

School District Secession in East Baton Rouge

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Abstract

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Proposal

I am interested in examining the relationships between school performance, race, and socioeconomic indicators (including income and percentage of “economically disadvantaged”¹ students). Furthermore, I am interested in examining this data within the context of school district “secession.”² I have chosen to focus on schools within East Baton Rouge Parish, Louisiana for two reasons: (1) there are stark differences among school districts with regard to school and school district performance [CITATION HERE], and (2) residents in the southeast corner of the Parish recently voted to incorporate as the City of St. George with the intention of forming a new school district [CITATION HERE]. If successful in creating a new school district, St. George will be the fourth new district to “secede” from the original East Baton Rouge Parish School District in two decades.

I propose to investigate the following research questions:

- Is there evidence that suggests the clustering of racial groups in East Baton Rouge (EBR) Parish?
- Is there evidence of the clustering of income levels in EBR Parish?
- Is there evidence of racial stratification of income?
- Is there evidence to suggest that school performance is linked to the racial makeup of the student body, the percentage of economically disadvantaged students, and/or the percentage of students fully proficient in English?

Abstract

Introduction

Methods

- Census Block Groups Analysis
 - Spatial Weights Matrix: Queen’s case first-order
 - Local Moran’s I
 - Local Moran’s I with EB rates
 - Bivariate Local Moran’s I
 - Schools Analysis

¹I use the Louisiana Department of Education’s data on percentages of economically disadvantaged students. I have yet to find sufficient metadata explaining how they define “economically disadvantaged,” but comparing current school and school district performance reports with past reports suggests that this may be the percentage of students on free or reduced lunch plans.

²See CITATION HERE for a thorough explanation of the school district “secession” phenomenon.

Louisiana School Districts

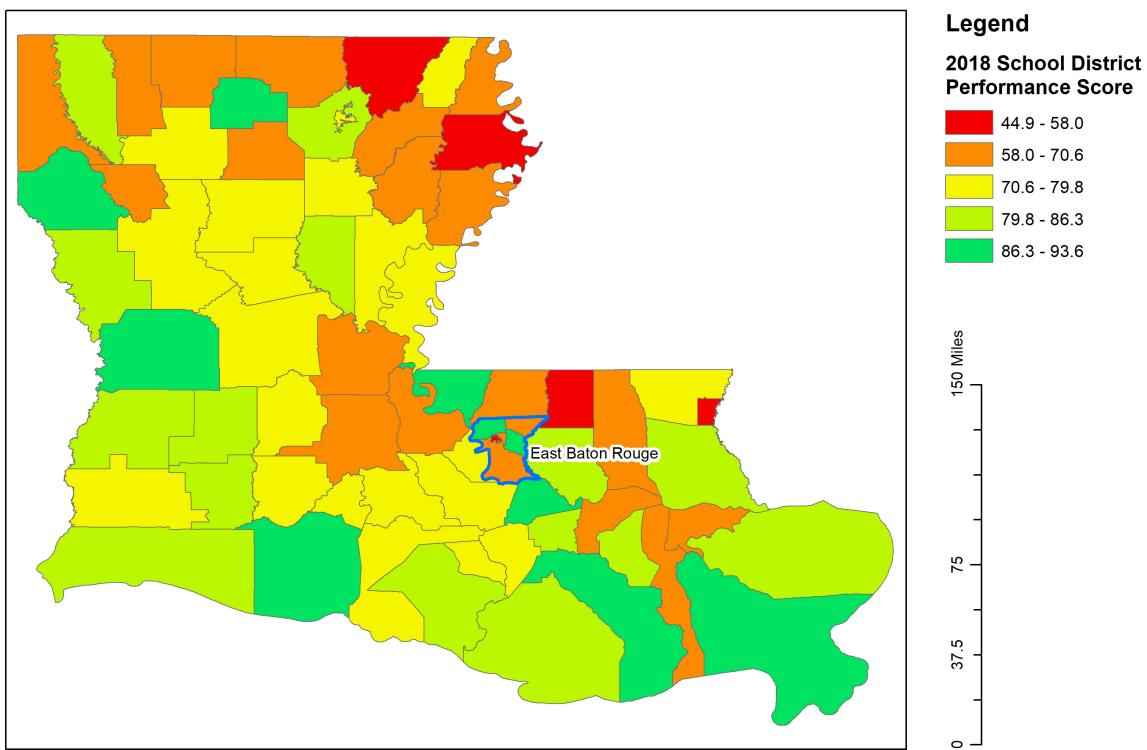


Figure 1: Louisiana school district performance for the 2017-2018 academic year. East Baton Rouge Parish is outlined in blue and labeled.

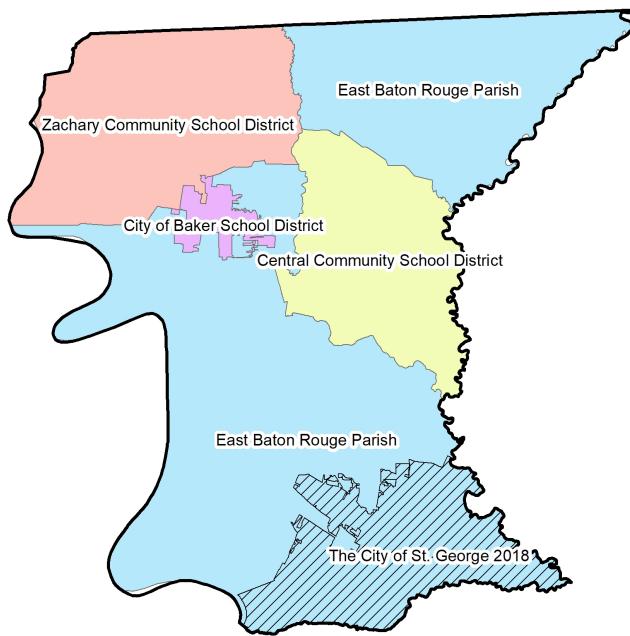


Figure 2: East Baton Rouge Parish school districts and the area of the City of St. George as proposed in 2018.

