Chapter 2
RESEARCH DESIGN AND METHODOLOGY

In this chapter, design and methodology adopted for this research work have been discussed in detail. A review of literature covering studies on industrial estates and small industry development, evaluatory studies, reports, and articles published in various journals and newspapers has been done. This chapter also covers significance and focus of the present study, objectives, hypotheses and other aspects of design and methodology. It refers to selection of sample estates, sample units, sample associations and their representatives in the selected districts, APIIC officials and representatives of the APIIC employees' association. At the end, Chapterisation of the study is presented, followed by brief profiles of sample estates and particulars of Entrepreneurs' Associations.

2.1 Review of Literature

2.1.1 Studies on Industrial Estates and Small Industry Development


   It is the first important study at international level on the programme of industrial estates which is recognised as an important tool for industrialisation. Bredo very analytically explained about the industrial estates, and reviewed its impact on the industrialisation in different countries.


   This work has been considered the pioneer study in India on Industrial Estates. The study focused on location, sitting size, and type of factory sheds. Their study gives some illustrations in clearing out the confusion about the role of industrial estates and their potentialities. In their opinion, the Ancillary Industries will surely grow in the estates where

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all facilities are available but also have the advantage of supply of good quality of raw materials through joint efforts.


In these studies, the merits and shortcomings of the industrial estates programme has been reviewed. The papers presented in these studies discussed the role of industrial estates in developed and developing countries, and stressed on the employment approach, physical planning, comprehensive system of assistance, training, management, and urged for the regional cooperation in this direction among various countries.

4. Industrial Estates in India by P.C. Alexander (1963)

Alexander's work, is a highly commendable contribution on Industrial Estates. It presents a comparative account of the objectives of the Industrial Estates in India with those of other countries like UK, USA, Pakistan, Hong Kong, Northern Ireland, Canada & Puerto Rico. His study deals briefly with the progress of the industrial estates programme in India during First and Second Plan periods. From the experience gained by the implementation of the programme during 1956-62, he opined that the approach to the programme was unsound resulting in a series of wrong decisions on location and planning and resultant failures in many cases.

3. United Nations: Department of Economic and Social Affairs,


UNIDO defined an industrial estate as "a planned clustering of industrial enterprises offering standard factory buildings erected in advance of demand and a variety of services and facilities to the occupants." The study has brought out several benefits enjoyed by the industrial units established in the industrial estates like common facility service centres, introduction of modern techniques, collective purchase of raw materials and sale of finished goods etc. Since these are located in the same area, the units are becoming interdependent and complementary to each other by using the services and goods of one another. It has also brought out that industrial estates serve as centres of industrial activity and area development, and stimulate industrial development in rural areas. The study projected that industrial estates programme should accelerate the promotion of small scale industries and facilitate the industrialisation of the economically backward and rural areas.


In her study, she made an attempt to evaluate the industrial estates programme at state level in the state of West Bengal. The main purpose of the study was to compare the performance of industrial units located in industrial estates and outside. This is a study similar to that of Somasekharas. From the study it was revealed that industrial estates programme in West Bengal helped new industries to come up to a limited extent. It was noticed that estates in less developed areas have less demand and the sheds in those estates remained vacant for quite a long time, whereas estates close to Calcutta have high rate of occupancy. Regarding the efficiency of the units, it was observed that most of the units set up in the estates located even in less developed areas proved to be economically viable. It was, however, noticed that the rate of return earned by small scale units located outside the estates had generally been higher than that of units located inside.

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This study summarised the industrial estates programme in India, bringing out the objectives of the Government, pattern of management, location, types of estates and their progress. Other aspects covered in the publication include guidelines for physical planning of the estates and also criteria for evaluating individual industrial estates and the programme as a whole in a region.

8. Industrial Estates Programme - The Indian Experience by D. Nagaiya (1971)

This study reviewed the industrial estates programme from its inception and highlighted the stages of the programme of its implementation in the first part. The second part of the study has taken up certain case studies of industrial estates established in metropolis, bigger towns, small towns and rural areas, and single trade, functional, ancillary and cooperative industrial estates, and industrial areas.


This study tried to find out whether the industrial estates programme has made any impact on the development of backward areas. The study brought out the problems involved in the development of industrial estates in backward areas and concluded that the programme is suffering from limited planning and inadequate involvement of local people.


10. *Efficacy of Industrial Estates in India* by N. Somasekhara (1975)

Infact this study was conducted in two stages, one for the doctoral dissertation in 1962 and the other, a follow-on study in 1972 considering the earlier one as a benchmark survey.\(^\text{10}\) These studies inquired into whether the industrial estates were economically viable and whether they had accomplished the objectives for which they were established. The studies compared the efficiency of industrial units of nine estates of Karnataka with their peers located outside the estates in the respective settlements. The study concluded that industrial units inside the estates could not perform as good as the peer units. Industrial estates had not achieved many of the objectives for which they were established and that the programme proved costly in terms of capital for generating output and employment. Industrial estates proved to be more capital intensive. The programme had not been financially viable from the point of view of the state government either.


This study examined the role of industrial estates in South Gujarat and evaluated the achievements and shortcomings of the programme.\(^\text{11}\) Major findings of the study were economies in the cost of construction, optimum package of infrastructure facilities and other services depending on the size and composition of the estate. It was found that industrial units in the estates could save initial investment of capital on sheds since sheds could be got on lease or hire-purchase. A number of entrepreneurs have been assisted and it was found that industrial units in the estates were more capital intensive. The study brought out a finding different from that of Somasekhara's study (1975) by pinpointing that industrial units located in industrial estates were found to be economically more viable than those located outside the estates.


This study anlaysed important aspects of the industrial estates programme like location, planning, organisation and management with special reference to Andhra Pradesh.\(^{12}\) It focussed on the need for pre-project planning and improvement of general infrastructure facilities in the areas before developing industrial estates, particularly in backward areas. He commented on the haste with which the industrial estates programme was implemented and felt that industrial estates had not significantly contributed to the industrialisation of backward areas.


This is an empirical study of Andhra Pradesh covering the period from 1960 to 1976.\(^{13}\) It covered the industrial growth of the state of Andhra Pradesh as a whole, and its regions and districts. It examined inter-regional and intra-regional disparities and growth and problems of different sectors. It has also studied the contribution made by different financial and promotional institutions in the state associated with industrialisation. It also analysed the impact of incentive schemes on the development of the backward areas and offered useful suggestions.


