The Relationship Between Income and School Quality in South Carolina

Melanie Brown

Earth and Environmental Science Department, Furman University, Greenville, SC 29613

I. Summary and Objectives

22% of all children in the United States live below the federal poverty line. Research has shown that poorer areas have worse schools than richer areas. This creates a cycle of poverty as they grow up and are unable to compete for jobs. The purpose of this project was to discover how lower-income school districts performed relative to higher-income districts. The study finds that low-income school districts receive lower quality scores, potentially perpetuating the cycle of poverty in South Carolina.

II. Introduction

There are 82 different school districts in South Carolina. Every year, each district receives a quality rating from the South Carolina Department of Education. Each District is graded on criteria such as student passing rates, teacher quality, drop out rate, and dollars spent per pupil. These criteria are then aggregated into an overall score for that district. Scores are as follows: U for at risk, B for below average, A for average, G for good, and E for excellent.

III. Literature Review

Rouse and Barrow show that schools in low-income neighborhoods have fewer skilled teachers and more inadequate facilities (2006). The failings associated with low-income schools, in addition to students' backgrounds, could help explain why schools in poorer districts are of lower quality. A study by Burney and Beilke (2008) write that poverty may be the most important student difference that determines student achievement. They also explain that many-low income students lack background preparation or enrichment opportunities that lead to higher achievement. Schools in low-income districts much work to compensate for these differences. Additionally, income inequality has increased around the United States in recent decades. Ensuring that children from all backgrounds receive the same opportunities will be key in reducing inequality and poverty.