- Spatial Weights Matrix: distance band (distance threshold = 14732 ft such that every point has a minimum of 1 neighbor); inverse distance weighting (power = 1); max neighbors = 19
- OLS Regression
- Spatial Regression

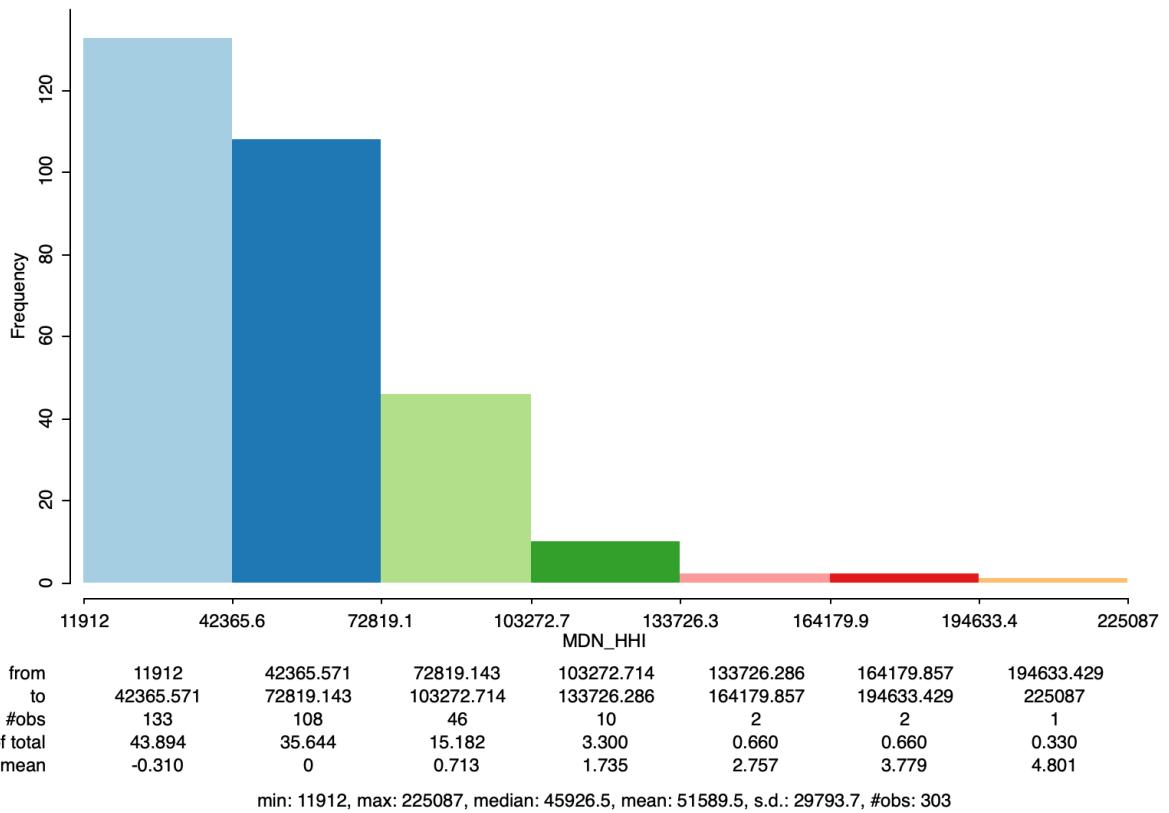


Figure 3: Histogram of median household income.

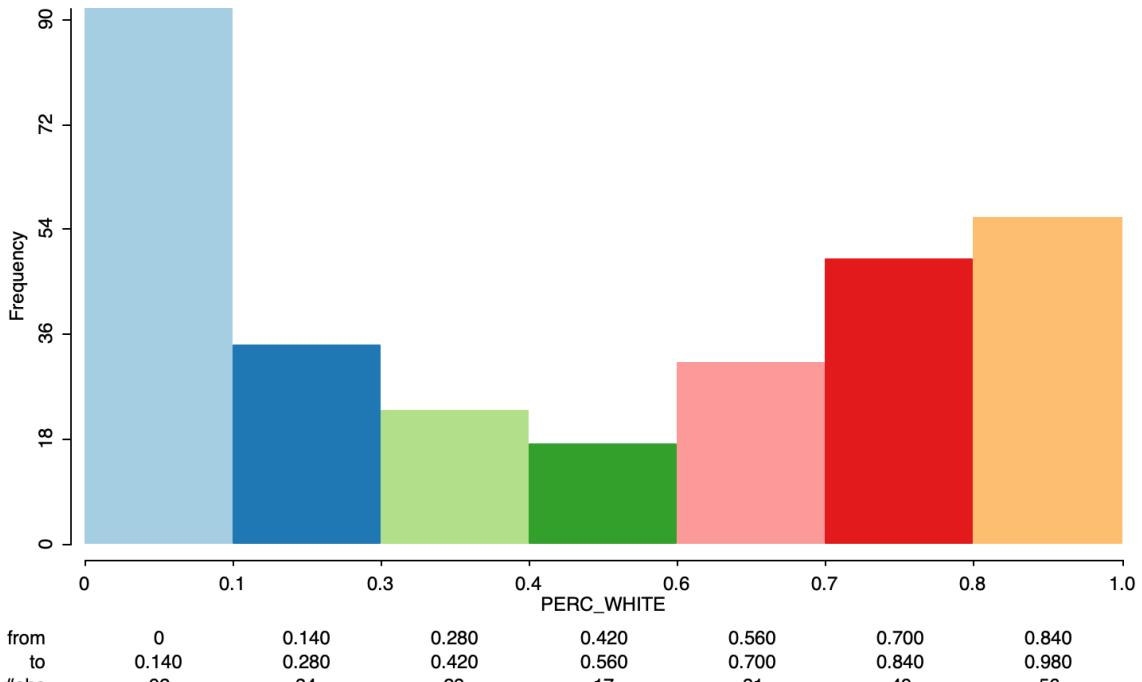


Figure 4: Histogram of population percentage white.