This study attempted in depth various aspects of small industry development in India during the last four decades (1950-1990).\(^{14}\) It also examined the measures taken by the Government in the initial stage to support small industry, reasons for high mortality rate in the small scale sector, infrastructure developments and its contribution to regional development and stressed that industrial estates, if planned carefully, can contribute to faster development of backward regions and accelerate small industry development.


15. *Industrial Clearances by Andhra Pradesh Assistance Centre for Entrepreneurs of the Commissionerate of Industries, Andhra Pradesh (1991)*

This provides information on various rules and procedures for obtaining licences and clearances for setting up of industries. It provides a wide range of information conveniently at one place for entrepreneurs to serve as a ready reckoner to the procedures prescribed by various central and state departments for setting up of industries.

### 2.1.2 Evaluation Studies on Industrial Estates

16. Rama Subba Rao’s study (1977) on the effectiveness of the industrial estates programme in Andhra Pradesh considered entrepreneurs under two groups - those who were entrepreneurs earlier also and the others who became entrepreneurs for the first time. The study found that those who managed industrial units earlier exhibited more innovativeness and managerial capabilities. They came from distant locations, started capital-intensive units, expanded and diversified over a period of time.

The study found that allotment and utilisation rates in urban estate were better than semi-urban and rural estates. Assisted private estates where developed sites were provided did not receive good response when compared to conventional estates where built-up sheds were provided on rental basis. The study suggested that conventional estates should be established with the work sheds of the type needed by artisans and tiny sector units in rural areas. Another suggestion was that entrepreneurs below the age of 40 years and those who have a trading background be given preference in the allotment of sheds.

17. Basu’s study (1981) on four industrial estates in west Bengal attempted social cost-benefit analysis by using sensitivity analysis indicated in a UNIDO study. Costs and

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benefits both primary-direct and indirect, and secondary - direct and indirect for a period of 30 years were discounted to arrive at net present values. The study attempted quantification of certain intangible items like impact on urbanisation, impact on the development of local entrepreneurial talents and effects of industrial estates on the distribution of personal income, both inter-temporal and intra-temporal.

The study worked out financial, economic and social profitability for each of the estates and concluded that social profitability did not depend solely on location. This is contrary to the popular belief that urban estates are more profitable. Social rates for all the four estates were found to be very high. Commercially, the programme was not found to be profitable under every set of alternative assumptions. In some cases IRR in financial analysis fell below the market rate of interest. The rural estates were found to be socially more desirable than the urban estates. In economic analysis, rural estates established their superiority, in terms of IRR. The social analysis further widened the gap between the two groups, pointing out the serious limitations of financial profitability analysis and the study recommended extensive use of social cost-benefit analysis for evaluating public and semi-public investment projects.

18. Nagaiya's study (1984) in Maharashtra with special reference to Marathwada region, analysed the role of industrial estates and areas in accelerating industrialisation in centres of different levels of development. He compared the performance of the industrial units located in industrial estates and industrial areas with units located outside these clusters but in the respective settlements, and found that units in the industrial estates were operationally more viable after a period of time. The gestation period did vary from one location to another, but generally in the range of 5 to 7 years.

The cross comparison of industrial units revealed that the units located in industrial estates and areas are more capital intensive and more economically viable after a certain time lag but remarkably low linkages with the local economy than those units located outside the

estates and areas. The study also revealed that the time lag between the starting of estates, full occupancy of the sheds and functioning of the units was considerably high i.e. 12 to 15 years. The small industrialists' background indicated that in the developed regions majority were technical persons, whereas in the least developed regions, they were with business experience. The study found that industrial estates and areas in less developed and least developed regions served a greater social purpose when compared to those located in the fairly developed centres and regions. It was also found that capital intensity in projects was high with the units of technically qualified persons but this is not corresponding with the utilisation capacity.

19. Sambasiva Rao's study (1984) focussed on the conceptual issues, apart from other aspects of industrial estates. After examining a number of locations of industrial estates in Andhra Pradesh, the study pointed out that the definition of rural estates required modification. The study came to this conclusion quoting the IDA at Visakhapatnam in Visakhapatnam district which was considered as 'rural' by definition but for all practical purposes, this could be treated as part of Visakhapatnam city. Need to redefine rural, semi-urban and urban estate was emphasised in the study.

The study observed that though a variety of industrial estates had been promoted, only few categories of estates like autonagar, technocrat industrial estate and the electronic complexes are distinctly different while all other estates are composite industrial estates. Some of these are - self employment industrial estate, cooperative estate, ancillary estate etc. Developed plots and built-up sheds are provided both in industrial estates as well as in industrial areas. Therefore, the line of demarcation between an industrial area and an estate becomes smaller. An estate caters to small scale units, whereas in an industrial area, medium and large industries can also be accommodated though they have not come up in many locations of industrial areas in Andhra Pradesh. The industrial estates programme has been found to be urban oriented as large tracts of land is acquired in and around Hyderabad, Visakhapatnam and other important cities in the state.

The study observed that the sheds/plots were allotted on first-come-first-served basis. Initially plots/sheds were allotted on rental or lease basis; later on the APIIC decided to give up this system and encourage outright sale or hire purchase of plots/sheds. The principle of cross subsidy is adopted in deciding the prices of the plots/sheds.

It was observed in the study that the economic viability of the estates in backward regions was questionable. More over industrial estates had promoted industries largely based on demand from outside the region and units in the estates based on local demand were very few in number. It was observed that occupancy rate in backward areas was very low. In order to ensure higher occupancy of built-up accommodation/plots it was suggested to encourage some of the existing industrial units located outside to shift to industrial estates. In order to achieve the policy objectives of the industrial estates programme, the study suggested that the investments in industrial estates should be synchronised with massive development programmes in areas adjacent to industrial estates.

20. Vijaya's study (1984) examined the performance of industrial estates programme in overcoming the problem of regional imbalances, by studying whether the industrial estates programme had been instrumental in the promotion of entrepreneurship, whether the units in the estates are labour intensive or capital intensive and to identify the major operational problems of small industrial units established in the industrial estates in general, and Telangana Region of Andhra Pradesh in particular.

It was observed in this study that even though the industrial estates programme was modest in achieving its objective of small industry development, it could not be denied that this development was not totally free from lapses and shortfalls in the implementation of a vast programme of this kind. The units which were established during the inception of the estates ceased to function for one reason or another, like the changing over of hands and rapid turnover of factories. It was also seen that the sheds in most of the estates were allotted haphazardly to anyone who wanted them without any check with regard to the soundness,

suitability, area of interest, aspiration and other related aspects of entrepreneurs. This obviously led to an irrational entry of occupants into the estates with diverse industrial activities which were quite unrelated to one another on the one hand, and without any relevance to the forward and backward linkages which are important attributes for the growth and development of the industrial units and the regions in which they are located. It was observed that the authorities concerned of industrial estates did not strive hard for achieving industrial development to the desired level.

