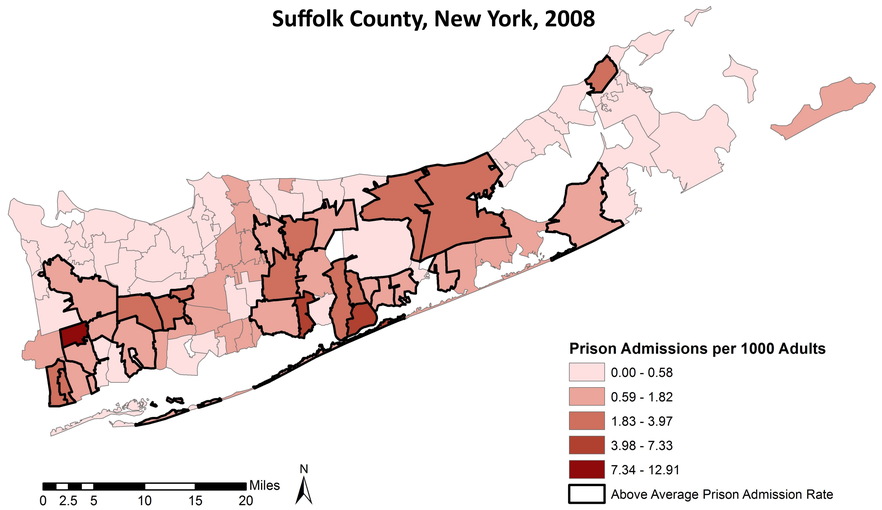
The Source of the Pipeline

Mapping Disparities in the Scholastic and Carceral Environment of Suffolk County, New York

Prison Admission Rates by Zip Code

Suffolk County, New York, 2008



Introduction

Academic failure and discipline practices that remove the student from the learning environment have been identified as key elements in the "school to prison pipeline," particularly for minority students.[1] Students who struggle academically are more likely to exhibit behavior that is regarded as disruptive and met with discipline, and likewise delinquency is more common in low-achieving schools.[2] Furthermore, students who come from backgrounds of low socioeconomic status typically begin school with pre-academic skills that result in lower test scores than those of their peers, and are likewise more susceptible to academic failure and delinquency, especially when a school lacks the resources to support their social and academic growth.[3]

As a result of exclusionary zoning and racist mortgage lending, Long Island, New York remains one of the most economically and racially segregated suburbs in the country.[4] Home to both sprawling mansions in the Hamptons and pockets of high poverty rates scattered around the island, Suffolk County serves as an interesting case study for the investigation of school characteristics and their potential correlation with incarceration rates.

Methodology

Mapping and Geoprocessing

Data for 2008 prison admission rates by zip code in Suffolk County, New York, was retrieved from Justice Atlas. This data was joined to a shapefile of Suffolk County zip codes, retrieved from the United States Census Bureau. The average prison admission rate (PAR) in Suffolk County was calculated to be 1.06 admissions per 1000 adults. Zip codes with rates higher than 1.06 admissions per 1000 adults were exported to a new shapefile.

A shapefile of public school districts in Suffolk County was attained from the NYS GIS Clearinghouse. Data from Suffolk County districts' Accountability and Overview Reports and Fiscal Summaries from the 2009-2010 academic year was sourced from the NYSED Data Site, and tabulated manually. This table was joined to the shapefile of Suffolk County school districts.

Suffolk County school districts with centroids located within zip codes with higher than average PARs were selected. These selected school districts were henceforth regarded as school districts with higher than average PARs, and all other school districts constituted school districts with lower than average PARs.

Average Prison Admission Rate in Suffolk County, NY	1.06 admissions per
Number of school districts with higher than average PAR	19
Number of School districts with lower than average PAR	49

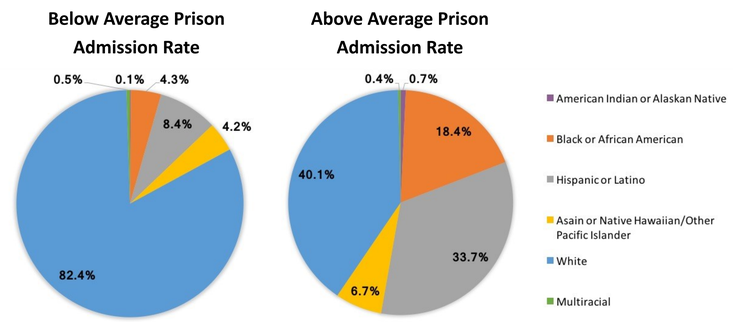
Analysis

The racial or ethnic origins of students in school districts with higher than average PARS and of students in school districts with lower than average PARs were summarized separately. Average suspension rate, limited English proficiency rate, free or reduced price lunch rate, annual attendance rate, and instructional expenditures per student were calculated for school districts with higher than average PARs. These calculations were repeated for school districts with lower than average PARs, and two-tailed t-tests were performed to compare these means.

Results

School District Data by Relative Prison Admission Rate (PAR)

Summary of Student Racial or Ethnic Origins



	Below Average PAR	Above Average PAR	Difference
Average Suspensions per 100 Students	2.33	6.27	-3.94 *
Average Limited English Proficiency Rate	3.32%	10.24%	-6.92% *
Average Free or Reduced Price Lunch Rate	9.27%	28.07%	-18.8% *
Average Annual Attendance Rate	95.43%	94.42%	1.01% *
Average Instructional Expenditures per Student	$15,117.70	$12,098.00	$3,019.70

*statistically significant ($p < 0.05$)

Conclusion

In Summary

In Suffolk County, New York, a student enrolled at a school district with an above average PAR is more than twice as likely to get suspended, more than three times as likely to have limited English proficiency, and is more than three times as likely to receive free or reduced priced lunch than a student enrolled at a school district with a below average PAR. This same student is also likely to have poorer attendance than her peer at a school with a below average PAR, and while the difference is not statistically significant, her district is spending an average of $3,019.70 less per year on her than a district with a below average PAR is spending is spending on each of their general education students.

Furthermore, 17.5% of students enrolled at districts with below average PARs are minorities, as opposed to 59.9% of students enrolled at districts with above average PARs. Seeing as academic failure and exclusionary discipline practices sit at the core of the "school to prison pipeline" particularly for minority students, this fact, when considered along with the aforementioned indications of low school performance, is concerning.[1]

Implications

These results provide support for the idea that incarceration often occurs as a downstream effect of a lifetime of disadvantages. Perhaps they might encourage a necessary change in the education system, in which students are not removed from the classroom upon the occurrence of disruptive behavior, but are instead offered more personalized and intensive social and academic support. Their realities are more likely to be burdened by financial stress and a predisposition for academic struggle than those of their peers. Furthermore, these results may be used as evidence for the necessary reallocation of federal and state budgets to increase funding for the education system, especially to districts whose students are at higher risk of experiencing academic and social distress.

Bailey Werner, Intro to GIS, Tufts University, May 2017
Geographic Coordinate System: GCS_North_American_1983
Projected Coordinate System: NAD_1983_UTM_Zone_18N
Data Sources: Justice Atlas, USCB, NYS GIS Clearinghouse, NYSED Data Site
Special thanks to Professor Sumeeta Srinivasan and McKayla Dunfey

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School District Characteristics

Suffolk County, New York, 2009-2010 academic year