Evaluating Accessibility Impacts of the Proposed America 2050 High-Speed Rail Corridor for the Appalachian Region
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Abstract

- This research examines industry-specific ‘attractiveness’ due to changes in transportation network improvements resulting from the new highway constructions and the proposed America 2050 High-Speed Rail (HSR) plan for the Piedmont Atlantic Megaregion portion of the Appalachian region.
- The HSR line would provide connectivity between two of the largest cities of the United States which rank in top 40 of the America’s most populated and highly concentrated employment centers, namely Atlanta (in Alabama) and Charlotte (in North Carolina). Five HSR station counties of Birmingham, Atlanta, Greenville, Charlotte and Greensboro are studied for potential accessibility changes between the years 2002 to 2035. 23 impacted counties in the Appalachian Region are examined.
- Attraction impacts are examined with respect to six key industry sectors predominant in the Appalachian region and in proximity of the HSR stations, namely - 1) Manufacturing, 2) Retail, 3) Construction, 4) Mining, quarrying, oil and gas extraction, 5) Health care services, and, 6) all other remaining industries combined using the Hansen type potential accessibility measure.

Conclusions and Implications

- HSR speed of 150 miles per hour is found to be just adequate enough to cause positive changes in potential accessibility of the directly impacted counties containing the HSR stations of Birmingham and Greenville.
- Counties around the Atlanta and Greensboro HSR stations would see accessibility increase in 2035 in comparison to 2002 with respect to Manufacturing, Retail, Construction, Health care services and all other remaining industries combined.
- With respect to Mining, quarrying, oil and gas extraction, positive changes in accessibility are observed for the indirectly impacted counties around the Atlanta HSR station and the county containing the Greenville HSR station.
- The benefits from agglomeration can be possible at speed levels higher than 150 mph but not without attendant network improvements, and transit connectivity to reduce wait time, and proactive measures from associated businesses to allow HSR diversion.
- No implications are made for size of agglomeration related benefits or productivity which is premature. We believe further research is warranted.

Future Research

- Examine the impact of HSR line on non-Appalachian counties of the Piedmont Atlantic Megaregion.
- Examine ridership competitions from air transportation and other transport modes to the HSR corridor of the Piedmont Atlantic Megaregion.
- Additional study on the full effects on labor market effects would be a valuable complement to this study in future.