



A Study on Infrastructure Facilities and Industrial Development

(with special reference to SIPCOT, Ranipet, Vellore District)

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Abstract

A nation's infrastructure development plays a significant role in its economic growth. A fast growing economy warrants an even faster development of infrastructure. Any discussion about India's infrastructure has to briefly cover the planning carried out for the country's economic growth, since Independence. For all round development of any state, it is necessary that economic and social benefits of development reach all sections of society. The policies and planning of the state should be necessary to make improvement in the living standard of people across all sections, to enable them, to lead a dignified life. Infrastructure and Industrial development is a key to the development of the State. Therefore the state government will accord the highest priority to infrastructure and industrial development by creating an enabling environment for industrial development and investment attraction, the infrastructure development needs to be revisited to find out some useful interesting relationship. Hence, the researcher has attempted to find out the relationship between infrastructure and industrial development in the study

area. The importance of infrastructure for sustained economic development is well recognized. The visible signs of shortfalls in capacity and inefficiencies include increasingly congested roads, power failures, long-waiting lists for installation of telephones and shortages of drinking water illustrate the widening gap between demand and supply of infrastructure and also raise questions concerning the sustainability of economic growth in future. The researcher therefore realizes the importance of Infrastructure Facilities.

KEY WORDS: Infrastructure-Facilities-Planning-Industry-Relationship-Water-Power-Communication-Transport-Development.

INTRODUCTION

A nation's infrastructure development plays a significant role in its economic growth. A fast growing economy warrants an even faster development of infrastructure. Any discussion about India's infrastructure has to briefly cover the planning carried

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out for the country's economic growth, since Independence.

Along with Independence, India inherited famine and poverty from its colonial rulers. There was dire need for housing, health facilities, education, roads, power, irrigation projects and drinking water facilities for millions of underprivileged people. This called for proper economic planning. Unfortunately, the task of planning fell into the hands of those who were sympathetic to the feudal lobbies. These rich and powerful people had less concern for the social uplift of the poverty stricken masses. The outcome was that they lost sight of the main objective of planning the economy by keeping the overall national interest in view. It created economic inequalities among the States and erected roadblocks on the path of building infrastructure. Even today the people in power tend to fall victims to this skewed vision.¹

For all round development of any state, it is necessary that economic and social benefits of development reach all sections of society. The policies and planning of the state should be necessary to make improvement in the living standard of people across all sections, to enable them, to lead a dignified life. Based on this principle, the state government will strive to create an environment that is conducive to development of infrastructure, industry as well as trade.

Infrastructure and Industrial development is a key to the development of the State. Therefore the state government will accord the highest priority to infrastructure and industrial development by creating an enabling environment for industrial development and investment attraction. In addition to this, the state government will partner with private sector in the implementation of various infrastructure projects.

1. Government of India (2008) *Scheme for Support to Public Private Partnership in*

Infrastructure, Ministry of Finance, New Delhi



To maintain an average growth of 10 per cent in State Gross Domestic Product (SGDP)², large scale investments will be required in manufacturing, infrastructure and services sectors, both by public and private sectors. To achieve the objectives set in the Twelfth Five Year Plan, the pace of industrial development will have to be accelerated. To accomplish this, it is necessary that industry-friendly reforms are implemented. It is 65 years after Independence. Today, the rural population accounts for nearly 70 per cent of the total population and nearly half of them still live in poverty and illiteracy. How good is the rural infrastructure? The latest report of the National Sample Survey Organization on village facilities is a revelation in itself. To quote from the report, “One fourth of our villages do not have electricity; only 18 per cent of them get tap water; 54 per cent of them are more

than 5 km away from the nearest health centre; one third of them do not have pre-primary schools and 78 per cent do not have post offices”! Yes, “India still lives in its villages”.

The cities shelter around 30 per cent of the population who contribute to the economic growth. However, the most vital part of economic growth, which is infrastructure, hardly matched the demands of even this 30 per cent of urban dwellers, spreading chaos at the slightest provocation with the danger of turning the clock backwards. This mismatch has been seen in the Mumbai deluge in September 2005 and a little later in Bangalore, shattering the “Shanghai dreams” that so many harbour.

