They bring together businesses and function in accordance with the principles of economic viability. The study summarises the impact of KINFRA industrial parks on the industrial development of Kerala under three heads as the impact on business, impact on the community and the impact on the environment.
- 65.** KINFRA industrial parks provide better ambience and support services for the businesses for ensuring higher profitability. They offer an enhanced market image for the businesses to reap better economic results. They create high performance workplaces with exemplary infrastructure leading to improved and higher economic efficiency for the businesses.
- 66.** KINFRA industrial parks offer greater regulatory flexibility in its operations and create favourable conditions for entrepreneurship. They provide better avenues of competitiveness for the industries and create specialised business niches for the growth of priority sectors. They also strengthen the industrial base of the small and medium

sized towns and increase the efficiency of urban land use for sustainable industrialisation.

- 67.** KINFRA industrial parks provide opportunities for the local companies to collaborate with the firms in the industrial parks and enable opportunities for subcontracting networks with large businesses. They provide economic freedom for the development of small and medium enterprises and also support business incubations and startups.
- 68.** KINFRA industrial parks provide opportunities for the influx of investments and enable the adaptation of modern management systems, processes and skills for better business. They enable diffusion of learning to a wider business community by the creation of certain forward and backward business linkages.
- 69.** KINFRA industrial parks create conditions for certain cooperation and have a positive effect on the cooperativeness ability, labour productivity, increase of employment and expansion in the research capabilities of particular industrial regions. They enable the development of regional labour market and also enhance the quality of life of the neighbourhood communities.

7.3. Conclusion:

Kerala paves the way for rapid industrialisation. As a step towards faster and sustainable industrial development, the State focuses on the creation of exemplary industrial infrastructure at par with global standards. It has sufficient potential for a much progressive economic development through rapid industrialisation in the context of the present globalised world and knowledge society, provided there is a change in the mindset of the people, government, political parties, civil society and the media. Being an active facilitator and industrial catalyst of the State, KINFRA has a saga of success in promoting a typical entrepreneurial culture and in making Kerala as one of the most promising and vibrant business hub of the country. It always strives to give a fillip to the momentum of Kerala's industrial development. The industrial parks set up by KINFRA are today recognised as important instruments for promoting rapid industrial development, innovation, competitiveness, productivity and focused growth of the regional economy of the State. The performance and effectiveness of KINFRA over the last 25 years of its operation in the industrial landscape of Kerala ratifies the fact. The prospects for Kerala's further industrial development depend largely upon the strength of a clear cut vision and mission and the willingness on the part of the policymakers to accept realism with a pragmatic approach.

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Questionnaires

Appendix-1

QUESTIONNAIRE FOR KINFRA

(To be filled by the official representative of the Corporation)

Section-1

General Information

- 1.1. Name of the organisation :.....

- 1.2. Year of establishment :.....
- 1.3. Address of Head Quarters :.....

- 1.4. Administrative department
 (Under the Government) :.....
- 1.5. What are the major functions of KINFRA with particular reference
 to the industrial development of the State?
 (Please put a '✓' mark in the appropriate boxes)
- Identification of the core competency areas for the industrial
 development of the State.
 - Identification of appropriate industrial sites for the setting up
 of industries throughout the State.
 - Acquire land and its full-fledged development.
 - Setting up of industrial parks.
 - Establishing buildings and other ready-to-use built up spaces in
 the industrial parks.
 - Provision of quality infrastructure and other support services in
 the industrial parks.
 - Allotment of the built up modules to the entrepreneurs.

- Establishment and maintenance of industrial estates.
- Undertaking of different schemes for the orderly development of industries, especially in the backward regions of the State.
- Coordinating with different agencies to provide the services at affordable cost.
- Construction and management of industrial complexes.
- Establishment and maintenance of Standard Design Factories (SDF) in the industrial parks.
- Promoting balanced industrial development of the State.
- Acts as nodal agency for different agencies or Government departments.

1.6. Which are the major departments or institutions for which KINFRA acts as the nodal agency for any of their specific scheme(s)?

(Please put a '✓' mark in the appropriate boxes)

- Ministry of Commerce and Industry, Government of India.
- Ministry for Food Processing Industries, Government of India.
- Department of Industries and Commerce, Government of Kerala.
- Kochi Metro Rail Project, Government of Kerala.
- Kannur International Airport, Government of Kerala.
- Others, if any, please specify:

(a).

(b).

