



Monitoring Cities

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Performance Analysis of Schools in New York City : Race to Rank

Project Objective

To study the performance of elementary school students in New York City. We analyze grades as an indicator of performance versus the following attributes:

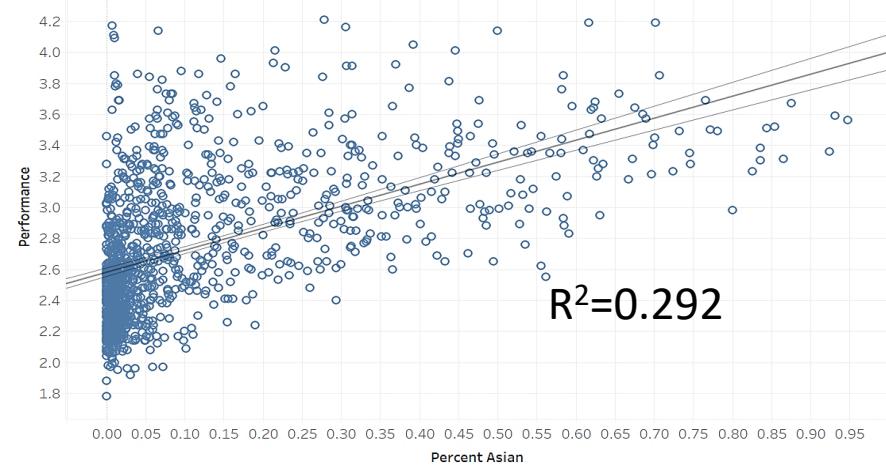
- ❖ Income
- ❖ Ethnicity
- ❖ English Learners
- ❖ Students with Disabilities
- ❖ School Enrollment
- ❖ Economic Need Index
- ❖ Attendance Rate
- ❖ School Leadership





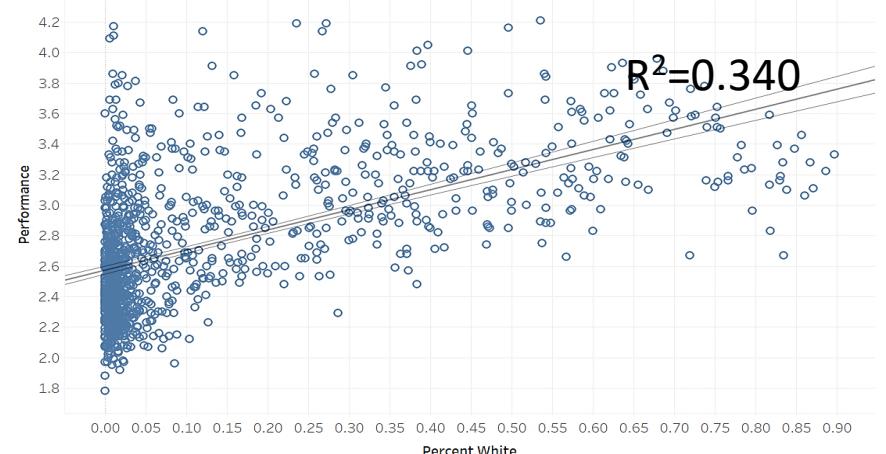
Performance Vs Ethnicity

Performance Vs Asian



Percent Asian vs. Performance.

Performance Vs White



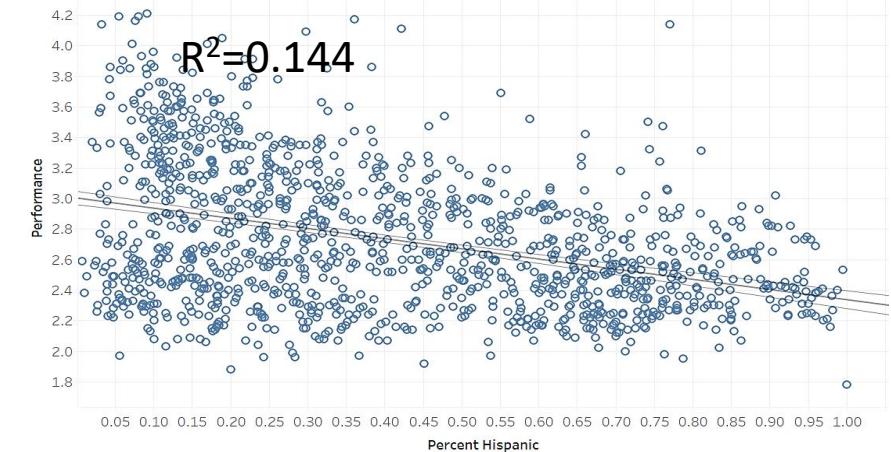
Percent White vs. Performance.

- ❖ It is observed that the performance is related directly to the percentage of different ethnic groups in the schools.

- ❖ The higher the number of white and Asian kids, the better is the performance of the school.

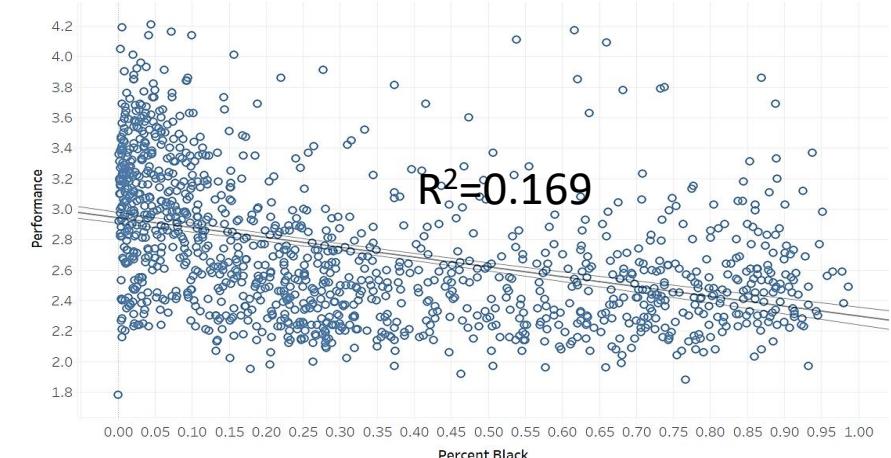
- ❖ The higher the number of Black and Hispanic kids, the performance of the school decreases.

Performance Vs Hispanic



Percent Hispanic vs. Performance.

Performance Vs Black

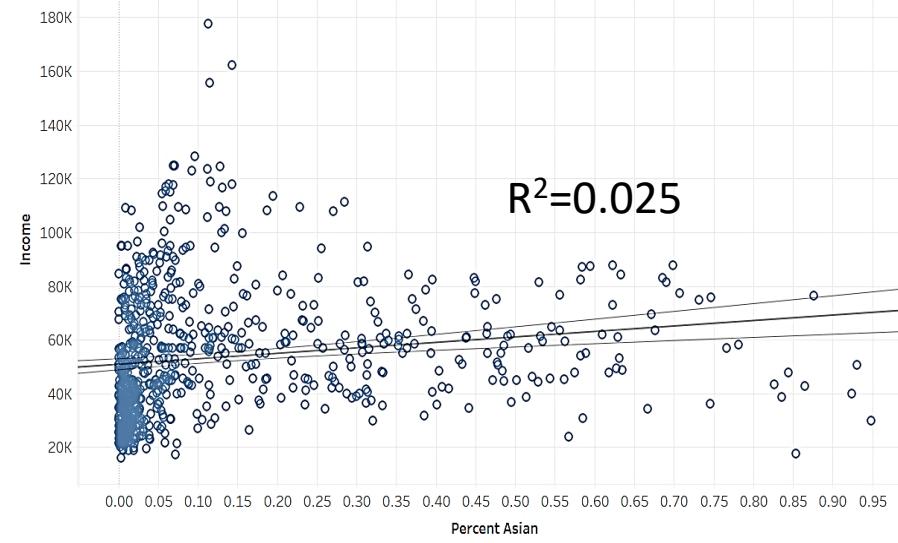


Percent Black vs. Performance.



