

Development Strategy for San-En-Nanshin Region in Japan

- A Simplified Spatial Computable General Equilibrium - Modeling Approach -

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Abstract:

The study region named San-En-Nanshin region (includes Aichi, part of Nagano and Shizuoka prefecture) is considered as a model of integrated dispersed regions and taken into the National Comprehensive Development Plan of Japanese government under Regional Revitalization Project. A large scale expressway connecting north and south named San-En-Nanshin Expressway is under construction in the study region. It is expected that with the completion of the expressway, the trade, production and consumption pattern of the region will significantly be changed. Therefore this research idea is to develop a model and to test empirically the impact of distance/commuting time after construction of San-En-Nanshin Expressway upon firm's profit maximization and households' utility maximization behavior in San-En-Nanshin region.

The research aims to draw an outline of new integrated prefectural cross-border economic model of transport, land choice and the economy at firm and household level. In later parts, this research also intends to draw the location choice behavior and corresponding market equilibrium conditions based on transportation demand.

As the results, combining this model and the short cut method for the evaluation of economic benefit of a transportation project under the general equilibrium framework, the total annual benefit after construction of San-En-Nanshin Expressway was estimated as 24.3 billion yen, at which 6.3 billion yen for business objective and 18 billion yen for leisure objective. The economic impact of San-En-Nanshin Expressway on Hamamatsu, Nanshin is largest as about 9.7 billion yen. Mito, Otawa, Ichinomiya, Tsukude get little impact. The total project cost of San-En-Nanshin Expressway is estimated as 500 billion yen or 1 trillion yen. If the project cost is about 500 billion yen, the construction of San-En-Nanshin Expressway passes the cost benefit criteria. In case of project cost of 1 trillion yen, this project is rejected under the cost-benefit principle. In this case, one must consider the way of increasing the benefit of the expressway by promotion of economic resource endowment in the sense of quality.

Key Words: San-En-Nanshin Expressway, economic benefit, spatial computable general equilibrium model, shortcut method

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