THE SOCIOECONOMIC STATUS OF NYC PUBLIC MIDDLE SCHOOLS

SY 2013-2014

Background Research on SES and Education

- Impact of students' neighborhood socioeconomic conditions on students and schools. Most of the empirical literature on neighborhood effects has focused on poverty

- Newer studies highlight the usefulness of multiple measures of neighborhood socioeconomic status in education research

- Household income and educational attainment: children who relocate to neighborhoods with higher educational attainment and higher income have higher rates of college attendance and earnings as adults

- Exposure to a violent felony affects students' ability to focus on academic tasks and is associated with reduced standardized test performance.

- Concentration of neighborhood factors in schools affect student achievement, motivation, interactions with classmates and teachers.

Four Characteristics of SES

Crime rate: Average number of violent felonies committed in each tract over 5 years (2009-2013) / 5-year average population of the tract * 1,000

**Drug/Alcohol rate:** Sum of hospital admissions in each tract in 2012 / 2012 population of the tract * 1,000

Household income: Median income of the households in each tract averaged over 5 years (2009-2013)

Educational attainment: Percent of residents ages 25 and older with a bachelor's degree in each tract averaged over 5 years (2009-2013)

Violent crime

Drug and alcohol hospitalizations

Household income

Educational attainment

NYC Open Data (NYPD)

Statewide Planning and Research Cooperative System (SPARCS)

American Community Survey (ACS) (Census)

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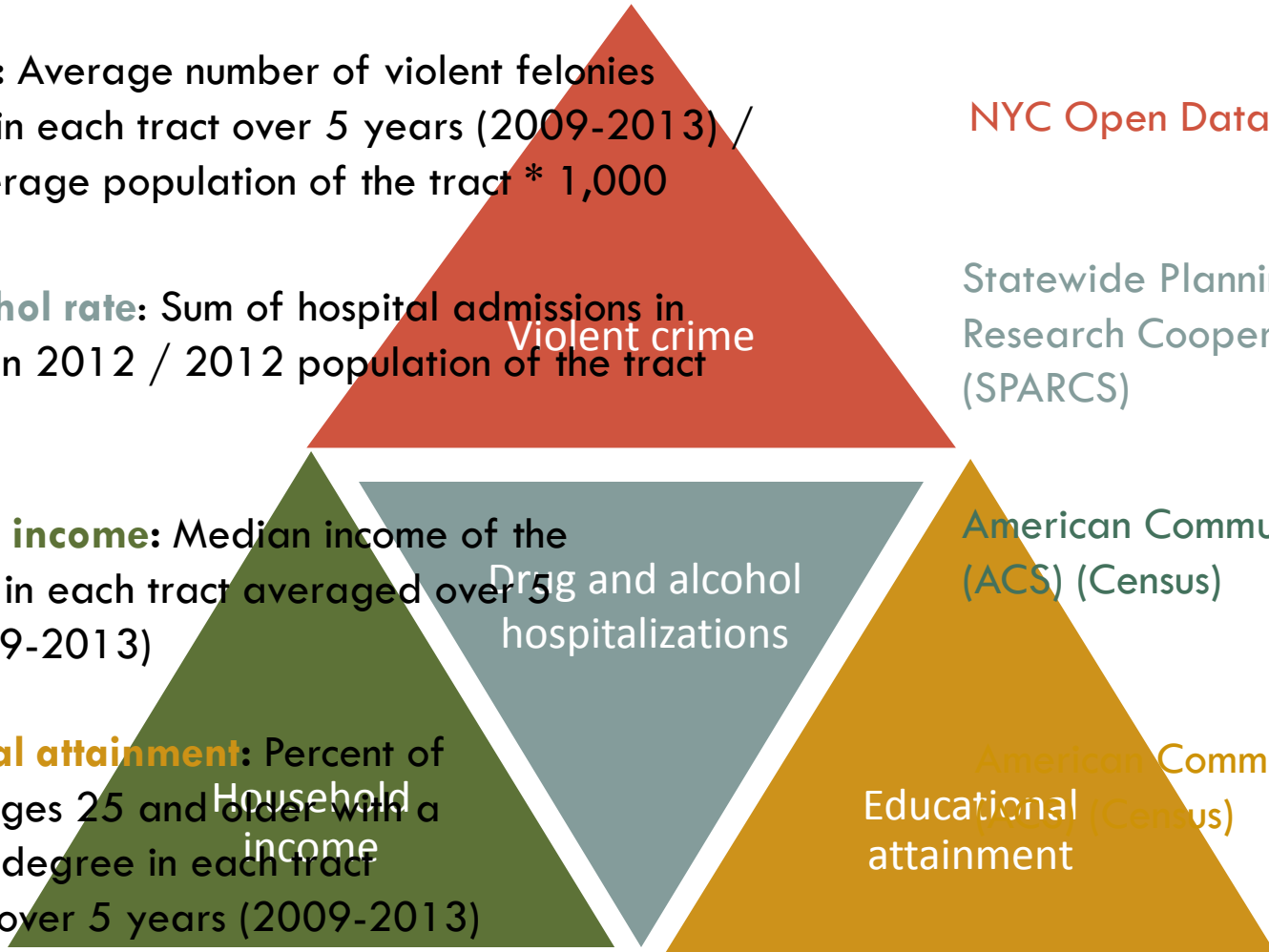
Unit of Measurement: Tract as Neighborhood

