Hypothesis

Ho 1: Crime and Income are inversely related (as one goes up, the other decreases).

Ha 1: Crime and Income show no inverse relations and correlations.

Ho2 : Income & Education (school ratings) are directly related.

Ha2 : Median household income and Education (school ratings) are not related.

We are independent data analysts appointed by state of Oklahoma, to study the correlation and effects of relations between Income, Crime and Education levels including school ratings to determine funding allocation.

After the teacher walkout over salaries the state authorities wish to study and understand how better can they allocate the limited funds available. With the studies we hope to see that as the median income increases, crime falls down and school rations as well as education level increases.

We have sourced our data from Census API for understanding the counties and zip codes. We collected our crime data csv file available directly from FBI – USR website. The school ratings data is sourced through School Digger API (we can provide our api key so that you won’t have to pay). Our Median Household Income data and High School dropout data was taken from CSV files from Data.gov.

Our team studied the impact of median income per county and have displayed it using heatmaps using google maps APIs. The heatmap has highlighted that higher the median income higher is the crime rate. This showed us that our null hypothesis 1 has to be rejected. This skewed result can be attributed to a low median household income ($49839) which is lower than the rest of the country($60309).

Our study also showed us that school ratings are scattered but tend to cluster most closer to $50,000 income range. This goes to show when the median income of the state is closer to that of the country people are more aware of education, as it scatters lower, there is a tendency to dropout of schools.

Highschool dropouts also show us a high correlation to crime. The graph displays a direct correlation, higher the percentage of high school dropouts higher is the crime rate.

The results also show us the crime is spread out across the board but is higher where the school rating is higher than rest of the state. We can attribute this to a higher household income in better rated school districts.

Our data has shown significant evidence to support our null hypotheses that income and education are directly related and income and crime are inversely related. Hence, we fail to reject the null hypotheses.