

Relationship between available academic resources and ethnic groups in the Chicago Public High Schools system

Downloaded data about the Chicago Public Schools from the system's website and locational info from Chicago Data Portal; Scraped College Readiness Data from the U.S. News website

Locational differences and college readiness

Used the folium package to visualize the distribution of high schools across the city (heatmap.html and school_map.html)

Used the geopandas package to visualize the college readiness index across different districts of the city

Findings

Public high schools are distributed heavily around the west side of the downtown area and the college readiness index in those regions are relatively higher than that of the other districts

Used scatterplot to display the relation between the proportion of ethnic minorities and the college readiness index

Applied the OLS model (with and without dummy variables of school types) to see whether different ethnic groups are related to the change of College Readiness Index

Schools with higher proportion of African American students tend to (from observing the plot directly) have relatively low college readiness index, indicating the fact that education resources on college preparation at schools where African American students take a big portion are relatively scarce

A school's higher percentage of African American students is associated with a decrease in College Readiness Index

Ethnicity and college readiness

Used the principle component analysis (PCA) to identify whether a school's student racial proportion is associated with how well each school prepares students for college

A negative correlation between how well a school prepares its students for college is negatively associated with the number of African American and unknown-ethnicity students it has.