□ Census tracts - generally range between 1,200 – 8,000 residents

□ Provide the most granular view of the neighborhood without significantly compromising the reliability of the estimates

Method of Computing Estimates for Each Student and School

School	Student ID	Student's Census Tract & Borough		Census Tract & Borough on ACS Dataset	Median Household Income
01M301	3512061	Census Tract 323 Bronx	→	Census Tract 323 Bronx	$49,335
01M301	3802697	Census Tract 2.02 Manhattan	→	Census Tract 2.02 Manhattan	$26,355
01M301	7702196	Census Tract 2.02 Manhattan	→	Census Tract 2.02 Manhattan	$26,355
01M301	9112456	Census Tract 24 Manhattan	→	Census Tract 24 Manhattan	$25,833
01M301	19602618	Census Tract 10.02 Manhattan	→	Census Tract 10.02 Manhattan	$18,270
01M301	25572900	Census Tract 24 Manhattan	→	Census Tract 24 Manhattan	$25,833
01M301	31412267	Census Tract 227.01 Bronx	→	Census Tract 227.01 Bronx	$32,079

	Average Neighborhood Income
01M301	$29,151

Distribution of SES Characteristics

- ➢ the city

- ➢ the middle school student population

- ➢ the schools they attend

Middle School Sample

- 281 middle schools totaling 156,040 students
- Schools that serve only students in grades 5-8
- Includes Charter schools

Reliability of Tract Estimates

- We follow the Census guideline of excluding estimates that had an error rate of 30 percent
- This metric pertains to income and educational attainment - based on Census survey data
- Crime and drug/alcohol hospitalization rates were excluded for tracts with population below 500
- When we aggregate students' neighborhoods to the school level, if a school had over one third of students with an error rate above 30 percent for a particular variable, the variable was excluded from the school entirely
- This affected educational attainment in 83 schools and income in 1 school

Median Household Income

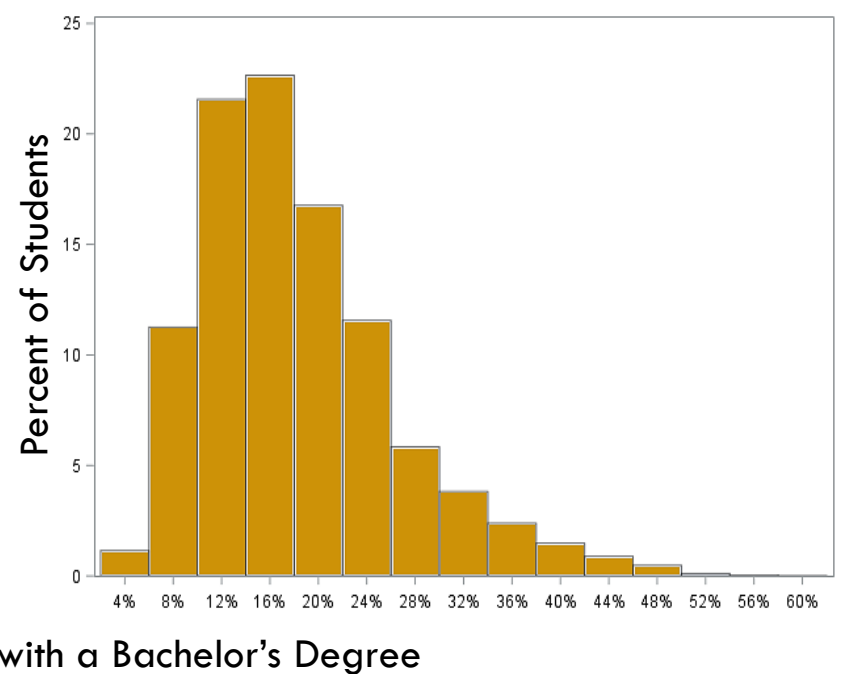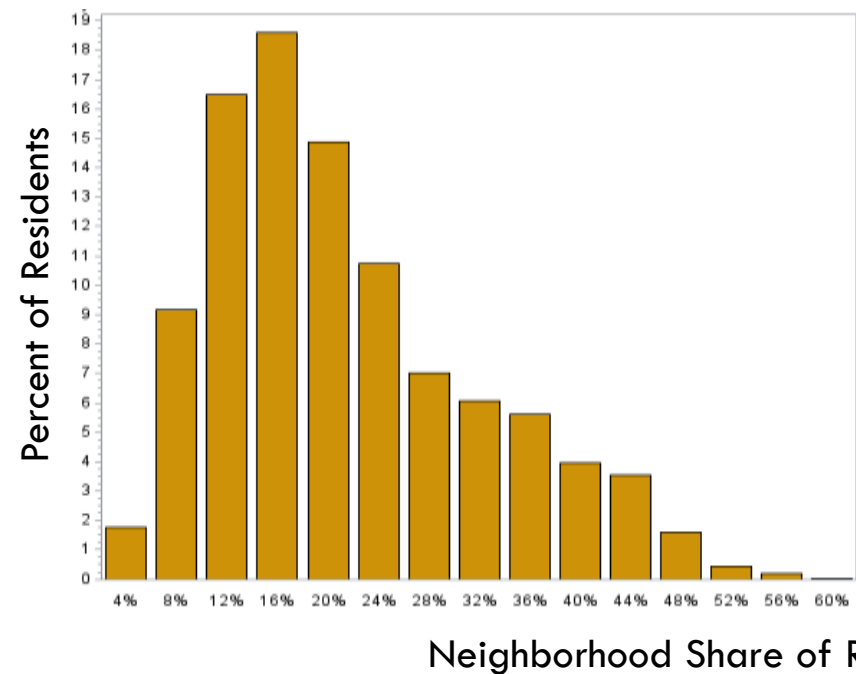| Neighborhood Variable	25th percentile	Median	75th percentile
City Neighborhoods	$37,222	$52,803	$76,431
Students' Neighborhoods	$32,051	$45,208	$62,230
Middle Schools' Average	$31,738	$40,180	$51,094

