

The Hong Kong Polytechnic University
Department of Logistics and Maritime Studies
Research Seminar

**Impact of High-Speed Rail Network Development on Airport Traffic and Traffic Distribution:
Evidence from China and Japan**

by

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Venue: N101, Block N

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(Conducted in English)

Abstract:

We explore the impacts of high-speed rail (HSR) development on airport-level traffic by considering not only the availability of air-HSR intermodal linkage between the airport and HSR station but also the position of the airport's city in the HSR network. The latter is measured by both the degree centrality (to reflect connectivity) and the harmonic centrality (to reflect accessibility). Using a sample of 46 airports in China and a sample of 16 airports in Japan over the period of 2007-2015, we conduct regression analysis and compare the effects of HSR network development on airports in these two Northeast Asian countries. We find that as HSR connectivity or accessibility increases, there is, on average, a decline in airports' domestic and total traffic in China but little change in Japan. Meanwhile, we observe a strong complementary effect of HSR to feed international flights with the presence of air-HSR intermodal linkage. As a result, some airports may experience a total traffic increase. In China, hub airports tend to gain traffic regardless the availability of air-HSR linkage, while non-hub airports are likely to lose. In Japan, on the other hand, airports with air-HSR linkage tend to gain traffic regardless the hub status. Our analysis also reveals some differentiated impacts of HSR connectivity and accessibility in China. An important policy implication is that the investment in air-HSR intermodal linkage at busy airports may not help with realizing the benefit of congestion mitigation and emission reduction. Rather, policy makers may invest air-HSR linkage at regional airports which have the potential to be converted into international gateway hubs.

Bio:

Shuli holds a Bachelor of Science degree in Logistics from Dalian University of Technology. Prior to joining PolyU, he was a postgraduate research student focusing on Operation Research and Optimisation in the School of Computer Science at The University of Nottingham. His research interests lie in transportation economics and policy, transportation network analysis, and data analytics for complex transportation system. He is currently pursuing his Ph.D. in Transportation and Logistics under the supervision of Dr Sarah Wan and Dr Meifeng Luo.

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All are welcome!