

Coastal Leadership: Impact of Port Investments on Port Urbanisation at Major Ports in India

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Abstract

The historical study of Indian urbanisation reveals that ports had played an important role since colonial times in both trade and urbanisation. Ports and shipping in India still play an important role in international trade, despite the tremendous growth of other alternative major modes and means of transport, such as airways. This is because ports presently comprise almost 70 per cent of the total value of world trade, even in the post-liberalisation period, despite the growth of air transport. However, in this era of globalisation, with a gradual shift to a more outwards oriented trade regime, there has been massive expansion in the volume of India's seaborne trade, together with a change in the composition of Indian port traffic, from break bulk to liquid bulk, dry bulk, and containerised cargo, with a decisive shift towards containerisation in the mode of cargo delivery post 1990s, across both the western and eastern coasts of the country. To cope with the above-mentioned challenge, coupled with the growth of world-class infrastructure in response to the emerging trends in global sea-trade and shipping trends, the growth of port urbanisation is highly affected, as a result of the corresponding port investments across both the coasts. This paper, therefore, statistically assesses the impact of port investments on port urbanisation in India. While doing so, a comparative study between the ports in the western and eastern coasts has also been attempted, to judge the performance of the coasts in this respect, where the dominant leadership role of the western coast is a major finding.

Keywords: Indian Major Ports, Western Coast, Eastern Coast, Port Towns

Introduction

Maritime transport has played a significant role in the history of overall trade and urbanisation of a country like India from pre-historic times till now (Mukherjee, 1968). In post-independence period, according to the Constitution of India, the transport sector, and hence, maritime transport, in particular, major ports are administered by the Central Government. India has a coastline of 7600 kilometres, with a well-established port infrastructure comprising 13 major ports (12 government and 1 corporate), spreading across nine coastal states of the country, namely Andhra Pradesh, Odisha, West Bengal, Tamil Nadu, Kerala, Karnataka, Goa, Maharashtra, and Gujarat. These ports mainly handle sizeable volumes of physical cargo traffic, thus acting as major gateways to the country's international trade by sea. Thus, sea-trade made sea-ports on the coasts of India more important since the colonial period, which led to the growth of port towns even in this post-globalisation period (Ghosh & De, 2001).

Literature Review

In the relatively neglected branch of studies of Indian port literature, it has been found that history and developmental issues, cargo handling aspects, general role, and functioning of the Calcutta Port Trust, and a few other major ports in India, such as Haldia and Mumbai ports, have always been focused. In this connection, mention may be made of Banerjee (1975), Stutchey (1978), De (1991), Panda (1991), Ray (1993), Chakraborty (1995)

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(ed.), and Sau (1997), with the first major pioneer to write the history of Calcutta Port (CP) being Mukherjee (1968). Besides them, various discussion papers, such as those of Ghosh and De (1998) and (2001), had emphasised different aspects responsible for the decline of the CPT port and the need for the Haldia Port.

Hence, it has been found that major attention has been given only to the study of the ports and their developmental issues, with little importance to the study of port towns in the existing port literature. The first major attempt in this respect, to identify the port towns of India in the post-independence period had been done by Mitra et al. (1980), on a definitional basis. According to them, because of the geographical location and function, the category of cities and towns with ports deserve to be recognised and classified as port towns. Champakalakshmi (1996), however, had concentrated on the port towns of South India during the period 300 BC-1300 AD, and considered the development of trade and commerce, together with the spread of religion, to be the major factors of urbanisation of such port towns during the contemporary period. Apart from economics, transport being an urban issue and ports being an important wing of transport, they had been studied in other disciplines to some extent, particularly in Geography. The book edited by Banga (1992) contains several papers highlighting the relationship between hinterlands and the growth of the ports and port towns in India during the pre-independent period of 1757-1957. This book relies more on European records rather than on indigenous sources like Indian language sources or regional sources and so on. This is because a large corpus of records on port cities and port towns, in the period 16th to 18th century, available to them were European records. According to this book, the colonial ports were symbols as well as immediate instruments of colonial Asia. It shows how the ports of India had carved out their hinterlands, where the characteristic feature of the dominance-dependent relationship of colonialism was effectuated, which had led to the urbanisation of such port towns. However, this book had failed to study the dynamics of the urbanisation of those port towns during the said period. Tan (2007) made a comparative study on the evolution of the port towns of Singapore and Calcutta from colonial port cities to a post-colonial city state and a city within a state. In doing so, he had critically examined the comparative trajectories of these port cities, with focus on their historical development, functioning of these

cities, and the spatial consequences of those political and economic changes on these two cities.