Educational Attainment

Neighborhood Variable	25th percentile	Median	75th percentile
City Neighborhoods	14%	20%	29%
Students' Neighborhoods	13%	17%	22%
Middle Schools' Average	14%	17%	21%

City Neighborhoods — Percent of Households vs. Neighborhood Median Household Income

Students' Neighborhoods — Percent of Students vs. Neighborhood Median Household Income

Percent of Residents vs. Neighborhood Share of Residents with a Bachelor's Degree

Percent of Students vs. Neighborhood Share of Residents with a Bachelor's Degree
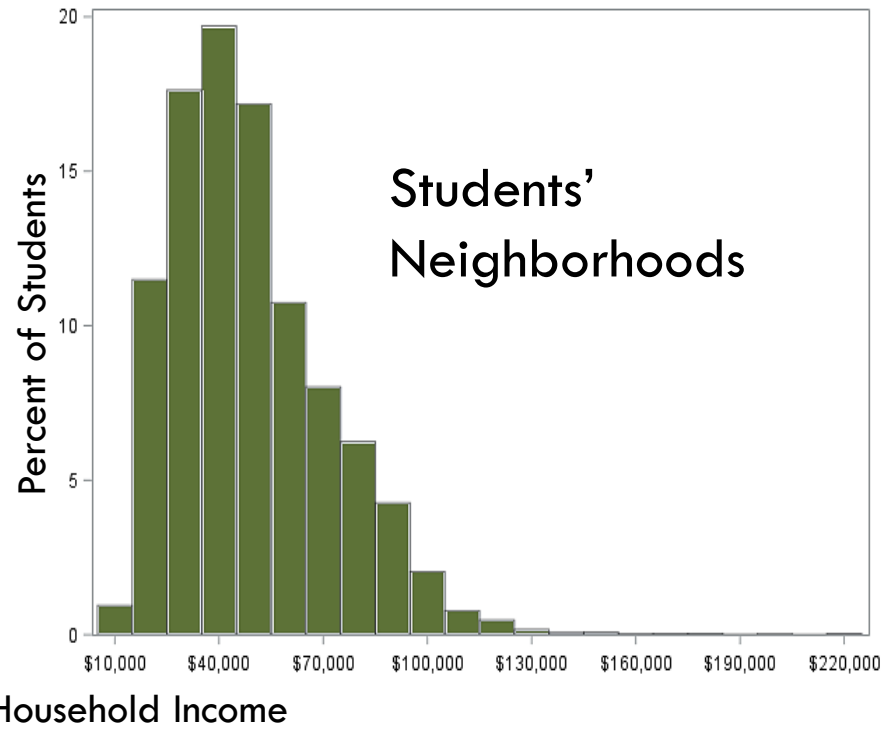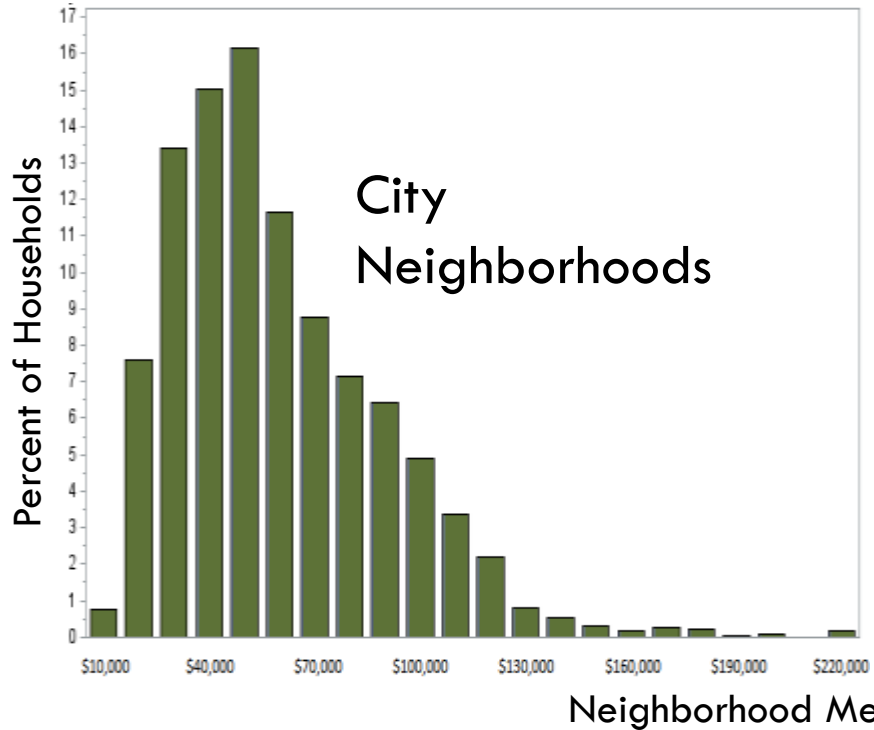
Average Income and Educational Attainment Across Middle Schools