(c).

(d).

(e).

- 2.9. How effective is KINFRA in keeping strict adherence to the cost estimates for the establishment and maintenance of the industrial parks across the State?

1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 2.10. How effective is KINFRA in generating sufficient employment opportunities (directly and indirectly), especially for the regional local population?

1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 2.11. How effective is the organisational structure and coordination mechanism of KINFRA in fulfilling all its objectives and to make it as the 'industrial catalyst' of the State?

1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 2.12. How effective is KINFRA in realising its mission through communicating its vision for the speedy industrialisation of Kerala?

1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 2.13. How effective is KINFRA in attracting prospective entrepreneurs and investments for accelerating the process of regional industrialisation of the State?

1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 2.14. How effective is the control techniques of KINFRA in inculcating a typical entrepreneurial culture in the industrial economy of Kerala?

1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 2.15. How effective is the coordination mechanism of KINFRA in providing a better business exposure in the State?

1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 2.16. How effective is KINFRA in promoting the industrial development of the State by promoting 'industrial spots' in the core competency sectors as identified by the Industrial Policy of the Government?

1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section-3

Growth Performance of KINFRA Industrial Parks

- 3.1. Give a brief account of the year-wise establishment of industrial parks (since the formation of KINFRA) across the State as on 31st March, 2018.

Year	Name of the Industrial Park	Number
1993-1994		
1994-1995		
1995-1996		
1996-1997		
1997-1998		
1998-1999		
1999-2000		
2000-2001		
2001-2002		
2002-2003		

2003-2004		
2004-2005		
2005-2006		
2006-2007		
2007-2008		
2008-2009		
2009-2010		
2010-2011		
2011-2012		
2012-2013		
2013-2014		
2014-2015		
2015-2016		
2016-2017		
2017-2018		
Total		

- 3.2. What is the overall status of industrial parks established by KINFRA as on 31st March, 2018?

Category of the Park		Number
1	Number of parks sanctioned.	
2	Number of operational parks.	
3	Number of parks with Special Economic Zone (SEZ) status.	
4	Number of parks with Standard Design Factories (SDF).	
5	Number of joint venture parks.	
Total		

- 3.3. Give a brief account of the year-wise details of land acquired and allotted by KINFRA for its industrial parks.

(As at the end of the financial year concerned)

Year	Area of Land (Acres)	
	Acquired	Allotted
2003-2004		
2004-2005		
2005-2006		
2006-2007		
2007-2008		
2008-2009		
2009-2010		
2010-2011		
2011-2012		
2012-2013		
2013-2014		
2014-2015		
Total		

- 3.4. Which of the industrial parks set up by KINFRA are having the 'Special Economic Zone (SEZ)' status as on 31st March, 2018?

Name of the Park(s)		Thrust Area(s)
1		
2		
3		
4		
5		

(Please use separate sheets, if necessary)

- 3.5. Which of the industrial parks set up by KINFRA are having Standard Design Factories (SDF) as on 31st March, 2018?

Name of the Park(s)		Thrust Area(s)
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

(Please use separate sheets, if necessary)

- 3.6. Give a brief account of joint venture industrial parks set up by KINFRA as on 31st March, 2018.

Name of the Park(s)		Joint Venture Company	Thrust Area(s)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

(Please use separate sheets, if necessary)

3.7. Please give the year-wise details of total volume of investment incurred and the employment generated in the industrial parks established by KINFRA.

(As at the end of the financial year concerned)

Year	Investment (Rs.)	Employment (No.)
2003-2004		
2004-2005		
2005-2006		
2006-2007		
2007-2008		
2008-2009		
2009-2010		
2010-2011		
2011-2012		
2012-2013		
2013-2014		
2014-2015		
Total		

Section-4 **Operational Efficiency of KINFRA**

Please answer the questions numbered 4.1 to 4.7 below, keeping in mind the performance of KINFRA in certain key areas such as: (i) facilitating the ease of doing business, (ii) providing industry-specific support services, (iii) ensuring dynamic client relationship management, (iv) developing and maintaining standards of business operations, (v) responsive commitments towards the industrial units, (vi) ensuring opportunities for the growth of sustainable entrepreneurship and (vii) providing valuable extension services for the growth and development of industrial units operating in its

various industrial parks. Mark your response(s) as per the scale shown below:

- 1 → Completely Agree.
 2 → Mostly Agree.
 3 → Neither Agree nor Disagree.
 4 → Mostly Disagree.
 5 → Completely Disagree.

