

## ABSTRACT

Agbelie, Bismark R.D.K. Ph.D., Purdue University, August 2013. Economic Development Impacts of Highway Investment across Countries: An Empirical Analysis. Major Professors: Kumares C. Sinha and Fred L. Mannering.

Transportation infrastructure investment is a critical and significant component of public capital expenditure in many countries. The present research investigated the impacts of investments in highway and railway infrastructures on economic output represented by gross domestic product per capita. Data from countries in Asia, Australia, Europe, North America and South America were considered. Three econometric frameworks (fixed effect model, finite mixture model and random parameter simulation-based model) were used on the basis of the Translog production function. The results indicated that a 1% increase in highway infrastructure investment would increase gross domestic product per capita varying from 0.001% to 0.943% across countries; the impact of highway maintenance and preservation expenditures would vary from 0.013% to 0.323% and railway infrastructure investment from 0.0003% to 0.2537% across countries. The statistical significance of time with regards to when highway and railway infrastructure investments were made and when the optimal economic benefits were realized were also investigated. The maximum benefit from highway infrastructure investment, for a country, was estimated to be one year after the investment while for the railway infrastructure investment it was two years.