Keeping in view of the above observations, the study suggested that the programme of industrial estates should necessarily be utilised to exert a catalytic effect on the industrial development and other economic activities in a broader sense. It was also suggested that the future role of industrial development programme through the promotion of industrial estates should necessarily aim at serving a social cause namely that of drawing out suitable and efficient entrepreneurial talents to the field of small industry and thereby creating sizeable employment opportunities, especially in underdeveloped areas with a strong motive of bringing about a sound and a balanced industrial development, and regional prosperity by favouring a rational deployment of local resources and talents.

21. Parvathi’s study (1995) pursued planning for industrial development in a backward region, with particular reference to Kurnool district. The study observed that industrial development in backward regions was not getting the required encouragement and momentum because of several reasons. Some of them are: a) subsidies made available appear to be inadequate and not given at the appropriate time, b) inadequate marketing facilities for products of small industrial units in backward areas, and also non-availability of raw materials, c) lack of infrastructure facilities like transport, communication, good roads, railways, recreational and educational facilities, etc., in the area of industrial estates of backward areas, d) misutilisation of incentives such as exemption from income tax, sales tax, excise duty, etc., and e) lack of adequate knowledge and proper training to State Government Officers dealing with subsidy.

The study suggested that the Government should provide proper training facilities to Government officials who deal with subsidy schemes etc., conduct intensive campaigns to make available various incentives at the door step of prospective entrepreneurs, minimising the delays caused inherently due to lengthy procedures which have been in vogue, providing suitable channels of marketing to small industry products, and give them incentives in price preference, exemption from sales tax, etc., establishing raw material depots for prompt supply of raw materials in sufficient quantity, providing basic infrastructure facilities not only in industrial estates but also in areas adjacent to the estates.

22. Sarala Bai’s study (1995) focused on certain adverse effects of industrialisation, particularly those industries causing pollution. The study observed that there are three prominent types of pollution, viz., air, water and noise, lead to degradation of the environment which emanates from the culmination of pollution from different sources, particularly, through the release of pollutants such as dust particles and emissions of smoke containing sulphur dioxide, carbon monoxide, oxides of nitrogen, hydrocarbon vapours, etc., from various industries. The polluting industries include thermal power plants, iron and steel, cement, engineering, chemical, fertiliser units, etc. The study reveals that industrial pollution affected mainly the health of family members of the respondents living in the polluted areas, their earning capacity, and their working conditions. There is degradation in the quality of life of people living in polluted areas. Pollution from such industries affected the milch animals and also agricultural crops. However, it was found that these effects were not reported by the respondents living in the non-polluted areas.

The study found that planned economic development which initiated industrial development in the country as well as in Andhra Pradesh has been playing a satisfactory role. As per the study, there is significant industrial development in the country as well as in Andhra Pradesh.

Keeping in view the need for rapid industrialisation particularly in backward areas, and threat of pollution which is an integral part of industrial development, environmental management has become more complex, requiring various measures like technical, financial, legal and institutional measures. The author opined that effective implementation of the various pollution control Acts, by streamlining the functioning of Pollution Control Boards, rigorous monitoring of the discharge of the pollutants by industries, etc., and imposing penalties and punishments on the generators of pollution can lead to maintenance of environmental quality.

The study also suggested certain measures to control different types of environmental pollution in barytes, cement and chemical industries of Cuddapah district.

2.1.3 Reports on Industrial Estates

A number of reports have been brought out in the past by various organisations and Government Departments on the programme of industrial estates in India. Their coverage is briefly presented here.

23. Reserve Bank of India's report on the seminar on "Financing of Small Scale Industries in India" (1959), stressed the need for industrial estates and steps to be taken by the Government for the development of Industrial Estates in India.23

24. The Andhra Pradesh Planning Department's study (1965) reviewed the operational problems of industrial estates, and suggested a number of measures24 for reducing the time-lag in construction, taking bulk load from the electricity board which can be distributed to various industrial units in industrial estates, and several other measures to improve the "management efficiency" of industrial estates.

25. The report on the study of Industrial Estates by the Development Commissioner (Small Scale Industries) (1967) was a fact finding survey on the experience of the states in their

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endeavour to accelerate industrial development in the Sixth Plan.\textsuperscript{25} The study pointed out that industrial estates programme in cities and larger towns could be taken over by the Corporations, Municipalities and associations, etc., and in backward and rural areas, it could be operated by the Government. The study emphasised the importance of pre-project planning and evolved guidelines for the future.

26. Report of the Working Group on Financing of Industrial Estates of Reserve Bank of India (1972) emphasised the need for participation of other agencies like Life Insurance Corporation of India, State Financial Corporation and Commercial Banks in financing the industrial estates programme which is highly essential for the rapid industrialisation of the country.\textsuperscript{26}

27. Nagaiya's paper in the Industrial Development Bank of India's report (1984) on the seminar on industrial development of backward areas held during May 16-17, 1980 at Bombay, dealt with the impact of incentives, subsidies and concessional finance on industrialisation of backward areas, with particular reference to Chittoor and Khammam districts of Andhra Pradesh.\textsuperscript{27} It also dealt with problems faced by industrial units set up in the industrial estates of backward areas and brought out suggestions to overcome these problems.

28. APITCO's study (1980) appraised the progress of IDBI assisted industrial estates and brought out the essential features of industrial units in Andhra Pradesh and Karnataka.\textsuperscript{28} The main aspects such as location of the estate, financial agencies, creation of employment, wages of workers, nature of firms, background of entrepreneurs, development of entrepreneurship and impact on the hinterland were discussed. It was observed that response for the industrial

\textsuperscript{25} Government of India, Development Commissioner (Small Scale Industries) (1967), Study of Industrial Estates, New Delhi, p. 52.

\textsuperscript{26} Reserve Bank of India (1972), Report of the Working Group on Financing of Industrial Estates, Bombay, p. 154.


estates programme was better in Karnataka. The study found that time-lag at various stages of the programme could be reduced by better coordination. The study suggested that greater importance be attached to building up of social infrastructure, area priorities, functional complexes, and training of entrepreneurs to make the programme a success. APITCO and KITCO studies stressed the need for new policy prescriptions to improve the performance of existing estates, and care to be taken while planning for future estates.

