

# Correlating socioeconomic factors impacting students test scores (SAT, ACT)

Teneika Askew, Oretha Domfeh, Omar Guerrero, Frederick Langham, Seyma Tas

## Highlights

- Colleges lowering the admission scores requirements are only addressing a small part of the problem of college not being accessible for most students. There is still a significant difference in test performance between regions of different demographics
- Understanding at a more granular level the impact of socioeconomic factors in students performance will help educators to identify the right problems and allocate the right resources for strong and long term solutions.

## Background

Educators have been trying to make college more accessible to students who don't perform well in standardized tests. Some efforts included making tests optional or lowering admissions score requirements, but are they really investing resources to understand how to help the right students to improve performance? We present findings to help educators understand better how socioeconomic factors account for large variances in ACT and SAT scores.

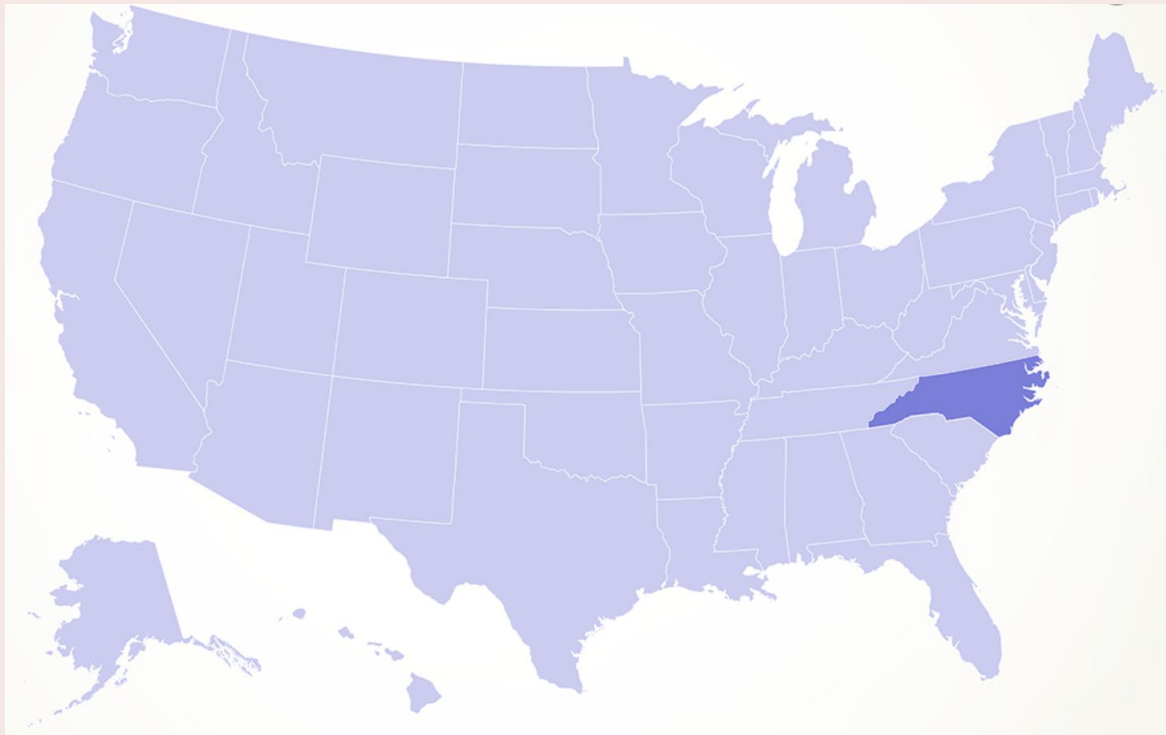
## Data

We used test scores data between 2017 and 2020 at school and district levels in North Carolina. Dataset only includes Secondary education (9-12 grades). Schools' unique codes were used to join with zip code information across datasets to discover socioeconomic properties. Data sources include North Carolina Department of Public Instruction (NCDPI), Internal Revenue Service (IRS) and US Census Bureau.

