NYC Achievement Deserts:
A Spatial Analysis of Low-Achieving District Schools and the Influence of Charter Schools

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Are there achievement deserts in NYC?

These maps show spatially significant clustering of district schools based on achievement levels. The blue dots represent schools that are low-achieving, and the red dots show schools that are high-achieving. Thus, the clustering of blue dots show achievement deserts.

Why might achievement deserts exist in specific areas?

For this part of the analysis, I compared four demographic factors that could contribute to the prominence of achievement deserts: economically disadvantaged students (%), Hispanic students (%), African-American students (%), and English Language Learners (%). From a visual standpoint, I found that the spatial relationship between socio-economically disadvantaged students and achievement deserts seems to be most prominent.

Are Charter Schools in achievement deserts providing higher achieving?

- ELAs:
  - 17 community school districts where the average proficiency rates of district schools is <25%.
  - 8 community school districts where the average proficiency of charter schools is <25%.

- Math:
  - 15 community school districts where the average proficiency rates of district schools is <25%.
  - 6 community school districts where the average proficiency of charter schools is <25%.

Limitations
- This study does not include statistical tests that would prove significance
- Dataset is confined to grades 3-8
- Only includes data with 4 demographic factors that can contribute to achievement
- Only measures achievement based on test scores
- Does not include data from Staten Island

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Background
This study shows the locations of low achieving schools in NYC, and attempts to illustrate the role of charter schools in this education landscape.

Defining Achievement
For the purpose of this study, a low achieving school is any school where the average proficiency of its students is below 25%. An achievement desert refers to a clustering of low achieving schools.

Methodology
Data from New York City Charter School Center and NYC Open Data
ArcGIS tools used:
- Geocode Addresses Tool
- Optimized hot spot analysis
- Definition query builder
- Attribute table tools (calculate geometry, select by location, select by attribute)