29. KITCO's study (1980) evaluated the mini-industrial estates programme in Kerala. The study found that the programme was successful only to a limited extent by attracting first generation entrepreneurs. The programme could not provide other basic infrastructural facilities like water, telephone, post and telegraph, transport, etc. The programme of mini-industrial estates by establishing one estate in each Panchayat Samiti had to be foreclosed by the Kerala Government because of the operational problems experienced by nearly 110 mini estates developed during 1975-1980. Priority specified by the study was to ensure the successful operation of the mini estates developed by that time.

30. The report of Government of India Special Working Group on Industrial Estates in North-Eastern Region (1981) observed that major problems faced by the entrepreneurs in industrial estates were as follows: inadequate supply of water (Dimapur, Shillong); shortage of power, unexpected load sheddings and high power tariff; no power supply in a well-designed estate (Imphal); lack of proper management policies for selling the sheds on hire-purchase basis; lack of telephone and banking facilities; inadequate and irregular supply of raw materials; and delay and unsatisfactory methods of computing subsidies, etc. These factors are hindering the growth of industries in the North-Eastern region. This study pointed out the failure of industrial estates to sustain the enthusiasm of the tenant entrepreneurs.

31. Infrastructure Committee's report (1987) examined the Perspective Plan of the APIIC and observed that the Corporation was playing an important role in providing infrastructure


facilities for small and medium scale industries in Andhra Pradesh.\textsuperscript{31} It suggested that the Corporation might continue to assist medium and large industries also in terms of acquiring land for them and providing necessary infrastructural facilities as might be needed. It also stated that apart from the conventional infrastructural facilities like levelled plots, built-up sheds, roads, drainages, power and water supply, the Corporation should also provide telecommunication facilities, common facilities like fire station, administrative offices, hospital, school, industrial housing and so on. The committee reviewed the management policies of the infrastructure programme in the state and suggested directions for the future.

\section*{2.1.4 Articles on Infrastructure/Industrial Estates}

A number of articles have also been published in various journals on the programme of industrial estates in India. Coverage of a few articles is reviewed here.

32. P.M. Mathai, in his article (1972), discussed various types of industrial estates developed in the country, and the importance of industrial estates in diversification of production, and various problems experienced by industrial estates in different parts of the country.\textsuperscript{32}

33. V.A. Krishna Murthy, in his article (1973a), made a detailed analysis of industrial estates in India.\textsuperscript{33} The concept, meaning, progress during plan periods, size and structure, efficiency of industrial estates, data relating to progress of industrial estates, size of industrial estates, percentage of completed sheds, production per worker etc. were stated.

34. V.A. Krishna Murthy, in his article (1973b), discussed the role of industrial estates in Andhra Pradesh.\textsuperscript{34} He explained the origin of industrial estates, their significance and the


benefits derived by setting-up industrial units in the estates. He also discussed various aspects relating to location and structure of industrial estates, size of industrial estates, etc.

35. B. Appa Rao, in his article (1981), provided a clear thought about the word industrial estates, the main objectives of establishing industrial estates, categories of industrial estates and reviewed reports of a number of committees and working groups on industrial estates and progress of industrial estates during the planning era, etc.35

36. M. Sahney, in his article (1982), laid stress on the importance of *industrial estates as instruments of generating industrial activity. He has also discussed several problems relating to the development of industrial estates in and around Delhi.*36

37. Ismail Sharif in his article (1986), explained various objectives of industrial estates and progress of industrial estates in terms of industrial policy.37

38. D. Nagaiya's article (1988), on Pricing Policy adopted for the allotment of plot/shed/land in industrial estates and industrial areas, covers the items of fixation of land cost; land compensation, development cost, principle of cross subsidization, incentives given in tribal areas; incentives for scheduled castes and scheduled tribes entrepreneurs, allotment of sheds at present market value, etc.38

39. D. Nagaiya's article on "Infrastructure" (1989) covers various types of industrial estates, funding, management and administration of infrastructure development under various


schemes, and promotional measures taken to improve the present position of industrial units in industrial estates.39

40. R.V. Dadibhavi’s article (1991), brought out a comparative picture on the inter-state industrial growth and growth of industrial infrastructure among 17 states of the country during the periods 1970-71 to 1986-87 and 1970-71 to 1984-85 respectively. He has selected power supply, transport facility and industrial finance as explanatory variables and the study finds out that even though the slow growth of industrial output is associated with the slow growth of these three variables, it was felt that it may not be the case in all the regions, as in Karnataka the output was increased despite slow growth in the said variables during the period of study.40

41. A.P. Bhatnagar in his article (1991), studied the need for the development of Rural Industrial Estates (RIEs) throughout the country which will improve the employment opportunities and strengthen the capital base in the rural areas. He opined that the approach of the RIEs should be "area and commodity" approach and a special infrastructure has to be created for detailed planning, implementation and running the RIEs in the states.41

42. P.V. Indiresan, in his article (1993), "Industrial estates: the right way, the wrong way", argued five fallacies concerning industrial estates in India.42 He concentrated on the main fallacies - a) industrial estates are meant to house industries only, b) the more crowded the industries are, the more economically they work, c) industry and commercial units are located most cheaply on busy trunk roads, d) infrastructure is best provided by the government, e) the education system will provide trained manpower.


43. Manimekalai's article (1993), contains the findings of various studies on entrepreneurship development in industrial estates in different parts of India and also abroad.  

44. D. Nagaiya's article on industrial estates (1994) explains the concept, features, objectives, types and significance of industrial estates in the development of small scale industries.  

45. Mahesh Prasad's review article (1996), on the deliberations of the full meeting of the Planning Commission held on August 19, 1996 to give broad directions to the planning commission on the preparation of Ninth Five Year Plan indicates, that the Ninth Plan will focus on infrastructure and social sector. Mr. Deve Gowda the then Chairman of the Commission and Mr. Madhu Dandavate the then Dy. Chairman of the Commission opined that "Cooperative Federalism" alone could ensure the success of India's economic reforms.  

46. V.B. Shankar's article on industrial estates (1996) reviews the pattern and types of industrial estates functioning in Andhra Pradesh and focusses attention on the implementation of the local authority status conferred on APIIC (Andhra Pradesh Industrial Infrastructure Corporation) and presents the entrepreneurs' view point on the quality of infrastructure facilities developed in industrial estates and industrial development areas in Andhra Pradesh, and highlights the problems faced and approaches that need to be followed for improving the quality of infrastructure developed and maintained in industrial estates and industrial areas. He pleads for more active and constructive role to be played by entrepreneurs' associations in the state, with the close support and involvement of APIIC. Entrepreneurs' involvement in the implementation of programmes can considerably improve the effectiveness of implementation.  