**452** schools teaching grades 9-12

**500K+** High School students

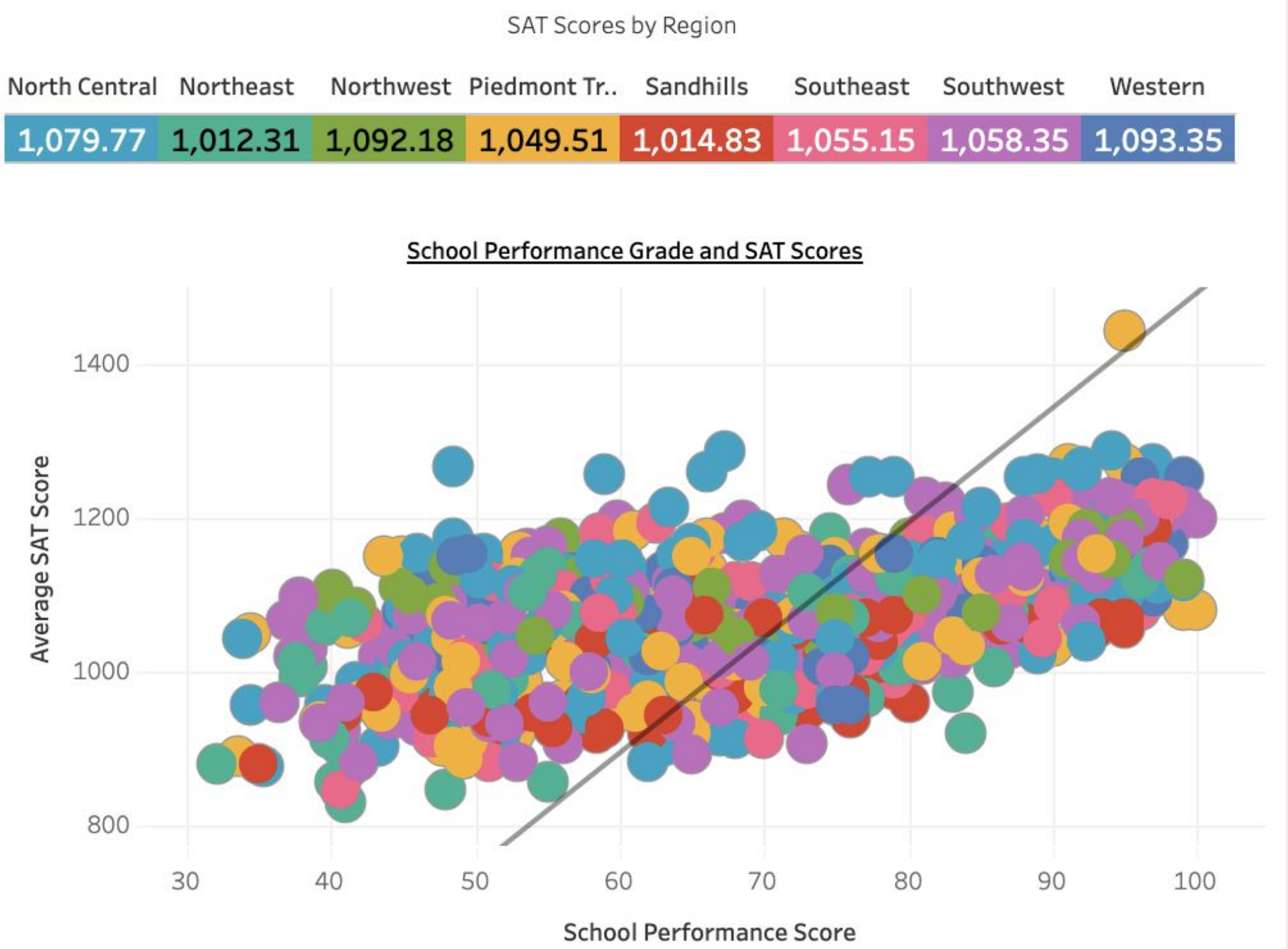
