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CRIME RATE INFLUENCES

MOTIVATION AND SUMMARY

- The core idea that was explored in this project was what factors influenced crime rates within cities across America.
- We asked if there was a significant relationship between crime rate and four different factors: population, education level, density of law enforcement, and poverty.

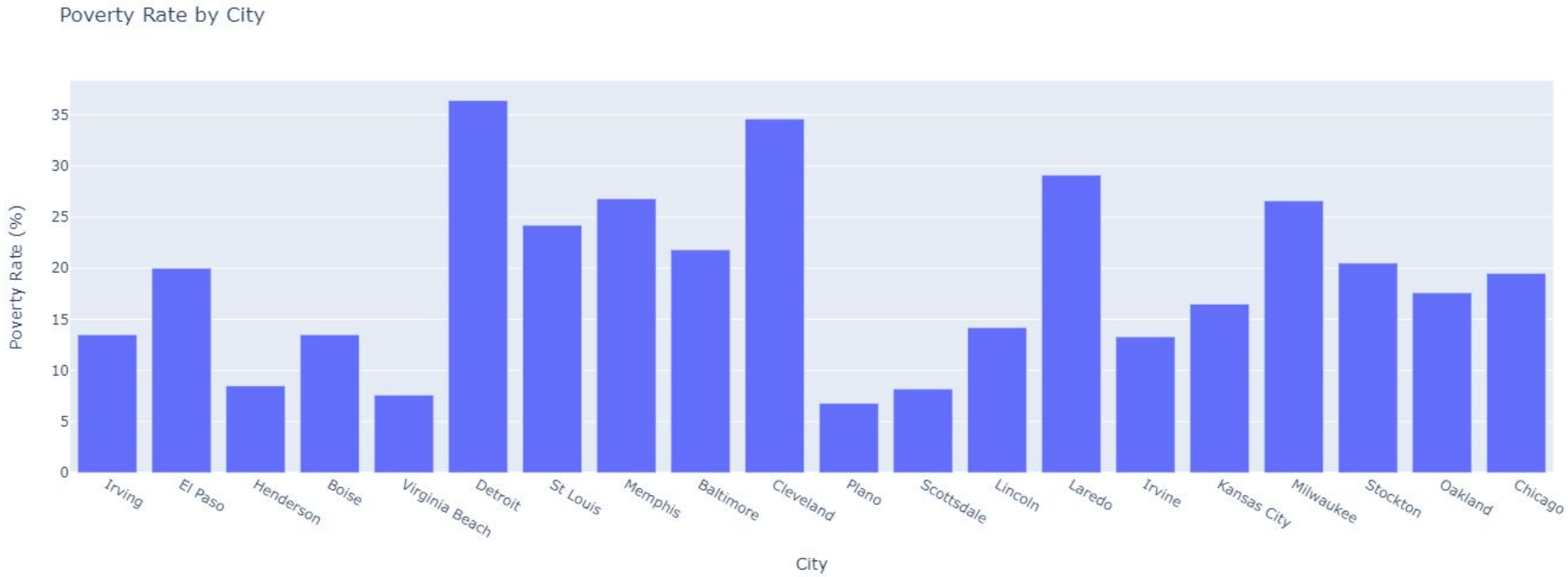
QUESTIONS

- Does population affect crime rate?
  - To answer this, we needed population of each city.
  - This information was found through 2019 census data
- Does education level affect crime rate?
  - This question required finding the level of education completed by the residents of each city.
  - This information was also gathered from 2019 census data.
- Does density of law enforcement employees affect crime rate?
  - To answer this question, we needed the number of police officers employed in each city.
  - This information was found through the FBI Uniform Crime Reporting database.
- Does poverty rate affect crime rate?
  - To answer this, we needed poverty rate within each city.
  - This information was also found through 2019 census data
- Each of these questions required us to find the crime rate of each city. This information was found through an FBI API.