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45. Mahesh Prasad (1996), Focus on Infrastructure and Social Sectors, Yojana, October, pp 5-7.  
2.2 Significance, Objectives, Design And Hypotheses

Comprehensive review of literature attempted in the earlier section reveals that industrial estates theme has been researched from various angles at the individual estate level, for a few estates, at the state level with a cross section of estates covered, and at the national level, under the sponsorship of different organisations, including Ph.D. dissertations. Spatial dimension as well as time dimension have been taken into account in many of the studies.

Studies on the overall health of the programme in states and the performance of the corporations handling the programme at the state level have not been pursued so far. Organisational studies are also important to improve the effectiveness of the organisation's working and to review the policies pursued by them, apart from bringing about improved work culture. Emerging issues and new directives pursued in this programme for the benefit of local entrepreneurs within a state also need to be studied to inject fresh look into the programme.

Even though some studies have been carried out in Andhra Pradesh on the industrial estates programme, by and large these were confined to one or two areas/regions and for a limited period and many studies have been made on the efficiency or on the performance of the industrial units set-up in the industrial estates of APIIC. No specific study was made so far to evaluate the overall performance of the APIIC. Moreover, performance studies of this nature need to be made periodically, to keep track of the latest trends in the operation of APIIC for promoting and encouraging rapid industrialisation in the state. In this direction, the present study has been planned in Andhra Pradesh as part of Ph.D. work.

2.2.1 Significance

The theme selected for the present study focuses on the Role and Performance of the APIIC which has shouldered the responsibility of promoting industrial estates and industrial development areas in Andhra Pradesh. The focus on thrust activities of the Corporation, and recent efforts of specialised activities are also covered. Environment for developing infrastructure at the macro level for the country at large is taken as the environmental factor, and the directions pursued in the recent periods are reviewed, and prospects for the future are envisaged. Another special feature of the present study is the perceptions of small scale
entrepreneurs, and also of the APIIC officials gathered on the major tasks handled by APIIC on infrastructure development. This systematic feedback has brought out important viewpoints, and recommendations that have been evolved in the light of the experience of the implementation of the programme in the last two and a half decades in Andhra Pradesh.

2.2.2 Objectives

Focus of the study is on evaluating the performance of APIIC in the light of its policies and priorities for promoting sound industrial infrastructure in Andhra Pradesh. Specific objectives of the study are detailed here:

(1) To analyse the development of industrial infrastructure in Andhra Pradesh and review the efforts made by APIIC in providing balanced industrial infrastructure throughout the state;

(2) To analyse the impact of the policies pursued by APIIC and to study the Corporation's financial performance;

(3) To study the organisational aspects of the APIIC and its involvement in certain key areas of management of infrastructure by closely associating entrepreneurs.

2.2.3 Hypotheses

A few hypotheses kept in view while carrying out the study are listed below:

1) Development of Industrial Estates and Industrial Development Areas contributes to balanced industrialisation of the state. However, in view of the faster growth of potential centres and clusters, imbalance persists and even gets accentuated.

2) Sound industrial infrastructure attracts prospective entrepreneurs with technical background and industrial experience, and also migrant entrepreneurs from outside the state.
3) Entrepreneurs have been playing a significant role through their Associations in the development of Effluent Treatment facilities, and in the maintenance of facilities developed in the IEs/IDAs of APIIC.

4) Focus of infrastructure development by APIIC has been more on physical facilities, directly linked with industrial activity, and not on social infrastructure such as housing, educational and health facilities, etc.

5) Integrated pattern of the organisational structure of APIIC operating through zonalisation is more effective.

2.3 Design and Methodology of the study

2.3.1 Scope of the Study

The study covers a period of 22 years from 1974 to 1996, i.e. since the inception of APIIC. All estates developed prior to the establishment of APIIC by the Department of Industries, were handed over to APIIC in 1974. The entire programme of industrial estates and industrial development areas of the state under the sponsorship of APIIC has been covered in the study. Specialised facilities developed by APIIC and handed over to the specialised organisations concerned of the centre or the state for management have also been covered.

2.3.2 Sources of Data

Data for this study have been collected both from primary and secondary sources. The methodology followed for the collection of primary data is presented at sub-head 2.3.3. Sources of secondary data are: various reports, statistical abstracts, plan documents, etc., of Government of India, and Government of Andhra Pradesh, publications and records of APIIC (both Head office and Zonal offices), publications and records of Commissioner of Industries, Andhra Pradesh, Hyderabad, publications of National Institute of Small Industries Extension Training (NISIET), Hyderabad, publications of IDBI, SIDBI, SFC and publications in journals like Yojana, Capital, Finance & Commerce, Indian Industries and also the publications/information in daily newspapers like Hindu, Economic Times, and Eenadu.
2.3.3 Methodology

The primary data have been collected from sample SSI entrepreneurs and the representatives of their associations; APIIC officials and representatives of APIIC Employees' Association. Two separate questionnaires were used; one for SSI entrepreneurs, and the other for APIIC officials. Entrepreneur's questionnaire covered the following aspects: background of the entrepreneur, data of the enterprise, information on infrastructure facility of APIIC and related agencies utilised by the enterprise, client-Corporation relationship, client-other agency relationship, clients suggestions for improving the services by APIIC, response of entrepreneurs' associations on issues represented by the associations to APIIC and other agencies and their responses, views on services rendered by APIIC, and suggestions for strengthening the quality of infrastructure and related services. The questionnaire meant for APIIC officials covered the following aspects: background of the official, managerial aspects of the Corporation such as recruitment, promotion, staffing pattern, support services, etc., performance of the Corporation in fulfilling the objectives envisaged, superior-sub-ordinate relationship, Corporation - client relationship, suggestions for improving the effectiveness of the performance of the Corporation, etc.

2.3.4 Tools of Analysis of the Data

In the analysis of the data, suitable statistical methods/techniques such as percentages, averages, compound growth rates, and weighted averages on 5-point scale have been used. The trend data has been used for depicting graphical presentations.

All possible data on various aspects covered in the study have been gathered (both primary and secondary) and analysed. For certain aspects, where it was not possible to collect data, these are pointed out in the respective chapters. Limitations of data collected are also indicated in the respective sections. Field work was carried out during 1996 and 1997.
2.3.5 Sample Selection

APIIC developed 226 industrial estates and industrial development areas as at the end of August 1996. In addition, 20 commercial complexes and 17 industrial housing belts have also been developed. The total locations thus developed by APIIC are 263.