World Development Report 1994 published by the World Bank under the title “**Infrastructure for Development**” rightly mentions that “the adequacy of infrastructure helps determine one country’s success and another’s failure – in diversifying production, expanding trade, coping

2. Caitlin E. Coakley, Daniel A. Reed, Shane T. Taylor (2009), Gross Domestic Product by State, Survey of Current Business, Vol.5, pp.62-90.

with population growth, reducing poverty, or improving environmental conditions” (World Bank 1994:2)³. Mody (1997: xii)⁴ aptly suggests that in any modern society, infrastructure plays a pivotal role- often decisive role in determining the overall productivity and development of a country’s economy, as well as the quality of life of its citizens”. According to him infrastructure can be defined as activities that provide society with the services necessary to conduct daily life and to engage in productive activities.

It is an established fact that states of the Indian Union are placed at an uneven level of development notwithstanding the measures taken by the Central Government to maintain balanced development of regions and to reduce socio-economic disparities across space and people through Five Year Plans. Among the 15 major states

of India in the early 1990s, the rank position of the composite development index of Orissa was found to be 14 in the descending order according to relative deprivation method. Bihar’s development position was 15th at the bottom. Interestingly, among the 15 major states of the country, the three states of eastern India namely Bihar, Orissa and Assam have continued to remain at the bottom positions of development since 1970s (Meher 1999:205)⁵. Infrastructure plays a very vital role in the development of the entrepreneurship. A small business with a better infrastructural support can reach to the top giving the best return to the entrepreneur. Industrial Infrastructure Development Corporation (IDCO) has come up to this stage with the specific objective of creating infrastructure facilities in the identified industrial estates or areas. The objective was for rapid and orderly establishment and

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3. World Development Report 1994, Infrastructure for Development, Executive summary, issued by The World Bank, Washington, D.C.
 4. Mody, Ashoka(ed.) (1997). *Infrastructure Strategies in East Asia- The Untold Story*, The World Bank, Washington, D.C.

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5. Meher, Rajkishor (1999). ‘Inter-state Disparities in Levels of Development and the Implications of Economic Liberalization on the Regional Economies of India’, *Review of Development and Change*, 4(2), Jul-Dec.,pp.198-224.

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growth of industries, trade and commerce. It has been declared as the Nodal Agency for providing infrastructure to industries in the state of Tamil Nadu. The infrastructure includes essential facilities such as roads, drains, power, water, street light amenities and social infrastructure such as banking, post office, telecommunication facilities, shopping complex etc. The corporation is playing a pivotal role at present in the era of liberalization, privatization and globalization for development of infrastructure projects in the state.

STATEMENT OF THE PROBLEM

Infrastructural development in a country helps to run the operations of any company efficiently and effectively. Since cost is a reality and price is a possibility and due to high competition price is decided by the market forces, the controlling of cost is very imperative and is within the scope of a company. Lowering of cost can be

achieved through better managed operations backed by a sophisticated infrastructure. Now a days the nature of operations management in India is changing. Customer demands for better services, growing dominance of technology, the view of the individual enterprise as just one component of the total value system, the increase in interconnectedness and globalization of business and economics and the widening range of stakeholders to be satisfied are all factors contributing to the substantial operational challenges. Another major factor triggering the shift to privatization is the tremendous growth in capital markets and innovative means of finance which makes it possible to finance large infrastructure projects despite the long payback periods involved.

Since the scale of construction in industrial parks is very large and these are of direct and immediate benefit to large sections of the society, the public sector will continue to play a dominant role in the area and will have the ultimate responsibility of meeting

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the demands. However if private initiative comes forward to participate in creating such infrastructure like power plants, roads, social housing and industrial estates on reasonable terms and with full protection of peoples interest such initiatives must be positively encouraged. This study analyse the approach to infrastructure development adopted in the study area.

Under these conditions, the infrastructure development needs to be revisited to find out some useful interesting relationship. Hence, the researcher has attempted to find out the relationship between infrastructure and industrial development in the study area.

IMPORTANCE OF THE STUDY

Industrial development of a region is guided by various factors of which infrastructure facilities play a key role, of a catalytic nature, in the industrial development and performance of a region. The high positive

correlation observed in the case of Ranipet between the Infrastructure and Industrial development highlights the need for the availability of adequate infrastructure facilities in promoting industry. Hence, the focus has to be more on enhancing the efficiency of the industry by giving adequate infrastructure support rather than spread industry to all nooks and corner of the state. Alternatively, the focus could be on gearing certain clusters with good industrial potential to prospective industrial growth centres by providing them with the necessary infrastructure.