Percent of Schools — School's Average Income

Percent of Schools — Schools' Average Educational Attainment
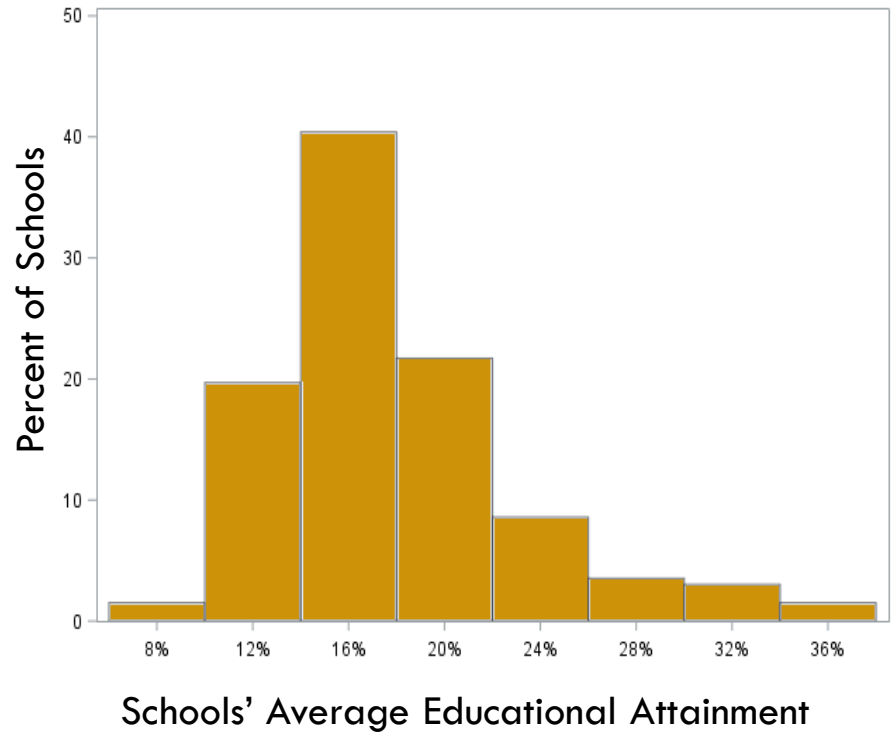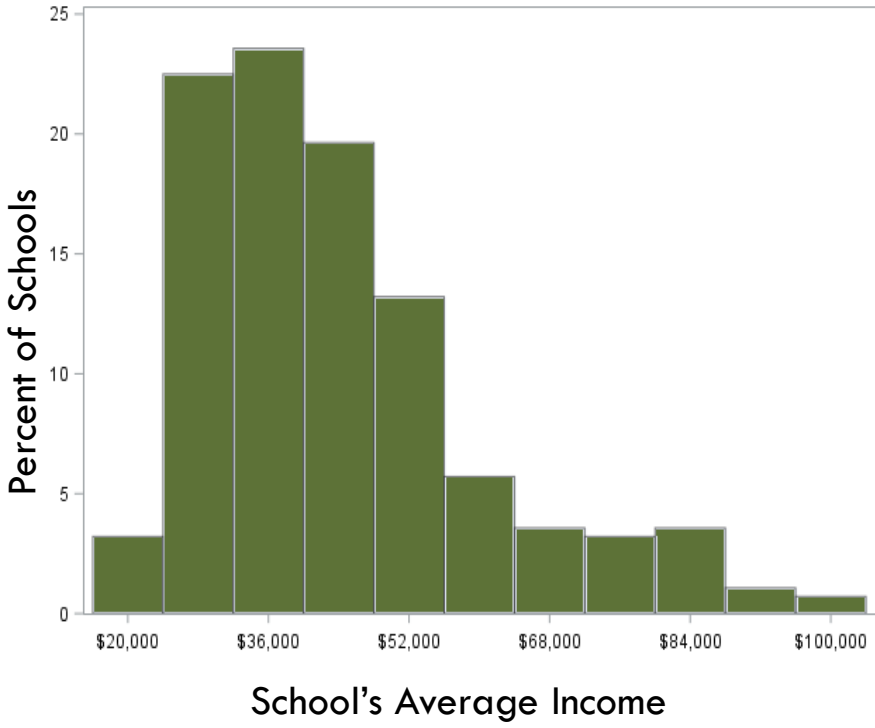
Rate of Violent Felony Crime per 1,000 Residents

Neighborhood Variable	25th Percentile	Median	75th Percentile
City Neighborhoods	<1	2	3
Students' Neighborhoods	<1	2	4
Middle Schools' Average	2	3	4

Rate of Drug and Alcohol Hospitalization per 1,000 Residents

Neighborhood Variable	25th Percentile	Median	75th Percentile
City Neighborhoods	3	5	7
Students' Neighborhoods	3	5	8
Middle Schools' Average	5	7	10

