

Can we increase the high school graduation rates?

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GROUP 92

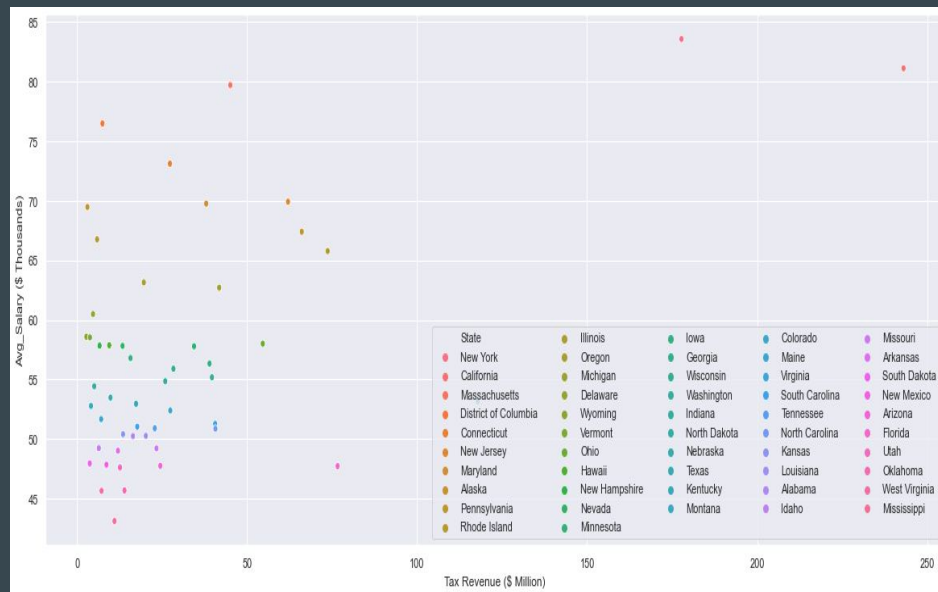
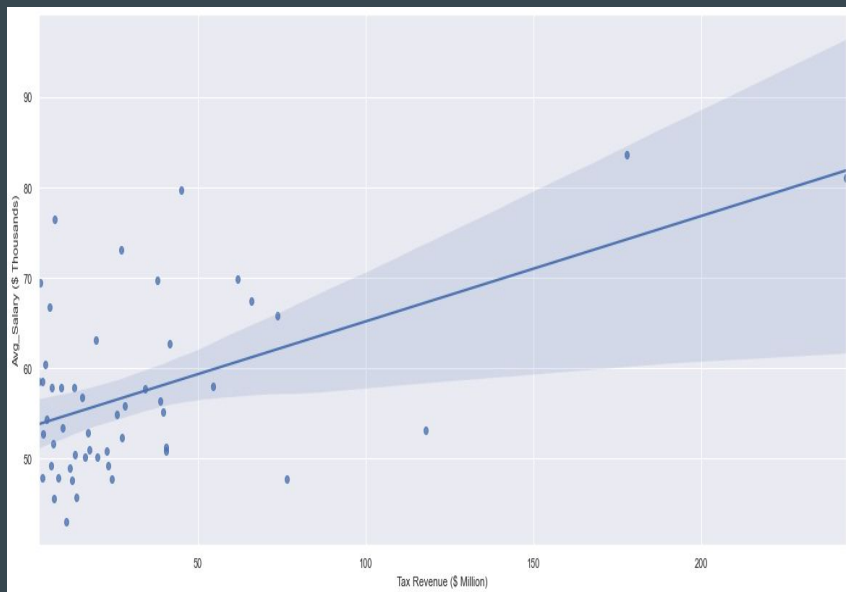
An interesting deep dive into a predictive analysis in reducing Public School Dropout Rates and how they are impacted by State Tax Revenue, Household Income & Teacher Salary

Hypothesis

- There are are many external factors that contribute to high school dropout rates.
- We explored crime rates, household income and teacher salaries (independent variables)
- If we can prove those 3 variables affect the graduation rate (dependent variable), communities and educators can work together to increase grad rates