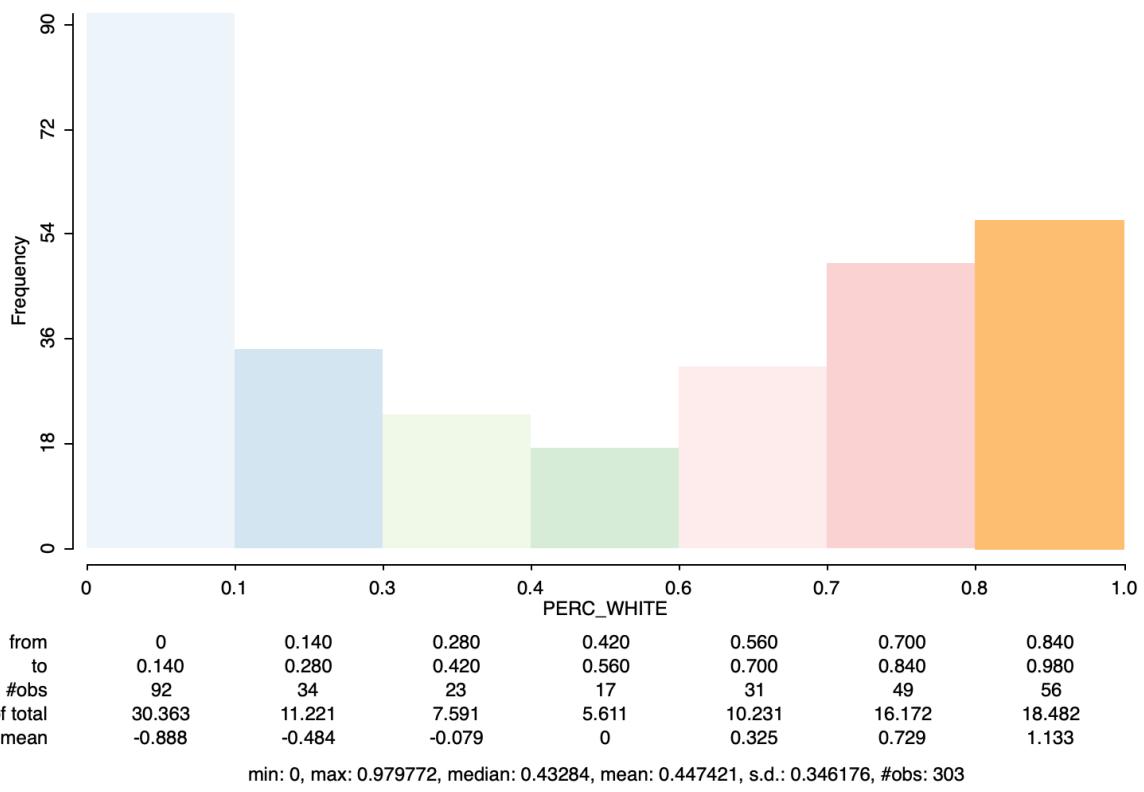


Figure 5: Histogram of population percentage white.

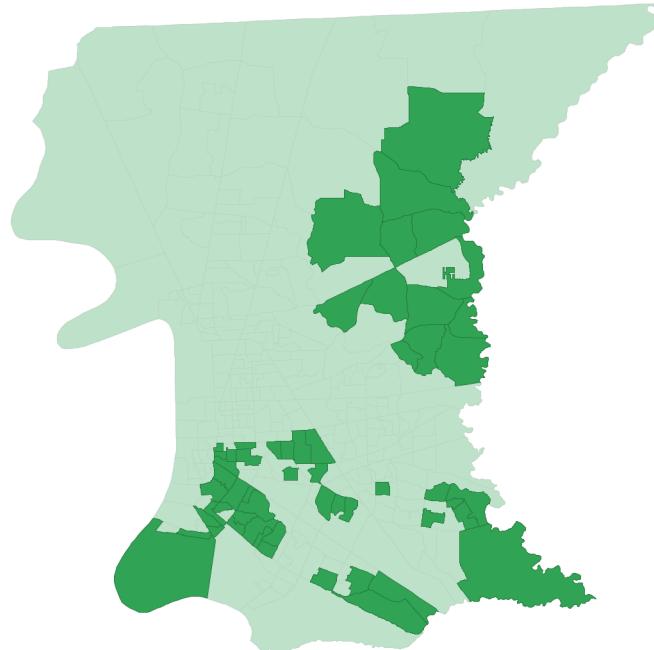


Figure 6: Map of census block groups with the most population percentage white.

