



# JP Morgan Chase Data for Good Hackathon: Group 8

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## Problem Space

How can we increase the performance of disadvantaged schools in the New York City school district?

Where should investments be made to bring about improvement?



## Our Success Metric

We are using student proficiency in Math and English/Language Arts as our metric of success. Why?

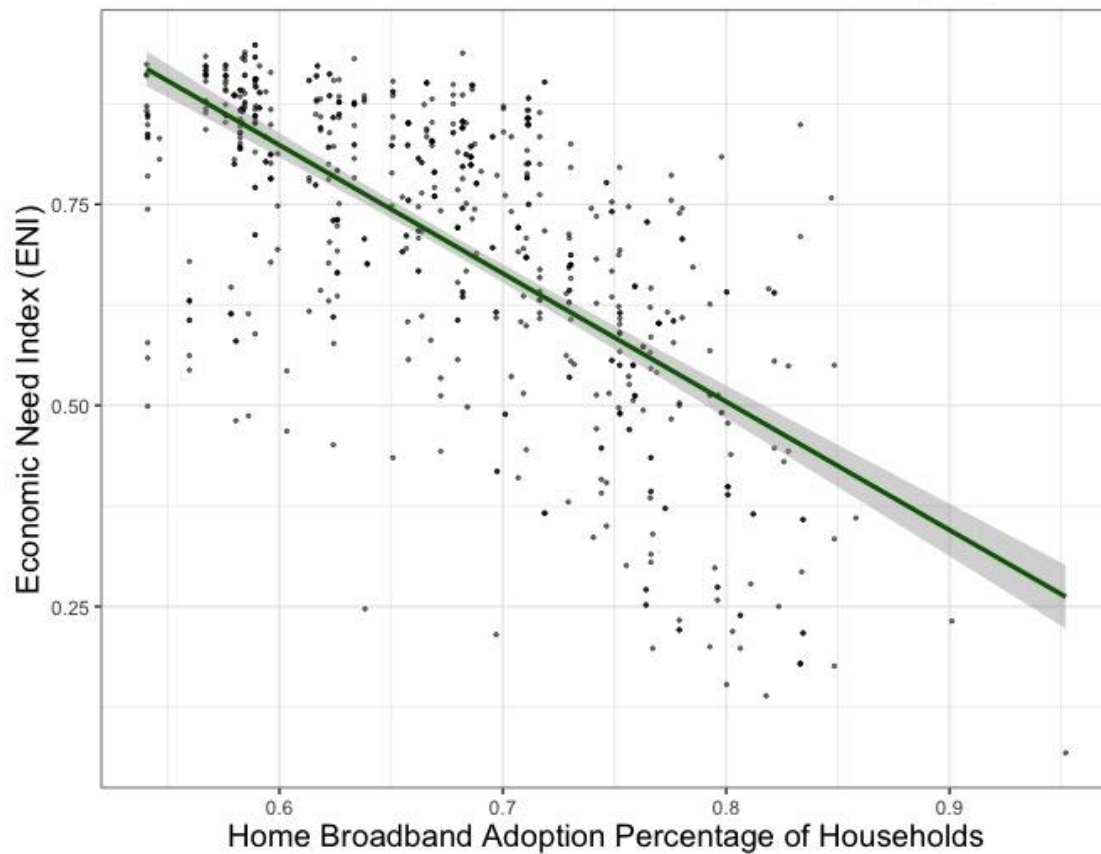
- Student scores in these subjects could be indicative of broader success for a school
- Proficiency scores offer a comparatively objective assessment of a school's performance (as compared to opinion polling)