City Neighborhoods — Percent of residents vs. Neighborhood Violent Crime Rate

Students' Neighborhoods — Percent of students vs. Neighborhood Violent Crime Rate

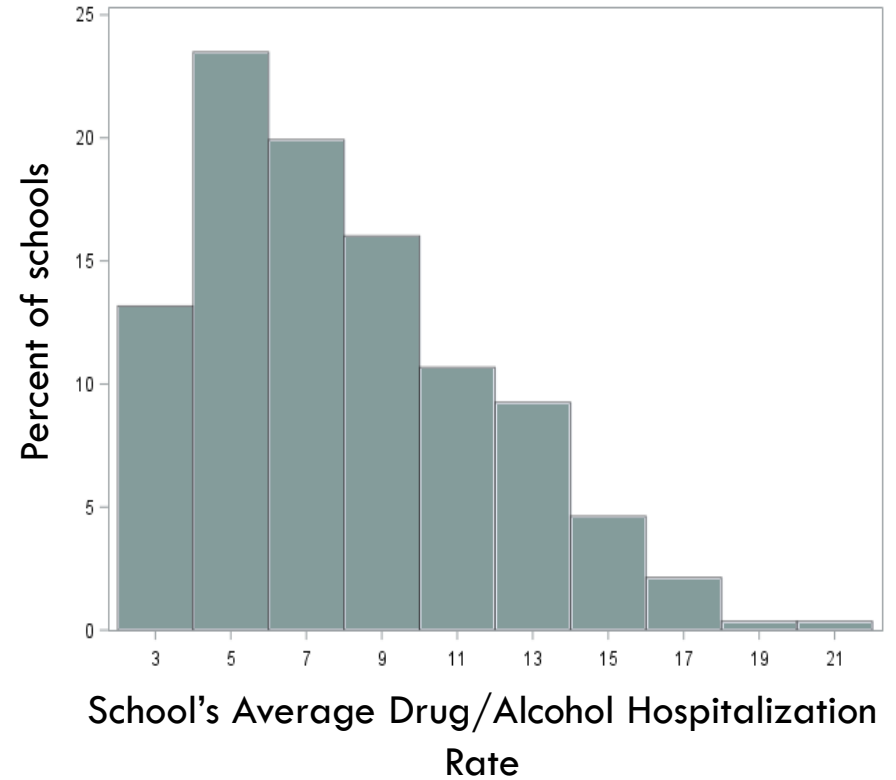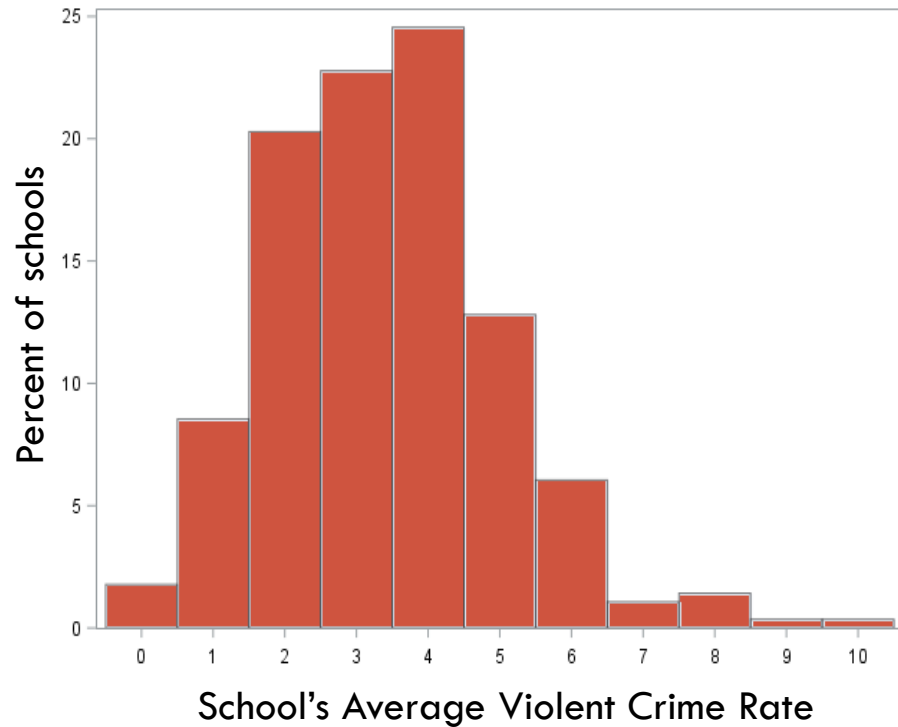Percent of residents vs. Neighborhood Drug and Alcohol Hospitalization Rate