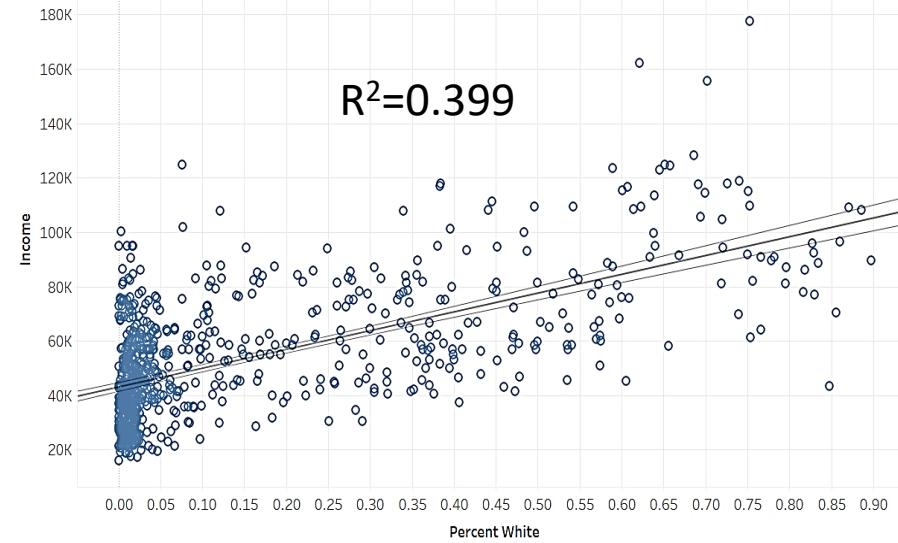
Income Vs Ethnicity

Income Vs Asian



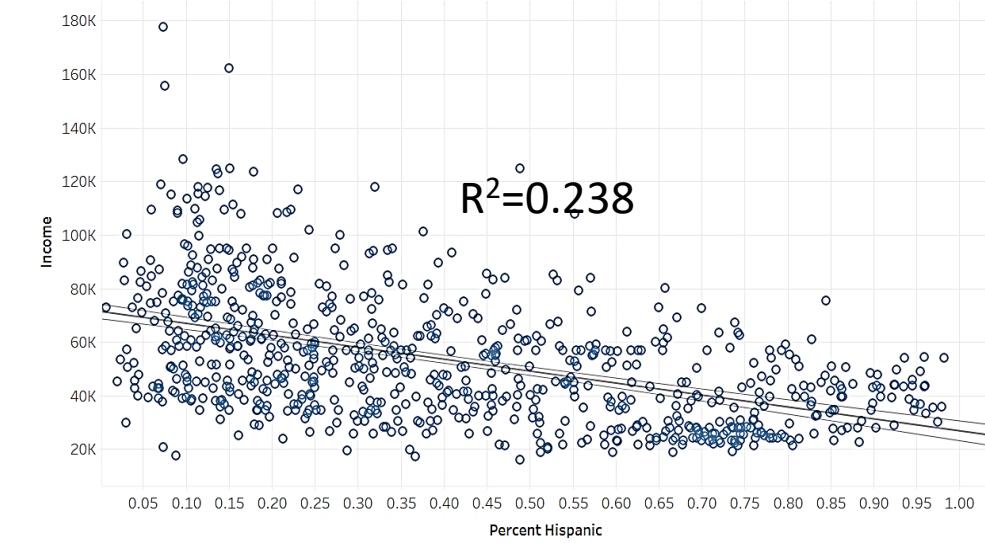
❖ Household income varies with ethnic group mix.

Income Vs White

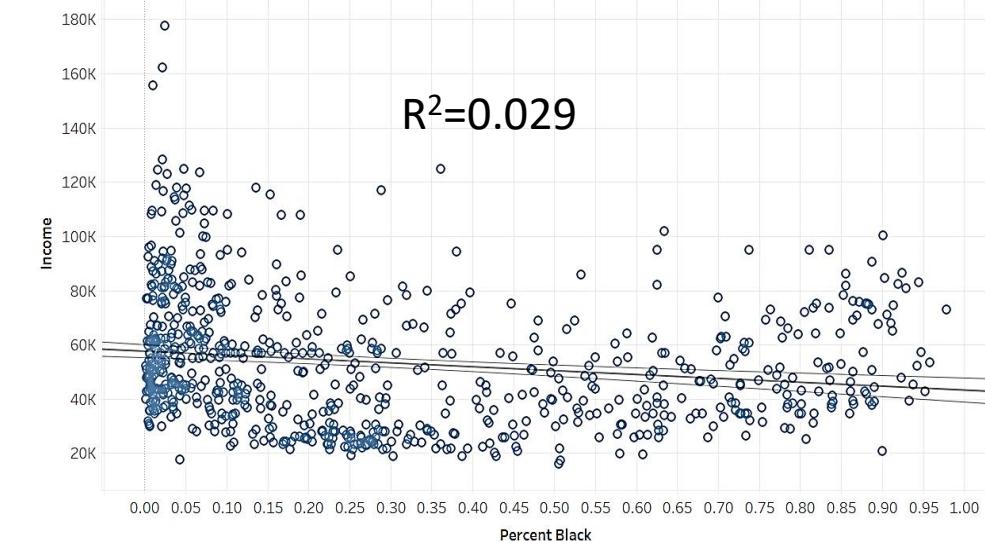


❖ Household income decreases with increase in Hispanic and Black population in the district.

Income Vs Hispanic



Income Vs Black



Performance Vs Income

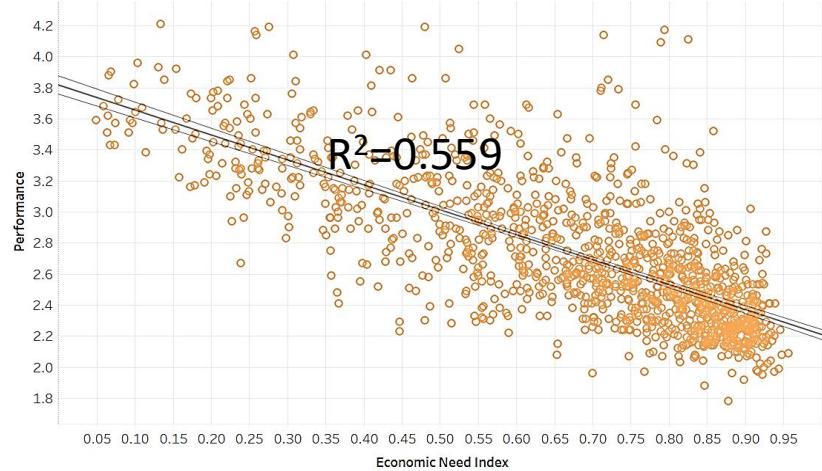
- ❖ It is observed that the performance in the schools is highly impacted by the income group of the household to which the students belong.

