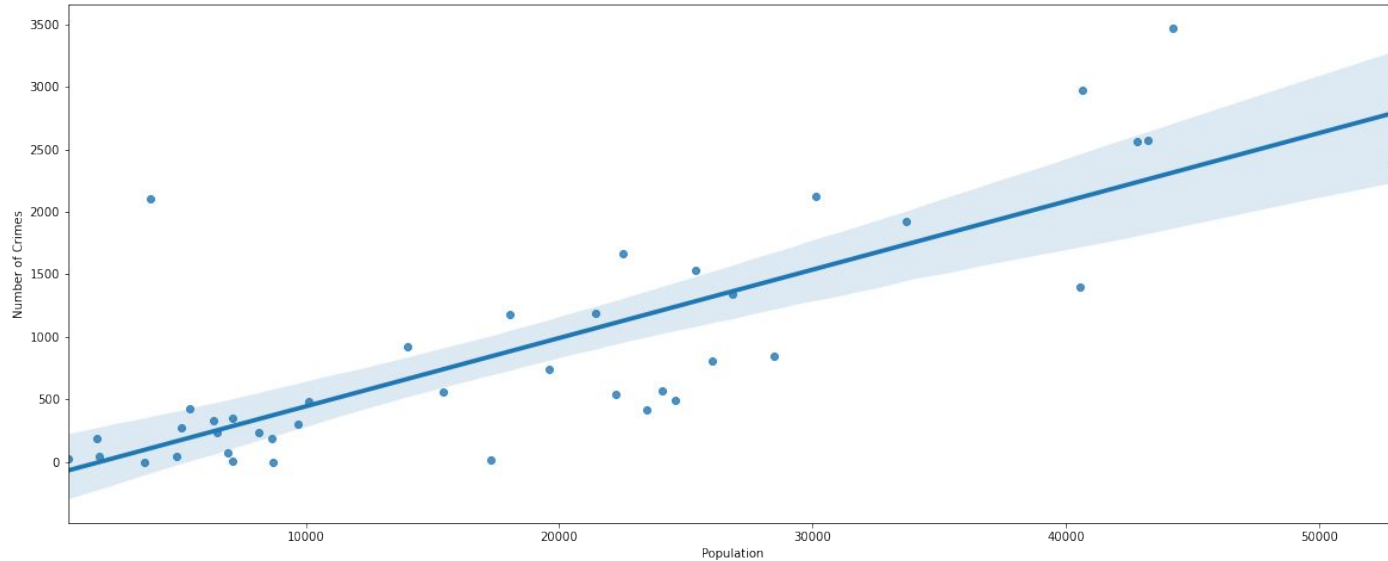


Population and Crime

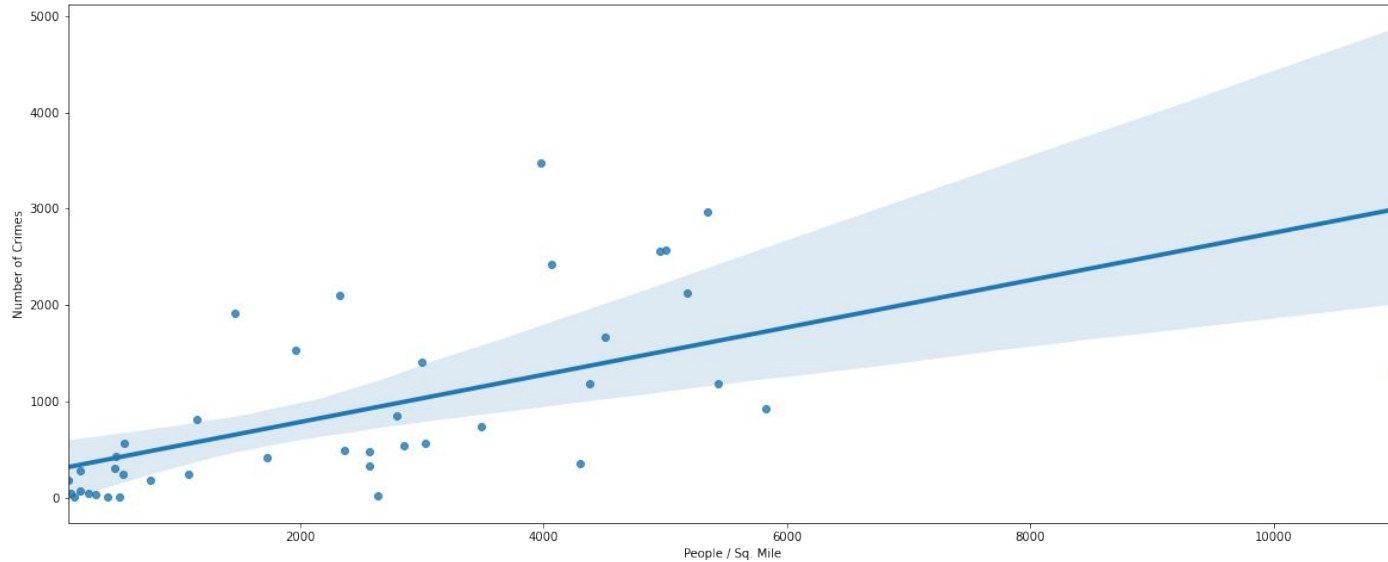
Michael Childs, Ben Shaw

Population and Crimes



Correlation Coefficient: 0.818. P-value: $\sim 6.0 \times 10^{-11}$.

Population Density Crimes



Correlation Coefficient: 0.598. P-value: $\sim 3.0 * 10^{(-5)}$.

More Crimes on one side??

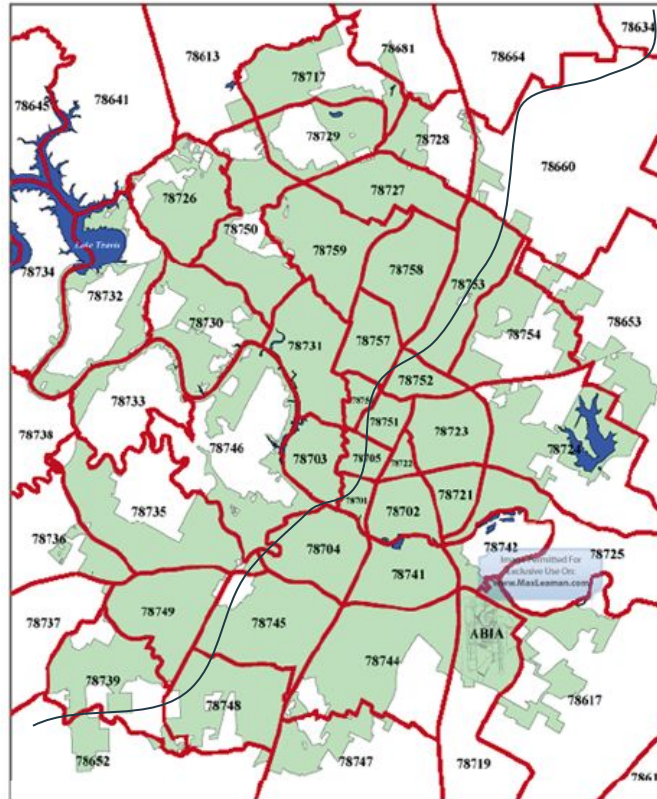