Objectives

Against the above theoretical backdrop, the main objective of this paper is to compare the impact of investments in major ports on the urbanisation of those major port towns between the western and eastern coast in India, in terms of the study of i) the impact of change in port investments on the urban population of the major port towns, and also ii) the significance and nature of correlation between port investment and port urbanisation (urban population of the port towns) in 2010.

Data and Methodology

Secondary data on the value of total investments (Rs) on the ports of India are collected from the various publications of Basic Ports Statistics of India, annual reports of the Indian Ports Association, and from the official website of the Ministry of Shipping, Government of India. Data on urban population has been collected from the official website of the Census of India.

Simple statistical tools are used in the methodology: (i) simple classical linear regression model (CLRM) regress port investments on the urban population of the major port towns. The value of R^2 measures the relative amount or percentage of the variation in the dependent variable (i.e., port urbanisation), which can be explained by the change in the independent variable (i.e., port investments) (Gujrati & Sangeetha, 2008), for major ports of India; (ii) simple correlation coefficient is used between the above two variables, namely port urbanisation and port investments. Moreover, square of correlation coefficient (denoted by R^2) and a measure of the goodness-of-fit of the trend lines is used to study the degree of the linear dependence between the above-mentioned variables. A comparative study between the western and eastern coasts has also been performed.

This paper includes 11 major port towns (MP) in India, of which the Western Coast (WC) includes five port towns, namely Greater Mumbai, Cochin, Mormugao, Kandla, and New Mangalore, while the eastern coast (EC) includes six port towns, namely Kolkata, Haldia, Chennai, Vizag, Paradip, and Thootukuddi (or Tuticorin).

Results and Discussion

This section first studies the impact of port investments on urbanisation in terms of the results of simple classical linear regression models (CLRM), which is provided in Table 1. It reveals that all five major ports on the western coast have a very strong, significant, and positive (β^*) port investment multiplier effect on the urbanisation of the respective port towns in India in 2010, whereas there is a very weak, insignificant, and negative (β^*) impact in the case of the remaining six port towns on the eastern coast, as is evident from the values of R^2 , t , F , and p values for Western Coast (WC) and Eastern Coast (EC), respectively. In fact, it has been found from the results for all 11 major port towns in India in 2010 that there exists a slightly much less strong, significant, and positive (β^*) port investment multiplier effect on the urbanisation of all these major port towns, as is evident from the values of R^2 , t , F , and p values.

Table 1: Impact of Port Investments, in Major Ports, on Urbanisation of Respective Port Towns in India in 2010

Coast	n	Coefficients (β^*)	T Stat	P Value	F	R^2
WC	5	41565.9	4.4	0.022	19.05	0.864
EC	6	-1488.95	0.15	0.888	0.022	0.006
MP	11	19700.65	2.06	0.07	4.24	0.320

Source: www.census.gov.in

Further, major ports on the western coast dominate the impact of the 11 major port towns (MP) in India, thus reflecting, however, a positive (β^*) but very slightly insignificant port investment multiplier effect on their port urbanisation.

Table 2: Correlation between Major Port Investments (PI) and Urbanisation of Port Towns in 2010

Coast (n)	Correlation Coefficient (r)
WC (5)	0.9295*
EC (6)	-0.13262
MP (11)	0.5443**

*Significant at 5% level; **Significant at 1% level.

Source: www.census.gov.in

Next, the same results are also evident from Table 2, which provides the results of correlation analysis. It shows

a very strong, significant, and positive (r) correlation at 5 per cent level of significance between major port investments (PI) and urbanisation of port towns in the western coast, with $r = 0.9295$, whereas there is a very weak, insignificant, and negative (r) correlation between them in the eastern coast in 2010, with $r = -0.13262$, thus reflecting higher impact of port investments on port urbanisation in the western coast. Moreover, the negative correlation between the above-mentioned variables in the case of the eastern coast suggests that higher the impact of the port investments, lower the growth of port urbanisation of eastern coastal port towns. Thus, the same type of dominance of the western coast is found for the overall impact of all 11 major port towns as well, with $r = 0.5443$. So, it has been found from the above analysis that all the major port towns reflect a weak but little significant correlation at 1 per cent level of significance between port investments and port urbanisation.

Conclusion and Policy Implication

So, it has been found from the analysis that all the above 11 major port towns of India reflect weak but little significant impact of the port investments on port urbanisation. In fact, a slight significant impact found in the above case can be said to be derived from the greater significant dominant impact of port investments on urbanisation of port towns in the western coast. This implies that port investment has almost no significant impact on the increase in urbanisation of the major eastern coastal port towns, which may be because of the dominance in the growth of port activities or occupations in most of their port towns in the western coast, compared to those in the eastern coast; thus, the western coast is emerging as the leader in coastal leadership in this respect. As a policy implication, a similar impact of the port investments on urbanisation of the respective districts of the port towns is suggested for future research, to differentiate the results across the coasts of the country.

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