- ❖ The higher the income the better the performance.

- ❖ The performance of students staying in temporary housing or claiming house rental allowance is low.

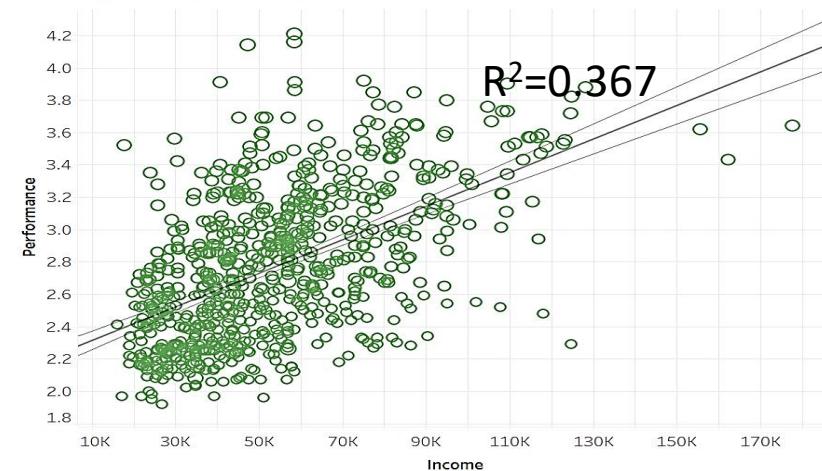
- ❖ Economic Need Index = $(\text{Percent Temporary Housing}) + (\text{Percent HRA-eligible} * 0.5) + (\text{Percent Free Lunch Eligible} * 0.5)$

Performance Vs Economic Need Index



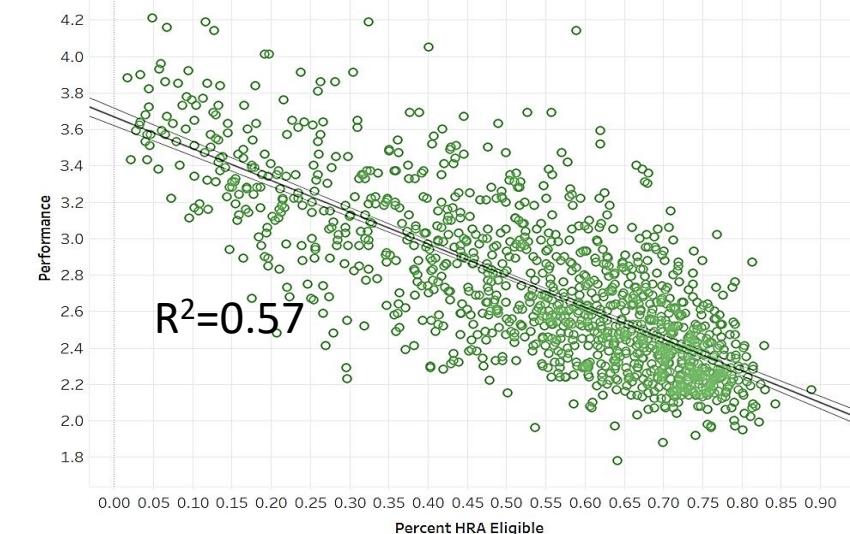
Economic Need Index vs. Performance.

Performance Vs Income

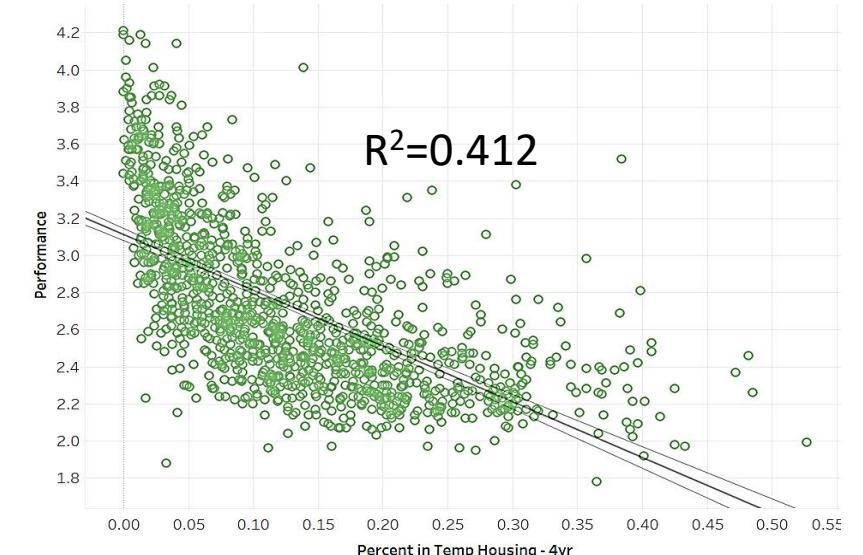


Income vs. Performance. Size shows sum of Performance.