Out of 226 industrial estates and areas, four districts selected for the survey, viz., Visakhapatnam, Chittoor, Ranga Reddy and Medak, constitute 33 per cent of total estates and areas. As per the records of APIIC, at the end of March 1995, a total of 8378 industrial units were set up in the state in the estates of APIIC out of which 7519 were functioning and 859 were sick. In addition, 2922 projects were under implementation. Out of 7519 working units, 3653 units were established in the selected four districts (Visakhapatnam 418, Chittoor 266, Ranga Reddy 2655 and Medak 314). The sample districts cover 48.6 per cent of the working units in APIIC estates and areas. As it was not possible to cover all working industrial units in the estates of selected districts, one to three important estates/areas per district where entrepreneurs' service societies have become operational, have been selected. Totally eight industrial estates/areas have been selected for a detailed survey. Brief profiles of the sample estates/areas are given at the end of this chapter. Since it was not practicable to contact all working SSI units in the estates, a sample of entrepreneurs based on their product lines was selected to represent as many product lines as possible.

The estates covered in each of the four districts and their percentages are given in table 2.1. In the eight industrial estates and areas studied, 114 sample working units have been contacted which includes 12 entrepreneurs' associations and a total of 24 representatives of their associations in the four districts. This works out to 31.3 per cent of the universe selected for intensive field investigation. Particulars of entrepreneurs' associations are given at the end of this chapter. Therefore the sample selected from the SSI entrepreneurs is felt to be reasonable size, representing from different product lines.
Table 2.1 Distribution of Sample Units Among Sample Industrial Estate/Entrepreneurs' Associations

<table>
<thead>
<tr>
<th>S.No.</th>
<th>District/ Sample IE/ IDA</th>
<th>Units of the Estate</th>
<th>Sample Size of working units</th>
<th>% of sample units to working units</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Total Working</td>
<td>% of working units</td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Visakhapatnam</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. AIE Pedagantyada</td>
<td>65</td>
<td>51</td>
<td>78.46</td>
</tr>
<tr>
<td></td>
<td>2. IDA Vizag Block &quot;A&quot;</td>
<td>20</td>
<td>20</td>
<td>100.00</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Chittoor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. APIE Tirupathi &amp; Expansion</td>
<td>59</td>
<td>35</td>
<td>59.32</td>
</tr>
<tr>
<td></td>
<td>4. IDA Gajulamandyam</td>
<td>36</td>
<td>21</td>
<td>58.33</td>
</tr>
<tr>
<td></td>
<td>5. IE Madanapalli &amp; Expansion</td>
<td>36</td>
<td>28</td>
<td>77.76</td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Ranga Reddy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. IDA, Jeedimetla Phase IV &amp; Expansion</td>
<td>134</td>
<td>134</td>
<td>100.00</td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Medak</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>7. AIE, RC Puram</td>
<td>48</td>
<td>47</td>
<td>97.92</td>
</tr>
<tr>
<td></td>
<td>8. IDA, Patancheru Phase III</td>
<td>32</td>
<td>28</td>
<td>87.50</td>
</tr>
<tr>
<td>8.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>430</td>
<td>364</td>
<td>84.65</td>
</tr>
</tbody>
</table>

© includes 1 representative of entrepreneurs' Association of neighbouring potential estate of the same district.

# includes 10 representatives of neighbouring potential estates from the same district where Entrepreneurs' Service Societies have been actively involved in the implementation of "Local Authority Status" conferred on APIIC.

* includes 24 Representatives of entrepreneurs' Associations (4 from Visakhapatnam District, 4 from Chittoor District, 12 from Ranga Reddy District and 4 from Medak District)

Source: Records of Head Office/concerned Zonal Offices of APIIC and Entrepreneurs' Associations of the concerned estates.

From the APIIC, 30 officers of Deputy Manager's rank and above could be contacted to elicit their observations on the pattern of functioning and performance of APIIC. From the APIIC employees' association, five office bearers could also be contacted to get their response. From APIIC, thus 35 respondents gave their observations.
Out of 95 executives, 30 responded, making the sample 31.6 per cent. The questionnaire was sent to all executives up to Deputy Manager level; out of them, 30 responded. Particulars are given at table 2.2. The executives who responded are from ten districts - East Godavari, Visakhapatnam, Krishna, and Nellore of Coastal Andhra region; Cuddapah and Chittoor of Rayalaseema region; Hyderabad, Ranga Reddy, Medak and Nalgonda districts of Telangana region. These districts cover eight of the ten zones of APIIC. Of the five office bearers who responded to the questionnaire are: two from the head office, and three from zonal offices.

The representatives who responded on behalf of the APIIC Employees' Association are its President, General Secretary, Joint Secretary and two Executive Committee Members. Therefore, the size of the sample selected from the officials of APIIC (executives and representatives of the Employees' Association) is felt to be quite sizable to gauge the response of employees of different categories.

Table 2.2 gives the distribution of officials between the Head Office and Zonal Offices.

### Table 2.2 Distribution of APIIC Officials Covered in the Sample

<table>
<thead>
<tr>
<th>Sl. Office No.</th>
<th>No. of officials up to Dy. Manager cadre</th>
<th>No. of officials who responded</th>
<th>Percentage of response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Head Office Hyderabad</td>
<td>41</td>
<td>14</td>
<td>34.15</td>
</tr>
<tr>
<td>2. Zonal offices (10 zones)</td>
<td>54</td>
<td>16*</td>
<td>29.63</td>
</tr>
<tr>
<td>Total</td>
<td>95</td>
<td>30</td>
<td>31.58</td>
</tr>
</tbody>
</table>

*Except Kurnool and Warangal, the remaining 8 zones have responded.
2.3.6 Limitations of the study

1. Since this is a study on performance appraisal of a state corporation, promoting industrialisation, the generalizations drawn from the study may not be made uniformly applicable to all such similar institutions/organizations involved in the promotion and development of Industries in the country as every organization or corporation functions with set objectives and in a different environment.

2. Though the study covers a period of 22 years from 1974-75 to 1995-96, the data on certain issues have been reviewed for the latest period also i.e., till 1997-98 and in certain aspects, the analysis of the data was restricted to the years of its availability. However, the specific limitations have been mentioned at the respective places in this study.

3. Secondary data sometimes collected from more than one source. The gaps in one source tried to be filled up by referring to another source. As a result, there could necessarily be some discrepancies, if the data were not correctly reported in the sources referred to. Regarding secondary data collected from various sources, the authenticity of the data is circumscribed to the reliability of the data reported by the relevant authorities.