We will now place each Zip code into one of two categories: Right and Left.

We will draw a diagonal line from the top right to the bottom left of the map to segregate.

We will make a histogram of zip codes for the crimes/population (x-axis).

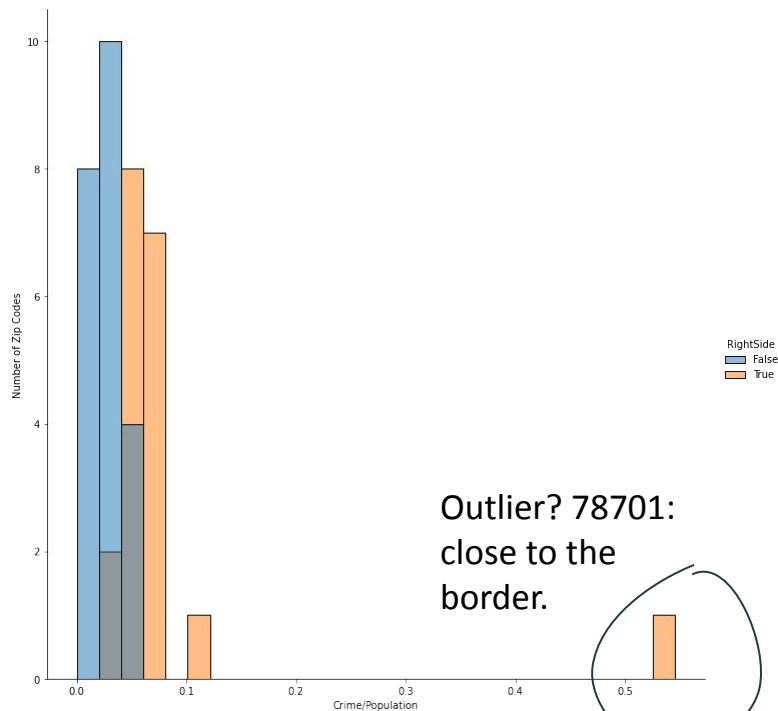
Is there “more crime” on one side of the city? Is there a significant difference?