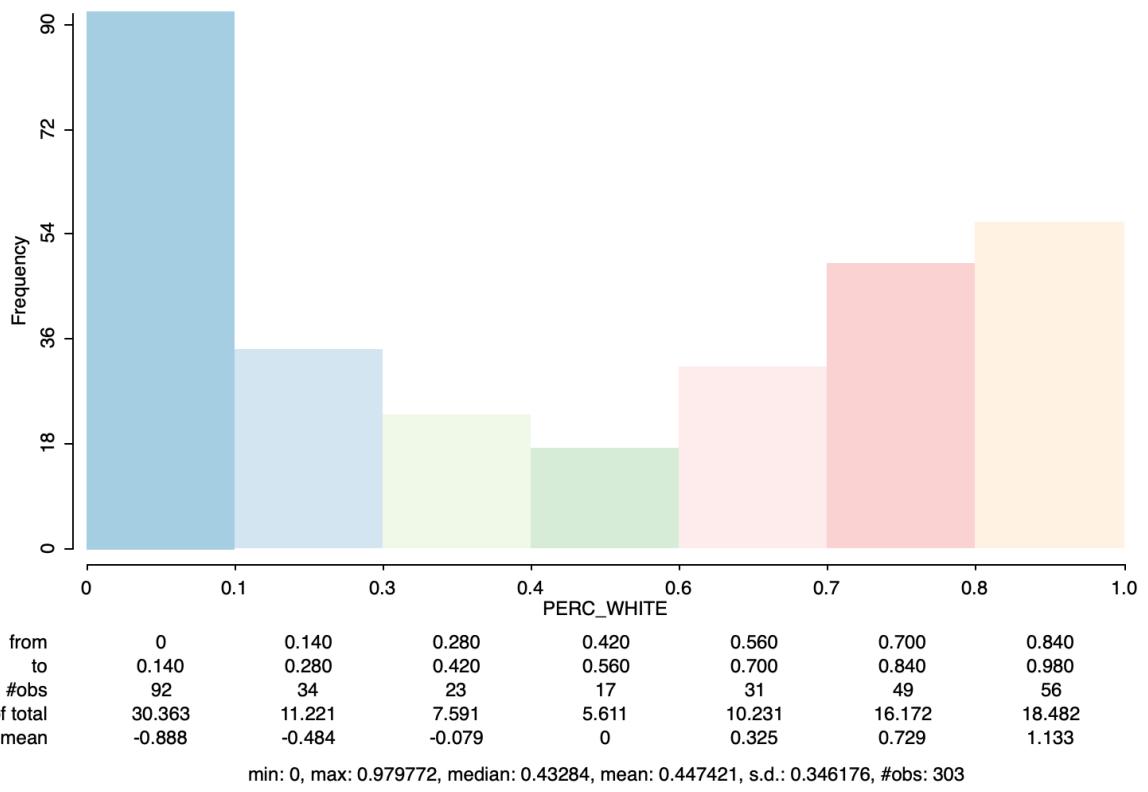


Figure 7: Histogram of population percentage white.

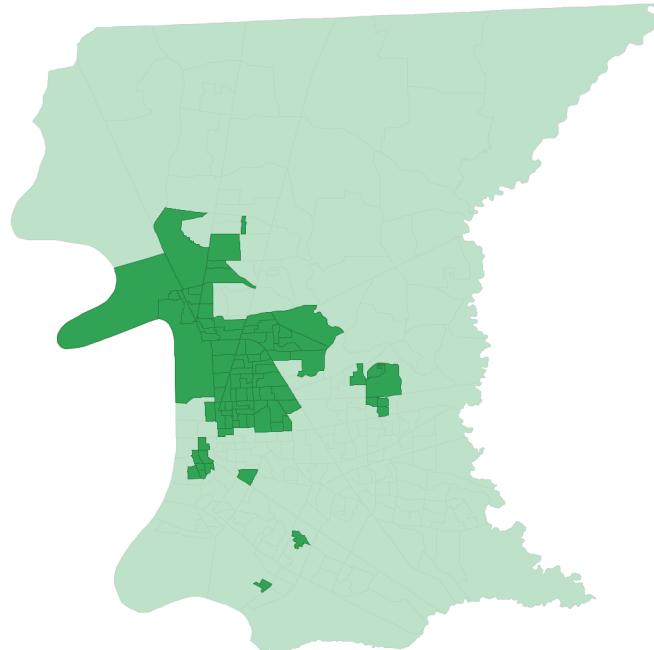


Figure 8: Map of census block groups with the least population percentage white.

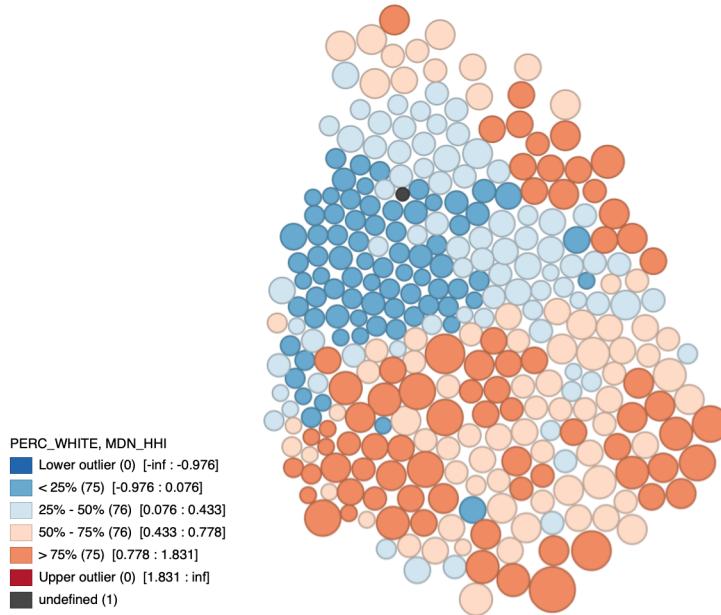


Figure 9: Cartogram of census block groups colored by the population percentage white with size annotating median household income.

