A Spatial and Temporal Analysis of Population Density and Railroads in the United States

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Introduction

Our study explores the relationship between population centers and the railroads of today in the contiguous United States. In 2010, we first created a map of railroads and overlapped it with population centers to see if railroads development correlates with major population centers. We examined the length of railroads in the most densely populated counties, controlling for county size.

It must be clarified that the growing population seeks to look at the associations between population in the past and railroads today. This is due to data availability, but also the key assumptions that 1) railroad construction peaked in the late 19th century, and 2) railroads today can indicate things about historical population trends.

Our analysis mainly rested on comparing the mean miles of railroads in densely and sparsely populated counties.

Population Density in 1890

The University of Oklahoma - TIGER Shapefiles

Population Density in 1950

Data Source: US Census Bureau, 2014 TIGER Shapefiles

Population Density in 2010

CONCLUSION

Our study shows that railroads have an interesting relationship with where population is. We must caveat that we are not looking at historical railroad data, and that the data is also messy because railroads running through an area doesn’t necessarily dictate anything about that area in terms of population or status.

We concluded that the trends of American population have likely affected the mean amount of railroad area in United States. Railroads are also a dubious method of looking at population, as the distribution required that we combine dissimilar counties. This is due to the nature of the American population: one with a large population doesn’t necessarily indicate anything about adjacent counties.

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