On a National Level

- We were able to make a correlation between State Tax Revenue and Average Teacher Salary in each state

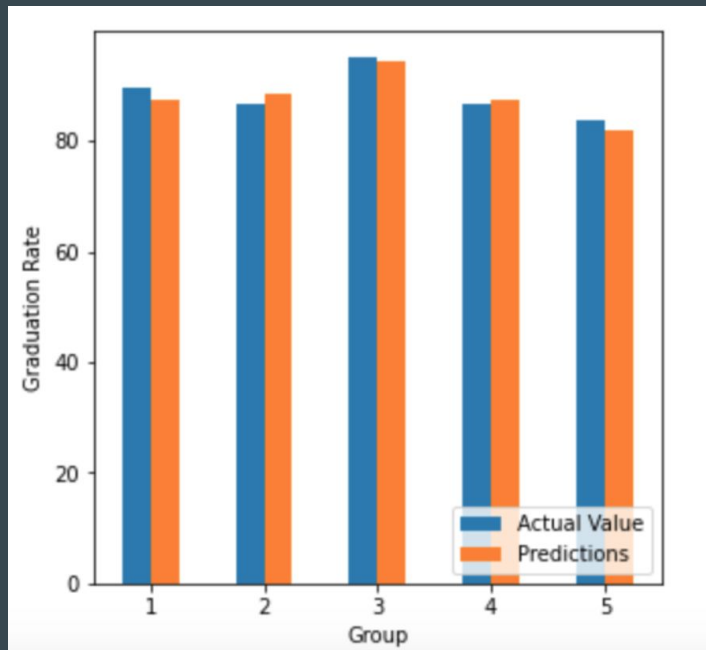


On a State Level - Overview

- We were able to deduce that higher tax revenue has a positive relationship with public teacher salaries
- Let's take a look at some other factors that are specific to New Jersey

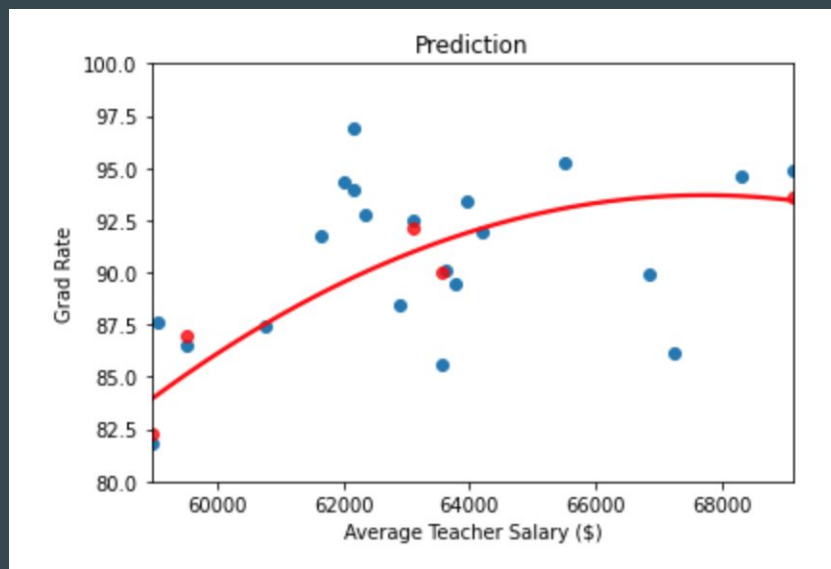
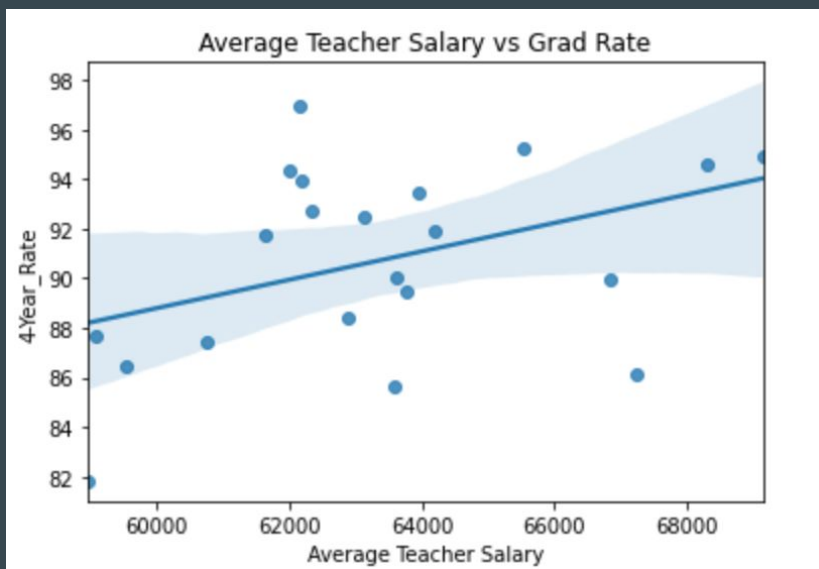
Putting it all together