Exploratory Data Analysis

Median Household Income

Population Percentage White

Most White

Least White

Bivariate Relationships

School Performance Scores

Results

Local Moran's I

Median Household Income

Population Percentage White

Local Moran's I with EB rates

- Population Percentage White

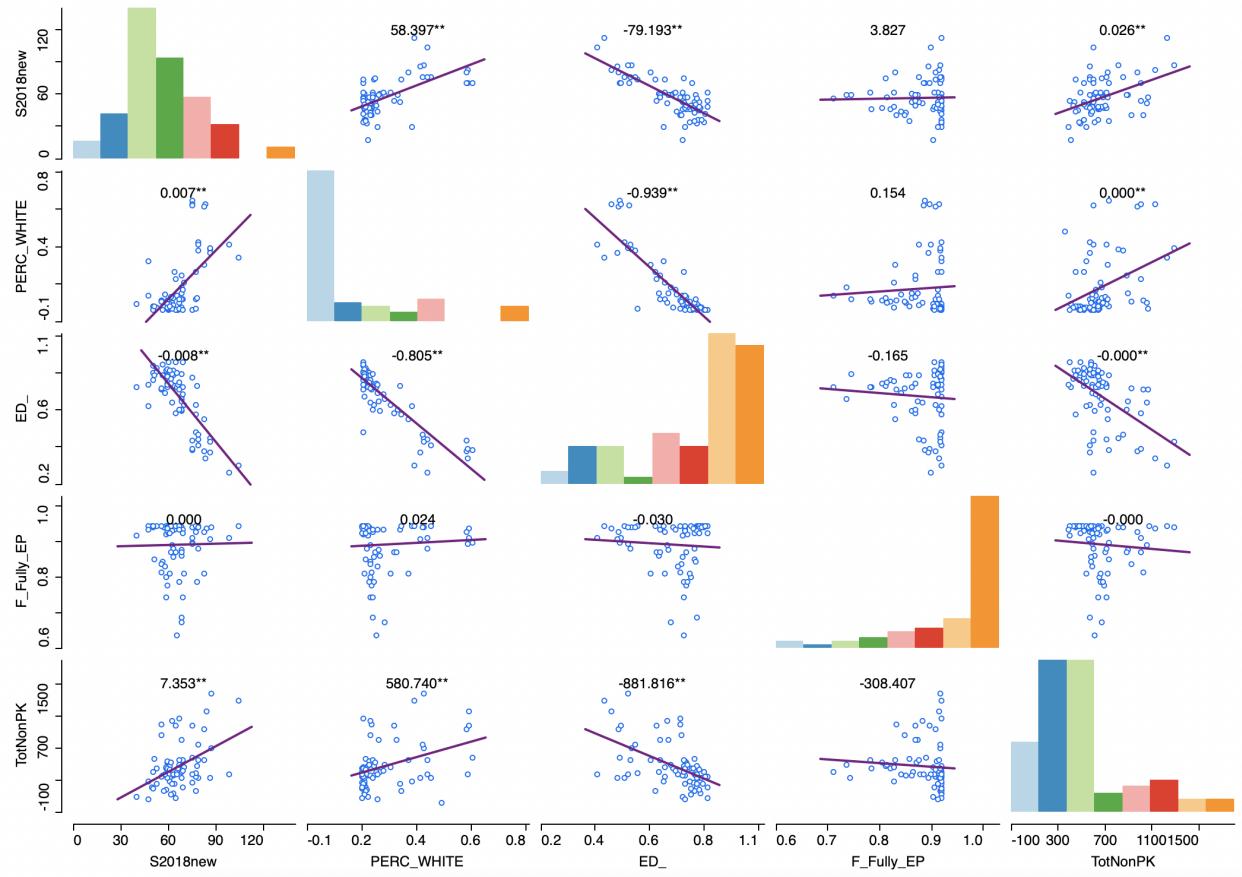


Figure 10: Scatter plot matrix of 2017-2018 school performance scores, percentage of student body that is white, percentage of students who are economically disadvantaged, percentage of students who are fully proficient in English, and total number of non-Pre-Kindergarten students for public elementary, middle, and high schools in EBR Parish.

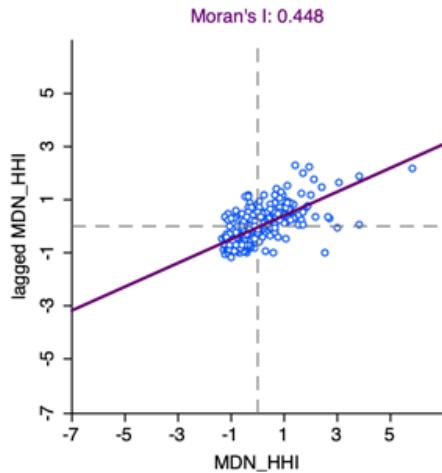


Figure 11: Lagged median household income versus median household income.