Infrastructure development is a major constraint on the industrial growth in India. India is aiming to achieve 10-per cent annual GDP growth by the year 2011-12, but the country needed over \$300 billion to upgrade its infrastructure over the next five years. Reduce costs by building the system with application-focused products that cross all platforms with the ability to deploy infrastructure management solutions only as needed. Maximize the existing infrastructure investment by

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effectively centralizing existing and new environments.

The importance of infrastructure for sustained economic development is well recognized. High transactions costs arising from inadequate and inefficient infrastructure can prevent the economy from realizing its full growth potential regardless of the progress on other fronts. Physical infrastructure covering transportation, power and communication through its backward and forward linkages facilitates growth; social infrastructure including water supply, sanitation, sewage disposal, education and health, which are in the nature of primary services, has a direct impact on the quality of life. The visible signs of shortfalls in capacity and inefficiencies include increasingly congested roads, power failures, long-waiting lists for installation of telephones and shortages of drinking water illustrate the widening gap between demand and supply of infrastructure and also raise questions concerning the sustainability of economic growth in future. The

researcher therefore realizes the importance of researching the effectiveness of Infrastructure in industrial development.

OBJECTIVES OF THE STUDY

1. To examine the role of infrastructure and industrial development in SIPCOT, Ranipet.
2. To determine the contribution of the Government and other agencies in infrastructure growth in this area.
3. To understand the creation of congenial industrial environment and high-end infrastructure facilities to attract investment in the State.
4. To analyse the availability of existing and required infrastructural facilities in the study area.

REVIEW OF LITERATURE

Ranjan (2010)⁶ investigated the role of physical and social infrastructure

6. Ranjan Ku Dash and Pravakar Sahoo. Economic growth in India: the role of

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in economic growth in India after controlling for other important variables such as investment, labour force, and trade. Two-Stage Least Squares (TSLS) and Dynamic Ordinary Least Squares (DOLS) techniques was used for the period 1970 to 2006. In this context a composite index of physical infrastructure stocks was developed and examined its impact on output. The result revealed that physical and social infrastructures had a significant positive impact on output apart from gross domestic capital formation and international trade. Further, the causality analysis supports the results, revealing unidirectional causality from infrastructure development and human capital to output growth in India.

Ranajoy Ray-Chaudhuri (2001)⁷

states that while India has a number of

physical and social infrastructure. *Journal of Economic Policy Reform*. December 2010, Vol.13, No.4, pp.373-385.

7. Ranajoy Ray-Chaudhuri. Institutional and infrastructural challenges to India's development. *International Affairs Forum*. 2001, pp.1-5.

national institutions such as the common law system and the English language, its diversity presents a unique set of developmental challenges. India's democratic government is marked by religion-based politics, inefficiencies, corruption, and interventionism that have kept the country from achieving its full economic potential. A major drawback to development is inadequate transport infrastructure, marked by low road density per capita, lack of paved roads and a railway network in need of modernization. Limited access to banking services in rural areas and to the poor presents another challenge, as do states that were left behind during India's growth surge; as do the country's growing environmental problems. These challenges need to be addressed as income and consumption levels rise and the country becomes a global powerhouse.

P.K. Tewari (2007)⁸ in his study states that the demand for water in India

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8. P.K. Tewari (2007), The potential for desalination in India, *International Journal*

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is increasing rapidly owing to progressive increase in the use of water for irrigation, rapid industrialization, population growth and improving life standards. A holistic approach is therefore required to cope with the freshwater needs of the country. It includes: seawater desalination in coastal areas; brackish water desalination; water purification; water reuse; rainwater harvesting; water supply schemes. The contribution of seawater and brackish water desalination would play an important role in augmenting the freshwater needs of the country.