- Given the 3 variables, we trained a Linear Regression Machine Learning model
- The predictive results were very close to actual graduation rates.



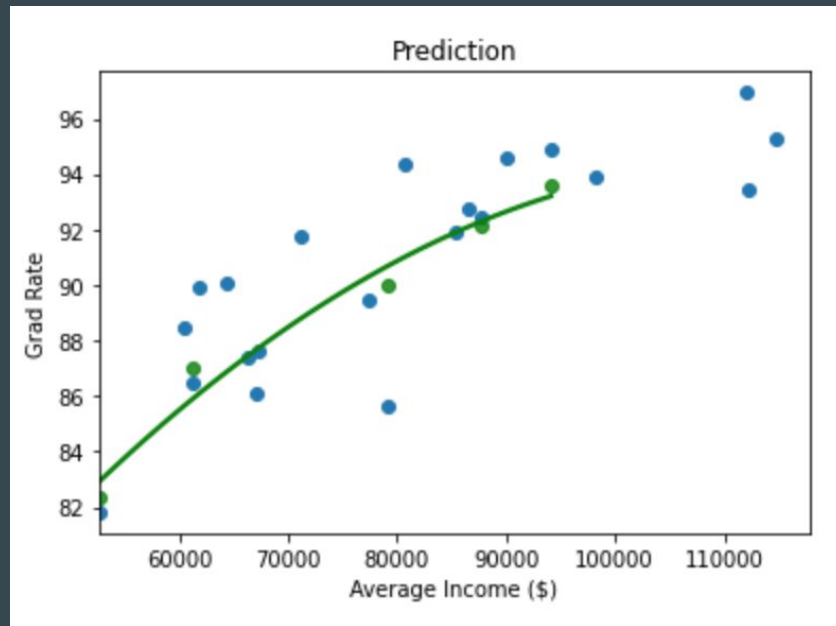
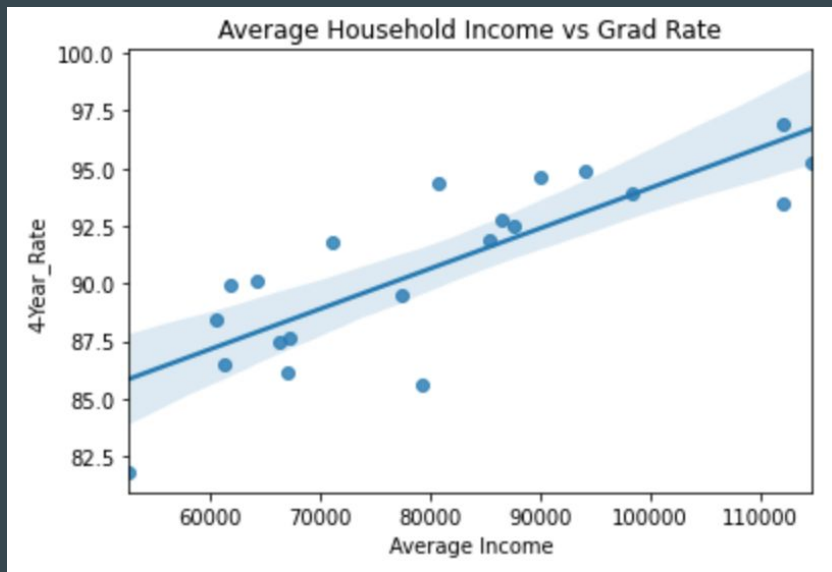
The following slides compare our initial results to a model that predicts graduation rates with average teacher salary, household income, and crime rate as variables