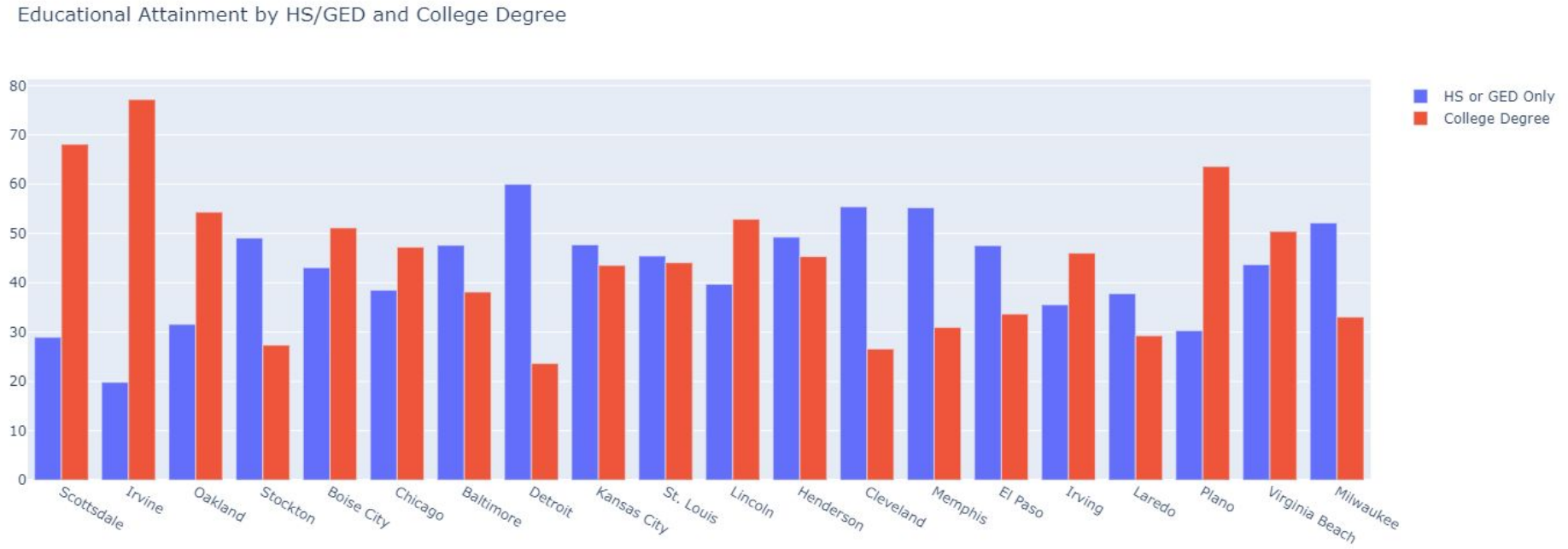
DATA CLEANUP AND EXPLORATION

Data cleanup and exploration was a mild challenge. Finding consistent data for cities in different states required the most data cleanup and exploration. Specifically with census data, population was organized by 1 state per table. This required manual organization to provide one source of reference for our population data.