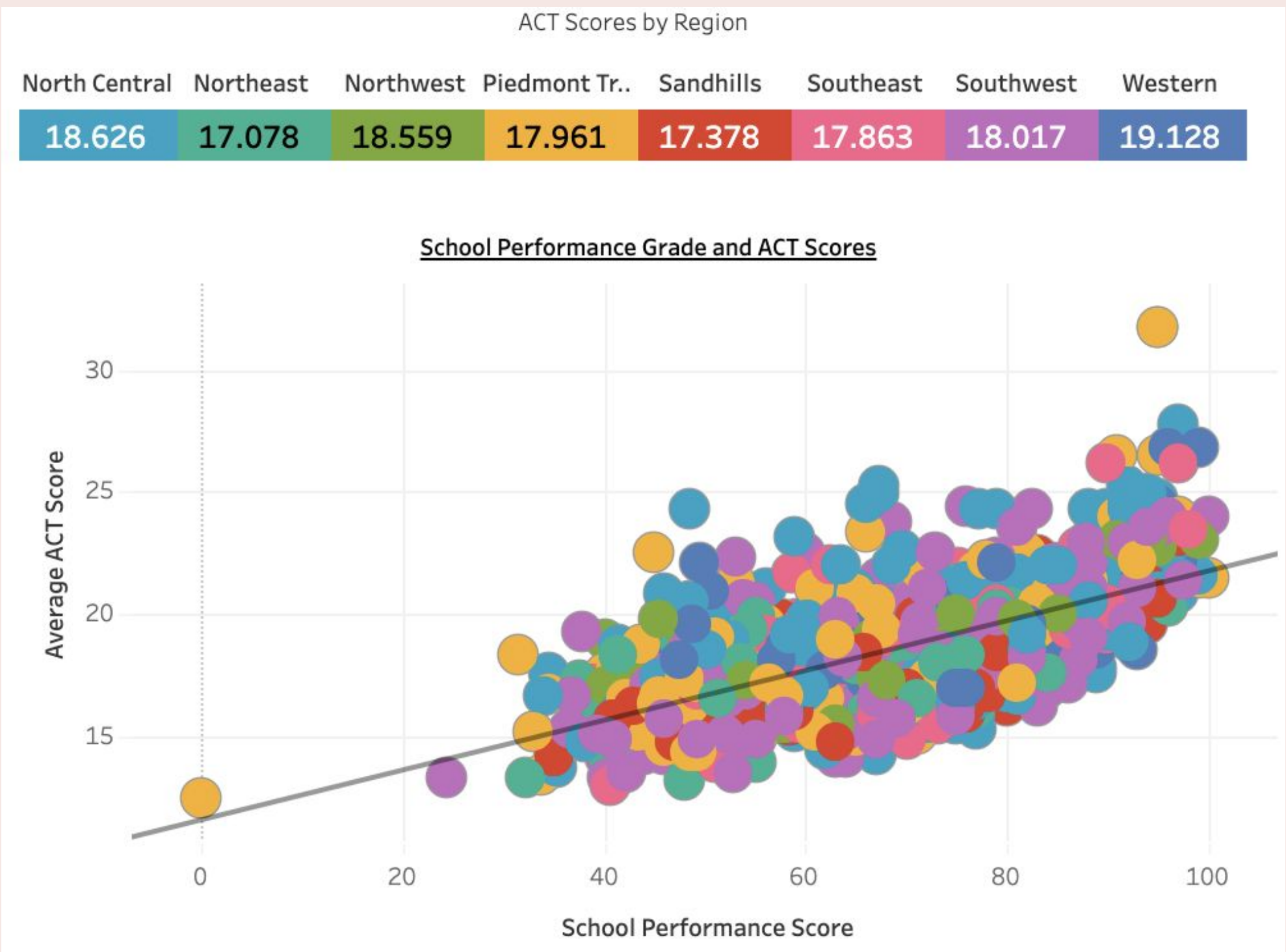
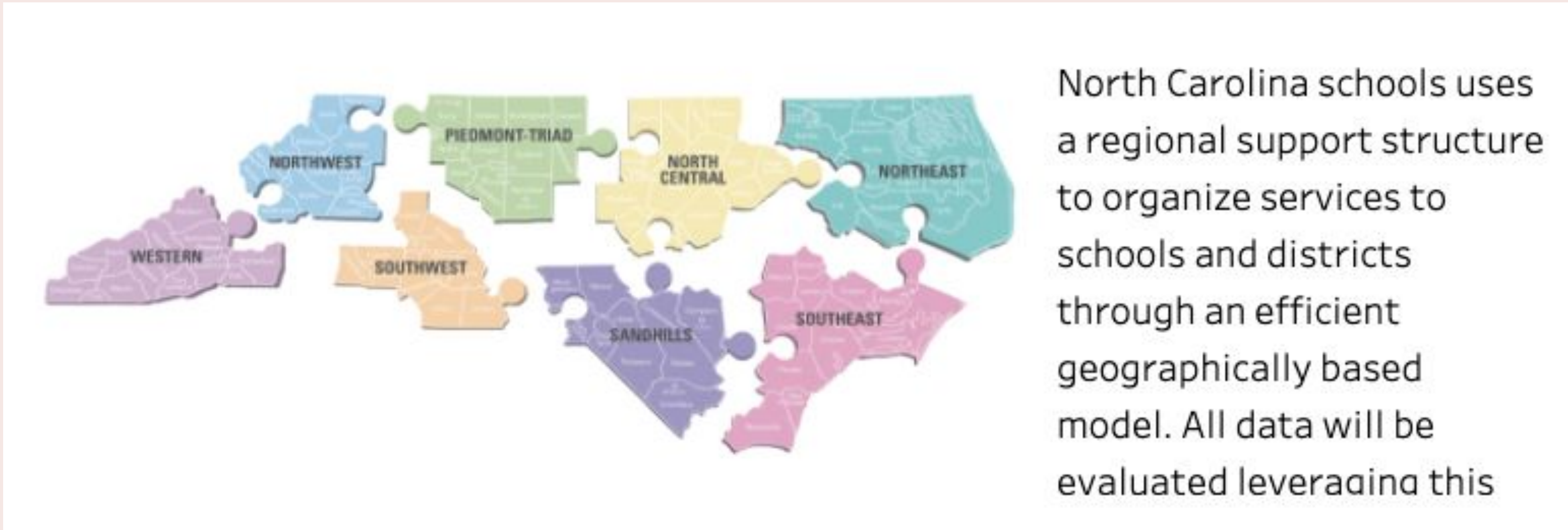
**31st** place nationally in average SAT score (1081)