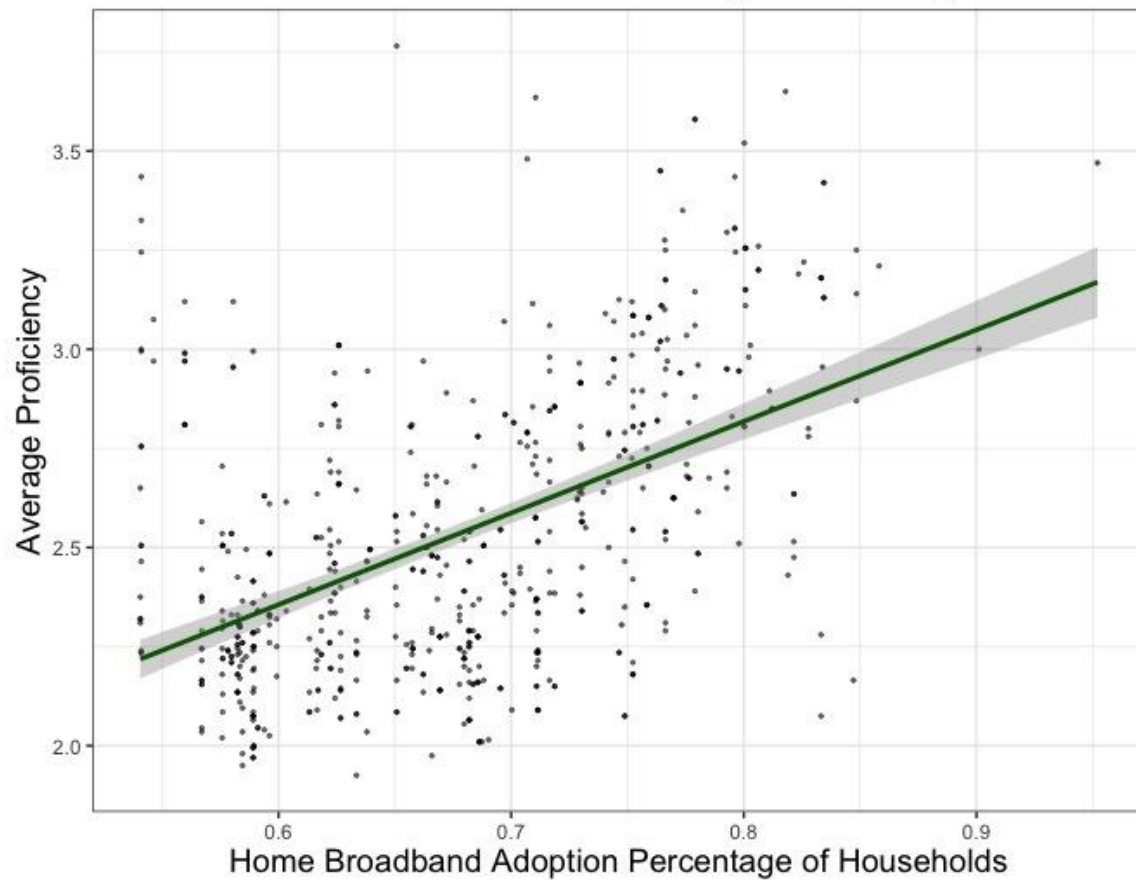
# Exploratory Analysis

- Correlation Matrix
  - Linked all potential predictor variables into one dataframe and analyzed all correlations
  - Included all sheets of given data along with external data
- Outside Data
  - NYPD Suspension and Crime Statistics
  - Graduation Rates
  - Demographic
  - Broadband Data
  - School Closures

Home Broadband vs. Economic Need Index (ENI)



Home Broadband vs. Average Proficiency





# Lag/Lead Metrics

Lag: Student proficiency

Lead: Broadband Internet access

- Could potentially be directly manipulated to have an effect on student proficiency
- Could also potentially affect student absence, the largest observed lead metric for proficiency.



# Predictive Model

We created a multiple linear model from the variables selected in the AIC process to predict a school's average Math and English/Language Arts proficiency level.

- Coefficient of “Home Broadband Adoption Percentage of Households:” **1.367**
  - Adjusted per percentage point: **0.01367**
- All other variables constant: for a 1 percentage point increase in Home Broadband Adoption in a school's zip code, we expect a 0.014 increase in the school's average Math/ELA proficiency level.





## Solution/Plan of Action

Collaboration with internet providers to bring broadband internet to students who are in need

Further considerations:

- Threshold of need
- Minimum internet cost
- Number of students in need