Summary

In 2004, the State Council of China officially approved the construction of high-speed railways (HSR). Since then, China's HSR network has entered a period of rapid development, and in 2008, the first HSR began operation. The total length of Chinese HSR network has reached 38,000 km in 2020, far exceeding the total length of all HSR in other countries. By the end of 2030, this HSR network will connect 34 provincial capitals and more than 80% of major cities in China with 1,000 HSR stations. Along with the rapid urbanization, 139 Chinese cities have planned or built at least one HSR new town by 2019. Chinese governments and people expect that HSR can catalyze economic and urban development. However, the planning and development of Chinese HSR station areas have been criticized by the public, media, and scholars because they do not follow the laws of urban development and have even been called by some scholars "the Great Leap Forward" in the new era.

There are four main problems with Chinese HSR station areas: unsustainable development patterns, station areas far from the urban areas, oversized HSR station areas and new towns, and difficulties in transferring and urban development after operation. First, although Chinese local governments claim that HSR station areas are planned according to the concept of transit-oriented development (TOD), scholars argue that the planning of these station areas actually violates the sustainable development principles of TOD, resulting in unsustainable development. Second, unlike in Europe and Japan, where HSR stations are used to promote urban renewal, most Chinese HSR station areas are newly built. These HSR station areas are located far from the built-up areas of cities, about 10 km from the city center. The locations of these HSR stations not only make it difficult to transfer to urban transport methods, but also make it difficult to attract economic and urban development. Third, these HSR station areas are fairly large, in some cases more than half the size of the city. A large amount of agricultural land has been converted into construction land, which has caused urban sprawl. Due to land speculation, most of these HSR station areas develop only real estate functions, leading to the fragmentation of the station areas from the surrounding areas. Finally, weak connections between these HSR station areas and urban transport methods make it challenging for passengers to reach their destinations. Meanwhile, the development of urban functions in these HSR station areas lags far behind the plan, making it difficult to attract investment and talent.

Most studies of HSR in China have focused on the impact of HSR on accessibility, the economy, and housing prices after its opening. However, there is a lack of study to investigate the institutional conditions and decision-making processes that contribute to these development problems. The actors involved in the decision-making process of Chinese HSR station areas, their resources, interdependencies, and interactions have not been fully revealed. Furthermore, most studies focus only on the urban effects associated with the development of HSR in China, and there is a lack of discussion on how to improve cooperation among decision makers and provide policy support for the integration of transportation and land use in station areas. Therefore, the main aim of this study is to fill this research gap. By gaining insight into the actors, decision-making process, and institutional context, it explores the reasons for the difficulties in developing Chinese HSR station areas and provides policy strategies for actor cooperation and station area development to promote the integration of transport and land use in HSR station areas.

The research aims were translated into four research questions: (1) Why do HSR stations in China, planned according to the TOD concept, result in unsustainable development? (2) Why are Chinese HSR station areas far from the city centers? (3) Why are Chinese HSR station areas so large? (4) Why does the development of Chinese HSR station areas lag behind planning from a governance perspective?

In order to answer these research questions, a three-dimensional framework was established to analyze the HSR station areas in China. The first dimension is based on TOD and Node-Place theories to dissect the transport and urban functions of Chinese HSR station areas. The second dimension is based on Policy Network Theory (PNT) and the Institutional Analysis and Development (IAD) framework to reconstruct the decision-making process of Chinese HSR station areas. The third dimension aims to analyze the impact of institutional context on the planning of Chinese HSR station areas based on state entrepreneurialism. This thesis focuses on case studies, using context analysis and interviews as the main research methods. It compares the planning of HSR station areas in 15 different cities of different sizes and delves deep into the decision-making processes of three cases, Shenzhen in Guangzhou province, Lanzhou in Gansu province and Yongcheng in Hubei province.