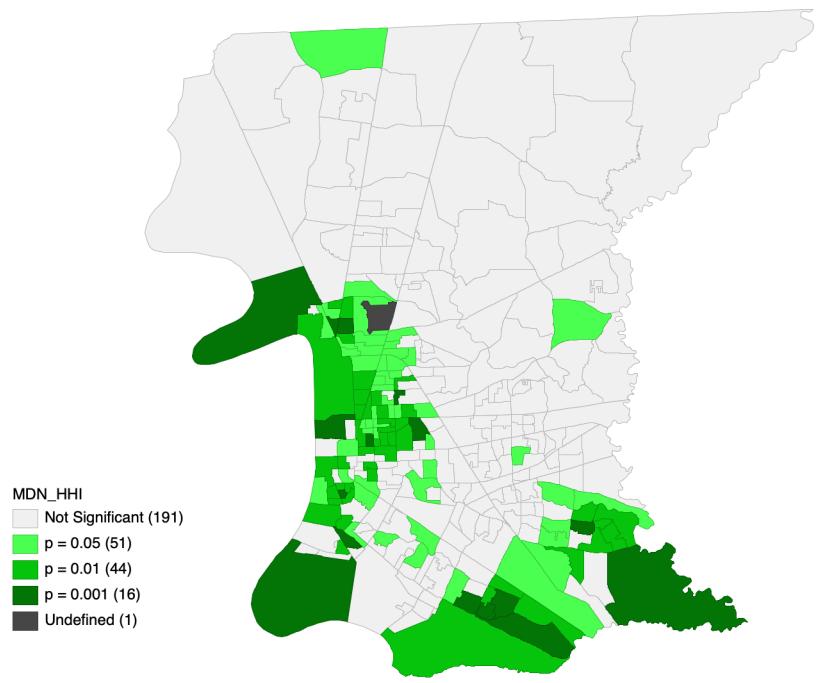


Figure 12: Significance map.

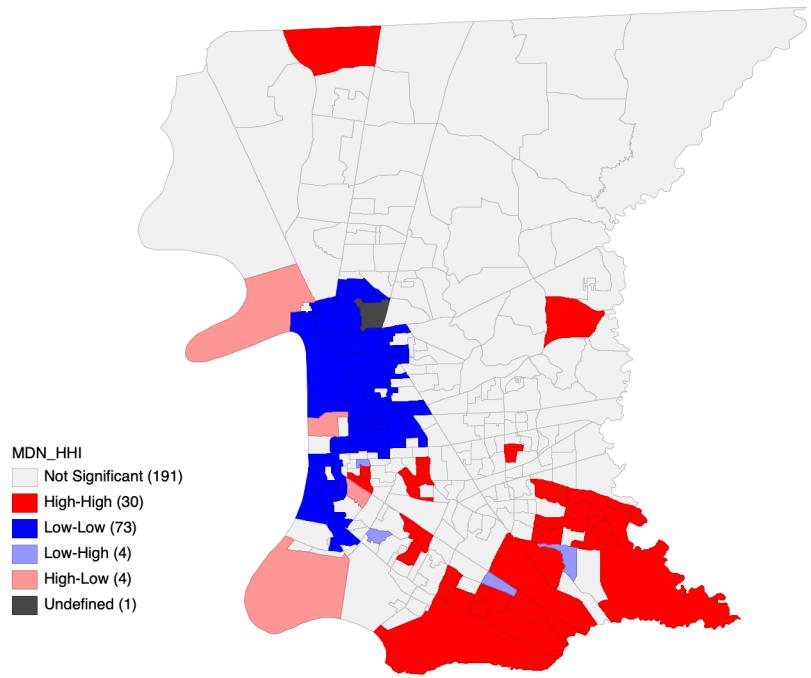


Figure 13: Cluster map.

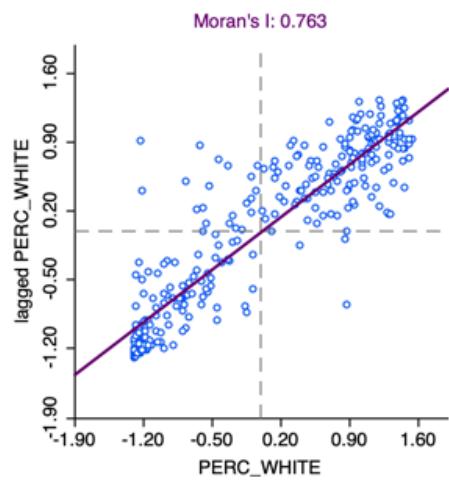


Figure 14: Lagged population percentage white versus population percentage white.

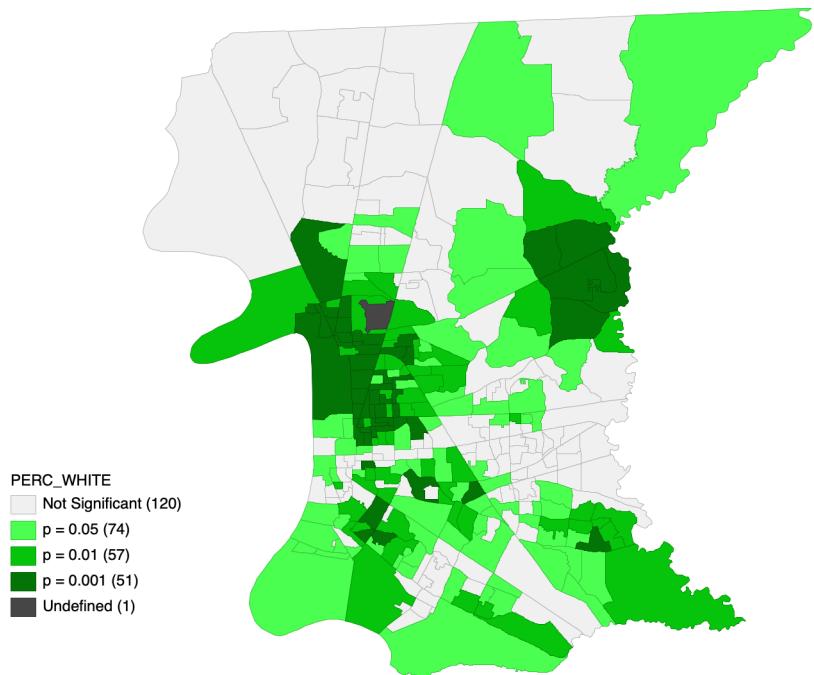


Figure 15: Significance map.