IV. Methodology

V. Results

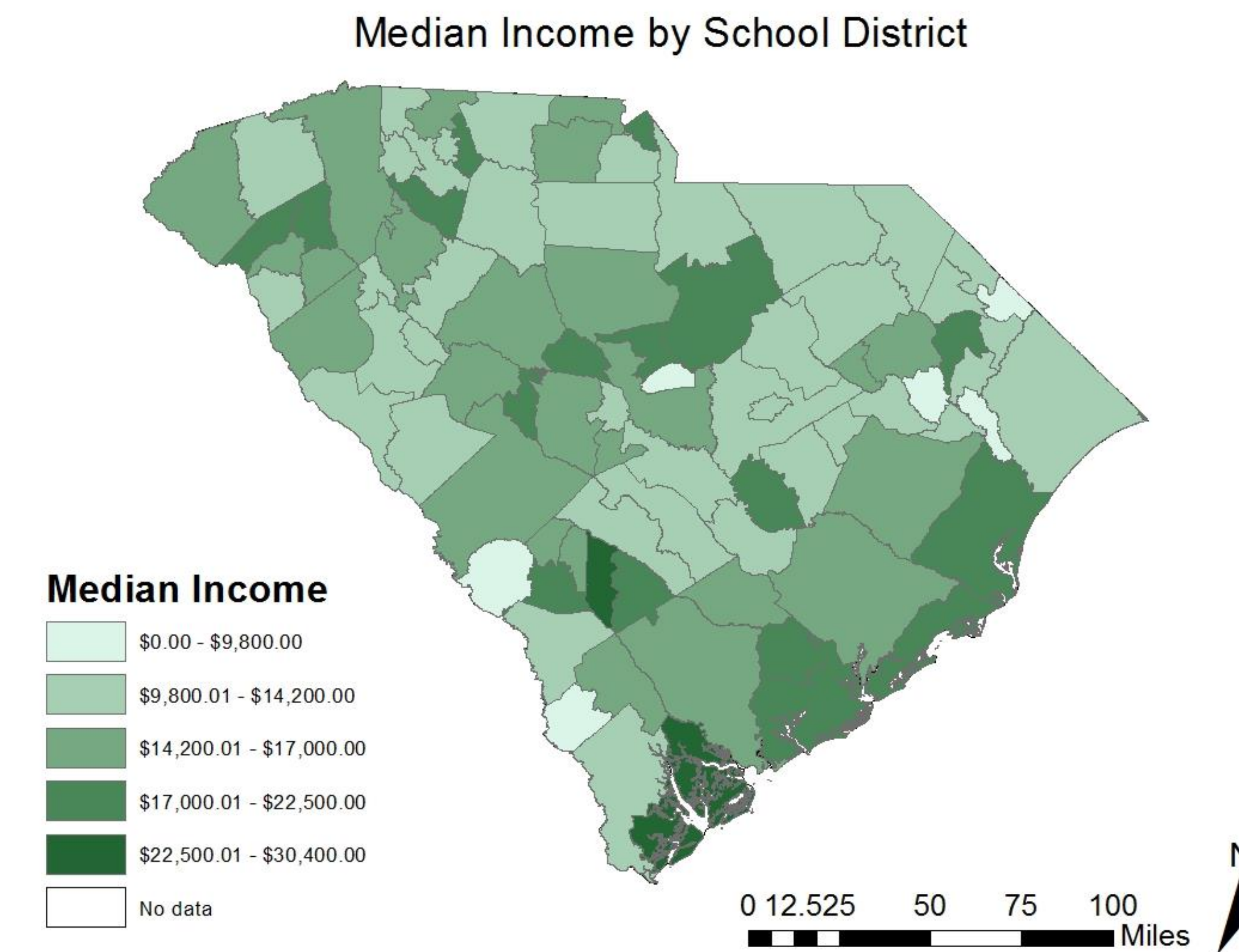### Median Income by School District
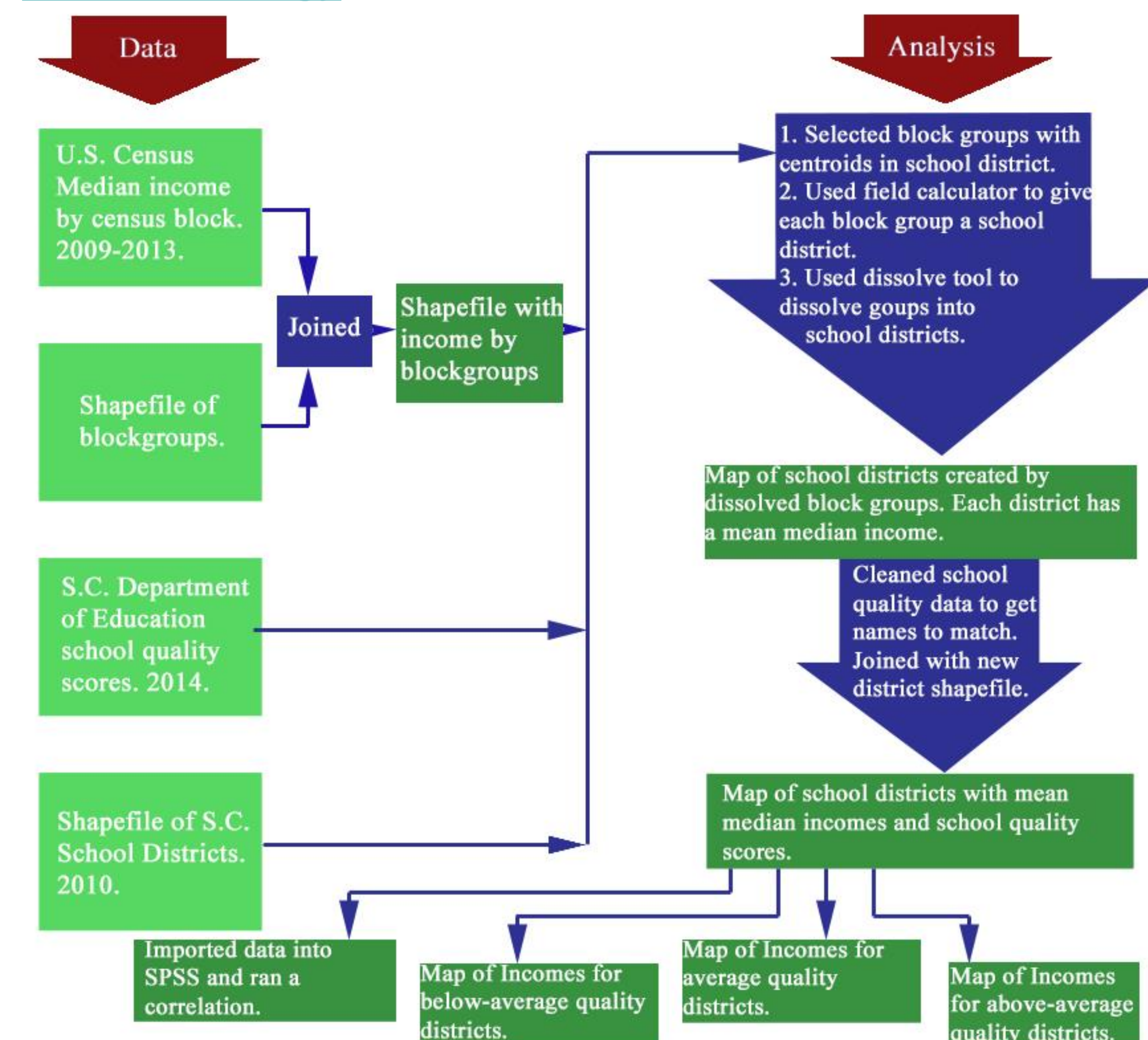
Figure 1. This map shows the mean median income per school district. School districts with darker greens have higher