Tripta Thakur (2005)⁹ in his study describes that the distribution sector is the focus of the ongoing power reforms in India, mainly due to its key role in realising the sales proceeds and, therefore, in ensuring the financial viability of the entire power sector. This paper details some of the problems

plaguing the distribution sector and spells an overview of the various efforts and the reform measures initiated by the government of India to ensure that the sector becomes financially and operationally viable. Further he discusses some of the important areas where certain issues need to be addressed by the policy makers to ensure that the distribution sector becomes efficient. The study also discusses these issues that include reorganisation of the distribution sector through optimal zoning, the issue of efficiency measurement through benchmarking of distribution utilities, privatisation-related aspects, the role of regulatory commissions, implementation of Multi-Year Tariff framework, and the need for universal metering.

François Jeanjean (2010)¹⁰ stated that subsidising demand is more efficient, in welfare terms, than infrastructure

of Nuclear Desalination, 2007, Vol.2, No.4, pp.303-310.

9. Tripta Thakur (2005), Distribution sector reforms in India: the tasks ahead, *International Journal of Global Energy Issues*, 2005, Vol.23, No.2/3, pp.196-217.

10. François Jeanjean, (2010), "Subsidising the next generation infrastructures. Consumer-side or supply-side?" info, Vol.12, No.6, pp.95-120.

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subsidies as long as the time required for private operators to cover an area, without subsidies, is shorter than the duration of the subsidies required to cover the same area immediately, thanks to the increase in consumers' willingness to pay.

B.K. Mukhopadhyay, A.K. Roy (2006)¹¹ in their study examines the global environmental pollution caused by so many anthropogenic activities. In particular, emphasis is laid on the recent experience of the increasing numbers of automobiles on insufficient and damaged roads, particularly in Indian cities, causing severe pollution effects. As far as the numbers are concerned, a standard mathematical model was developed, similar to Malthus' model on human population in an exponential form, and later changed to the logistic level of Verhulst. Because Kolkata experiences a heavy load of traffic with

insufficient infrastructure, this study has focused on this city, taking it as a reference city for the mathematical model. A detailed discussion is also given of automobiles and environmental pollution with reference to this city, and some comparative published data, along with some calculated measures, are presented for the four mega-cities of India.

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12. B.K. Mukhopadhyay, A.K. Roy (2006), A study on some standard mathematical modelling on automobiles and environmental pollution in the city of Kolkata, *International Journal of Environment and Pollution*, 2006, Vol.28, No.1/2, pp.198-215.

13. B.K. Mukhopadhyay, A.K. Roy (2006), A study on some standard mathematical modelling on automobiles and environmental pollution in the city of Kolkata, *International Journal of Environment and Pollution*, 2006, Vol.28, No.1/2, pp.198-215.



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RESEARCH METHODOLOGY

The methodology of the study is based on both analytical and descriptive type of methodology. The study used both the primary as well as secondary data. The study depends mainly on the primary data collected through a well-framed and structured questionnaire to elicit the well-considered opinions of the respondents. Multi-stage or two-stage random sampling is adopted to obtain the responses from the respondents of SIPCOT, Ranipet. The study is conducted in two stages format, with a preliminary pilot study followed

by the main study. The secondary data were collected from journals, magazines, publications, reports, books, dailies, periodicals, articles, research papers, websites, company publications, manuals and booklets.

Study Area

The study area taken up by the researcher is SIPCOT, Ranipet, Vellore District.

A pilot study was conducted to validate the questionnaire and to confirm the feasibility of the study. The pilot study was conducted with a sample of 50 questionnaires covering the industries in SIPCOT, Ranipet, Vellore District. The statements included in the questionnaire were subjected to the test of reliability using Cronbach's Alpha Criterion. The value obtained is, **0.808 (80.8%)** which showed that the instrument is highly reliable. In the light of experience gained, the questionnaire was modified suitably to elicit the responses from the sample group.

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After completing the pilot study, the questionnaire was slightly revamped and circulated among the respondents in SIPCOT, Ranipet, Vellore District. The questionnaire consisted of questions in optional type as well as in Likert's 5-point scale. The Likert's scale ranges from strongly agree (5) to strongly disagree (1). The questionnaire with a covering letter was handed over personally to the industries identified for the study and were requested to return the filled-in questionnaire after 15 days, when the researcher visited them. The respondents took a period of 15 days to 30 days to return the completed filled-in questionnaire.

