

Impact of High Speed Railways in Regional Economy: A Regression Analysis

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Abstract

Transportation is an important contributor to economic growth and development of a country as it facilitates easy movement of goods and resources. One of the indicators of a country's economic development is GDP. In this paper, we discuss the rapid penetration of high speed railways (HSR) in China within a short span of two decades and its impact on the local economy. For our research, we chose the Wuhan Guangzhou Line that began operations in 2011. We compute the theoretical regional gross development product (RGDP) of six cities that are along this line and three cities which are not connected by any HSR lines by using regression analysis. Independent variables in our study are population, employment, capex investment in land assets, length of highways and higher education strength. Dependent variable is the RGDP and we used data from 2006 to 2019. We benchmarked the change in theoretical RGDP over the years with the actual RGDP. Our results indicate that cities along the HSR line have an increase in their RGDP, whereas cities that are not along the HSR line have a decrease in RGDP. We infer that a HSR (or a transport infrastructure) that facilitates ease movement of goods and services has a positive impact on the region's growth; however, this could also adversely impact the neighbourhood that are not directly connected by the HSR. We would like to possibly extend our model to analyse the regional growth of European countries and the influence of HSR on it. We believe that it will be an interesting contribution, as our model benchmarks within-the country growth in China, whereas it would be across the countries in Europe.

Biography

Professor Sundaravalli Narayanaswami is the Chairperson, Public Systems Group, IIM Ahmedabad. She earned her PhD in Industrial Engineering and Operations Research from IIT Bombay, after a Masters in Computer Science. At IIM Ahmedabad, she holds a primary affiliation with the Public Systems and Group and a secondary affiliation with Production and Quantitative Methods Area. Her teaching interests are in Transportation Studies (Urban, Intelligent Systems, Heavy and Light rails, Transport Infrastructure), Operations Research in public systems, Operations Management, Artificial Intelligence and Government Systems and Policies. Most of her research in the past and present are in transportation operations and knowledge management that involve applications of ICT and OR tools in real-life problems of large impact. Dr Sundaravalli started her career in IT services marketing and she soon moved to a production profile in an electronics equipment manufacturing industry. Her academic career began later and she has taught at various programs in Mumbai University and at Institutes under the UAE Federal education ministry in Abu Dhabi and Dubai. She has also taught in many Executive development programs while at UAE. She has authored two research based books on transportation systems and they are published by reputed international publishers. She also publishes and reviews regularly for scholarly editorials and presents her research findings among peers, both in India and abroad. Dr. Sundaravalli holds several professional affiliations. She was awarded the Fellow of the British Computer Society in 2008. While in Abu Dhabi, she had served as the Youth Professional Group representative of the entire Middle East region for the British Computer Society. She is the honoured recipient of the Distinguished Educator Award for the year 2018 from the International Society of Industrial Engineering and Operations Management (IEOM), received in Johannesburg, South Africa.