Left zip codes: over and to the left of the blue line.



Right zip codes: under and to the right of the blue line

More Crimes on one half?



Outlier? 78701:
close to the
border.

Get rid of outlier: t is
5.988, p is 6×10^{-7} .
Mean (right): 0.061.

t: 2.477. P-value: 0.018. Mean (Left): 0.026. Mean (Right): 0.086.

Thinking of buying?

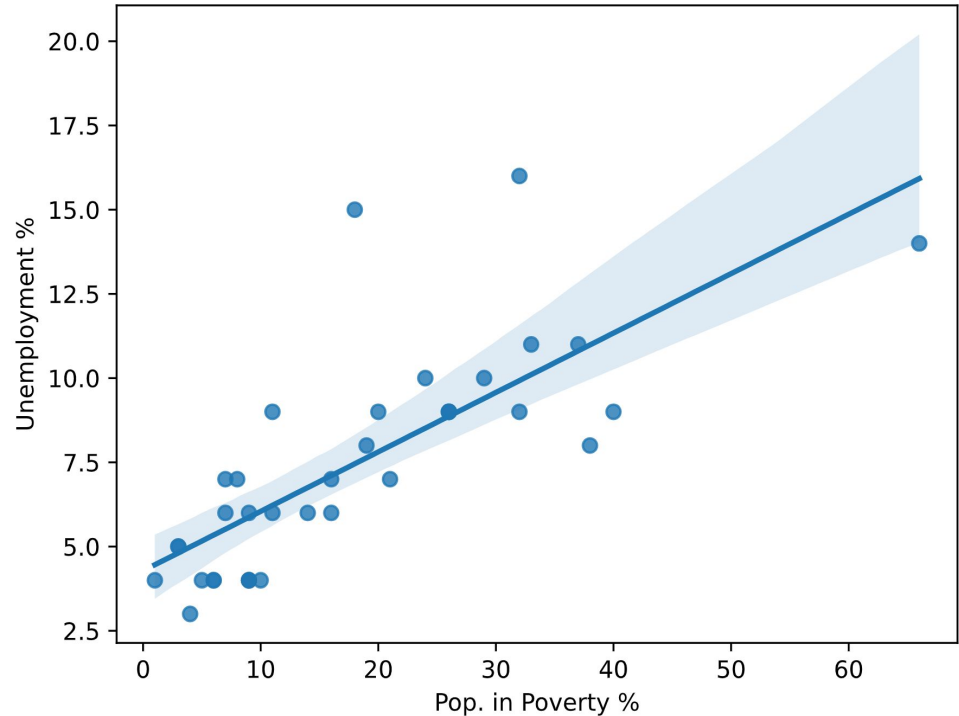
There may be less crime in lower population density areas, perhaps especially in the upper left part.

Does Poverty Increase Crime?

First created a correlation analysis of percent of people in poverty vs unemployment rates for each zip code:

(coefficient = 0.7577, $p = 8.753 \times 10^{-08}$)

Strong correlation.