Sampling Size

530 questionnaires were issued to the selected industries in SIPCOT, Ranipet, Vellore District. 512 questionnaires were received back and 12 questionnaires were rejected due to incomplete answers. 500 questionnaires were found to be appropriate for the analysis, with resulted in a response rate of 94.34%.

The questionnaire for the research consisted of both optional type and statements in Likert's 5 point scale. This allowed for the standardization of results as well as making it easier for respondents to complete the questionnaire. The author and supervisor discussed the Likert's 5 point scale and decided to assign the numerical value three for undecided or neutral. The numerical value 3 is assigned to neutral after referring the several approaches in statistics. Undecided has a connotation that, the statements in the questionnaire do not have proximity to the respondents. But neutral implies that they are well acquainted with the statements in the questionnaire but they want to remain equidistant from the two extremities of agreement and disagreement.

Analysis of Data

The primary data collected from the industries were analyzed by using Statistical Package for Social Science (SPSS) to obtain the results concerning the objectives of the study. Factor analysis, t-test and One Way Analysis

of Variance were applied for analyzing the responses of respondents in SIPCOT, Ranipet, Vellore District.

LIMITATIONS OF THE STUDY

1. The study is limited to SIPCOT, Ranipet, Vellore District only.
2. The study covers to the infrastructure provided to the industries located in SIPCOT, Ranipet, Vellore District.
3. The study is limited to the 500 responses of respondents in SIPCOT, Ranipet, Vellore District.

FINDINGS OF THE STUDY

The major findings of the study are:

- From the study it was found that the majority of the responding industries in SIPCOT Ranipet belonged to manufacturing area. It was clearly found from the research that most of the responding industries were manufacturing major equipments.
- It was found from the research that majority of responding

industries (37 %) invested more than 70 lakhs for their organization. The study revealed that there were no cottage industries established in SIPCOT, Ranipet.

- The research showed that majority of the responding industries (63%) was running with less than 250 employees. It also revealed that 47.2% of responding industries in SIPCOT were running only one shift at the maximum.
- The majority of the responding industries (47.4%) located in industrial estate reaches above 2 crore at the maximum as the annual turnover. It was also found that nearly 68 per cent of the responding industries are in the plan of future expansion.
- The study shows that the majority of the responding industries (41%) in SIPCOT consumes above 12000 units of power for their needs. It was clearly mirrored that 79 per cent



of the responding industries located in SIPCOT were using generator for their manufacturing process during power shut down.

- The study found that 58.4 % of the responding industries were using bore well as the source of water. Only 12 per cent of the responding industries in Ranipet are in need of above 25,000 liters of water for their organization. From the study it was found that the organizations were well provided with daily supply of water from the corporation. The study showed that 201 SIPCOT responding industries were storing the water in sumps.
- 80 per cent of the responding industries are provided with good connectivity by roadways for their transportation. The researcher found that 39 per cent of the responding industries were provided with gravel road. However, 42 per cent of the

responding industries expressed that they were suffering as roads were not properly maintained.

- 27 per cent of the responding industries strongly agreed that SIPCOT responding industries had good railway connectivity with major cities in the country. It was found that majority of the responding industries (32.2%) agreed that there was need for the expansion of railway connectivity. The study showed that the majority of the responding industries (32.2%) located in SIPCOT was using railways to transport raw materials for their manufacturing process. Majority of the responding industries (32%) agreed that railway was a safe mode of transport. Factor Analysis revealed that 71.835 % variance existed for the railway services used by the responding industries. Two factors were considered more important among the five. They were

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named as Logistic Features and Logistic Factors.

- The study revealed that 33 per cent of the responding industries were using SBI services for their financial transaction. And 50 per cent of the responding industries believed that SBI was the largest bank in SIPCOT providing financial services. Majority (42%) of the responding industries depend on Banks for LOC as their important financial need. ATM services were found to be highly productive by 36.4 per cent of the responding industries. Internet banking was expressed to be easy to access and highly productive by 40 %. One-way ANOVA revealed that there was significant difference in satisfaction with Internet Banking across different category of industry ($F=0.071$, $p=0.991$).
- Medical care was ranked first with the mean value of 3.89. The satisfaction level was also found

to be more than the test value for medical care ($t = 22.992$, $p = 0.000$).

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