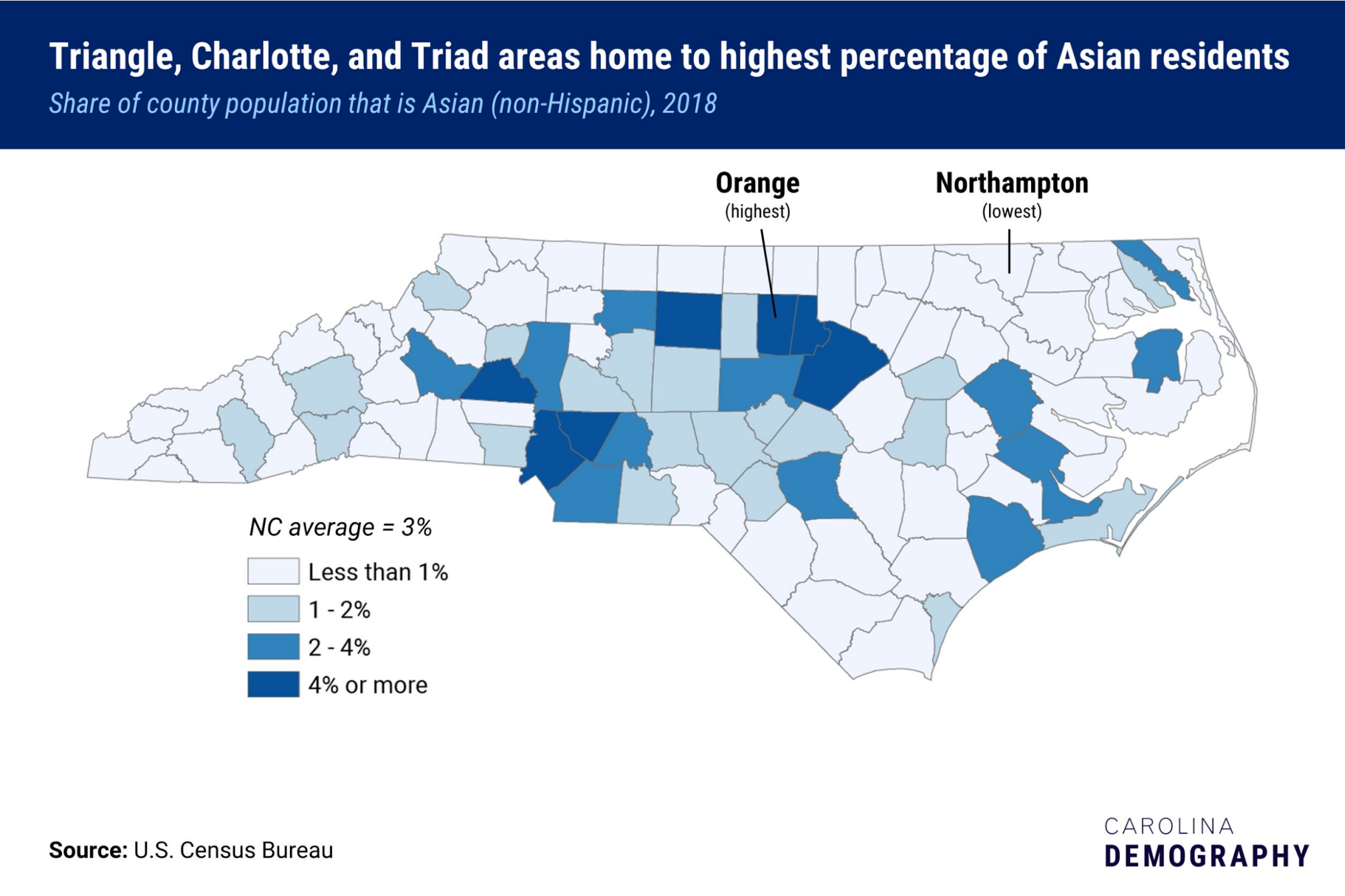
