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# Infrastructural Development of India: a Comparitve Study

KEYWORDS

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**ABSTRACT** *The development of every nation is highly correlated with infrastructure apparatus of that nation. The catalyst force of the entire developed nation is the infrastructure backup they have attained. Though India stand second in the population, it's infrastructure apparatus is not matching with it's developmental needs. Promotion Public Private participation ( PPP) in the development of infrastructure is indispensable and government must take initiative in this regard.*

**Introduction**

Infrastructure can be defined as the basic physical and organizational structures or facilities needed for the operation of a society or enterprise. The development of every nation is highly correlated with infrastructure apparatus of that nation. The catalyst force of the entire developed nation is the infrastructure backup they have attained. It can be divided in to social and economic infrastructure. While the social infrastructure comprised of education, health, sanitary, housing etc, and the economic infrastructure holds irrigation, power, transport and communication etc. It was the development economists who have give thrust for the development through the infrastructural development. Whether it is in a balanced or in an unbalanced one was the question. Hirschman points out that the development requires two types of investment in productive activity namely social overhead capital and direct productive activity. To smoothen the development process the latter must be overrun by the former. All these cite the importance of infrastructure development on different facets. Infrastructure development is a priority for Government. It is estimated that total spending on infrastructure would reach US$ 19 billion during FY12-17 .India-Foreign direct investment (FDI) received in construction development sector from April 2000 to January 2015 stood at US$ 24,028.19 million, according to the Department of Industrial Policy and Promotion (DIPP).

**Significance of the study**

India knows the importance of infrastructure better than every nation . To a developing country like India, the infrastructure development is the prime concerned for it's development needs. In this paper a comparison of infrastructural development on selected indicators are done. It has taken China and Pakistan because both countries have some similarities is there. One is that china has the similar population trends and coming to Pakistan, it got independence on same day. So a comparison of these country with India is quite not worthy.

**Objective**

To compare India's infrastructure performance with China and Pakistan

**Methodology**

The paper tries to make a comparison of India's infrastructure performance with China and Pakistan. The paper depend mainly the secondary data from planning department, UN, World Economic Forum etc. The data were mainly collected from World Bank's data bank. The data is comprised of the year 2014.

**Table.1**
**Some selected demographic indicators of indicators of India, China and Pakistan**

| Country | Population | Population growth (annual %) | Population density/km$^2$ | Literacy ratio | HDI | Life expectancy | Infant mortality | Percapita income |
|---|---|---|---|---|---|---|---|---|
| India | 1.28 bill | 1.2 | 386 | 74.04 | 135 | 68.13 | 41.00 | 1,627 $ |
| China | 1.40 bill | 0.5 | 146 | 95.10 | 91 | 75.30 | 14.39 | 8,154 $ |
| Pakistan | 0.18 bill | 1.6 | 233 | 54.90 | 146 | 67.39 | 57.48 | 1.513 $ |

Source: Compiled from various source (2014)

From table .1, it's seen that, the India stand second in population and first in density. It indicates that the need of infrastructure development of the country. Compared to china, India stands second in literacy, literacy and HDI. But at the sometime, India is highest in infant mortality. It was seen that, the population of India is increasing, and it will overtake China in 2022 and India has a great responsibility to provide it's increased population. The per capita income of India is far below compared to China and slight higher than Pakistan. Pakistan is the sixth populated country in the world.

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**Table.2**
**Population, Water and food accessibility comparison with China and Pakistan**

| Country | Food production index | Improved water source(%) of rural population with accessibility | % of population in rural area out of total population | Rural population |
|---|---|---|---|---|
| India | 138.8 | 91 | 68percent | 857,194,567 |
| China | 129.5 | 85 | 46 percent | 627,970,693 |
| Pakistan | 93.8 | 89 | 62 percent | 114,221,461 |

Source: World Bank Data source (2014)

Under this head, some general trend on food, water and population are dealt. It can be seen that, India is comparatively better position in the improved water accessibility especially in the rural areas. India's 68 percent of the population are living in rural areas and among these, 91 percent are able to get improved water facility is quite praise worthy when it is 85 percent in China and 89 percent in Pakistan. Food production index covers food crops that are considered as edible oils and that contain nutrients. The improved water sources shows the percentage of the population using an improved drinking water sourced .It includes the improved drinking water source includes pipe water on premises and other improved water sources including public taps, stand pipes, tube wells etc.

**Health infrastructure**
One of the prime objectives of government of every nation is providing a health care at an affordable rate. Concerned to India, it lacks sufficient health care infrastructure apparatus. As per the WHO data (2013), it was only 1.2 percent of GDP is spending for health development. To China it is 3.1 and for Pakistan it is 1.00 percent. Even though, there is an investment in the health care sector it is highly biased towards the urban area. For providing an equal attention to urban and rural sector, the government has introduced National Rural Health Mission in 2005 and for the urban people the government approved National Urban Health Mission in 2013.