4.1. How effective is KINFRA in facilitating ease of doing business for the spread of industries in Kerala?

(Please enter your response(s) to the items listed below)

Parameters		1	2	3	4	5
(a)	The lease out period and premium offered by KINFRA is really attractive for the starting of an industrial unit.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(b)	The terms and conditions laid down by KINFRA for the entrepreneurs who intend to start a business venture are highly flexible and affordable.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(c)	The infrastructure and other support services provided by KINFRA for the industrial units are excellent.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(d)	The common facilities available in the parks are excellent and supplementing the smooth running and growth of the business enterprises.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(e)	The facilities in the industrial parks are well organised and easily accessible for the industrial units so as to ensure them a hassle free business environment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(f)	KINFRA takes utmost care in consistently and continually communicating its key initiatives to the industrial units and other stakeholders.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4.2. How effective is the support services of KINFRA for the industrialisation of the State?

(Please enter your response(s) to the items listed below)

Parameters		1	2	3	4	5
(a)	KINFRA communicates well the required information to the industrial units and the units are usually kept informed about the things they want to know.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(b)	KINFRA provides a proper framework for the determination and realisation of the business objectives of the entrepreneurs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(c)	KINFRA provides proper administration and elaboration of the business and hence greatly contribute to the continuity and success of the enterprise.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(d)	KINFRA stimulates the independent and creative initiatives of the entrepreneurs by providing well defined areas of work and operation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(e)	KINFRA controls and influences the managerial actions of the entrepreneurs with a view to improve their organisational effectiveness.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(f)	KINFRA addresses every challenging issues and problems of the units in the parks and helps to resolve the issues in a more feasible manner.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4.3. How dynamic and effective is the client relationship management in KINFRA?

(Please enter your response(s) to the items listed below)

Parameters		1	2	3	4	5
(a)	There exists a smooth and cooperative environment that provides good relationship between the KINFRA management and the industrial units.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(b)	The management and employees of KINFRA are committed to producing the highest quality of work for its clients.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(c)	The professionalism and courtesy of the KINFRA team are really good and encouraging with particular reference to the development of businesses.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(d)	KINFRA count the ideas and allow the entrepreneurs to discuss with the management whatever matter(s) related to their company.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(e)	The entrepreneurs have the freedom to question the decisions or actions taken by the KINFRA management.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(f)	The entrepreneurs have the freedom to develop, revise and modify any idea or business plan for the betterment of the industrial unit.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4.4. How good is KINFRA in the development and maintenance of standards of business operations in their industrial parks?

(Please enter your response(s) to the items listed below)

Parameters		1	2	3	4	5
(a)	KINFRA provides all the facilities for efficiently producing the products and services at affordable cost and within a shortest time span.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(b)	KINFRA plays a significant role in realising the fullest utilisation of capacity of the industrial units in the parks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(c)	KINFRA permits the optimum use of resources of the industrial units including technological improvements.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(d)	KINFRA supports and prepares the entrepreneurs to effectively manage the operating risk.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(e)	KINFRA undertakes all the promotional activities for the industrial un its operating in the parks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(f)	The facilities and support services provided by KINFRA enables to strengthen the ability of the entrepreneurs to deliver high standards of quality in their business.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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4.5. How responsive is KINFRA to their commitments towards the industrial units operating in their parks?

(Please enter your response(s) to the items listed below)

Parameters		1	2	3	4	5
(a)	By the setting up of industrial parks, KINFRA provides certain locational and localised advantages to the entrepreneurs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(b)	The environment at KINFRA parks enables to efficiently innovating and bringing new ideas, products or services to the market.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(c)	KINFRA provides the basic training and development activities to enhance the level of confidence of the entrepreneurs in making their business a success.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(d)	KINFRA follows strict adherence to the timeliness of its services that provides a strong impetus to the entrepreneurs for doing their business.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(e)	KINFRA enables the industrial units located in the park in leveraging technology to improve their operational efficiency.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(f)	KINFRA undertakes all the possible efforts to enhance the productivity of employees working in various industrial units of the park.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4.6. Does KINFRA provide opportunities for the growth of sustainable entrepreneurship in Kerala?