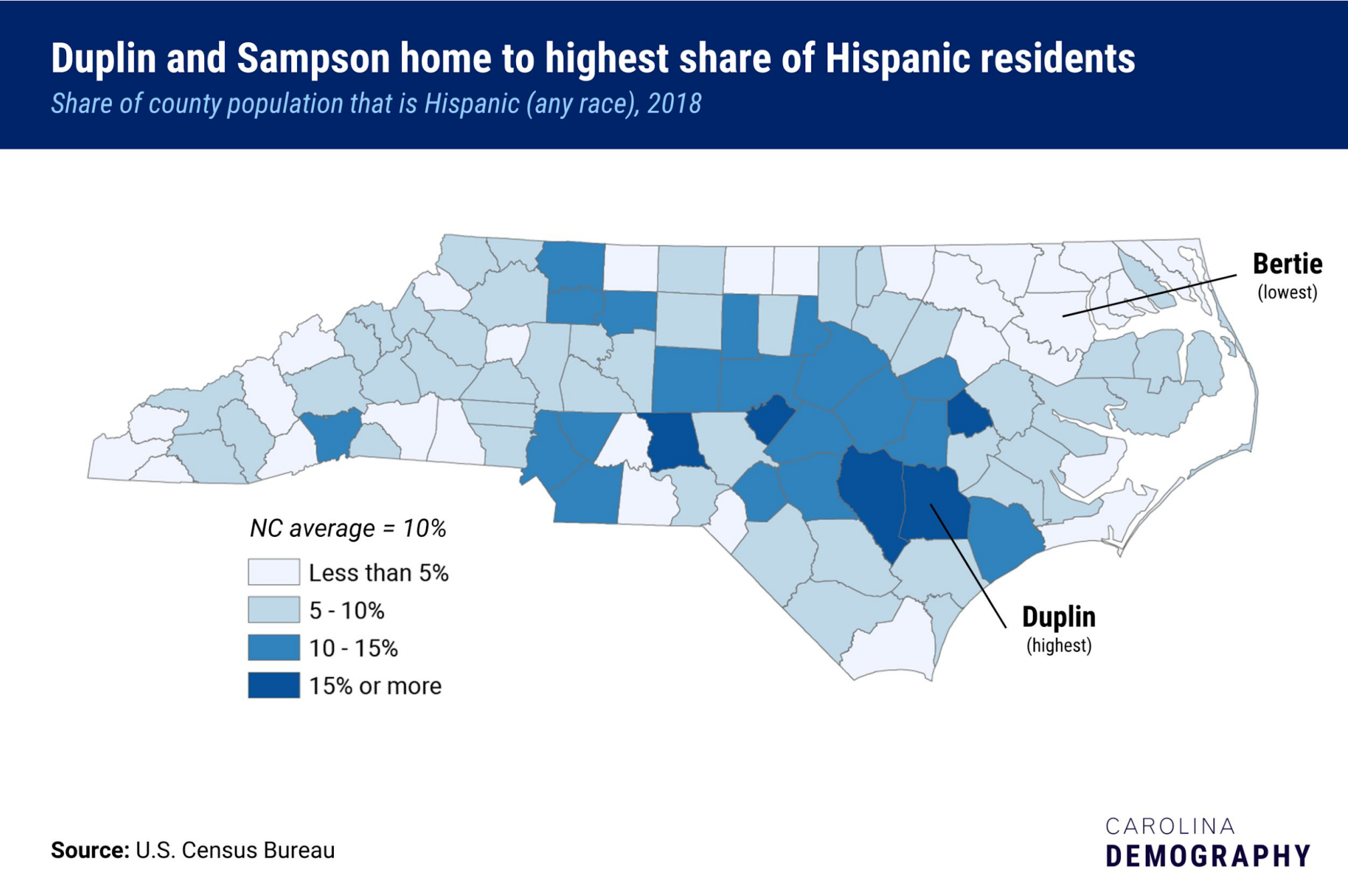