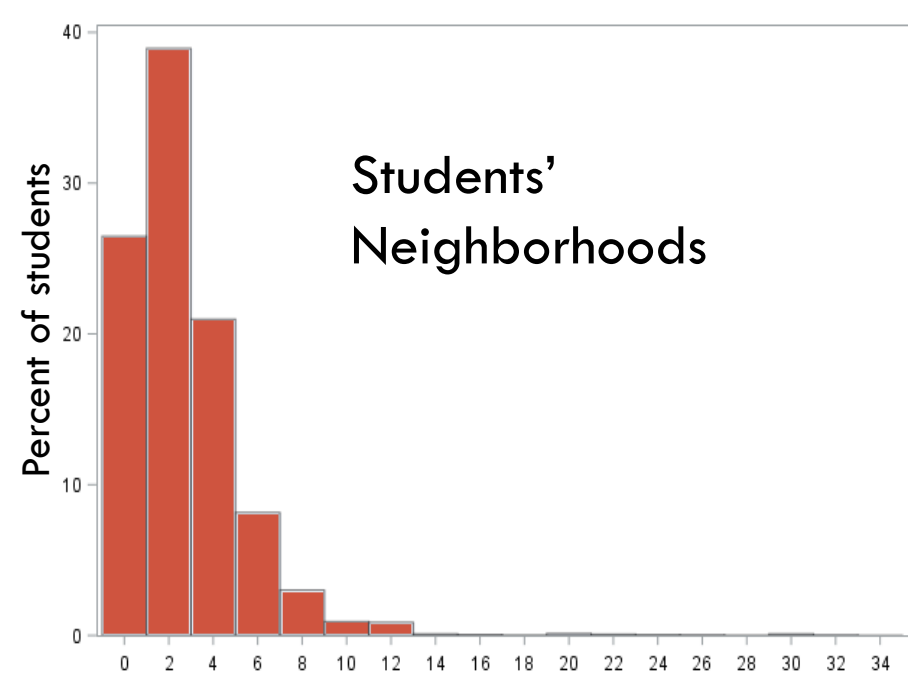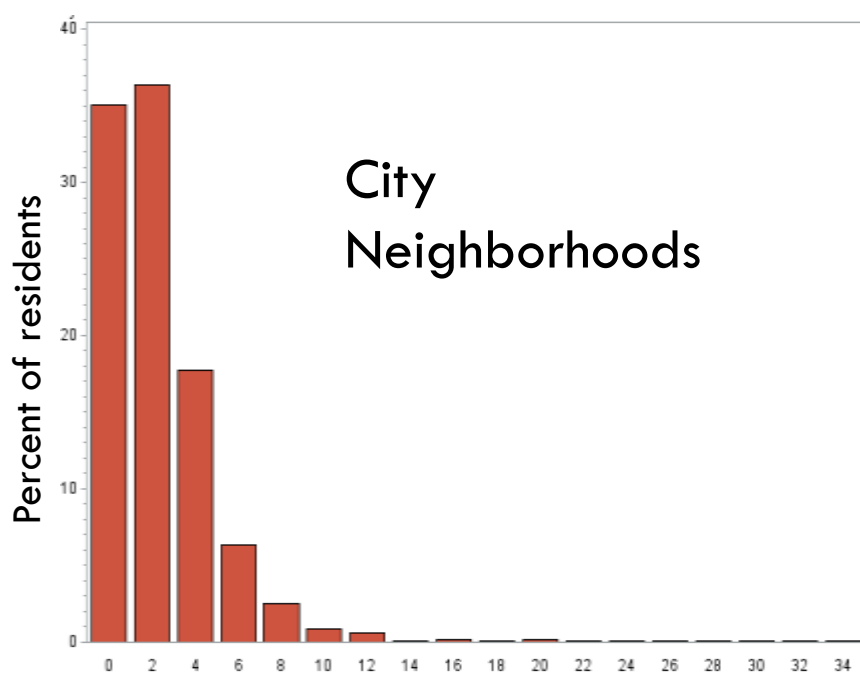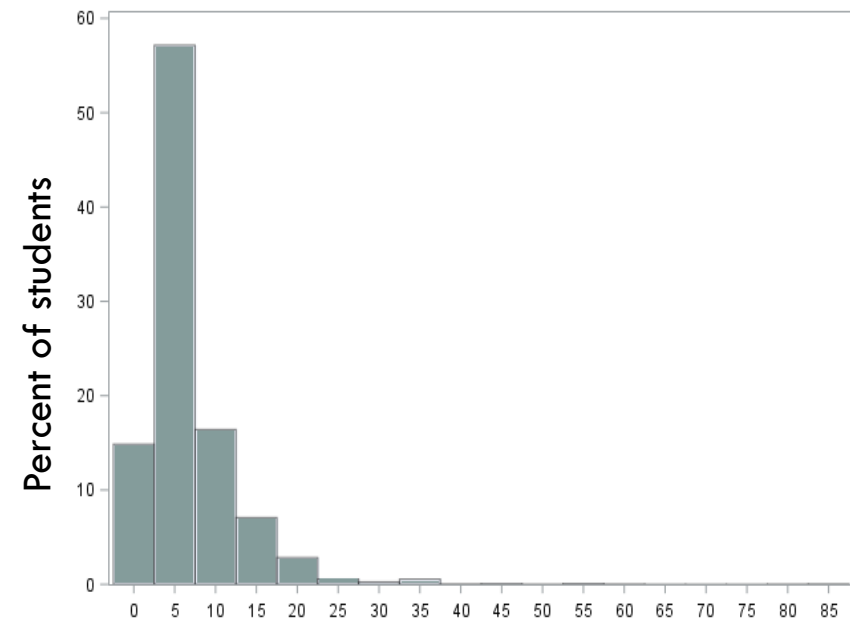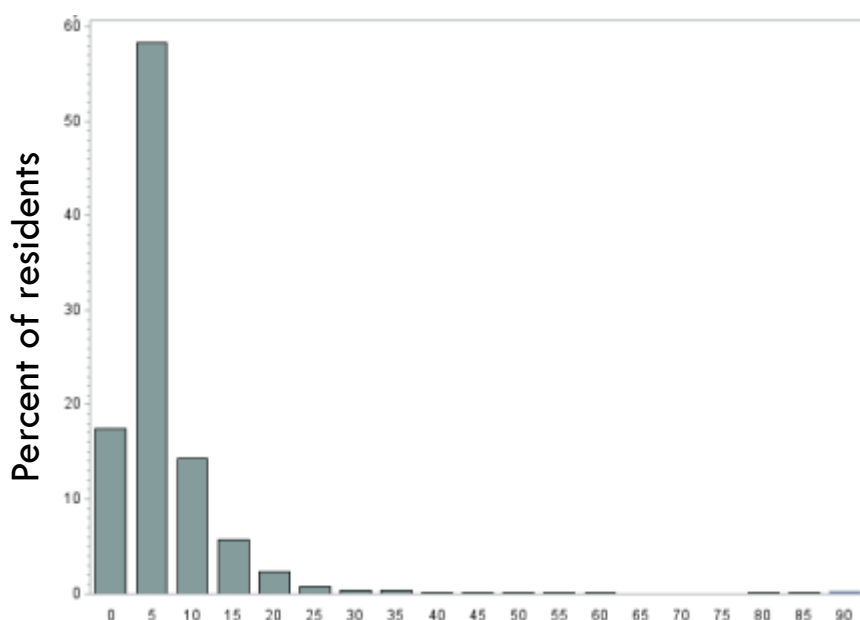
Percent of students vs. Neighborhood Drug and Alcohol Hospitalization Rate