Performance Vs HRA Eligibility



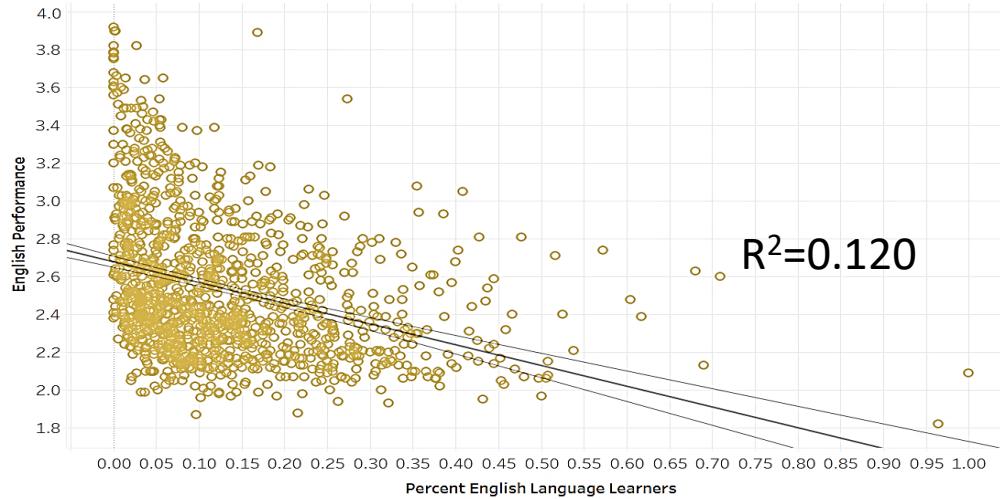
Performance Vs Temp Housing



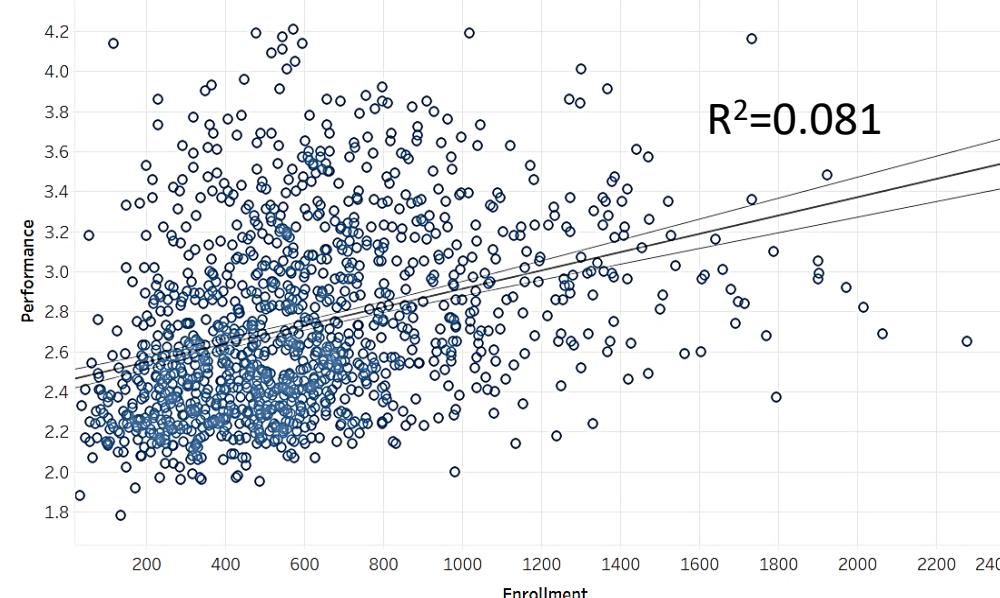


Performance Vs Student

English Language Learners Vs English Grade



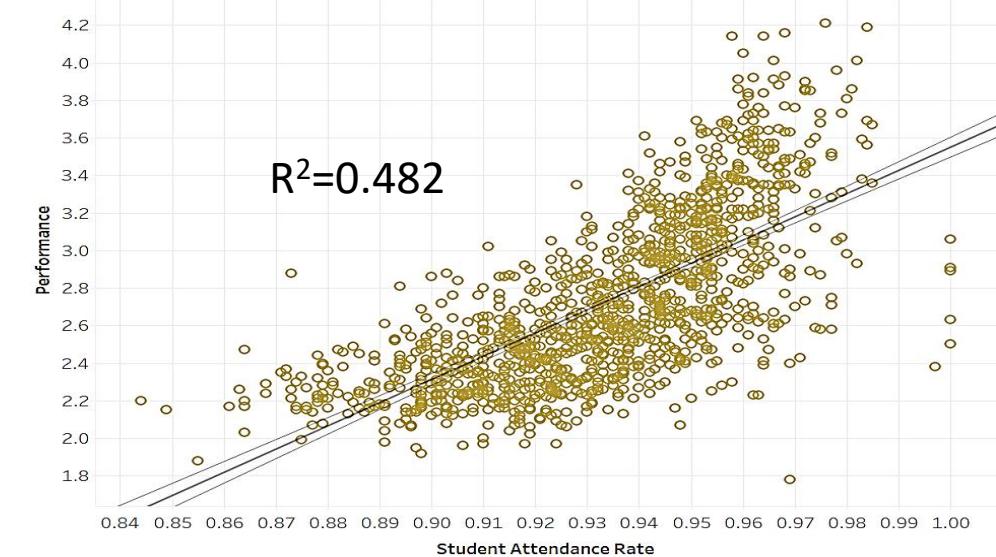
Performance Vs Enrollment



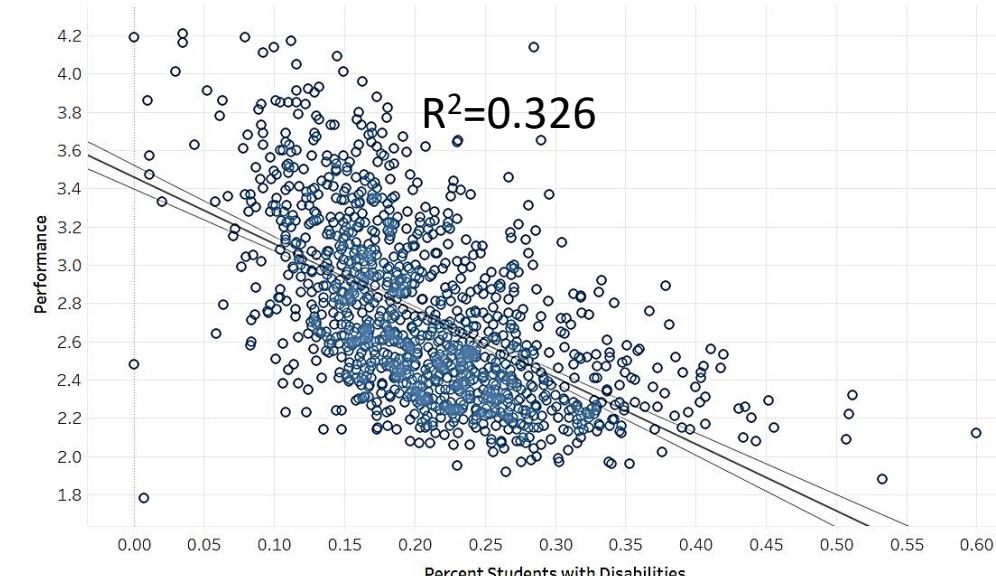
Enrollment vs. Performance.

- ❖ Non-Native English Speakers, who are learning English score low grades than the students who are Native English language speakers.
- ❖ The Performance in Schools having higher Enrollment rates and attendance rates is high compared to the other schools.
- ❖ Students with Disability are finding it difficult to score better grades.