DATA ANALYSIS



DATA ANALYSIS CONTINUED



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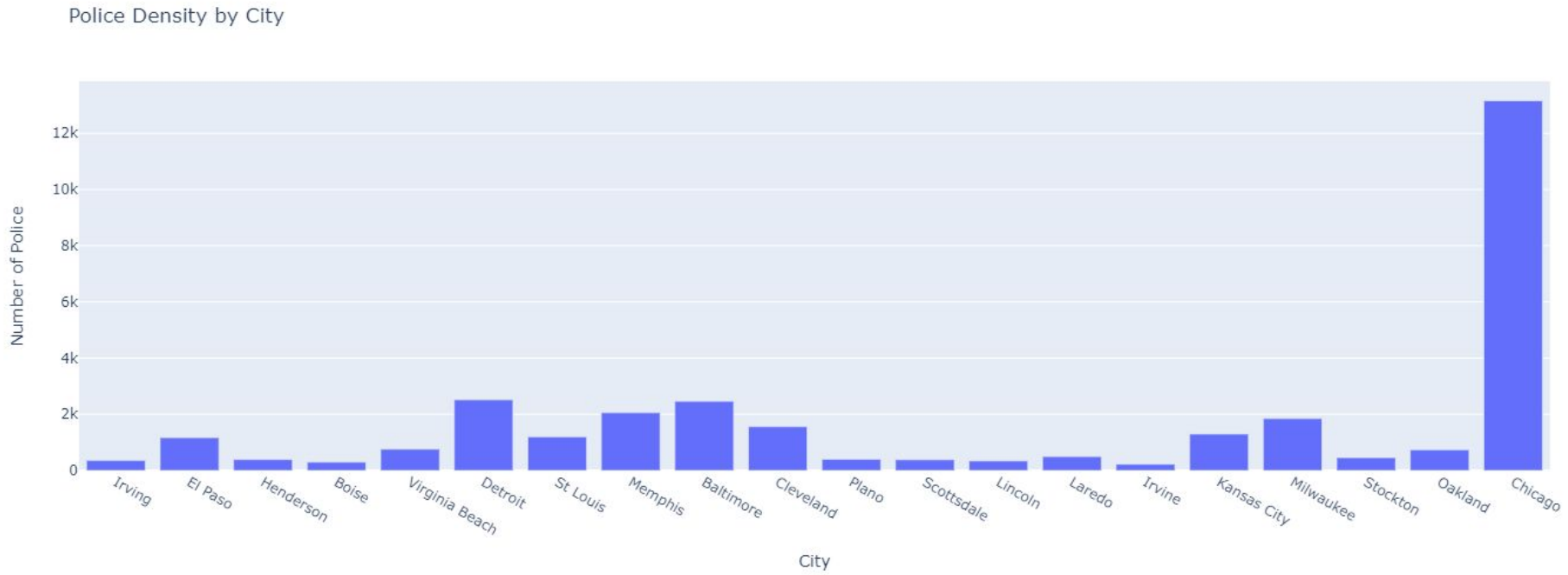
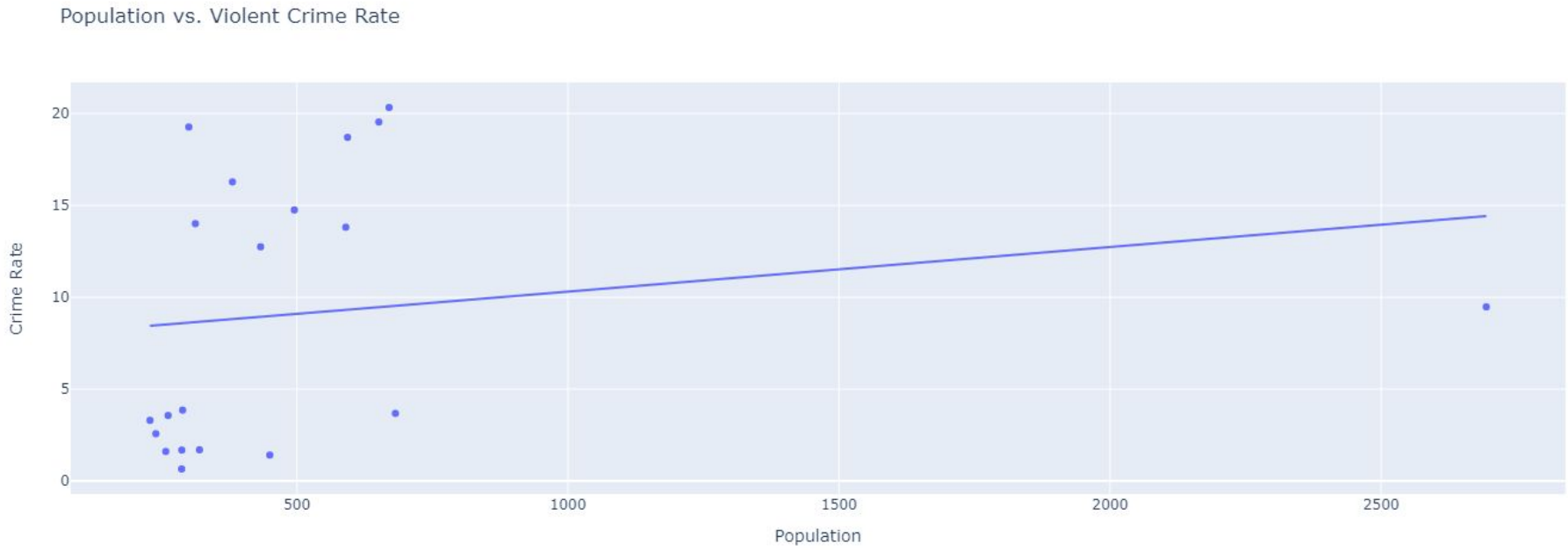