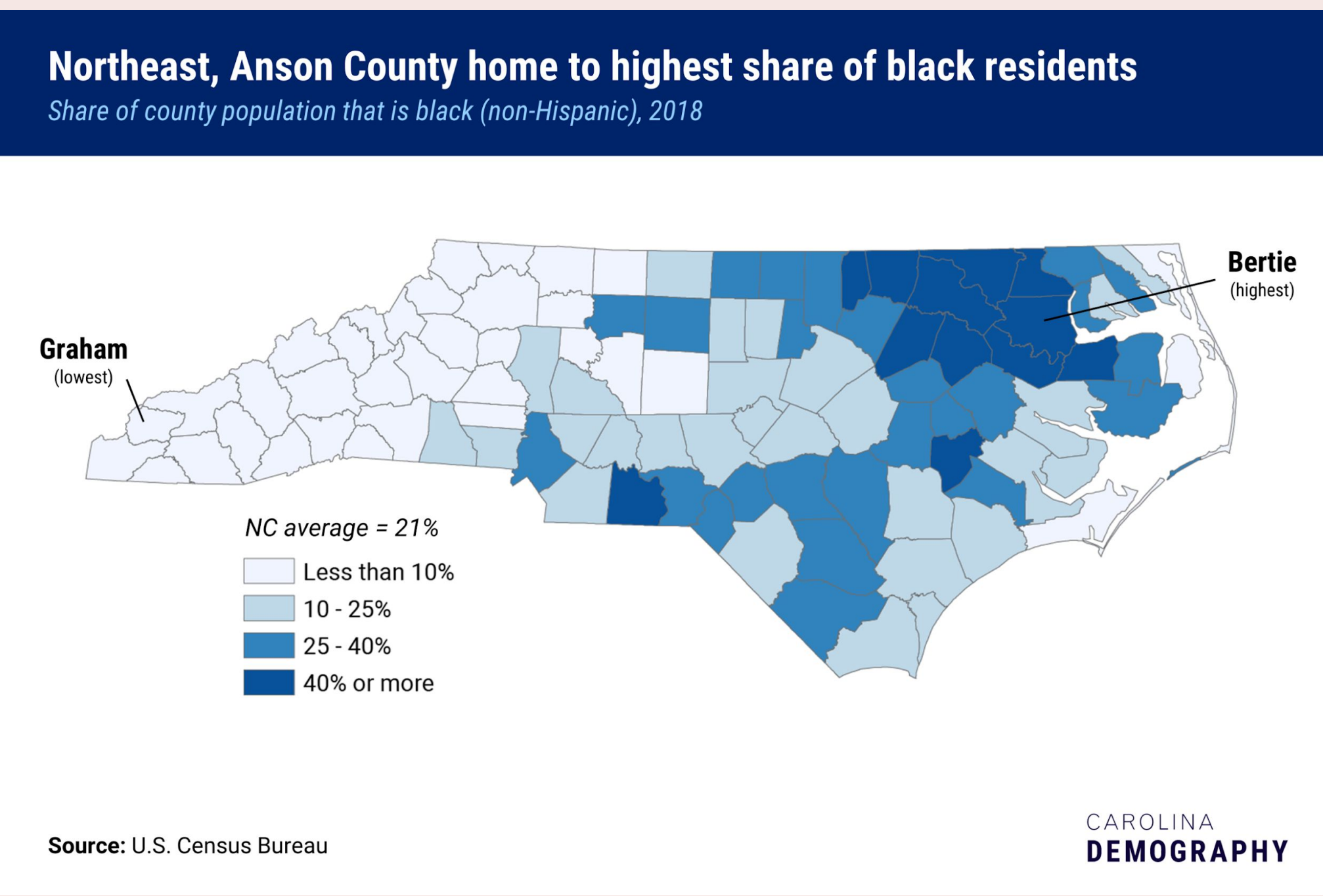