Performance Vs Student Attendance



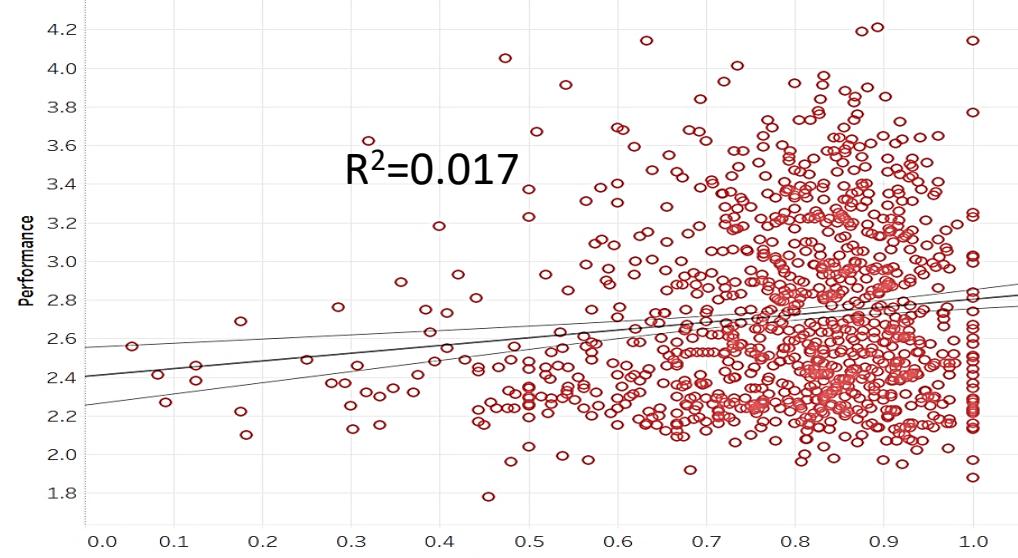
Performance Vs Disability



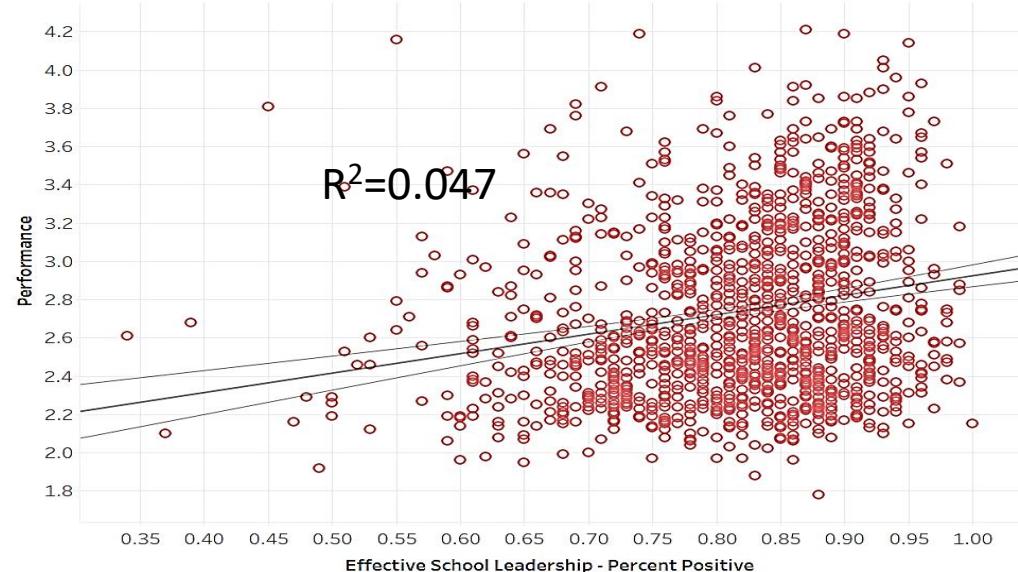
Percent Students with Disabilities vs. Performance.

Performance Vs Teaching

Performance Vs Teacher Experience Greater than 3 Yrs

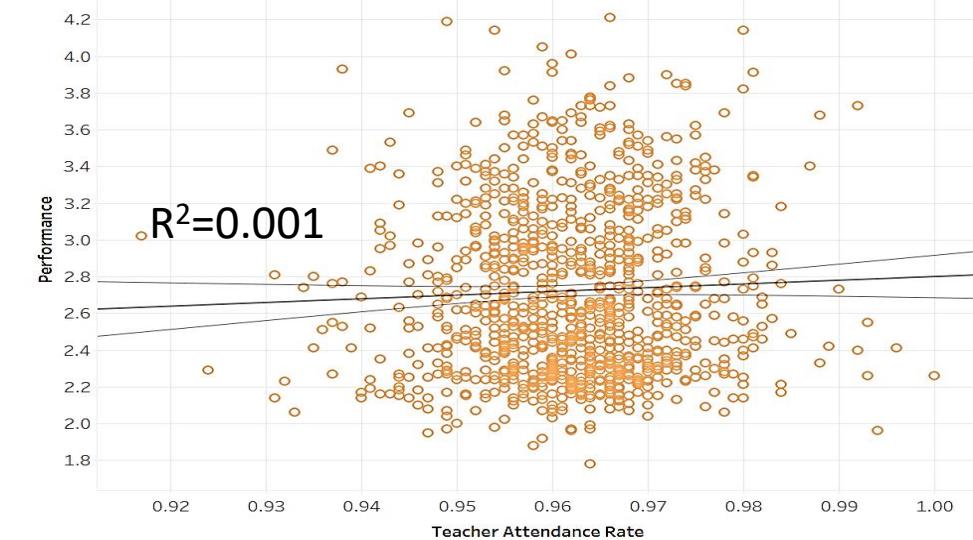


Performance Vs School Leadership

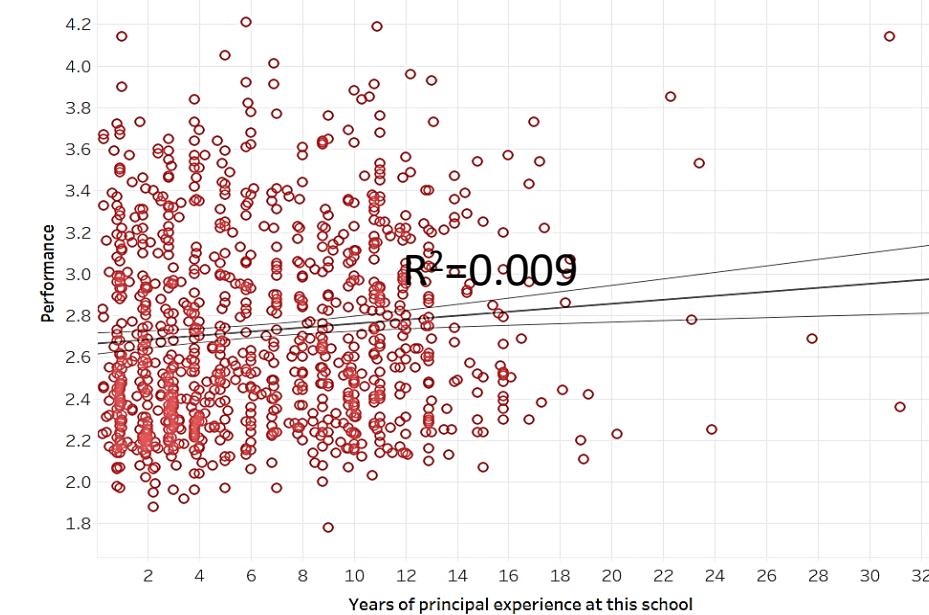


- ❖ Schools having better Leadership perform better.
- ❖ Higher the experience of the teachers & Principals in the schools better is the overall performance of the schools.
- ❖ The Attendance rate of teachers in School also has an influence of Performance of the School.