(Please enter your response(s) to the items listed below)

Parameters		1	2	3	4	5
(a)	KINFRA attracts prospective entrepreneurs to the industrial parks for the start up of their business through different schemes and programmes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(b)	KINFRA provides immense scope and opportunities for the expansion of the industrial units operating in the parks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(c)	KINFRA acknowledges and provides ample space for the diversification activities of the industrial units.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(d)	The framework offered by KINFRA industrial parks offers immense possibilities for maintaining growing relationships with the customers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(e)	KINFRA enables the entrepreneurs to effectively managing their community involvement and societal commitment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(f)	KINFRA is the apt choice to begin and sustain the work than any other organisation of similar nature.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4.7. How valuable are the extension services of KINFRA for the growth and development of industrial units in its parks?

(Please enter your response(s) to the items listed below)

Parameters		1	2	3	4	5
(a)	KINFRA's current activities reflect a strong focus on the development of its industrial parks as well as the industrial units located in the parks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(b)	KINFRA provides easy access to the supplies and equipments needed for the optimal performance of the industrial units.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(c)	KINFRA provides better and effective marketing assistance for the product(s) of business ventures located in the park.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(d)	KINFRA undertakes all the possible measures for the promotion of export of the product(s) of the industrial units.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(e)	KINFRA provides appropriate ambience for the development of new and improved ways of doing things.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(f)	The industrial parks set up by KINFRA are a good place for the prospective entrepreneurs trying to get ahead in their business ventures.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section-5
Problems and Constraints

Please answer the questions below, keeping in mind the major problems or constraints faced by KINFRA in establishing and managing the industrial parks across the State. Mark your response (Please put a '✓' mark) as per the scale shown below:

1 → Never.

2 → Rarely.

3 → Sometimes.

4 → Often.

5 → Always.

Problems/Constraints		1	2	3	4	5
(a)	Delay in establishing new industrial parks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(b)	Delay in establishing Standard Design Factories (SDF) in industrial parks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(c)	Delay in locating suitable projects for the existing built up spaces in parks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(d)	Delay in establishing industry-specific infrastructure in the parks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(e)	Delay in establishing proper support services in the industrial parks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(f)	Actual cost of establishing the project exceeds its estimated cost.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(g)	Delay in the timely completion of the project.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(h)	Delay in establishing the single window clearance facility in the parks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(i)	Lack of autonomy for KINFRA for its operations and management.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(j)	Non-availability of trained and qualified personnel for the parks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(k)	Lack of genuine entrepreneurs for the built up spaces in the industrial parks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(l)	Lack of commitment on the part of the entrepreneurs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(m)	Misbehaviour of entrepreneurs obstructing fulfilment of objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(n)	Deficient budget allocation by the Government.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(o)	Delay in the transmission of funds from the Government.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(p)	Deficiency in the procurement of funds for investment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(q)	Problem of cost escalation or abundant revenue expenditure.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(r)	Lack of fund raising capacity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section-6 **Future Prospects**

6.1. Is there any expansion plan for KINFRA proposed in the coming five years?

Yes

No

If your answer is 'Yes', please specify the nature of expansion activities:

Name of the Project(s)		Estimated Cost (Rs.)	Thrust Area(s)
1			
2			

3			
4			
5			
6			

(Please use separate sheets, if necessary)

- 6.2. Give a brief account of the major joint venture projects proposed by KINFRA (if any) in the coming few years:

	Name of the Project	Joint Venture Company	Thrust Area(s)
1			
2			
3			
4			
5			
6			

(Please use separate sheets, if necessary)

- 6.3. Overall, how satisfied are you with the operational performance of various industrial parks of KINFRA spread across the State? (Please put a '✓' mark).

- Very Satisfied.
 Mostly Satisfied.
 Somewhat Satisfied.
 Neither Satisfied nor Dissatisfied.
 Somewhat Dissatisfied.
 Mostly Dissatisfied.
 Very Dissatisfied.

If your answer is on the area 'dissatisfied', please specify the major reason(s) for the dissatisfaction:

- (a).
- (b).
- (c).
- (d).
- (e).

6.4. In your opinion, what factors are most necessary to increase the competitiveness and efficiency of the organisation? (Please put a '✓' mark in the appropriate boxes)

- Autonomy in operations and management.
- Professionalism and better management.
- Expansion and diversification.
- Quality infrastructure and support services.
- Removal of administrative barriers.
- Transparency and stability of the policies.
- Market attractiveness and other innovations.
- Better research and development activities.
- Spin off and/or disposal of non-priority businesses.
- Establishment of new joint ventures.