Graduation Rate vs Teachers Salary (NJ)



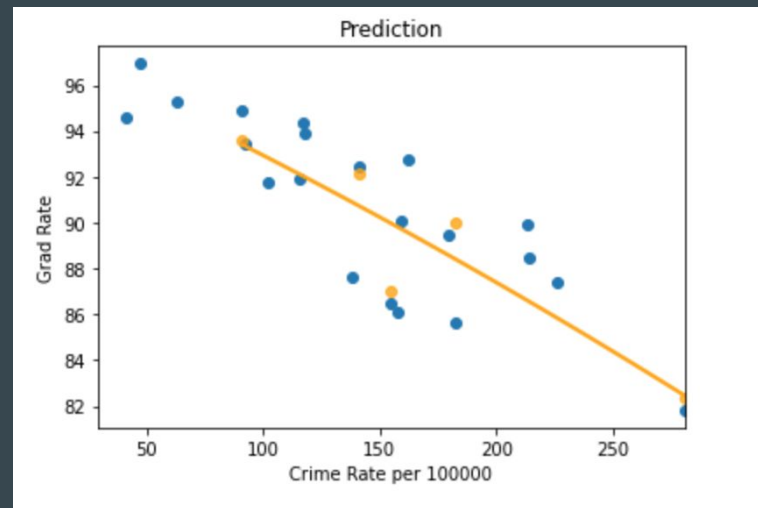
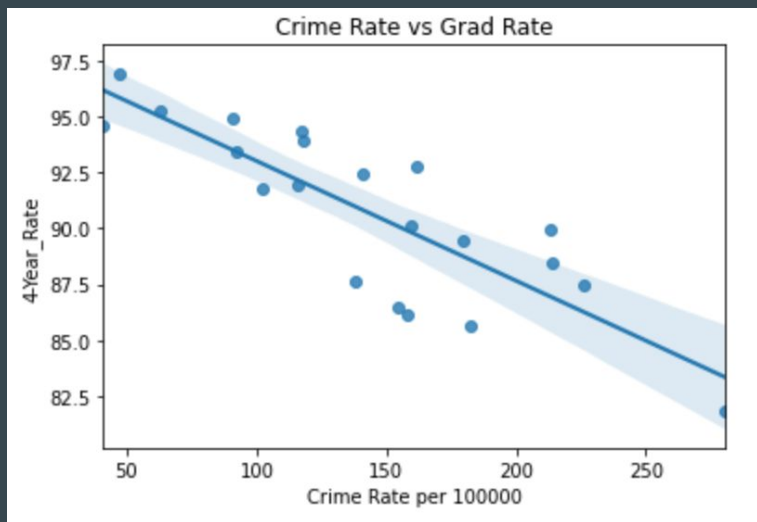
Red points indicate ML predicted values

Graduation Rate vs Household Income (NJ)



Green points show ML predicted values

Graduation Rate vs Crime Rate (NJ)



Yellow points show ML predicted values

Conclusion - Further Analysis

- Higher Salary = Increase in Graduation Rates
- Higher Household Income = Increase in Graduation Rates
- Higher Crime Rate = Decrease in Graduation Rates
- Overall, there definitely are more factors that will impact graduation rates, however, if communities, families, and educators work together to reform crime rates, teacher salary, and household income, we can progress to drastic changes in the future.

Socioeconomic Status Matters !!!!