Performance Vs Teacher Attendance

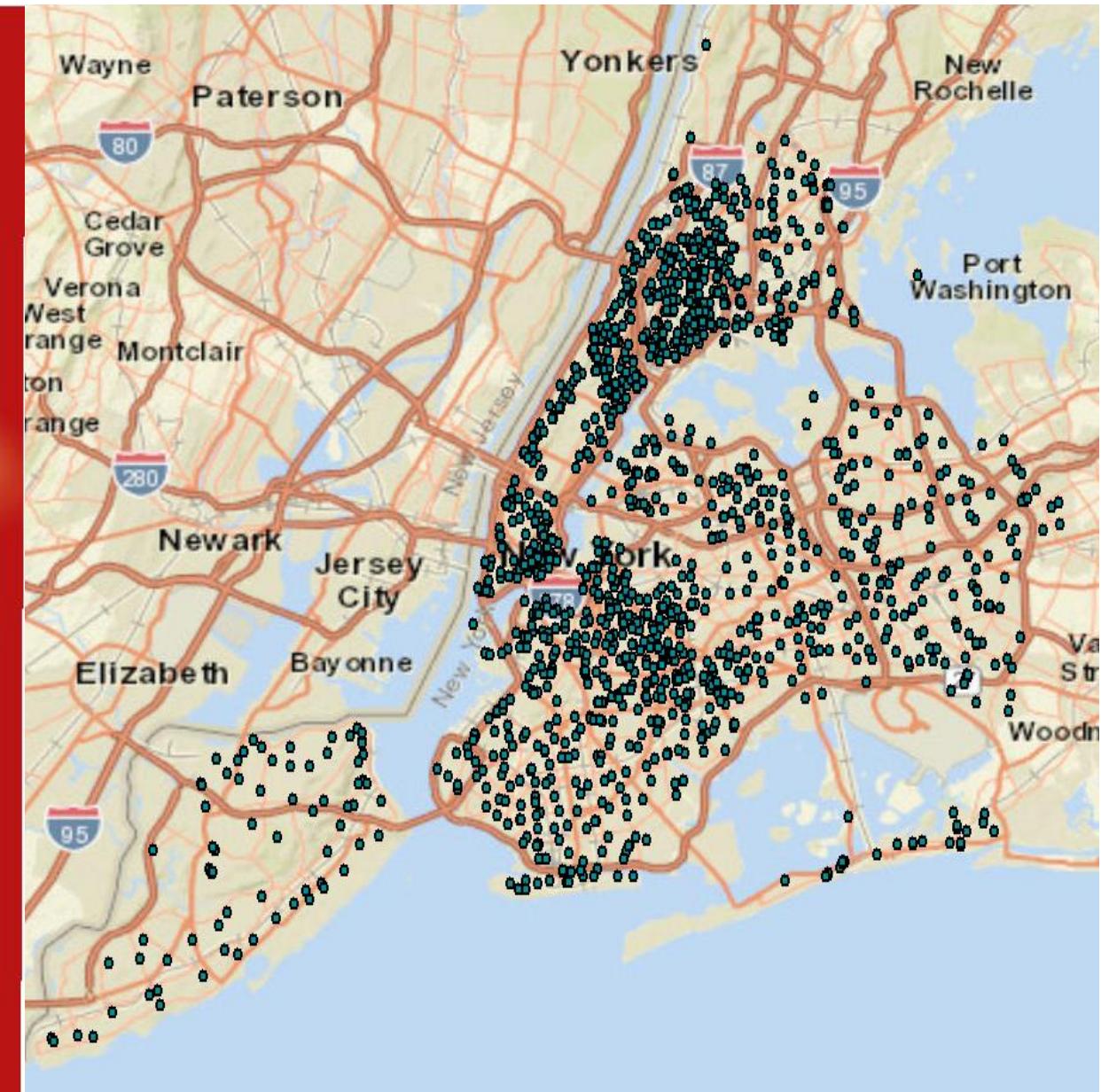
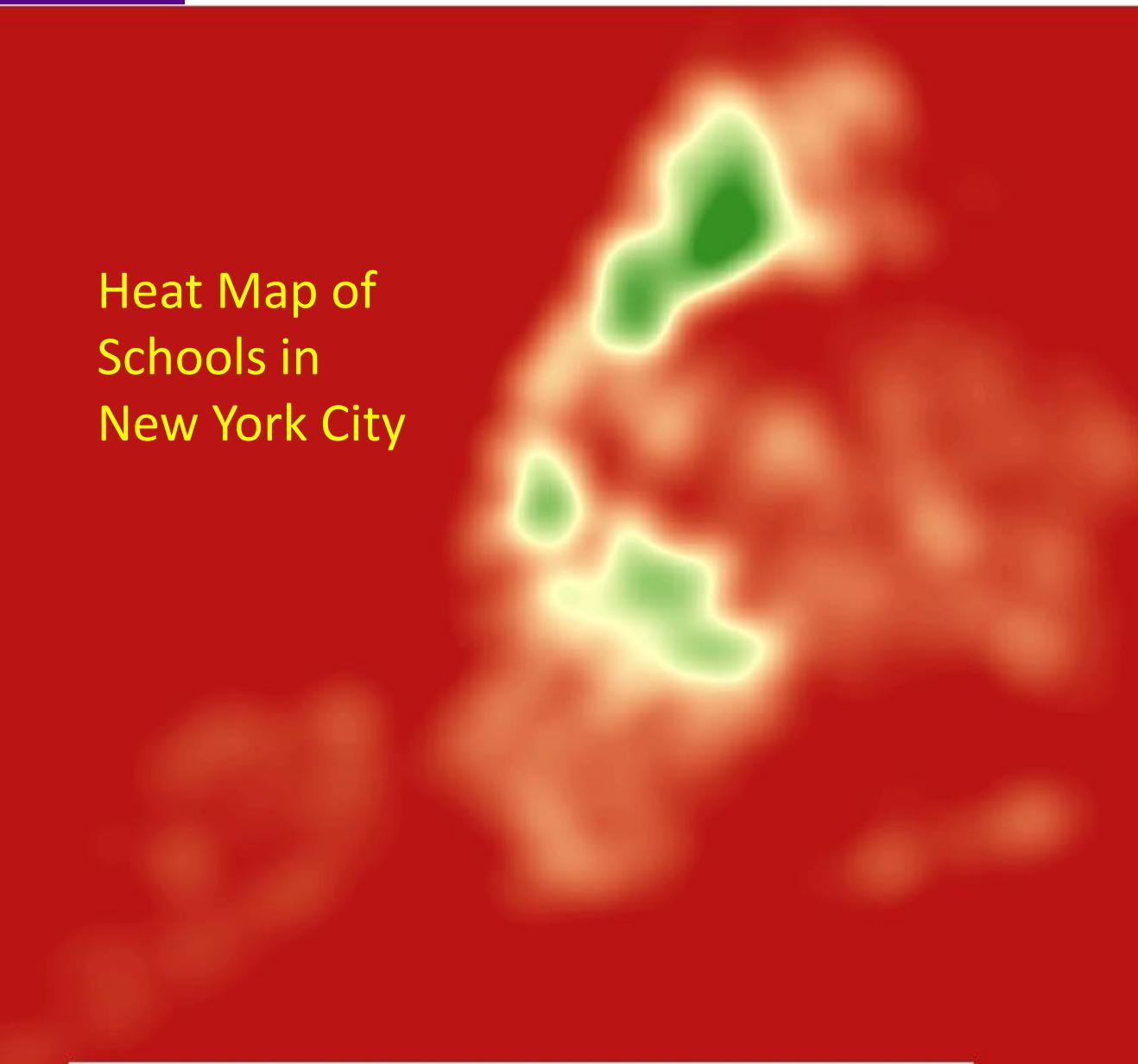