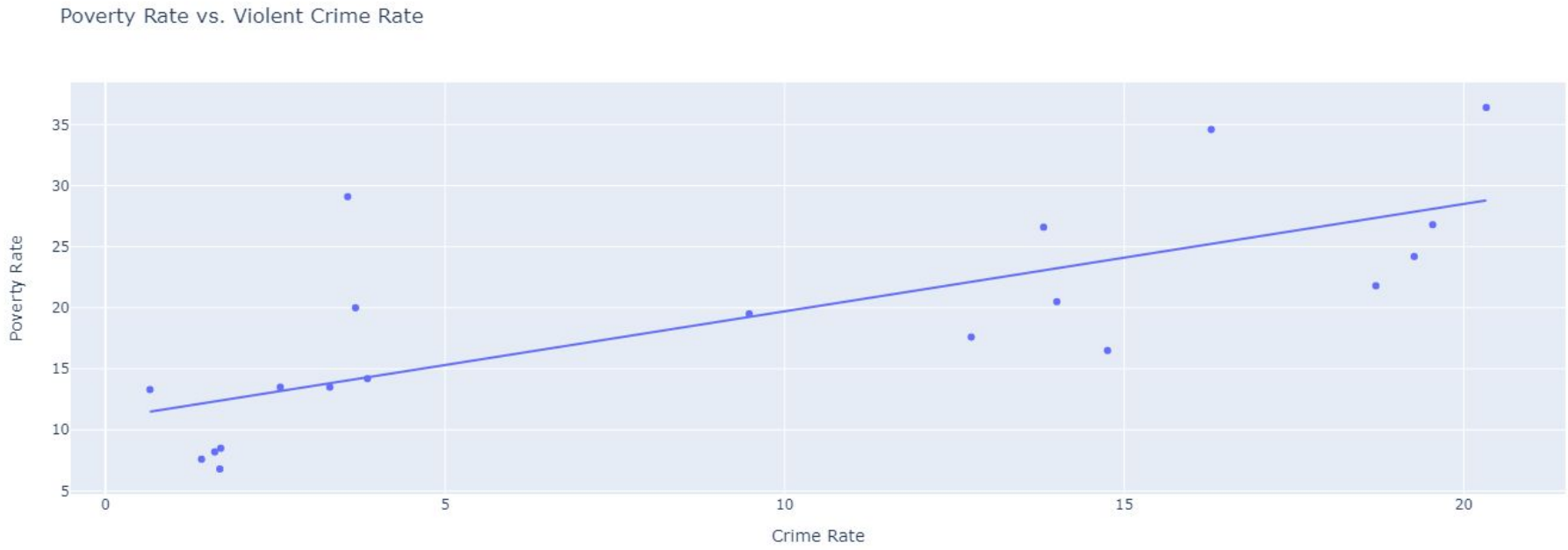
DATA ANALYSIS CONTINUED

p = 0.00038; There is a significant relationship between population and violent crime rates.