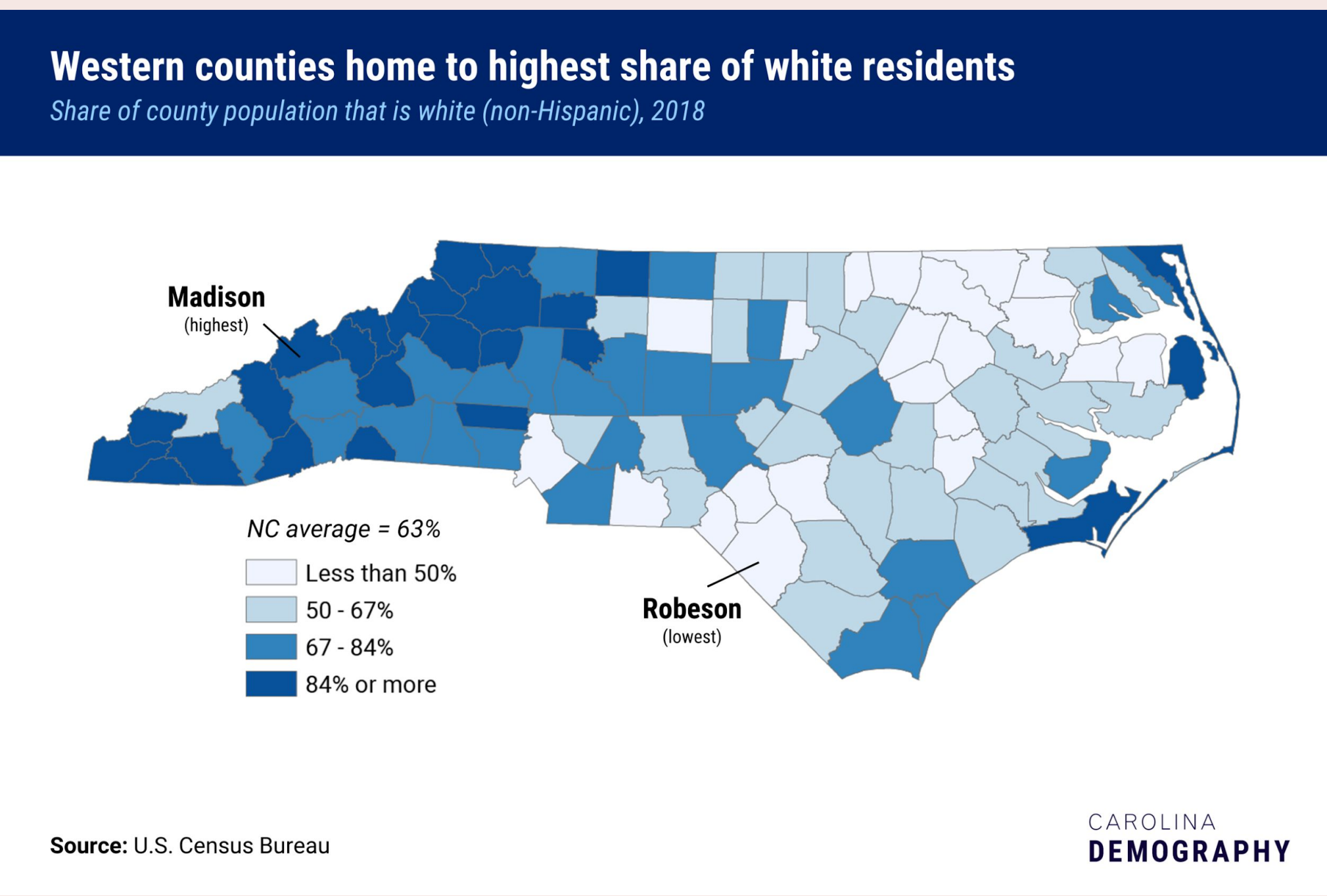
## Analysis

