**Introduction**

Social scientists have done extensive research on the effects of wealth and racial disparities between districts on lifetime outcomes, but there has been comparatively little research on how intra-school disparities affect educational outcomes. This thesis focuses on precisely these distributional effects. In this project, I investigate the extent to which the income and racial make-ups of schools and the neighborhoods they serve affect the distribution of outcomes over time. In essence, I ask whether traditional factors of positive educational outcomes -- like an influx of wealth to a neighborhood -- mask adverse *distributional* effects. I chose to focus on Chicago Public Schools because it comprises a single school district and because there are readily available and extensive data. Chicago schools are also notorious for their racial homogeneity; in more than half of Chicago public elementary schools, at least 90% of the students identify as the same race.[[1]](#footnote-0)

To answer these questions, I am using several high dimensional data sources. I have access to the Illinois Department of Education data for each public elementary school in Chicago. These data include detailed demographic data, standardized testing scores, and other indicators at the school-level. I also have access to the American Community Survey data, which provides detailed metrics about the characteristics of each census tract. I employ spatio-temporal methods and traditional linear methods to analyze the effects of racial and income disparities on the distribution of testing outcomes across space (school zones) and time (school years).

**Literature Review**

* Discussion of income, race, peer effects on student outcomes.
* Discussion of test scores as metrics of outcomes -- relationship to lifetime earnings. Imperfect proxy but best we have
* Segregation/ integration and student outcomes
* discussion of measuring disparities in outcomes -- distributions
* Discussion of any info about heterogeneity and outcomes

**Background Information and Historical Context**

* Chicago specifically has a long history of redlining
* CHA -- Ida B. Wells Homes
* Resulting in intense racial segregation
* Corresponding Income disparities between neighborhoods
* Dissimilarity index? compare to other cities
* School closures
* CPS structure and function -- role of elementary school boundaries

**Data Sources**

I rely on several public data sources. The Illinois Board of Education provides public data on annual school “report cards,” including information about school demographics and aggregate test scores. The test score data includes the number of students in each grade who test at each proficiency level. After the 2013-2014 academic year, Illinois transitioned from the ISAT (Illinois Standardized Assessment Test) to the PARCC (Partnership for Assessment of Readiness for College and Career), which was in turn replaced by the IAR (Illinois Assessment of Readiness) in 2019. All three exams have multiple proficiency levels, but the ISAT has only four levels, while the PARCC and IAR have five levels (did not meet, partially met, approached, met, and exceeded expectation). Although these test score data are at the grade-level, the demographic data is exclusively at the school level.

I also use data from the Chicago Public Schools (CPS) for the geographic boundaries for public elementary schools.

**Methodology**

Inputs:

* Racial demographics are block level and come from decennial census
* Racial homogeneity is measured by percent covered by the same group

**Descriptive Statistics**

**Results**

**Discussion**

**Conclusion**

1. My analysis of Illinois Department of Education data. Data fetched from <https://www.isbe.net/Pages/Illinois-State-Report-Card-Data.aspx> [↑](#footnote-ref-0)