4. In the analysis of data, while calculating percentages, averages, etc., the resultant figures have been approximated. Though enough care was taken in approximation, sometime, the total may not exactly tally.

2.3.7 Presentation of the study

The thesis is divided into nine chapters.

Chapter 1: Infrastructure and the Industrial Estates Programme

This chapter is divided into two sections. In the first section, infrastructure at the macro level (national and state levels) is covered to highlight the directions pursued for the programme in the context of liberalisation. A number of illustrations are given covering
different sectors on the directions pursued and steps taken towards privatisation in the country. In the second section, the industrial estates programme in India is covered in detail. It includes background, types, patterns of financing and management, role played by institutional financing, and infrastructure in the liberalisation context.

Chapter 2: Research Design and Methodology

This chapter deals with a review of literature on industrial estates and small industry development, focus of the present study, survey design and methodology covering sample selection of estates, SSI units and representatives of associations and APIIC officials, questionnaires used for data collection, and analysis and presentation of data.

Chapter 3: Industrial Development and Infrastructure Growth in Andhra Pradesh

This chapter is divided into three sections. In the first section, policies and programmes for industrialisation, small industry development and infrastructure development are reviewed. These include the post-liberalisation policies at national and state levels. In the second section, industrial development of Andhra Pradesh is reviewed from different angles based on the data available from secondary sources. In the third section, infrastructure growth in Andhra Pradesh is reviewed at the state level. These include basic facilities needed for industrialisation, and special facilities developed for export promotion, including software development.

Chapter 4: Origin and Role of APIIC

Origin and key functions of the Corporation like acquisition of land, development of infrastructure facilities such as formation of roads, power and water supply, industrial housing, etc., allotment of the facilities developed, organisational structure of the Corporation and its evolution are reviewed in this chapter.

Chapter 5: Select Thrust Activities of APIIC

A few specialised activities undertaken or catalysed by APIIC are studied in this
Chapter 6: Operational Performance of APIIC

This chapter is divided into two sections. First section analyses the achievements in the field of industrial estates and industrial development areas in the state, examines the inter-regional and intra-regional variations, development of major concentrations of industrial units/growth centres. Second section presents inter-state comparison of the industrial infrastructure programme through a comparative account of the structure and role of organisations implementing the programme, policies pursued and major accomplishments.

Chapter 7: Capital Structure and Financial Performance of APIIC

Aspects covered in this chapter include, a study of the financial pattern of APIIC, utilisation of funds, and the results/benefits flowing from the investment pattern adopted by the organisation. The analysis is attempted in three aspects viz., capital structure, financial performance and pricing policies adopted at different periods.

Chapter 8: Perceptions of SSI Entrepreneurs and APIIC officials

This chapter is divided into two sections. This chapter analyses the feedback received from entrepreneurs and officials of APIIC. The feedback received from entrepreneurs and their associations on the quality of the infrastructure provided by APIIC, maintenance of the estates, administration of APIIC and other related agencies are analysed under first section. The feedback received from the officials of APIIC and their association on the organisational aspects of APIIC, Corporation-client relationship, and suggestions for improving the effectiveness of the performance of the Corporation are analysed in second section.
B) Chittoor District

3. APIE (Assisted Private Industrial Estate), Tirupathi and Expansion: This is one of the oldest estates developed by the Corporation in the district on an area of 50.415 acres, out of which, the land of 6.005 acres acquired for expansion is yet to be developed. In the developed land, 73 plots were made against which 71 plots were allotted and 7 sheds were constructed which were fully allotted as on 31-8-1996. Against 59 industries set up, only 35 are functioning, and another 5 new industrial projects are under implementation. Industries functioning in the estate are - Aluminium Alloys & Castings, Plastic Products, PVC pipes, Rubber, TV sets, printing ink, etc. First allotment was made in the year 1975, and the latest was in the year 1992. APIIC has also constructed an industrial housing colony of about 50 houses in Tirupathi.

4. IDA, Gajulamandyam: This is also an estate developed by the Corporation in the initial stage on an area of 561.990 acres. Even though it is an old estate, only 215.190 acres (38% of the land acquired) was developed. As against 69 plots made, 52 were allotted, and all the 14 industrial sheds constructed were allotted as on 31-8-1996. Totally 36 industries were set up in the estate against which 21 are functioning. 12 new industrial projects are under implementation. There is wide scope for developing and accommodating several industries in the estate. Industries functioning in the estate are rubber, agriculture seed processing, silicates, wire meshes, cement poles and other cement products, welding electrodes, etc. First allotment was made in 1975, and the latest was in the year 1991. The APIIC has also constructed an industrial housing colony of about 100 houses in Gajulamandyam.

5. IE (Industrial Estate), Madanapalli & Expansion: This is also one of the old estates of the district developed on an area of 43.47 acres out of which land acquired for expansion to the extent of 4.890 acres is yet to be developed. In the developed land, 42 plots were made and 8 industrial sheds were constructed, and all the plots and sheds were allotted as on 31-8-1996. As against 36 industrial units set up in the estate, 28 are working and 3 new industrial projects are under implementation. Even though it is a small estate, entrepreneurs of the estate seem to be highly committed. Industries functioning in the estate are flexing packing material, sweet oil mills, chikori coffee powder, dyeing and print.
making, readymade garments, general engineering etc. First allotment was made in the year 1975, and the latest was in the year 1988.

C) Ranga Reddy District

6. IDA, Jeedimetla Phase IV & Expansion: Jeedimetla of Ranga Reddy district is the biggest industrial belt in the state. Different types of industries in the SSI sector have been set up in this area. The estate has been developed by the Corporation in a phased manner. IDA, Jeedimetla phase IV and expansion was developed on an area of 134.970 acres which was fully developed. In this area, 90 plots were made and 67 industrial sheds were constructed against which 86 plots and 66 sheds were allotted as on 31-8-1996. Against this allotment, 134 industrial units were set up and all are functioning. Another 4 new industrial projects are under implementation. There is a scope for accommodating some more industries in the estate. Industries functioning in the estate are - safety razors, fabrication, job works, tools and pipes, ice blocks, saw mill, general engineering, rolling shutters, printing, food products, castings, chemical, plastic, rubber products, stone polishing, night lamps, power electronic equipment, etc. First allotment was made in 1978, and the latest was in the year 1993. The Corporation constructed an industrial housing colony of about 625 houses in the estate.