6.5. Please give your specific suggestions, if any, for improving the efficiency and performance of KINFRA.

- (a).
- (b).
- (c).
- (d).
- (e).

(Please use separate sheets, if necessary)

Appendix-2

QUESTIONNAIRE FOR KINFRA INDUSTRIAL PARKS

(To be filled by the Project Manager of the park)

Section-1
General Information

- 1.1. Name of the park :
-
-
- 1.2. Address of the park :
-
-
- 1.3. Contact Person :
- 1.4. Month & year of Establishment :
- 1.5. Year in which the park became fully operational :
- 1.6. Nature of ownership of the park:
- Directly owned by KINFRA
- Joint venture with
- 1.7. Thrust area of the park:
- Food Processing
- Electronics
- IT and ITES
- Textiles/Garments
- General Manufacturing
- Others:
- (Please specify)

1.8. Has the industrial park obtained the Special Economic Zone (SEZ) status?

Yes

No

If your answer is 'Yes', please specify the month and year of obtaining the SEZ status for the park.

Month:..... Year:.....

1.9. Is there any Standard Design Factory (SDF) available in the park?

Yes

No

If your answer is 'Yes', please specify the total area of the SDF available in the park as:..... Sq. Ft.

1.10. What is the nature of business activities carried out in the industrial park:

(a).

(b).

(c).

(d).

(e).

Section-2

Extent of Realisation of Objectives

Please answer the questions below (numbered from 21 to 2.15), keeping in mind the basic objectives and overall performance of the park in promoting the industrial development of the regional economy of the State. Mark your response(s) as per the scale shown below:

- 2.10. How effective is the organisational structure and coordination mechanism of the industrial park in fulfilling the objectives of KINFRA as the 'industrial catalyst' of the State?

1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 2.11. How effective is the industrial park in realising the vision and mission of KINFRA for the speedy industrialisation of Kerala?

1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 2.12. How effective is the industrial park in attracting prospective entrepreneurs and investments for accelerating the process of regional industrialisation of the State?

1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 2.13. How effective is the control techniques of KINFRA in inculcating a typical entrepreneurial culture in the industrial economy of Kerala?

1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 2.14. How effective is the coordination mechanism of KINFRA in providing a better business exposure in the State?

1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 2.15. How effective is KINFRA in promoting the industrial development of the State by promoting 'industrial spots' in the core competency sectors as identified by the Industrial Policy of the Government?

1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section-3
Growth Performance of KINFRA Industrial Parks

- 3.1. What is the present status of land available with the industrial park as on 31st March, 2018?

Category of Land		Area (Acres)
1	Total area of land owned by the park	
2	Total area of land allotted to industrial units	
3	Total area of developed land available for allotment	
4	Total area of land yet to be developed	

- 3.2. What is the current status of the Standard Design Factories (SDF) available with the industrial park as on 31st March, 2018?

(If there is any such SDF)

Segmentation of the SDF		Area (Sq. Ft.)
1	Total area of the SDF	
2	Total area of SDF allotted to industrial units	
3	Total area of built up space available for allotment	
4	Total area of space yet to be developed	

- 3.3. What are the major facilities and support services available in the park?

- Developed land and built up space.
- Standard Design Factory (SDF).
- Dedicated and uninterrupted power distribution system.
- Proper street lighting.

- Excellent water supply.
- Better connectivity – Internal roads, culverts and drainage.
- Excellent telecom and communication systems.
- Better sewerage network.
- Single window clearance.
- Storage and warehouses.
- Administrative blocks.
- Banks.
- Health care centres.
- Cafeteria.
- Hostel for employees.
- Conference halls.
- Training centres.
- Space for startups/business incubations.
- Round the clock security.

3.4. Total investment of the park :.....
(As on 31st March, 2018)

3.5. Sources of investment:

Source		Proportion (%)	Amount (Rs.)
1	State Government		
2	Central Government		
3	Joint Venture Company (Please specify)		
4	Others (Please specify)		

Section-4
Operational Efficiency of KINFRA Industrial Parks

Please answer the questions numbered 4.1 to 4.7 below, keeping in mind the performance of KINFRA in certain key areas such as: (i) facilitating the ease of doing business, (ii) providing industry-specific support services, (iii) ensuring dynamic client relationship management, (iv) developing and maintaining standards of business operations, (v) responsive commitments towards the industrial units, (vi) ensuring opportunities for the growth of sustainable entrepreneurship and (vii) providing valuable extension services for the growth and development of industrial units operating in its various industrial parks. Mark your response(s) as per the scale shown below:

1 → Completely Agree.