**Table.3**
**Health Indicators of India, China and Pakistan**

| Country | improved sanitation facility % of people access | Incidence of T B /100,000 | Life expectancy at birth female (years) | Life expectancy at birth male (years) | Malnutrition prevalence | Out of pocket of private health expenditure | Maternal mortality | Health expenditure Per capita($) | Health expenditure (% of GDP) |
|---|---|---|---|---|---|---|---|---|---|
| China | 65 | 70 | 77 | 74 | 0 | 85.9 | 32 | 367 | 5.6 |
| India | 36 | 171 | 68 | 65 | 0 | 76.7 | 190 | 61 | 4 |
| Pakistan | 48 | 275 | 68 | 66 | 0 | 86.8 | 170 | 37 | 2.8 |

Source: World Bank Data source(2014)

The health care development of each nation will be better revealed from the health indicators like life expectancy and infant mortality. Compared to India and Pakistan the life expectancy of China is 75.To India and Pakistan it is 135 and 146.The Infant mortality rate of India is more than compared to China. When India experience 41, it is 57.48 in Pakistan. But compared to both countries, China is very low and is 14.39.Thus it can be said that, Comparing three countries, the performance of China is better. One of the striking features of the table is that, the per capita spending on health is very high India compared to other two nations.

**Accessibility to fresh water in the rural area**
Water availability is getting reduced now a days.783 million people of the world is out of the purview of the fresh water accessibility. It is as important as to provide fresh water accessibility to the people especially rural people. The accessibility to fresh water to rural area is provided to rural is India. India provides fresh water to 91 percent of the rural people. It is 89 in Pakistan and 85 in China.

**Table.4**
**Fresh water accessability in rural area of India, China and Pakistan**

| Country | Improved water accessibility of rural by percent | Investment in water and sanitation with private participation(US $) |
|---|---|---|
| India | 91 | 135,100,000 |
| China | 85 | 287,390,000 |
| Pakistan | 89 | NA |

Source: World Bank Data source(2014)

Moving to private participation on water and sanitation it can be see that, China has nearly twice of the investment in India. If the expenditure of China is US $ 287,390,000 India holds only US $ 135, 100, 00.One of the major bottleneck of the Infrastructure development of every nation is lack of private investment. India suffers this limitation.

**Energy development**
Energy is the primary concern of every country. India is concerned as the major energy consuming country of the world. The following table illustrates some of the fact related to the energy scenario of India, Pakistan and China.

**Table.5**
**Energy trends in India, China and Pakistan**

| Country | Alternative and nuclear energy out of total energy consumption | Energy imports out of total energy consumption | Fossil fuel energy Consumption out of Total energy | GDP per unit of energy use |
|---|---|---|---|---|
| India | 3.01 | 32.3 | 74.33 | 7.8 |
| China | 4.52 | 14.2 | 88.42 | 5.2 |
| Pakistan | 4.60 | 24.2 | 61.21 | 9.6 |

Source: World Bank Data source (2014)

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Table .4 explains the important information as it is china which stands first in using fossil fuels energy consumption. Moreover 32.3 percent of India's energy needs are satisfied by import. Moving to GDP per unit of energy use it can be seen that, it Pakistan who stand first in the order.GDP per unit of energy use is the PPP GDP per kilogram of oil equivalent of energy use.

**Education**

The process f development will not complete if there is not right education to the people. It is visible that Chins spent 25 percent of it's total expenditure to educational infrastructure. To India it is 15.8 percent and it is 12.6 per cent in Pakistan. It can be said that it is because of this spending on infrastructure made China to have 95.10 percent of literacy rate. In Pakistan there is 12.6 percent of the total expenditure is investing for the educational purpose, their literacy rate is comparatively very low comparing to other two nation (54percent).

**Table.7**
**Educational trend India, China and Pakistan**

| Country | Percentage e of Government Expenditure on education | Literacy rate |
|---|---|---|
| India | 15.8 | 74.04 |
| China | 25.00 | 95.10 |
| Pakistan | 12.6 | 54.90 |

Source: World Bank Data source(2014)

**Other infrastructural trends an overview**

Under this head, all other infrastructure indicators which not mentioned in the previous head are taken in to consider. It includes access to electricity consumption, mobile cellular connections $CO_2$ emissions are taken in to consideration. It can be conclude that, the carbon emission is mainly from China compared to other two country is comparatively higher. It indicates the fact that even though, Investment expenditure of China is comparatively high to the other countries, it is not at all sustainable. The other important feature derived is that, the electricity consumption of Chinese are very high. When it was 760 kWh per capita and 447 kWh per capita, it is 3,475 kWh per capita. After China,it is India Who stand first in cellular connections.

**Table.8**
**Other infrastructural scenario**

| Country | Access to electricity consumption (% of population) | Electric power consumption (kWh percapita) | Urban population(%) | $CO_2$ Emission (metric tones per capita) | Mobile cellular connections /100 people |
|---|---|---|---|---|---|
| India | 78.7 | 760 | 32 | 1.7 | 74 |
| China | 100 | 3,475 | 54 | 6.7 | 92 |
| Pakistan | 93.6 | 447 | 38 | 0.9 | 73 |

Source: World Bank Data source (2014)

**Conclusion**

Though India stand second in the population It's infrastructure supply is not matching with it's developmental needs. Promotion PPP in the development of infrastructure is indispensable the government must take initiative in this regard. One of the major constraints of infrastructure development in India is the capital scarcity. For this attraction of FDI in this field highly inevitable. There is huge gestation in period in infrastructural development is the other constraint. Time lags in investment must be avoided and the procedures must be liberal.

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