

ABSTRACT

Gkritza, Konstantina.Ph.D., Purdue University, December, 2006. Economic Development Effects of Highway Investment. Major Professors: Kumares C. Sinha, and Fred L. Mannering.

The evaluation of transportation projects has traditionally been carried out in the context of economic efficiency in terms of savings in travel time, vehicle operating cost, and safety. The broader long-term effects on economic development (i.e., job, income and business growth) are a concern of transportation planners and decision-makers but have been often overlooked due to the lack of a reliable impact estimation methodology and/or data. Information on economic development effects of proposed highway investments is valuable for understanding the total impact of project proposals and ensuring an efficient allocation of resources. The present research extends the traditional transportation impact framework by examining how different types of highway improvements can affect a state's economy, and how project- and location-specific factors interact to stimulate economic development. The analysis went beyond accounting for user benefits and travel efficiency improvements and included additional economic development benefits in terms of business cost savings and productivity benefits. The end product of this research is a quantitative tool that can be used at the project development phase to estimate the economic development effects of different types of highway investments. The models developed in this study are calibrated using data from the Indiana Department of Transportation.

A major contribution of this work is the demonstration of a general approach that can be applied for broad analysis of a highway project's economic development effects at the state-level, while taking into account the intensity of highway system use. The results set forth herein provide a better understanding of the interrelationships among economic development, type of highway improvement and geographical location, and how investments in highway infrastructure can be ranked and prioritized based on sound economic development criteria. Moreover, this study illustrates the types of data necessary to document these effects and demonstrates how analysis can be carried out and ultimately improved. Given the complexity of the problem and the limitations of available data, the present research should be viewed as an incremental step toward a broad analysis of the economic impacts of highway investment.