Average Crime Rates and Drug and Alcohol Rates Across Middle Schools

School's Average Violent Crime Rate

School's Average Drug/Alcohol Hospitalization Rate

Four Characteristics of Low-SES Student Neighborhoods

- **Bottom quartile of income**: $32K and below
- **Bottom quartile of educational attainment**: 13% or fewer residents who went to college
- **Top quartile of drug and alcohol rates**: 8 hospitalizations and above
- **Top quartile of crime**: 4 felonies and above

# Two Ways to Look at the Distribution of Students from Low-SES Neighborhoods

- **Across schools:**
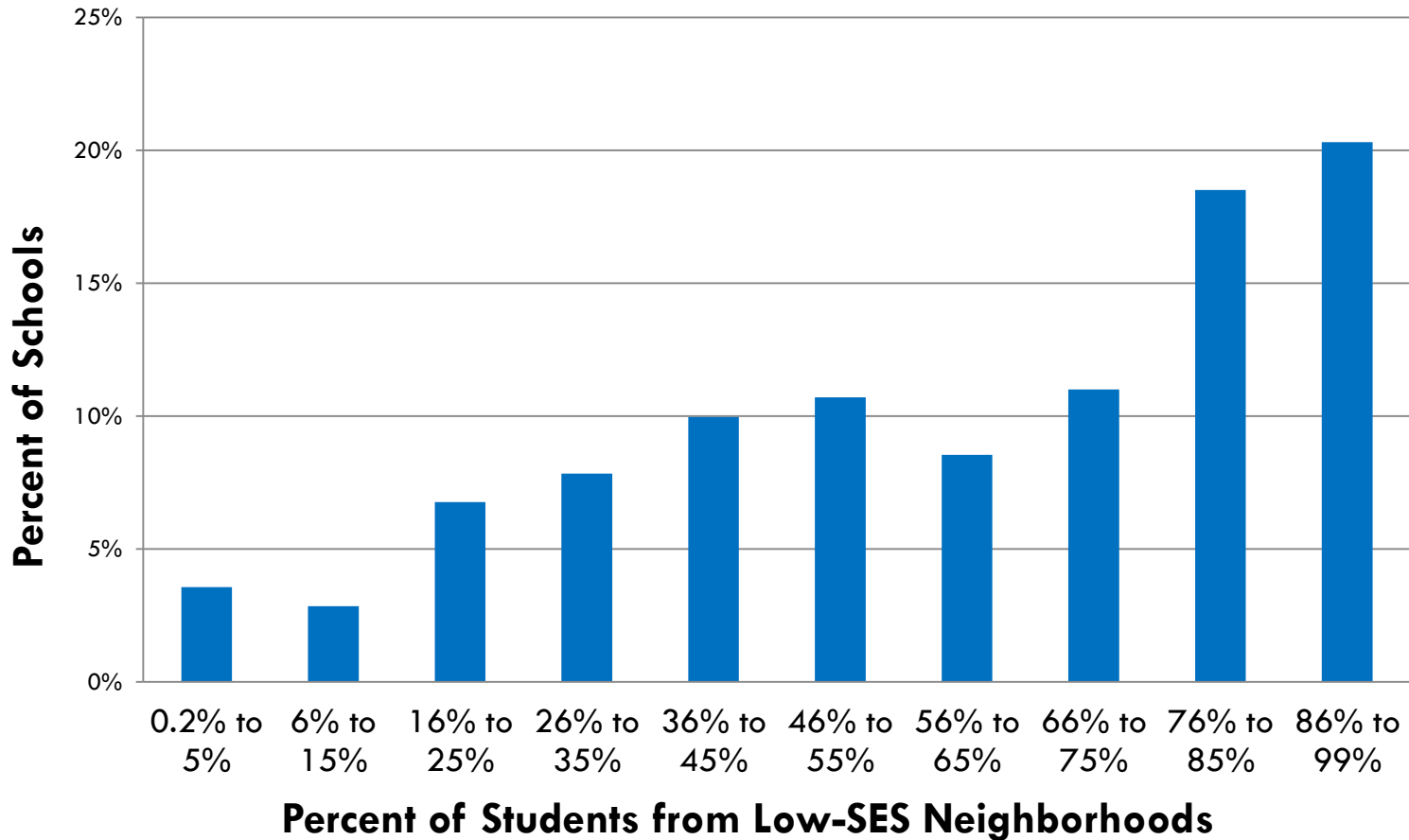 - Are the majority of all students from a low-SES neighborhood concentrated in a small share of schools?

