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## **Tracking Indo-Japan Cooperation in Railway Modernisation: Opportunities, Perspectives and Challenges**

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### **Abstract**

The idea of a high-speed railway is 89 years old, dating back to 1933 when the first high-speed train was operated in Germany at an operating speed of 99 miles per hour. This was later surpassed by Japan's Shinkansen or the Bullet Train which began operations in 1964 with an operating speed of 199 miles per hour between Tokyo and Osaka. High-Speed Rail first appeared on the Indian Railway network in 1969. Over the years following liberalisation, the idea of a high-speed railway corridor has started gaining momentum with the first announcement made by Mamata Banerjee in the Railway Budget of 2001. The idea of a high-speed railway was pursued over the years with announcements being made in 2004 and 2008 by the then railway minister Laloo Prasad Yadav. The foundation stone for the first high-speed rail corridor between Mumbai and Ahmedabad was jointly laid by the Prime Minister of India Narendra Modi and Shinzo Abe of Japan in 2017 with a total investment of USD 15 billion with Japan contributing USD 8.8 billion to the project. This has led to the Sino-Japanese rivalry with China exerting its influence on countries such as Indonesia seeking Chinese assistance in establishing high-speed railway connectivity. The following essay aims to understand the role of high-speed railways in influencing the emerging forms of diplomatic relations and the challenges to the expansion of the high-speed network in developing countries with a focus on the Indo-Japanese Cooperation in the railway modernisation using qualitative data which includes primary and secondary sources of data. The primary data includes interviews with policymakers, bureaucrats, politicians and academicians. The secondary data includes books and reports by the ministry of railways.

**Keywords:** railway, modernisation, cooperation, challenges

## **1 Introduction**

International relation has a long-drawn history. The pre-globalisation period was marked by hard approaches marked by the massive arms race and cold war dividing the countries between the US-led NATO allies and the Russia-led Warsaw allies poised to create a New International Economic Order. The post-cold war saw a transition to a capitalistic approach marked by intervention financial institutions such as the World Bank. The introduction of Shinkansen technology in 1964 paved the way for other countries to develop high-speed railway operations (Debroy, 2020). The decades between 1960-2000 saw an increase in the high-speed railway network (UIC, 2020). The United States of America joined the high-speed railway fray in 2000 with the start of Acela between Washington and Boston (Gunn, 2011). The competition for high-speed was triggered by China's achievement of 12,427 miles of the high-speed railway network in 2011 (Lawrence. et. al, 2019). This provided an opportunity for Japan to invest in India's high-speed rail project between Mumbai and Ahmedabad to compete against China's advancement in the South Asian region.

The high-speed railway became synonymous with modernisation with countries like Indonesia also seeking the assistance of the Chinese in establishing high-speed railway connectivity. The following essay aims to understand the role of high-speed railways in influencing the emerging forms of diplomatic relations and the challenges to the expansion of the high-speed network in developing countries.

## **2 Methods**

The study is analytic, employing the use of a qualitative approach. The study employs the use of both primary and secondary sources of data. The primary data includes interviews from policymakers, bureaucrats, politicians and academicians. The secondary data includes books and reports by the ministry of railways. The article has been analysed from the global south theory (Benabdallah. et.al, 2017). The theory comprises a variety of states with diverse levels of economic, cultural, and political influence in the international order. The study encompasses the political, economic and policy framework. The political framework encompasses the domestic and international influence on the high-speed railway project. The economic perspective focuses on the role of foreign direct investment in promoting cooperation between the nations in the development of railway networks. The independent variables of the study include countries and organisations which influence the diplomatic approach to establishing high-speed railway networks. The dependent variable is the high-speed railways.

From a social perspective, the high-speed railway presents challenges to equity of access and the purchasing power of people availing of high-speed railways. The National Railway Plan takes into consideration the population, city-wise GDP, congestion levels and the passenger flows between city pairs. The findings of the study

pointed out to the routes reported greater than 50 per cent of the passenger share in the AC passenger share as potential high-speed rail corridors. The proposed project between Mumbai and Ahmedabad has a population of 18,394,912 and 6,357,693 respectively with a GDP of USD 310 billion and USD 68 billion (Ministry of Railways, Government of India, 2021).

From the economic perspective, the viability of the project is largely dependent on traffic studies to be taken on the proposed routes. The studies will help point out the chances of the project reaching a breakeven point to help achieve feasible Returns on Investment. The volatile nature of the foreign exchange can sometimes harm a financially viable project.