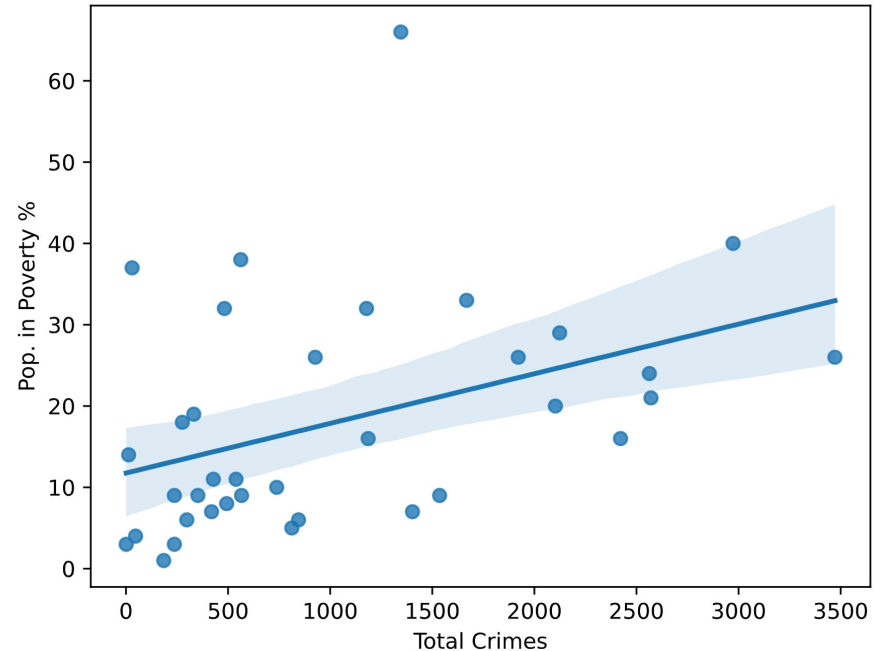


Poverty vs Total Crimes Committed

Next, we analyzed if poverty had a strong correlation to the total number of crimes committed:

(coefficient=0.4114, $p=0.0127$)

Medium correlation, but still statistically significant.

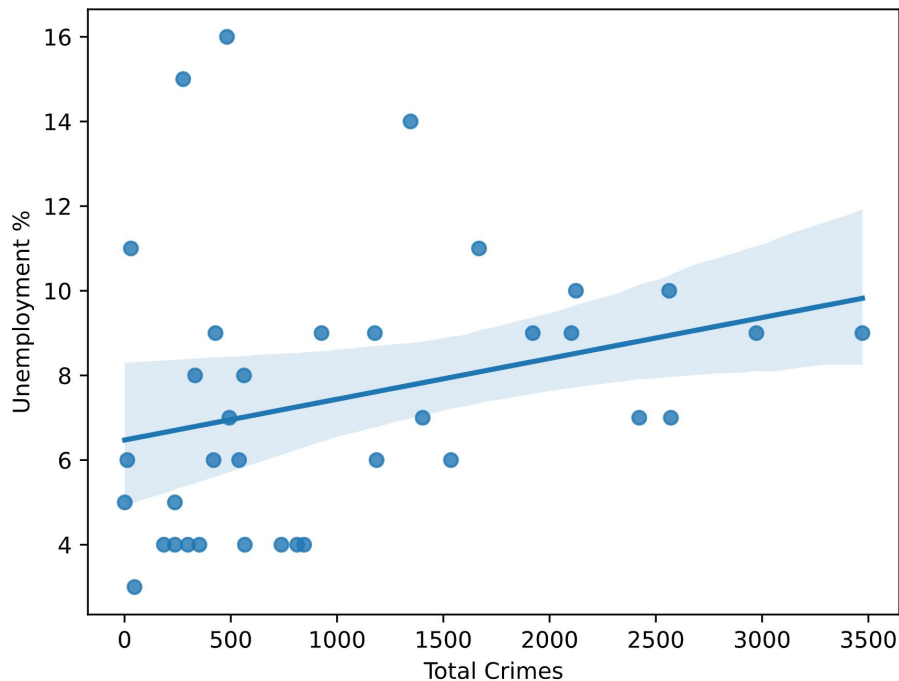


Unemployment vs Total Crimes Committed

Finally, we computed the regression plot for unemployment vs total crimes in each zip code:

(coefficient=0.279, p=0.099)

Weak correlation & by far the worst likely of the 3 analyses for direct relation.



So does Poverty Increase Crime?

Although the base case of poverty & unemployment are strongly correlated (likely to nobody's surprise), the case for poverty itself causing crime is less certain. However, it is still evident that there is a medium correlation. Finally, the case for unemployment causing crime is least supported with a weak correlation. The results for this? Unemployment usually directly correlates to poverty, but it usually does not usually correlate to a life of crime.



Thank you for your Attention