D) Medak District:

7. AIE, (Ramachandra Puram): This is an old estate developed by the Corporation on an area of 25.170 acres. 13 plots were made and 35 sheds were constructed and all were allotted. It is an ancillary estate to cater to the needs of the BHEL, RC Puram, a giant industrial unit. Out of 48 industrial units set up, all except one are functioning. Majority of the industrial units working in the estate are - general engineering and job works of BHEL, timber & wood products, electronics, machine parts, etc. First allotment was made in the year 1974, and the latest in the year 1985. The Corporation also constructed about 1000 industrial houses in a housing colony at RC Puram to cater to the needs of the industrial community of RC Puram and Patancheru. However, majority of the houses were reported to be allotted to the employees of BHEL, RC Puram.

8. IDA, Patancheru Phase III: After Jeedimetla of Ranga Reddy, Patancheru of Medak district is the major industrial belt of Telangana region. This industrial estate has been
developed in phased manner. IDA phase-III was developed on an area of 61,340 acres. In this estate, 21 plots were made, 17 industrial sheds were constructed, and all were allotted as on 31-8-1996. Out of 32 industrial units set up in the estate, 28 are functioning and another 3 new industrial projects are under implementation. Few more industries can be accommodated in the estate. Industries functioning in this estate are - general engineering, machinery parts, plastic products, heavy fabrication, iron rods castings, chemicals etc. First allotment was made in the year 1977, and the latest was in the year 1989.

2.3.9 Particulars of Sample Representatives of Entrepreneurs' Associations

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of the Association/Portfolio of the Representative(s)</th>
<th>Name of the Estate</th>
<th>District</th>
<th>No. of Representatives Responded</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Pedagantyada Entrepreneurs Association (President)</td>
<td>AIE, Pedagantyada</td>
<td>Visakhapatnam</td>
<td>1</td>
</tr>
<tr>
<td>2.</td>
<td>Visakhapatnam Estate Industrialists Association (President)</td>
<td>APIE, Vizag</td>
<td>Visakhapatnam</td>
<td>1</td>
</tr>
<tr>
<td>3.</td>
<td>Autonagar Small Scale Industries Welfare Association (President and Secretary)</td>
<td>IDA, Vizag Block 'A'</td>
<td>Visakhapatnam</td>
<td>2</td>
</tr>
<tr>
<td>4.</td>
<td>Tirupathi Industrial Estate Association (President &amp; EC Member)</td>
<td>APIE, Tirupathi</td>
<td>Chittoor</td>
<td>2</td>
</tr>
<tr>
<td>5.</td>
<td>Madanapalli Municipal Notified Industrial Area Service Society (Vice-President &amp; Treasurer)</td>
<td>IE, Madanapalli</td>
<td>Chittoor</td>
<td>2</td>
</tr>
<tr>
<td>6.</td>
<td>Qutubullapur Municipal Notified Industrial Area Service Society (President &amp; Secretary)</td>
<td>IDA, Jeedimetla</td>
<td>Ranga Reddy</td>
<td>2</td>
</tr>
</tbody>
</table>

(Contd. in next page)
<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of the Association/Portfolio of the Representative(s)</th>
<th>Name of the Estate</th>
<th>District</th>
<th>No. of Representatives responded</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.</td>
<td>Uppal Municipal Notified Industrial Area Service Society (Chairman &amp; Treasurer)</td>
<td>IDA, Uppal</td>
<td>Ranga Reddy</td>
<td>2</td>
</tr>
<tr>
<td>8.</td>
<td>Kapra Notified Municipal Industrial Area Service Society (Chairman &amp; Joint Secretary)</td>
<td>IDA, Nacharam</td>
<td>Ranga Reddy</td>
<td>2</td>
</tr>
<tr>
<td>9.</td>
<td>Charlapalli Small Industries Association (President &amp; General Secretary)</td>
<td>IDA, Cherlapally</td>
<td>Ranga Reddy</td>
<td>2</td>
</tr>
<tr>
<td>10.</td>
<td>Kattedan Municipal Notified Industrial Area Service Society (Chairman &amp; Secretary)</td>
<td>SEIE, Kattedan</td>
<td>Ranga Reddy</td>
<td>2</td>
</tr>
<tr>
<td>11.</td>
<td>Lal Bahadur Nagar Notified AN, Municipal Industrial Area Service Society (Chairman &amp; Treasurer)</td>
<td>LB Nagar</td>
<td>Ranga Reddy</td>
<td>2</td>
</tr>
<tr>
<td>12.</td>
<td>Medak Small Industries Association (President, General Secretary, Treasurer and EC Member)</td>
<td>AIE, RC Puram</td>
<td>Medak</td>
<td>4</td>
</tr>
</tbody>
</table>

In 12 Associations of four districts, Total respondents 24
2.4 Conclusion

This chapter covered the review of literature available, significance and objectives of the study, research design and methodology adopted and limitations of the study.

From the review of the past literature, it could be observed that though, several studies have been made in the state of Andhra Pradesh on the industrial estates programme, most of them were confined to one or two areas/regions and for a limited time. Further these studies were on the efficiency or on the performance of the industrial units set up in the industrial estates or on the financial institutions contributing for the promotion of small scale industries. No specific study was made to evaluate the overall performance of the APIIC. Therefore, there is a need for the present study.

To study the development of industrial infrastructure in Andhra Pradesh, efforts made by APIIC, the impact of the policies of APIIC, its financial performance, and its organisational aspects are specific objectives of the study.

Brief version of the hypotheses kept in view for this study are: development of industrial infrastructure contribute to balanced industrialisation, sound industrial infrastructure attracts prospective entrepreneurs, involvement of entrepreneurs' associations play a significant role in the maintenance of estates and setting-up of effluent treatment plants, focus of infrastructure is more on facilities directly linked with industrial activity and integrated pattern of APIIC's organisation structure is more effective.

The study covers 22 years i.e., from 1974 to 1996, and the data are collected both from primary as well as secondary sources. Two different questionnaires have been used to elicit feedback from the entrepreneurs and the officials of APIIC. For interpreting the data collected, simple statistical tools like, averages, percentages, compound growth rates and weighted average method on 5-point scale have been used.

Out of the 23 districts of the state, 4 districts viz., Visakhapatnam, Chittoor, Ranga Reddy, and Medak have been selected for field survey. From the four districts, 8 industrial estates and from the 8 estates, 114 working units have been selected which constitutes
31.32%. Similarly, 30 officers of the APIIC against 95 officers upto the cadre of Deputy Managers have responded which constitutes 31.58%. This excludes 5 representatives of the association of the officials of APIIC.

Making the study applicable uniformly for all similar corporations in the country, the data since collected from different sources is subjected to discrepancies, and approximation of the resultant figures may affect the tallying of the totals are some of the limitations of the study.