It is therefore essential that such projects don't merely rely on the hedging period, but also take into consideration the risks that exist in a foreign assisted project. The financial institutions normally offer only 10-year hedging risk products, but Mumbai-Ahmedabad High-Speed Corridor's loan repayment is spanning for 50 years. An alternative to funding such projects is the assessment of the project's profitability as it starts operations and focuses on revenues to service the likely currency depreciation. The volatile nature of the foreign exchange can sometimes harm a financially viable project, it is therefore essential that such projects also take into consideration the risks that exist in a foreign assisted project. In the case of the yen appreciation, there is a possibility of a rise in effective interest rate by less than 1 per cent. The rate is likely to increase with the reduction in monetary easing with a possible increase in the spread depending on India's growth and demand for emerging-market assets.

Raghuram & Udaykumar (2016) in their paper have identified the following technical challenges with the establishment of high-speed rail in India:

- a. **Route Alignment:** Route alignment refers to the determination of points of origin and destination and intermediate stations. There must be fewer intermediate stations to help reduce the travel time between the two cities. High-speed trains can't stop at every station. With the development of railways influenced by political demands, there are greater chances of an increase in the number of stations. Further, there will always be competition from aviation for distances beyond 310 miles. The paper identifies two scenarios that are ideal for high-speed travel: High-Speed rail for intercity travel is an ideal choice for distances ranging between 186 miles to 373 miles. For overnight travel by high-speed rail, the ideal distance is 1500kms and beyond.
- b. **Location of Stations:** The paper identifies the following possible locations for stations along with the high-speed railway stations:
- c. **Existing railway stations at city centres:** These stations are an ideal choice for peripheral locations as they would cost less and are less challenging in terms of land to be acquired. However, when looked at from the point of view of intermodal connectivity to the city vital for higher patronage of High-Speed

Railway, existing railway stations at the periphery of the cities is a much viable option. Local train services can as well be developed from the station to the periphery. In the case of newly built railway stations, there would be a need to develop bus connectivity unless the patronage for high-speed rail would be convincing for the development of new lines for promoting metro and local train connectivity.

- d. **Pricing & Revenue:** The paper also identifies the need for optimal pricing given the competition posed by the road and aviation sector and the consumer preferences to pay for the services. There may also be a necessity for revenue generation through non-core segments such as real estate development and commercial services. Given the long gestation period of projects like the high-speed rail, it would be important to formulate a financial structure. In the case of the project failing to generate sufficient revenue, government subsidies might be required and tied with non-transport benefits such as technology percolation into other domains, economic development, game-changing sense of connectivity and a sense of national pride due to cutting edge infrastructure.

### 3 Results

At the end of the study, the following findings were made:

1. The advent of globalisation has led to increased cooperation between countries in niche areas such as railway modernisation programmes facilitating technology exchange and cooperation through financial assistance for capital intensive projects such as the high-speed railway.
2. The high volatility of foreign currency poses a greater risk of an increase in debts, which may harm a countries' goodwill and render the project economically unviable in the long run.
3. The peripheral location of the stations falling along the high-speed railway can help reduce the costs of construction and land acquisition. It is also important to ensure continuity in connectivity by linking the High-Speed Railway Stations with local services to and from the city.
4. Assessing the potential competitors to the high-speed railway and structuring fares as per the prices charged by the competitive modes of transport- roadways and airways is important to ensure a greater inclination towards the high-speed rail for high traffic flow and sufficient revenue generation to cover the cost of construction and operation.
5. Openness to public consultation and transparency at various stages of the project helps in deviating any conflict of interests and stalling of the project during its gestation period

## 4 Conclusions

The start of the post-cold war period has been marked by non-traditional approaches to diplomacy through economic cooperation between countries in sectors like railways with the developed nations playing an active role in the modernisation of the transport network, predominantly the railways, which have emerged as a cultural and economic instrument in the strengthening of diplomatic relation between the countries. The high-speed railway has occupied a predominant position in the development of the global south with Japan and China playing a major role in propagating the idea of high-speed railway, extending their influence beyond traditional approaches to diplomacy. The challenge in its implementation is its capital-intensive nature of the project saddled with a long gestation period and uncertainty due to the volatility of the foreign currency invested by the countries in the modernisation project with uncertain returns on investment. It is therefore required that the countries make an informed decision based on traffic assessment, the purchasing power of the country's citizens while taking into account the competitive alternatives of travel to high-speed to rationalise fares and choose the most profitable routes for high-speed railway corridors.

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