**FINAL PROPOSAL PROJECT**

My data from Opportunity Atlas based on the household income and poverty rate of Allegheny county. The purpose of the project is to figure out the significant impact of household income in poverty rate. Practically, my data were for all the areas in Allegheny county, however, I preferred to work with the 10 highest and 10 lowest based on household income. To see if the household income is the main reason that causes the high number in poverty rate of some areas.

First, I visualized data to discover about the means, medians, quarters, etc of my data.

Here are the results:

Name of Areas Household-Income Poverty-Rate

Length:20 Min. :13079 Min. :0.00440

Class: character 1st Qu.:20429 1st Qu.:0.01758

Mode: character Median :56458 Median :0.23510

Mean :47151 Mean :0.30728

3rd Qu.:67046 3rd Qu.:0.54222

Max. :78424 Max. :0.77680

Then, I have a bar graph of household income and poverty rate to describe both of my data graphically. So, people who have difficult time to read numbers, they can understand the data via a bar graph.

After that we have done the regression test to figure out the relationship between household income and poverty rate, which I used household income as Y-value and poverty rate as X-value. By using LM formula “lm(formula = data$`Household-Income` ~ data$`Poverty-Rate`)”.

And named it as a mod, then I found the summary of the result to figure out whether the p-value is statistically significant, or it is not. Therefore, to determine what kind of the relationship is between household income and poverty rate.

Here are the results :

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| Residuals:  Min 1Q Median 3Q Max  -20595.6 -5379.8 -697.9 3588.3 28568.4  Coefficients:  Estimate Standard Error T-value Pr(>|t|)  (Intercept) 68866 3595 19.158 2.02e-13  Poverty-Rate -70669 8334 -8.479 1.06e-07  ---  Significant codes: 0 0.001 0.01 0.05 0.1 1  Residual standard error: 11280 on 18 degrees of freedom  Multiple R-squared: 0.7998, Adjusted R-squared: 0.7886  F-statistic: 71.9 on 1 and 18 DF, p-value: 1.06e-07 |
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