Performance Vs Principal Experience



Density of Schools in NYC

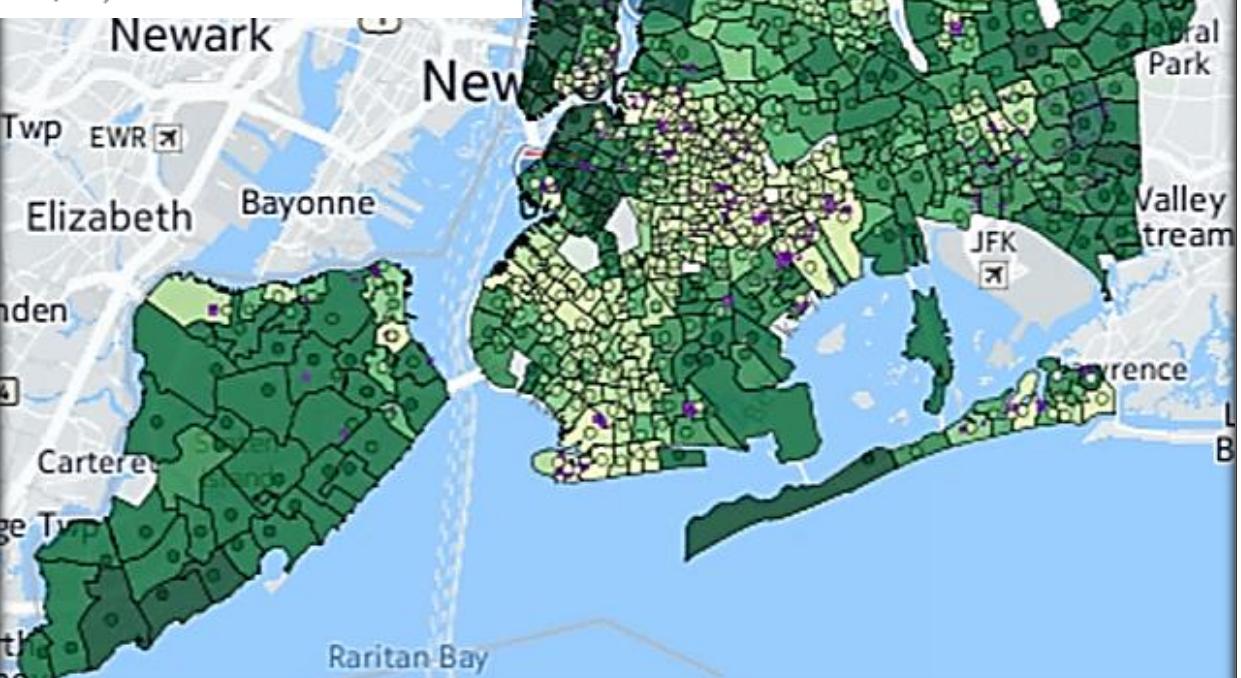
Heat Map of
Schools in
New York City



Income & Ethnicity in School Zones

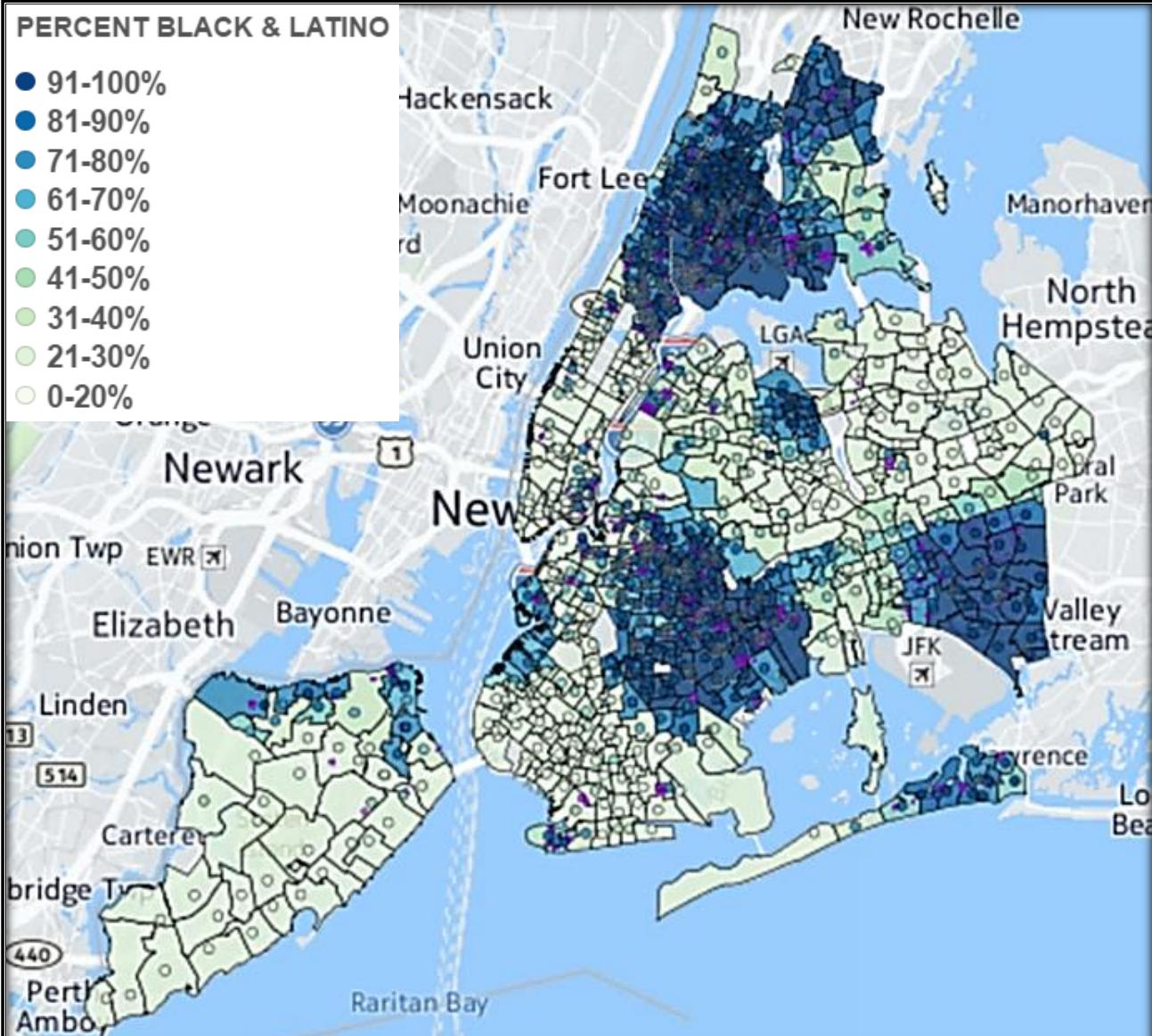
MEDIAN HOUSEHOLD INCOME

- \$95,000 OR MORE
- \$70,000-95,000
- \$60,000-70,000
- \$53,000-60,000
- \$47,000-53,000
- \$41,000-47,000
- \$30,000-41,000
- \$24,000-30,000
- \$24,000 OR LESS



