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Challenges in Construction of High-Speed Railways in India

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Abstract:- India is relatively a newcomer in HSRs group. A memorandum of understanding was signed between India and japan to build the full stretch of the project between Ahmadabad and Mumbai. As of now the top speed of Indian railways is par below rest of leading HSRs operating nations. The proposed HSRs construction would mainly focus on Chennai, Delhi, Kolkata, and Mumbai in the early phase. HSRs construction in India was first proposed in India by then railways minister Madhav Rao Scindia in the 1980s and it was approved in 2014 by Nagendra Modi led government.

Keywords-
- *Newcomer*
- *Mumbai Ahmadabad*
- *Speed*
- *Railway*

I. INTRODUCTION

The high-speed rail provides safer and reliable mode of transport between cities which lead to contribute service openings to the country. There are many factors that will determine the economic seen of HSR but the most important among them is the local impact of project this would prove to be the major section in socio economic. After the first introduction of shinkansen in japan in 1964, the HSR have proven to be an undeniable technology, many countries have adopted the technology and has become as vast network of HSR line. while India still in progress on project of 508km long rail line from Mumbai to Ahmedabad. This project can make a huge impact on the growth of GDP of our country because it is a heavy project which estimate cost is Rs 1.1 lakh crore (us $15 billion) including the cost of 24 train set.

II. HISTORICAL OVERVIEW

High speed railway was begin in 1899 when the Prussian state railway joined with ten electrical and engineering firms and electrified 72 km (45 mi) of military owned railway between Marienfelde and Zossen in germany. The line used three-phase current at 10 kilovolts and 45 Hz.

World Scenario

Xiaohong Ren (2020), Investigated social impact of high-speed rail (HSR) through fundamental questions. He analyzed and revealed factors about HSR such as trip distance, charge, travel behaviors, onboard services and play significant roles in whether passengers choose conventional rail over HSR. Equally, the study shows that lower incomes and education levels are associated with higher odds of choosing conventional trains over HSR by 24.1% and 25.3%, respectively (1).

Indian Scenario

Vishal Urade (2019), presented the rationale for an ‘Investment or In-waste-ment’ in Bullet train developed in India. The Investment decision to prove that whether the Investment in its true sense. Also this study shows that Can the Indian Bullet train make the Indian economy run like a bullet” (3).

III. CHALLENGES OF HSR IN INDIA

Social Challenges

Construction of high-speed railways requires a lot of initial investment which many would question for an ineffective way of investing quite a large sum of money. Indian high speed rail project is proposed between Mumbai and Ahmedabad which is 510 km. MOU was signed between India and japan to carry out joint study on the proposed project. High speed railways along with all other benefits can bring a lot pf opportunities and can majorly impact the economy of a country. Mumbai-Ahmedabad which are the economical hub of India can benefit hugely form the proposed HSR project between the two cities. China has the largest network of high-speed rail network in the world more than twice the length of all the HSR operating nations combined. china has connected all its major cities increasing the economic performance of all the connected cities and the nation as a whole. The major city centers in India are heavily congested with nearly everyone owning private transport (cars, bikes etc.) resulting in loss of time and money in the end. Construction of HSR will not only provide easy communication but also provide safe and cheap transport to and for between 2 cities in lesser time. With India being the 2nd largest population in the word there won’t be any issue for passenger gathering.

Major social challenges in the construction of HSP in India can be acquiring the land for the construction of Mumbai-Ahmedabad corridor. The project was proposed in 2009-2010 railway budget and the land survey and acquiring of land started on 2017. The const. of the project was to be started on 2020 and completed by 2023 but was pushed back due to problems in acquiring the land to 2028.

Relocation of displaced people can pose major problems. The dislocated people have to be relocated to new

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location and provide housing to stay with compensation included.

Relocation of firms and creation of new firms in the 2 cities to amass the benefit of high-speed railways between the 2 cities can contribute to the development and economic growth in the region and improve life style.

The key problem in construction of high-speed railways is whether the project of construction of HSR would bring about any real economic development, can it bring the net economic benefit for the nation.

The cost of project is estimated to be 15 billion us dollars which raises many eyes but it also puts India in the list of high-speed railways operating countries.

Human resource development would be very important as large number of workers has to be trained in maintenance, safety precautions and construction of the said HSR line.

The improvement of the HSR, stations and expansion plan have to be revised.

Location of the station and number of stations have to be checked as the demand for station and in general the number of stations will increase.

Technology and man power plays a major role in construction of anything for the first time and with japans help we have already tackled one the biggest challenge of implementing the HSR project. Japan has agreed to bear 80% of the estimated cost for the construction.

IV. ECONOMIC CHALLENGES

The report of the London school of economics and Political science and the university of Hamburg research says, the towns connected to a new HSR line saw their GDP rise by at least 2.7% compared to neighbor's not on the route. The study also found that HSR has a direct correlation with a rise in GDP- for each 1% increase in market access, there is a 0.25% in rise.(4B)

Figure 0.1

Construction effect

Since transportation project occur within a circumscribed area, studies estimating Construction effect are often based on two different theoretical models the input - output model and economic bare analysis Keynesian theory. economy base analysis promise that the development of city is essentially achieved by exogenous variable over which they have no influence. This theory demonstrated that the capital earned outside the region stimulates the rest of the local economy with to the multiplier. Since the most of the finance investment spending can be seen coming from a source other than the local economy and thus similar to revenue from basic activity.

Accessibility and travel time

HSR implies changes in accessibility and reduce travel time which changes modal share and new transport demands. These are called the transport effect of HSR and are directly based on the space/time relations (4). Reduction of time is most important effect of HSR.

Long Term Benefits

country like Japan, Germany, France, UK, south Korea, USA have successfully adapted the HSR technology and has been seeing rapidly increasing their economic status and they are more competitive and has better positioned to attract tourist, businesses, job and skilled workforce. As a developing economy. India is working on project of HSR which will not only put India at a higher pedestal of technology & connectivity but also allow for more foreign investment, development of new businesses and improve lifestyle fear.

Contractual Incompleteness

Contractual incompleteness would be one of the main weakness identified in both hypothetical and experimental level. The long duration of the project and the complexity of

political climate, the possible threat from private monopolies and the unbalanced contracts may be the reason to leave the MAHSR project incomplete.

V. CONCLUSION

By looking at a range of socio-economic indicators for countries with successful Hrs. systems. Comparing these with the current scenario in India, India economy is developed enough for HSR introduction. India's GDP per capita along the proposed Mumbai-Ahmedabad corridor already surpasses that of the Tokyo-Osaka corridor in Japan and many others in the PRC. The population density is also comparable to the Osaka-Fukuoka corridor another HSR case in Japan.

The success of the upcoming Indian HSR relies on the cooperative efforts of all the stakeholders working together, they can ensure that the HSR project delivers on its promises of long-term socio-economic growth for India.

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