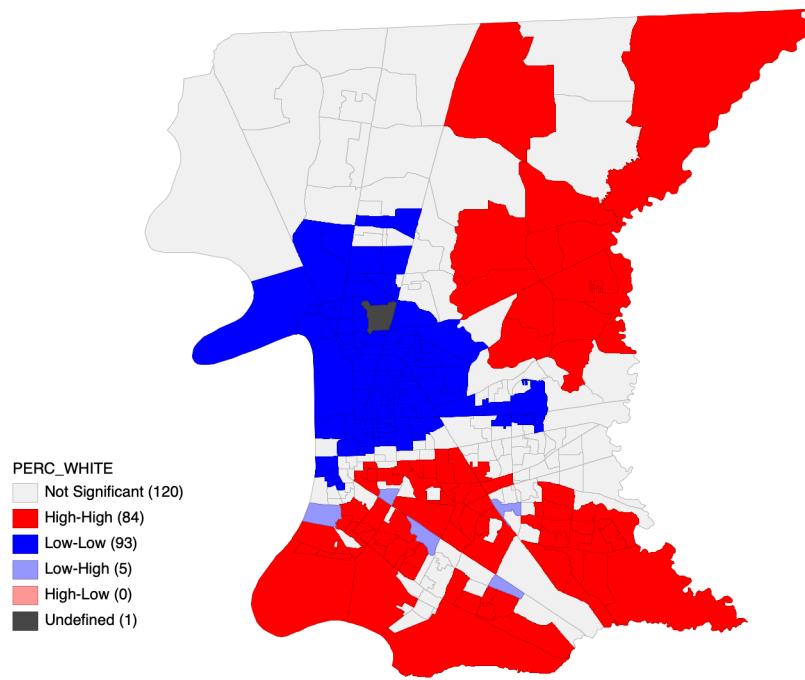


Figure 16: Cluster map.

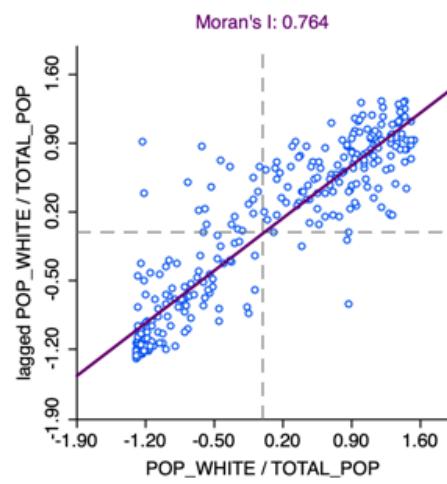


Figure 17: Lagged population percentage white versus population percentage white.

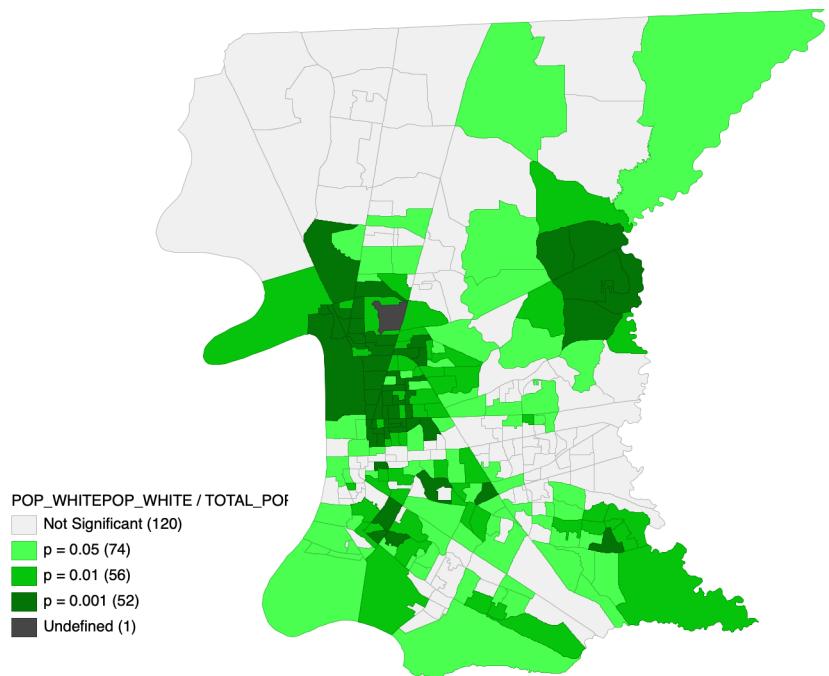


Figure 18: Significance map.