2 → Mostly Agree.

3 → Neither Agree nor Disagree.

4 → Mostly Disagree.

5 → Completely Disagree.

4.1. How effective is KINFRA in facilitating ease of doing business for the spread of industries in Kerala?

(Please enter your response(s) to the items listed below)

Parameters		1	2	3	4	5
(a)	The lease out period and premium offered by KINFRA is really attractive for the starting of an industrial unit.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(b)	The terms and conditions laid down by KINFRA for the entrepreneurs who intend to start a business venture are highly flexible and affordable.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(c)	The infrastructure and other support services provided by KINFRA for the industrial units are excellent.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(d)	The common facilities available in the parks are excellent and supplementing the smooth running and growth of the business enterprises.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(e)	The facilities in the industrial parks are well organised and easily accessible for the industrial units so as to ensure them a hassle free business environment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(f)	KINFRA takes utmost care in consistently and continually communicating its key initiatives to the industrial units and other stakeholders.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4.2. How effective is the support services of KINFRA for the industrialisation of the State?

(Please enter your response(s) to the items listed below)

Parameters		1	2	3	4	5
(a)	KINFRA communicates well the required information to the industrial units and the units are usually kept informed about the things they want to know.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(b)	KINFRA provides a proper framework for the determination and realisation of the business objectives of the entrepreneurs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(c)	KINFRA provides proper administration and elaboration of the business and hence greatly contribute to the continuity and success of the enterprise.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(d)	KINFRA stimulates the independent and creative initiatives of the entrepreneurs by providing well defined areas of work and operation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(e)	KINFRA controls and influences the managerial actions of the entrepreneurs with a view to improve their organisational effectiveness.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(f)	KINFRA addresses every challenging issues and problems of the units in the parks and helps to resolve the issues in a more feasible manner.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4.3. How dynamic and effective is the client relationship management in KINFRA?

(Please enter your response(s) to the items listed below)

Parameters		1	2	3	4	5
(a)	There exists a smooth and cooperative environment that provides good relationship between the KINFRA management and the industrial units.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(b)	The management and employees of KINFRA are committed to producing the highest quality of work for its clients.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(c)	The professionalism and courtesy of the KINFRA team are really good and encouraging with particular reference to the development of businesses.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(d)	KINFRA count the ideas and allow the entrepreneurs to discuss with the management whatever matter(s) related to their company.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(e)	The entrepreneurs have the freedom to question the decisions or actions taken by the KINFRA management.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(f)	The entrepreneurs have the freedom to develop, revise and modify any idea or business plan for the betterment of the industrial unit.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4.4. How good is KINFRA in the development and maintenance of standards of business operations in their industrial parks?

(Please enter your response(s) to the items listed below)

Parameters		1	2	3	4	5
(a)	KINFRA provides all the facilities for efficiently producing the products and services at affordable cost and within a shortest time span.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(b)	KINFRA plays a significant role in realising the fullest utilisation of capacity of the industrial units in the parks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(c)	KINFRA permits the optimum use of resources of the industrial units including technological improvements.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(d)	KINFRA supports and prepares the entrepreneurs to effectively manage the operating risk.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(e)	KINFRA undertakes all the promotional activities for the industrial units operating in the parks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(f)	The facilities and support services provided by KINFRA enables to strengthen the ability of the entrepreneurs to deliver high standards of quality in their business.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4.5. How responsive is KINFRA to their commitments towards the industrial units operating in their parks?

(Please enter your response(s) to the items listed below)

Parameters		1	2	3	4	5
(a)	By the setting up of industrial parks, KINFRA provides certain locational and localised advantages to the entrepreneurs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(b)	The environment at KINFRA parks enables to efficiently innovating and bringing new ideas, products or services to the market.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(c)	KINFRA provides the basic training and development activities to enhance the level of confidence of the entrepreneurs in making their business a success.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(d)	KINFRA follows strict adherence to the timeliness of its services that provides a strong impetus to the entrepreneurs for doing their business.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(e)	KINFRA enables the industrial units located in the park in leveraging technology to improve their operational efficiency.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(f)	KINFRA undertakes all the possible efforts to enhance the productivity of employees working in various industrial units of the park.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4.6. Does KINFRA provide opportunities for the growth of sustainable entrepreneurship in Kerala?