- **Within schools:**
  - How many schools have a large percentage of their student population coming from low-SES neighborhoods?

25 Percent of Middle Schools Serve Half of All Students from Neighborhoods with At Least One Low-SES Characteristic

Percent of Students from Low-SES Neighborhoods (y-axis: 0%, 25%, 50%, 75%, 100%)

Percent of Schools (x-axis: 0%, 25%, 50%, 75%, 100%)
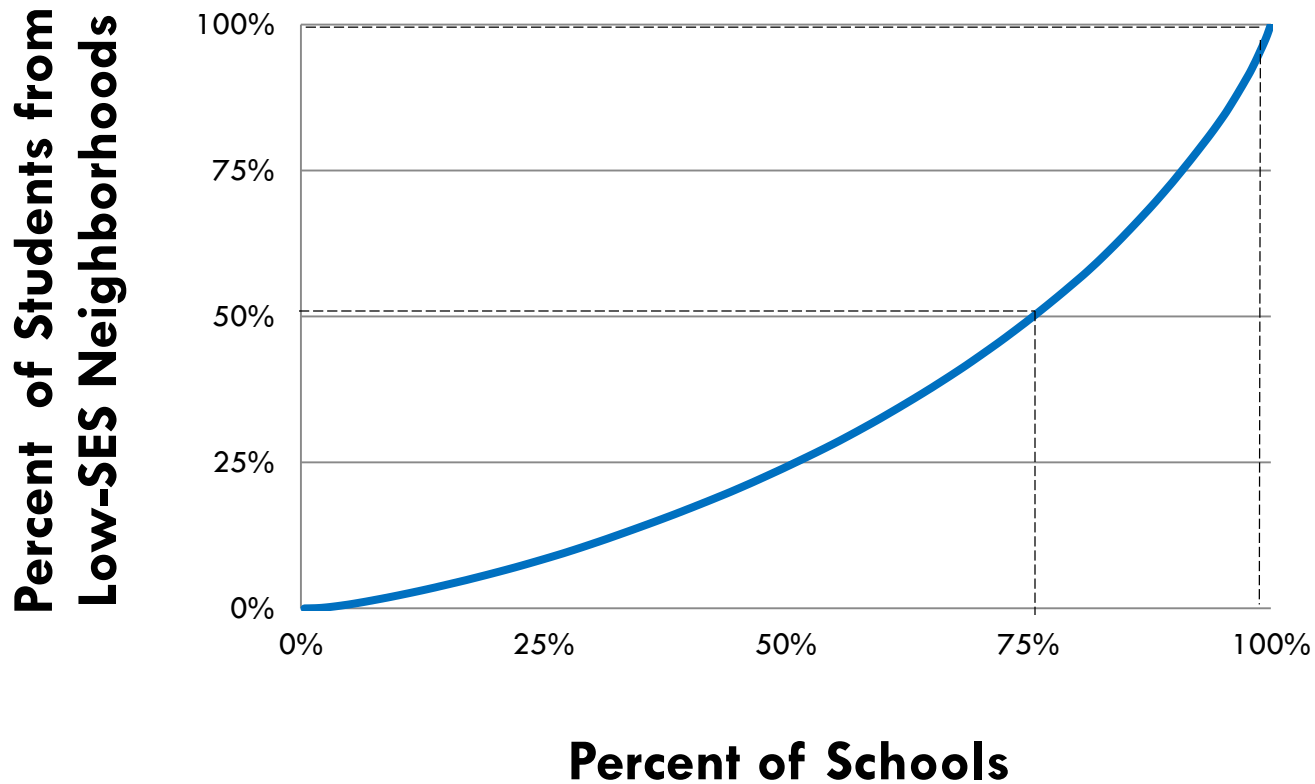
Schools' Shares of Students from Low-SES Neighborhoods

Main Findings

- Our study elicited two main findings.
  - A fraction of middle schools, 25 percent, serve half of all students from a low-SES neighborhood.
  - When we look at the population in each school, we found students from low-SES neighborhoods comprised the majority of the student population in half of all middle schools.
    - In these 50 percent of schools, anywhere between two thirds to 99 percent of students came from neighborhoods with at least one low-SES characteristic.

Potential Applications of the Data

- ❑ Achievement gap and SES

- ❑ High school choice and SES

- ❑ Graduation rates by SES of high schools

- ❑ Course offerings and SES of middle schools

- ❑ Socioeconomic integration

- ❑ Distance between the address of low-SES students and high performing middle school