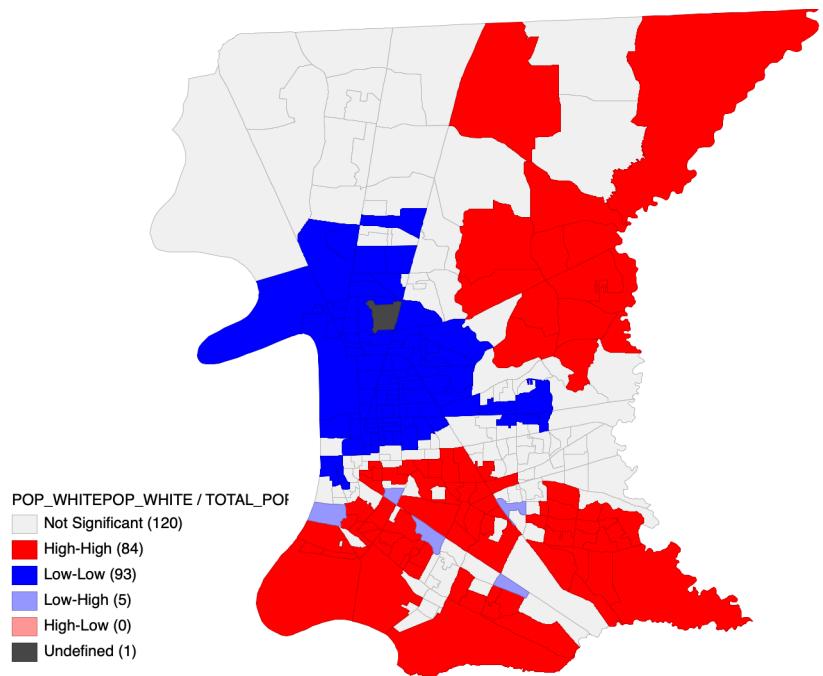


Figure 19: Cluster map.

Bivariate Local Moran's I

- Median Household Income vs Lagged Population % White

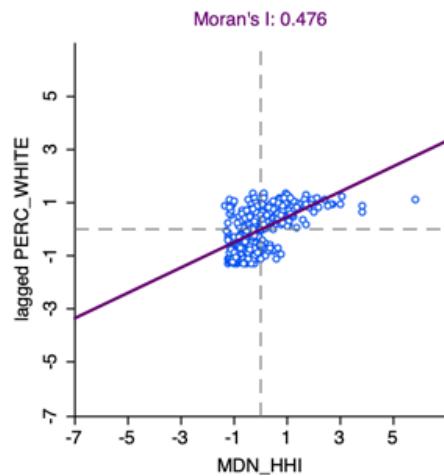


Figure 20: Lagged population percentage white versus median household income.

OLS Regression

Spatial Regression

Discussion

Citations

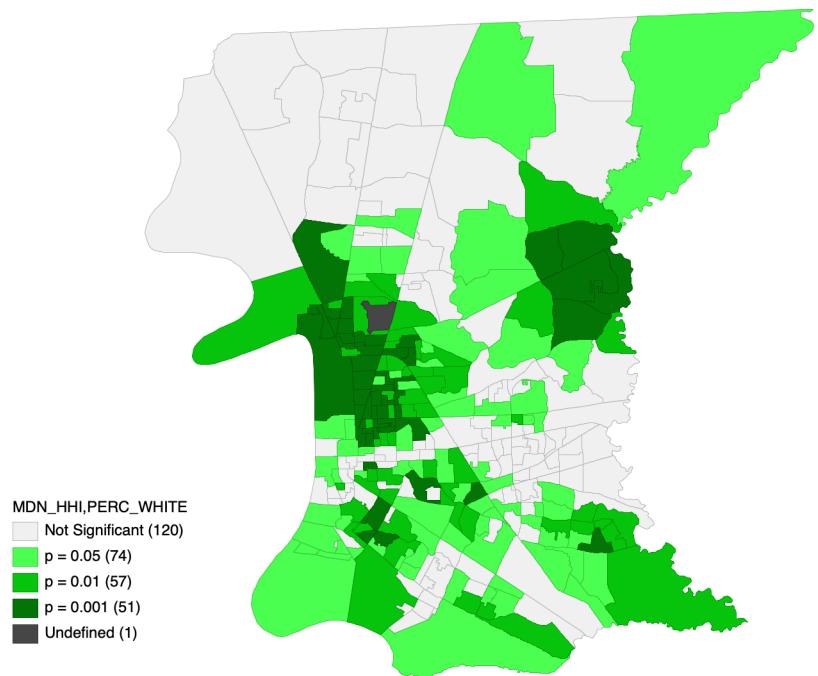


Figure 21: Significance map.

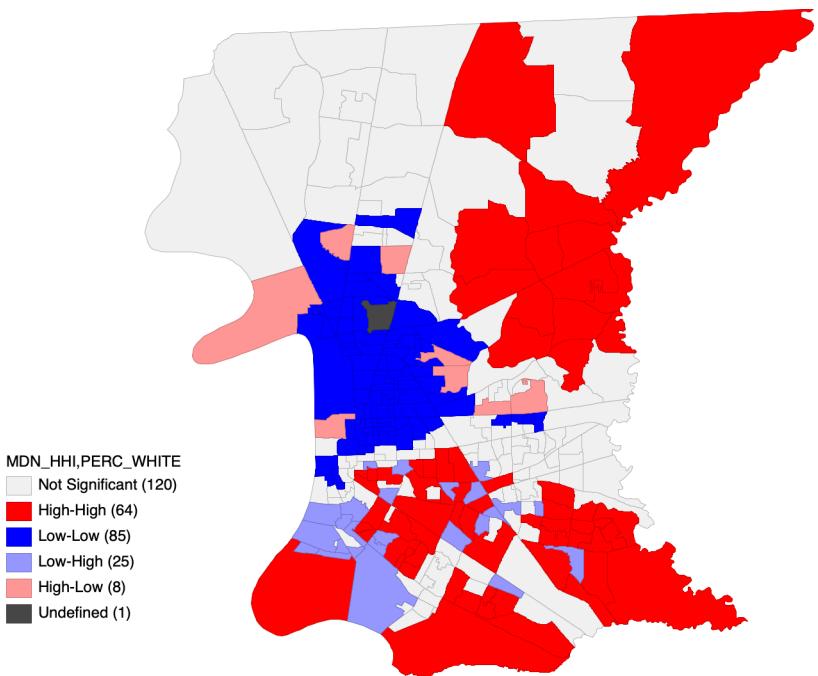


Figure 22: Cluster map.