We identified which socioeconomic factors are strongly correlated to student tests scores by running some hypothesis (t-tests) and statistical methods in Python and Tableau. We also used some data and charts from external research, specifically around demographics on the state [\(1\)](#)

Understanding better which factors besides test scores correlate to student performance can help us identify specific areas to focus on

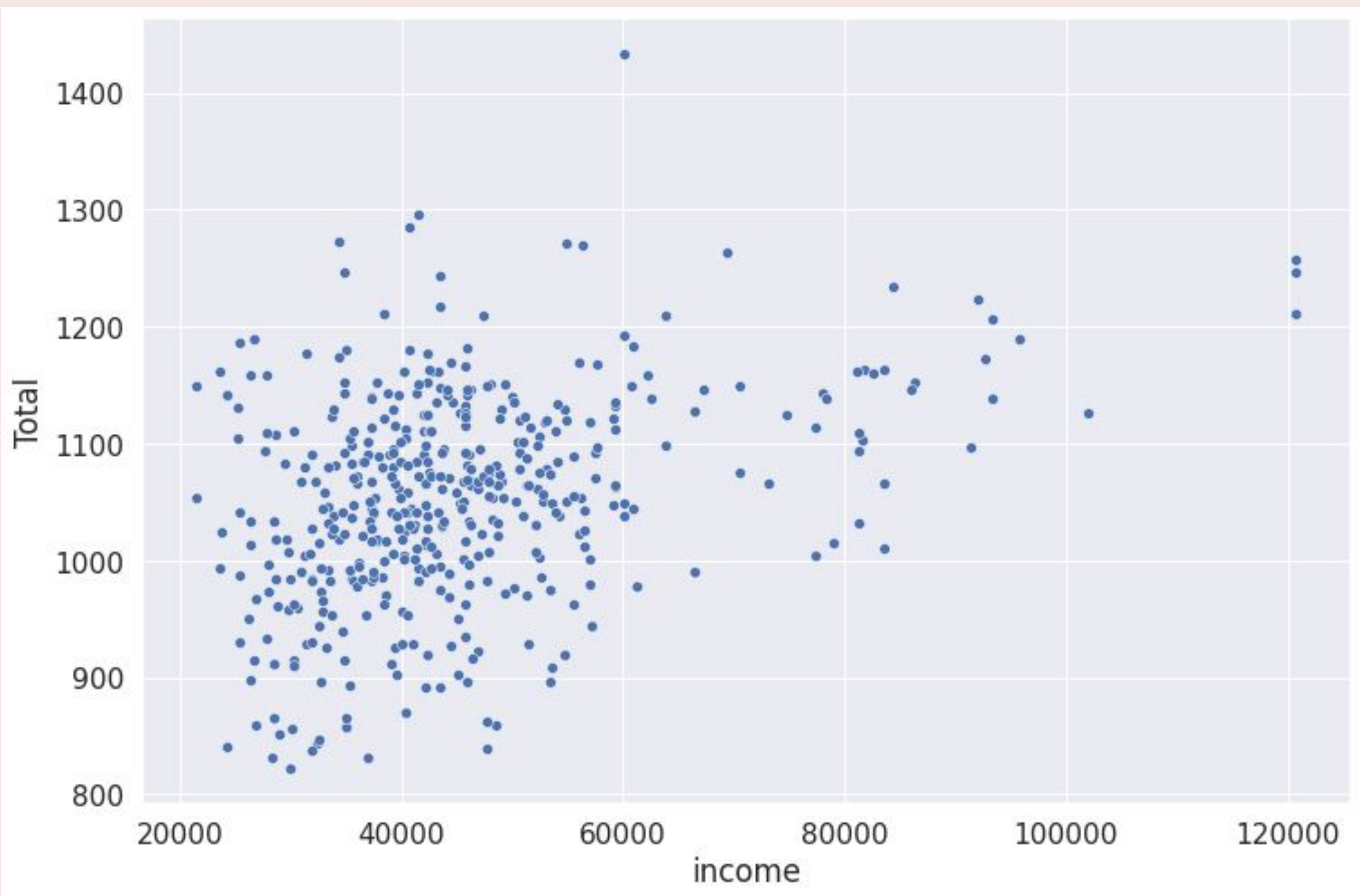


Western and North Central regions are majority white, while Northeast is majority black [\(1\)](#)



[Demographics Map Source \(1\)](#)

Schools with higher Avg ACT score and Avg SAT are located in the North Central and Western part of the state, while worst performance schools are on the Eastern side.



Average total SAT score for each school and income are positively correlated.

Socioeconomic factors have a significant impact on average test scores. Focusing on lowering admission requirements or reassessing how grades are calculated does not solve for the real cause of the gap in learning