PERCENT BLACK & LATINO

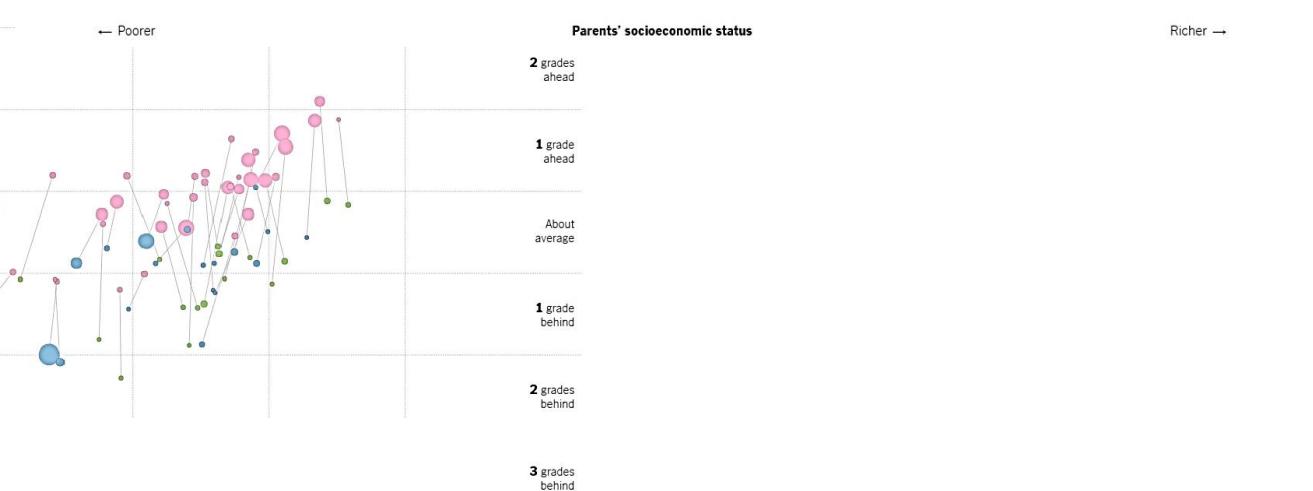
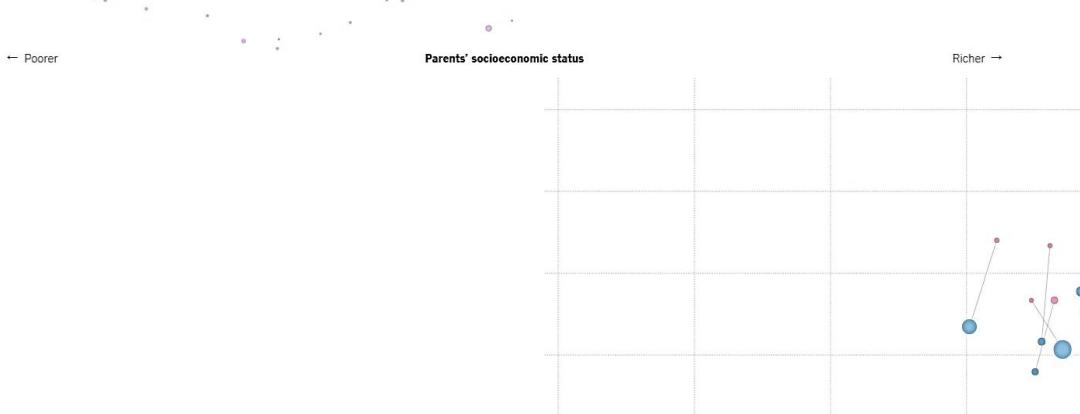
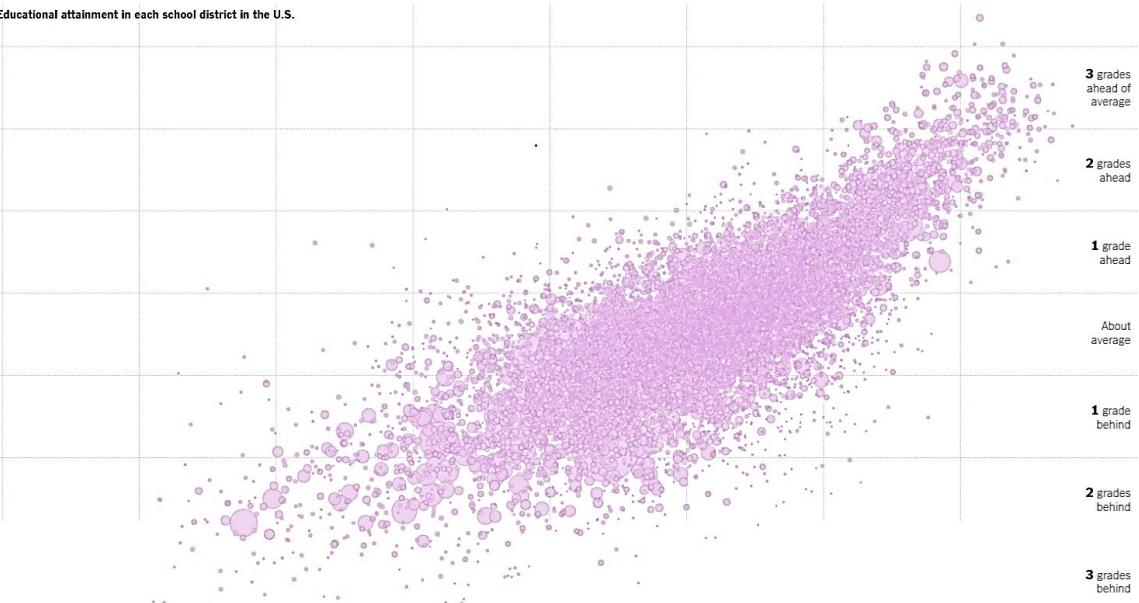
- 91-100%
- 81-90%
- 71-80%
- 61-70%
- 51-60%
- 41-50%
- 31-40%
- 21-30%
- 0-20%





Relating Overall Performance of USA

Educational attainment in each school district in the U.S.



Here, we're showing only districts where black and white students or Hispanic and white students came from similar backgrounds.



What We Understand?

- Students from the same economic groups belonging to the different ethnicity have varying performance – Whites & Asians Perform Better than Blacks & Hispanics
- The High Income zones are densely populated by Whites and the low Income group by Blacks & Hispanics.

There are a Few Exceptions that has caught attention:

- P.S.172 Beacon School of Excellence has a very high ratio of Hispanics (77%) and a very high No. of Students under Economic Need Index (71.5%), but they still tend to perform much above the average standards.
- P.S.6 Corporal Allan F. Kivlehan School has a very high ratio of White (83.4%) and a very low economic Index (23.9%), but they still tend to perform much below the average standards.
- This could be attributed to many intangible factors such as
 - Rigorous Instruction - Way of teaching followed by School
 - Collaborative Teaching - More Attention to student interest
 - Supportive Environment - Better Care of Students
 - Effective School Leadership – Good Principal, Teachers & Staff
 - Strong Family-Community Ties – Welcome & Incorporate Values
 - Trust Rating – Trust on School Staff by Students & Parents

How interesting and challenging is the curriculum?
How effective is the teaching and learning?
How well does the school assess what students are learning?
How well do teachers work with each other?
How clearly are high expectations communicated to students and staff?