(Please enter your response(s) to the items listed below)

Parameters		1	2	3	4	5
(a)	KINFRA attracts prospective entrepreneurs to the industrial parks for the start up of their business through different schemes and programmes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(b)	KINFRA provides immense scope and opportunities for the expansion of the industrial units operating in the parks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(c)	KINFRA acknowledges and provides ample space for the diversification activities of the industrial units.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(d)	The framework offered by KINFRA industrial parks offers immense possibilities for maintaining growing relationships with the customers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(e)	KINFRA enables the entrepreneurs to effectively managing your community involvement and societal commitment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(f)	KINFRA is the apt choice to begin and sustain the work than any other organisation of similar nature.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4.7. How valuable are the extension services of KINFRA for the growth and development of industrial units in its parks?

(Please enter your response(s) to the items listed below)

Parameters		1	2	3	4	5
(a)	KINFRA's current activities reflect a strong focus on the development of its industrial parks as well as the industrial units located in the parks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(b)	KINFRA provides easy access to the supplies and equipments needed for the optimal performance of the industrial units.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(c)	KINFRA provides better and effective marketing assistance for the product(s) of business ventures located in the park.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(d)	KINFRA undertakes all the possible measures for the promotion of export of the product(s) of the industrial units.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(e)	KINFRA provides appropriate ambience for the development of new and improved ways of doing things.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(f)	The industrial parks set up by KINFRA are a good place for the prospective entrepreneurs trying to get ahead in their business ventures.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section-5

Problems and Constraints of KINFRA and Its Industrial Parks

Please answer the questions below, keeping in mind the major problems or constraints faced by the industrial park in its operations and management.

Mark your response (Please put a '✓' mark) as per the scale shown below:

1 → Never.

2 → Rarely.

3 → Sometimes.

4 → Often.

5 → Always.

Problems/Constraints		1	2	3	4	5
(a)	Delay in locating suitable projects for the existing built up spaces in parks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(b)	Delay in establishing industry-specific infrastructure in the parks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(c)	Delay in establishing proper support services in the industrial parks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(d)	Delay in establishing Standard Design Factories (SDF) in industrial parks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(e)	Delay in the timely completion of the project.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(f)	Actual cost of establishing the project exceeds its estimated cost.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(g)	Delay in establishing the single window clearance facility in the parks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(h)	Non-availability of trained and qualified personnel for the parks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(i)	Lack of genuine entrepreneurs for the built up spaces in the industrial parks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(j)	Lack of commitment on the part of the entrepreneurs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(k)	Misbehaviour of entrepreneurs obstructing fulfilment of objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(l)	Lack of autonomy for KINFRA for its operations and management.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(m)	Deficient budget allocation by the Government.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(n)	Delay in the transmission of funds from the Government.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(o)	Deficiency in the procurement of funds for investment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(p)	Lack of fund raising capacity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(q)	Problem of cost escalation or abundant revenue expenditure.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section-6
Future Prospects

6.1. Is there any expansion plan proposed for the industrial park in the coming five years?

Yes

No

If your answer is 'Yes', please give details of the expansion activities:

Name of the Project(s)		Estimated Cost (Rs.)	Thrust Area(s)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

(Please use separate sheets, if necessary)

6.2. Overall, how satisfied are you with the operational performance of the industrial park? (Please put a '✓' mark).

Very Satisfied.

Mostly Satisfied.

Somewhat Satisfied.

Neither Satisfied nor Dissatisfied.

Somewhat Dissatisfied.

Mostly Dissatisfied.

Very Dissatisfied.

If your answer is on the area 'dissatisfied', please specify the major reason(s) for the dissatisfaction:

(a)

(b)

(c)

(d)

6.3. In your opinion, what factors are most necessary to increase the competitiveness and efficiency of the organisation? (Please put a '✓' mark in the appropriate boxes)

Autonomy in operations and management.

Professionalism and better management.

Expansion and diversification.

Quality infrastructure and support services.

Removal of administrative barriers.

Transparency and stability of the policies.

Market attractiveness and other innovations.

Better research and development activities.

Spin off and/or disposal of non-priority businesses.

Establishment of new joint ventures.

6.4. Please give your specific suggestions, if any, for improving the efficiency and performance of the industrial park as well as the corporation.

(a)

(b)

(Please use separate sheets, if necessary)