Based on the conceptual framework, this study first focuses on the planning features of HSR station areas in China to discuss which TOD principles should be followed in the planning of HSR stations and which TOD principles are followed or violated in the planning of HSR stations in China. First, the factors of TOD that are suitable for the planning of HSR station areas are summarized from the literature. Then, 15 Chinese HSR station master plans are analyzed using content analysis, with the goal of exploring how these TOD factors are considered in the Chinese HSR station area

plans. The results show that the plans of Chinese HSR station areas violate most of the TOD principles, but different reasons cause the gap between theory and practice. Moreover, TOD in HSR station areas is used as a financing tool to promote state-supported and transit-led suburbanization. It has resulted in arable land loss and social inequity, but plans rarely address how to resettle farmers who have lost their land. Finally, deviations from TOD principles are more severe in small and medium-sized cities, potentially resulting in wasted land and unsustainable development.

This study then explores one of the most salient features of Chinese HSR station areas, namely their remote location. Most HSR stations are located far from city centers in China, which has negative impacts on urban and economic development. The decision-making processes of HSR station location choices in Shenzhen, Lanzhou and Yongcheng are reframed based on the interviews with both railway and urban actors. The results show that railway actors and urban actors control different resources and have to cooperate with each other to select a suitable location. It also shows that the costs and risks of development often create impasses in the process of location choice. Furthermore, three potential locations for an HSR station usually appear in most decision-making processes: city center, new town and urban fringe. Urban fringe locations are usually preferred by both railway and urban actors since they can serve their interests.

This study then investigates another distinctive feature of Chinese HSR station areas, i.e., the large station area and HSR New Town. The part investigates how the Yongcheng local state harnesses the HSR project strategically to develop a new town through the theoretical lens of state entrepreneurialism. Local governments proactively implemented entrepreneurial spatial policies in the HSR new town development to generate land revenue, pursue career advancement and maintain state power. Their behaviors are competing with neighboring cities, using the HSR project as their main strategy for growth and enlarging urban areas through HSR new town. It led to the loss of cultivated land and mounting local debt.

The last part of this study focuses on the difficulties of transferring and the slow development of urban functions in the HSR station area. This part analyzes the interactions of actors in each transport and land use function of the HSR station area and how they have been influenced by the institutional rules. The findings reveal that the current Chinese institutions obstruct the integrated development of HSR station areas and fail to create a common understanding of spatial development and ways to achieve value capture. There is a lack of national guidelines for the planning of HSR station areas and cooperation of actors. The integration of transport and land use also requires a strong governance capacity of local governments to establish cooperative organizations.

This study suggests that Chinese HSR station areas should pay more attention to the integration of transport and land use, balancing transport and urban functions and enabling value capture. The national government should develop specific planning guidelines for HSR station areas for cities of different sizes. Local governments need to establish a cross-sectoral cooperative coalition to plan and manage HSR station areas and create conditions for value capture. For the successful development of HSR station areas, the national government should enact policies that support investments of market actors in railway construction and allow them to participate in the decision-making process. Furthermore, profound reforms in the Chinese institutional system are needed to change the motivations of local governments towards using HSR station areas for land-leasing revenue and as a political achievement for local officials.

Overall, this study explores the characteristics, decision-making processes, and institutional context of the planning and development of HSR station areas in China. Its purpose is not only to reveal the causes of the development dilemmas of these HSR station areas and to understand the drawbacks of the current system, but also to propose a set of problem-solving strategies to promote the integration of transport and land use. By showing the interactions and bargaining between different levels of government, this study provides new insights into the actual functioning of China's massive bureaucracy. Furthermore, this study provides the basis for a comparison of international HSR station area planning. The conceptual framework of this study can also be applied to other national contexts, adding new knowledge to the planning of megaprojects. The social significance of this study is that its identification of the development problems and the proposed strategies for HSR station areas can help to alleviate the growing debt of the China Railway and local governments. The findings are also applicable to other large infrastructure projects in China, especially transport projects.