median incomes. Generally, the richest districts are in the most populated areas of the state. The counties along the coast likely have higher incomes due to their proximity to beaches.
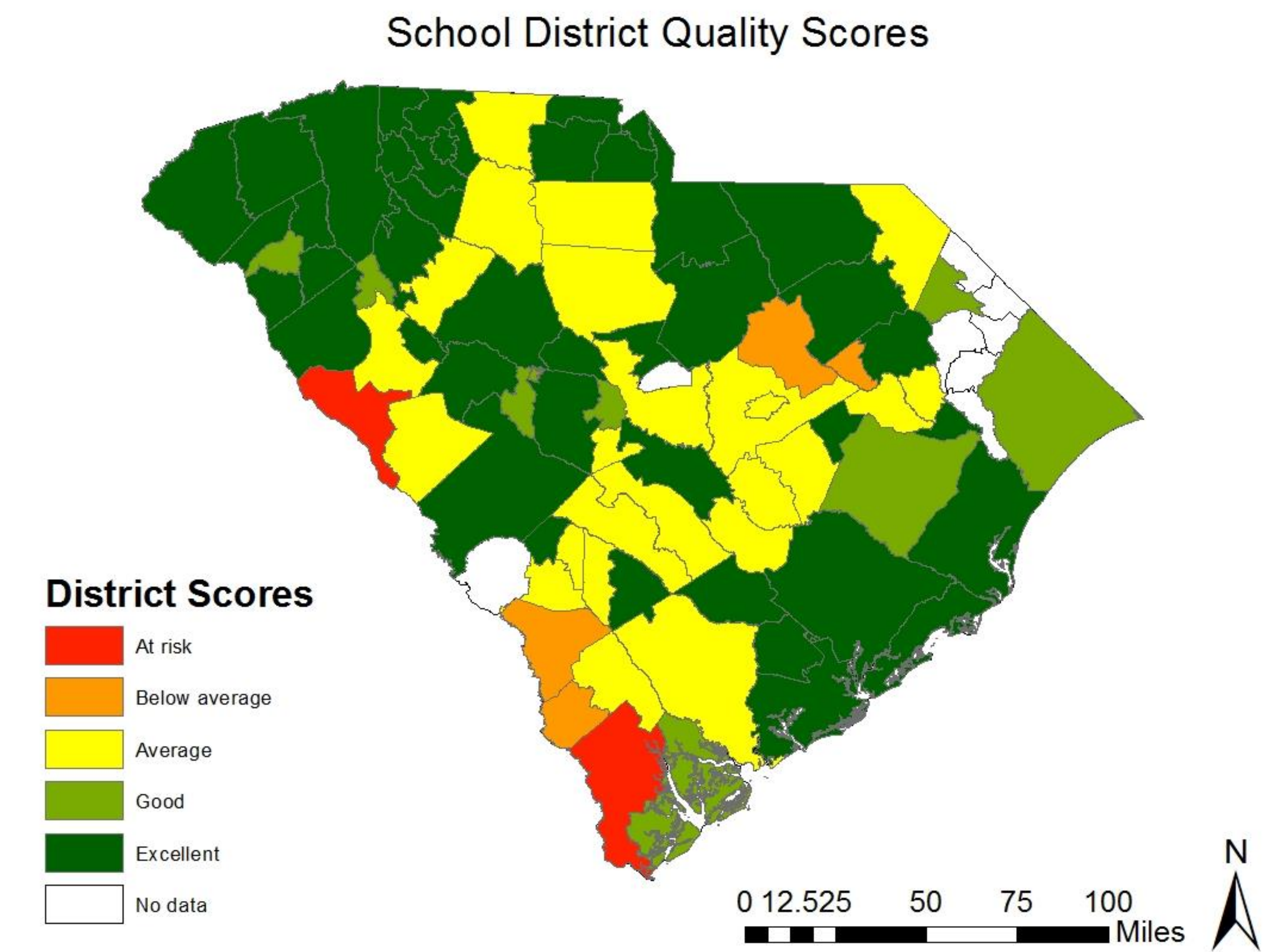
School District Quality Scores

