論文の内容の要旨

Thesis Summary

Title of Dissertation:

ENHANCING LINKAGES IN CITY REGIONS: ANALYZING CITY NETWORKS AND PERSPECTIVES FOR HIGH-SPEED RAIL STATION AREA DEVELOPMENT IN INDIA

(都市圏リンケージ強化に関する研究ーインドにおける都市ネットワーク分析と高速鉄道駅周辺都市開発の展望ー)

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India has undergone a paradigm shift during the past six decades, politically, socially, economically, technologically, and demographically though still lacks collaborative governance. Indian Railways operates the 3rd largest rail network in the world though does not participate in urban development other than construction of railway stations. Ministry of Housing and Urban Development exempts 'Land under the Ministry of Railways' to be included in city development plans. The railways barricade the stations and other railway properties resulting in low integration with the city urban fabric. Over the time, such lack in coordination at regional as well as city-level has created patches of un-coordinated development that amount to no station area development in almost all cities served by railways.

Indian Railways in their vision 2020 plan proposed to develop 6 HSR Corridors. The National High-Speed Rail Corporation Limited will develop the first route connecting the cities of Mumbai and Ahmedabad along the west coast of India. The HSR Corridor will have 12 stations 4 in Maharashtra state and 8 in Gujarat state. The Union government of India envisions to bring economic development along the project corridor. In the past during the implementation of large-scale inter-regional transport infrastructure projects like Expressways, National highways, and Airports claims of the transformative potential of infrastructure projects especially in case of regional economic development in every case have always remained far from reach.

In this context based on the proposed Mumbai-Ahmedabad High-Speed Rail (MAHSR) – What is the role of planning in connection to the introduction of HSR in the Mumbai-Ahmedabad corridor in India? The literature explains that large scale regional development projects are proposed with two central ideas at their core: Economic development and Balanced Regional Growth. Concerning HSR and Urban-Regional development, literature primarily focuses on one planning scale- Regional, Urban or Station Area Level and based on cases in countries with established planning systems. At the regional

scale, the HSR brings about change in intercity linkages due to 'time-space convergence', at Urban scale the HSR stations become the hubs for urban transformation through integration with other transportation services while at station level HSR stations are the connectors and provide an opportunity for urban transformation through Station area development projects. Although all scales connect with the same infrastructure, the missing connection between the regional scale to station area scale is not addressed. Moreover, there is rarely any discussion on the institutional framework for station area planning for emerging economies.

In 2015, the Government of India discontinued the Five-year planning systems and shifted to co-operative federalism for effective policy implementation in its various states. Economic liberalization shifting towards mass manufacturing from the agricultural economy were some of the critical drivers of nationwide economic development and growth during the 5-year plan period. Indian metropolitan cities grew as regional centers, but in recent years tier-two cities are growing faster.

The HSR is proposed to connect the Financial Capital of India- Mumbai to Ahmedabad historically known for its textile processing industries. To understand the role of planning in HSR implementation to create a balanced region, the dissertation in its first part analyses the linkages in the cities along MAHSR. The 'time-space convergence' created because of HSR will not only transform the growth dynamics but further changes the network structure at a regional scale. Thus, there is a need to examine the dynamics of intercity linkages and understand the nature of the network.

While social network analysis of firm statistics makes it visible that there are businesses and manufacturing firms linked along the Mumbai Ahmedabad region. The firms agglomerate in four cities – Mumbai, Surat, Vadodara and Ahmedabad and the network of cities thus forms a hierarchical functional urban region. To prove this hypothesis, the second part of the analysis looks at the agglomeration of types of services each of the four cities provide and examines the nature of their network. This analysis proves that there exists a hierarchical order in cities planned to be connected with the HSR which each city specializes a specific service.

The spatial dynamics of linked firms in each of the four cities are different and imparts a characteristic functional form to each of the city. To confirm this hypothesis, data on network firms was matched with the city development plans of each city as well as confirmed by interview respondents at Urban Local Bodies. The four case studies each at Ahmedabad, Vadodara, Surat and Mumbai present their specialized functional character in the region and highlights the differences in their functional form with the nature of services that the cities specialize.

In the next analysis, officials involved in the implementation of HSR along the corridor were interviewed to understand the perspectives on station area development and the procedure for planning the integration of HSR stations into the urban fabric of each of the four cities. City function and the tools cities adopt for development plan implementation influences each of the cities' approach to absorb HSR station and station area development projects. This is verified with participant observation and analysis of the stakeholder interviews to draw a narrative of the perspective on station area development in the four cities.

There are three major conclusions of this dissertation. First, the cities along the MAHSR Corridor form a functional urban region which is sectorally specialized in services and manufacturing. Complimentary service specialization in the cities along the corridor forms the functionally specific region organised in a hierarchical order. Among the four cities, Mumbai is the hub of the network with the highest concentration of Business services and Finance Headquarters. Followed by Ahmedabad accommodating the branch offices of business services and trading activities. The cities located between Mumbai and Ahmedabad specialize in manufacturing – Surat is a hub for manufacturing and trading of Chemicals, Jems and Textiles and Vadodara is the regional centre for chemical manufacturing and processing. The offices of the manufacturing hubs are in Mumbai and Ahmedabad and are linked through 3 types of network configurations.

Second, development approaches in case of MAHSR differ at the planning scale- at regional scale, there is a need for Corridor level plan for balanced regional development and redistribution of urban functions among cities. At Urban scale, there is a need to involve private stakeholders in the station integration projects at the same time incentivize development with an attention to current functional structure and specializations of cities. At station area level there is a duality where the High-Speed Rail operator needs to collaborate with urban local bodies to generate non-railway business at the same time Urban local bodies need to orient station area plans concerning the functional structure.

Third, the crucial role of station area development in case of MAHSR is to become the driver for the economic trajectory of the city and the region. Co-ordination in the High-Speed Rail Corridor plan and station area development plan would help in driving the economic trajectory of the city as well as the region. There is a need for a collaboration governance framework for the plan implementation to build a long-term vision and involve private partners and stakeholders in the station area projects.

Keywords: Functional Urban Regions, Mega-City Networks, High-Speed Rail, Station Area Development, India