Figure 2. This map shows the quality scores received by each school district. Average or below average schools are concentrated in the middle of the state. Only six districts are below average or at risk. This suggests that the ranges for each score should be increased in order to better reflect the distribution of scores.

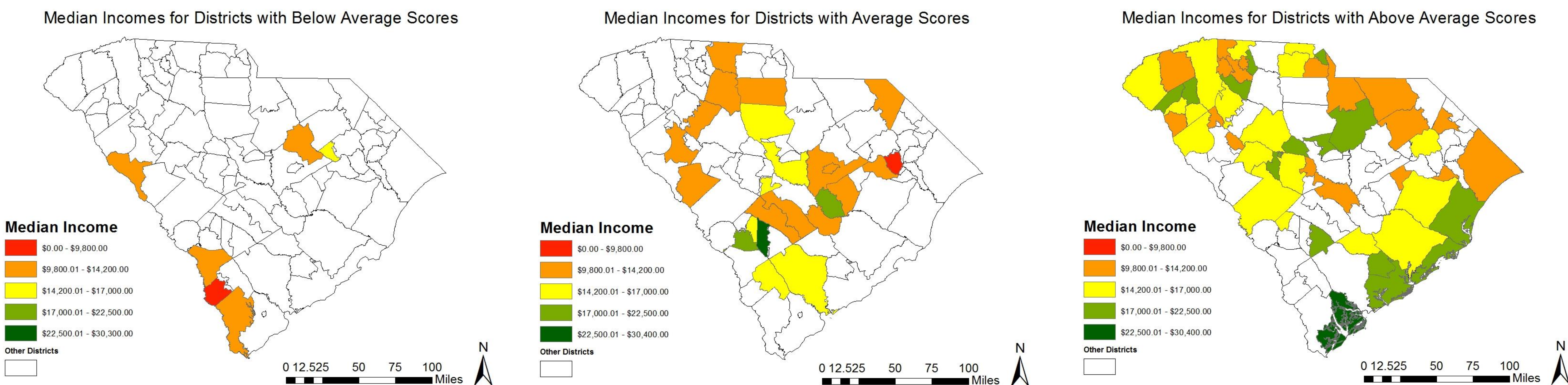### Median Incomes for Districts with Below Average Scores

Figure 3. This map shows the incomes of school districts that received below average quality scores. All of the districts with below average scores have median incomes that fall into the three lowest income classes. This supports the proposition that poorer districts have worse schools.

Median Incomes for Districts with Average Scores

Figure 4. This map shows the incomes of school districts that received average quality scores. There are 24 districts that received average scores. Of these, only three had incomes above the middle income class. When combined with the districts with below average scores, this means that only three districts with high median incomes received scores at or below average.

Median Incomes for Districts with Above Average Scores

Figure 5. This map shows the incomes of school districts that received above average quality scores. The majority of school districts in South Carolina received scores that were above average. This implies that the way the schools are scored is not an accurate representation. The better-quality schools are located in the Upstate or along the coast, with fewer in the middle.

VI. Conclusion

Results from this study and previous research clearly indicate that there is a significant relationship between income and school quality. Statistical analysis of the results indicate a moderate positive relationship between income and school quality (correlation coefficient is 0.355 with 0.002 p-value). Previous research has shown that children from lower-income families often under-perform academically. This study shows that part of the achievement gap can be attributed to differences in school quality. The disparities between schools in low-income districts and high-income districts should be corrected in order to ensure equal opportunities for children from all backgrounds to succeed.

References and Data Sources

1. Shapefile of South Carolina school districts in 2010. From Furman's GIS data.
2. Census data on block group level between 2009 and 2013. Dataset contained a table of average incomes within block groups and a shapefile of where the block groups were located. From nhgis.org.
3. School district report card data from South Carolina Department of Education. From http://ed.sc.gov/data/report-cards/.
4. Rouse, C. E., & Barrow, L. (2006). U.S. Elementary and Secondary Schools: Equalizing Opportunity or Replicating the Status Quo? The Future of Children, 16(2) 99-123.
5. Nguyen-Hoang, P., & Yinger, J. (2011). The Capitalization of School Quality into House Values: A Review. Journal of Housing Economics, 20, 30-48.