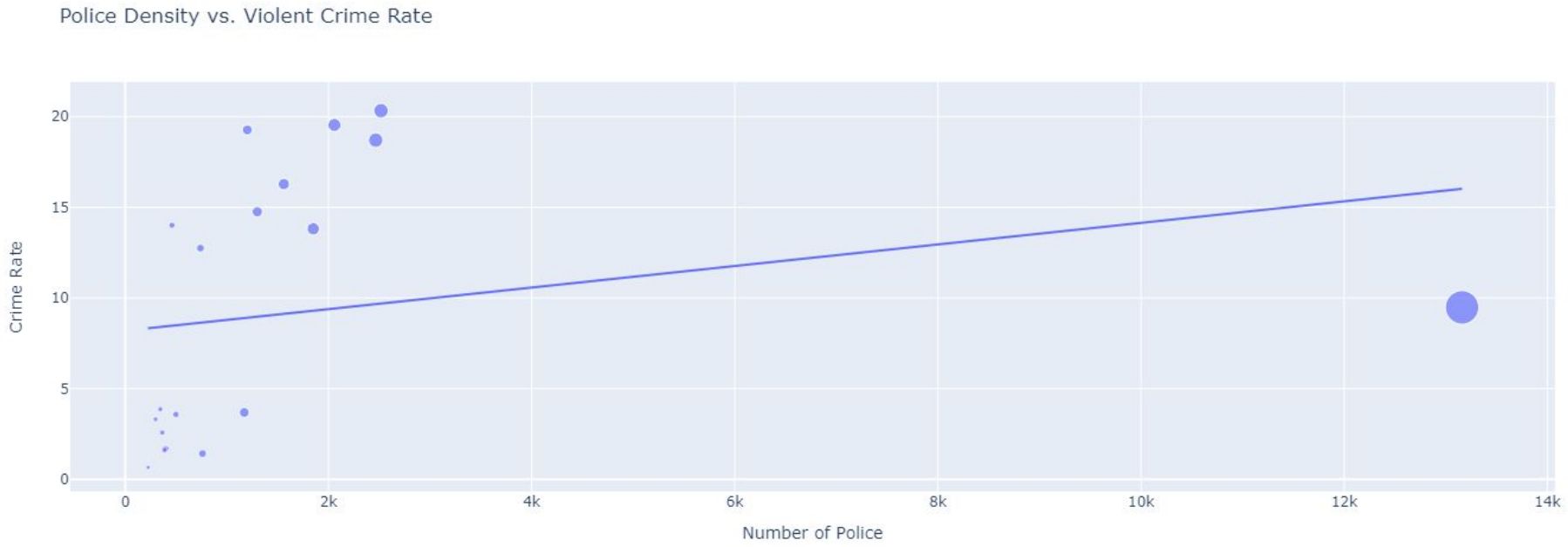
DATA ANALYSIS CONTINUED

p = 0.0004; There is a significant relationship between poverty and violent crime.



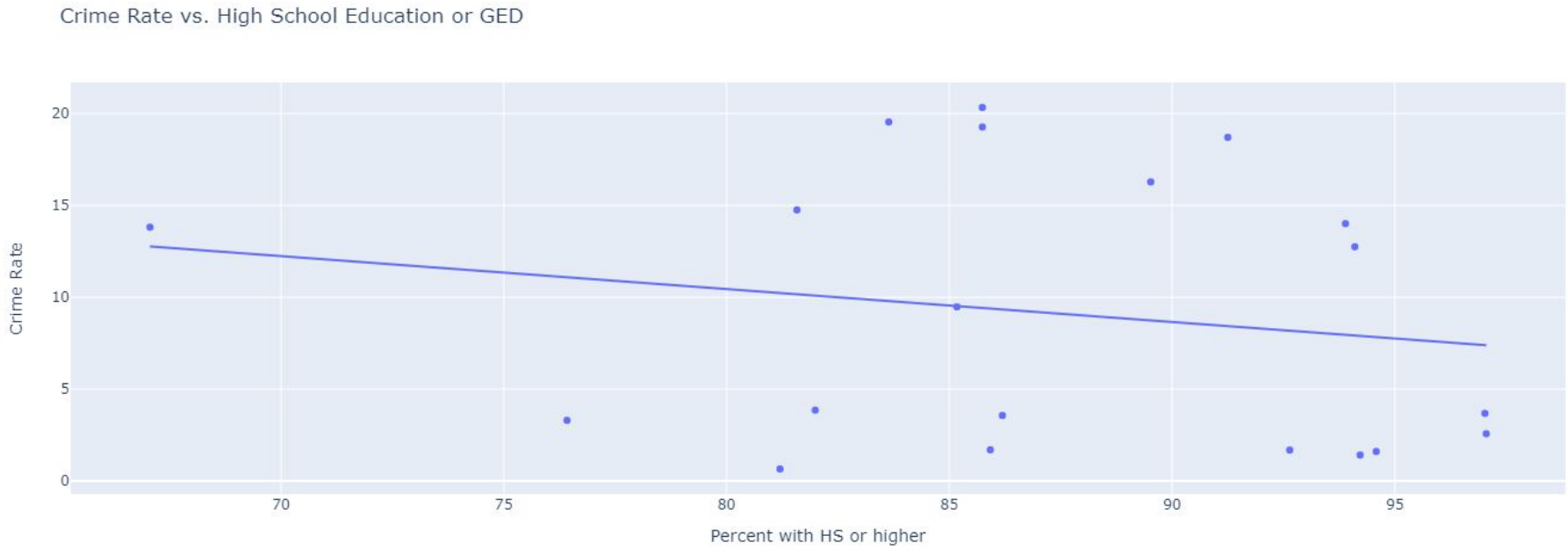
DATA ANALYSIS CONTINUED

p = 0.02; There is a significant relationship between police density and violent crime rates.



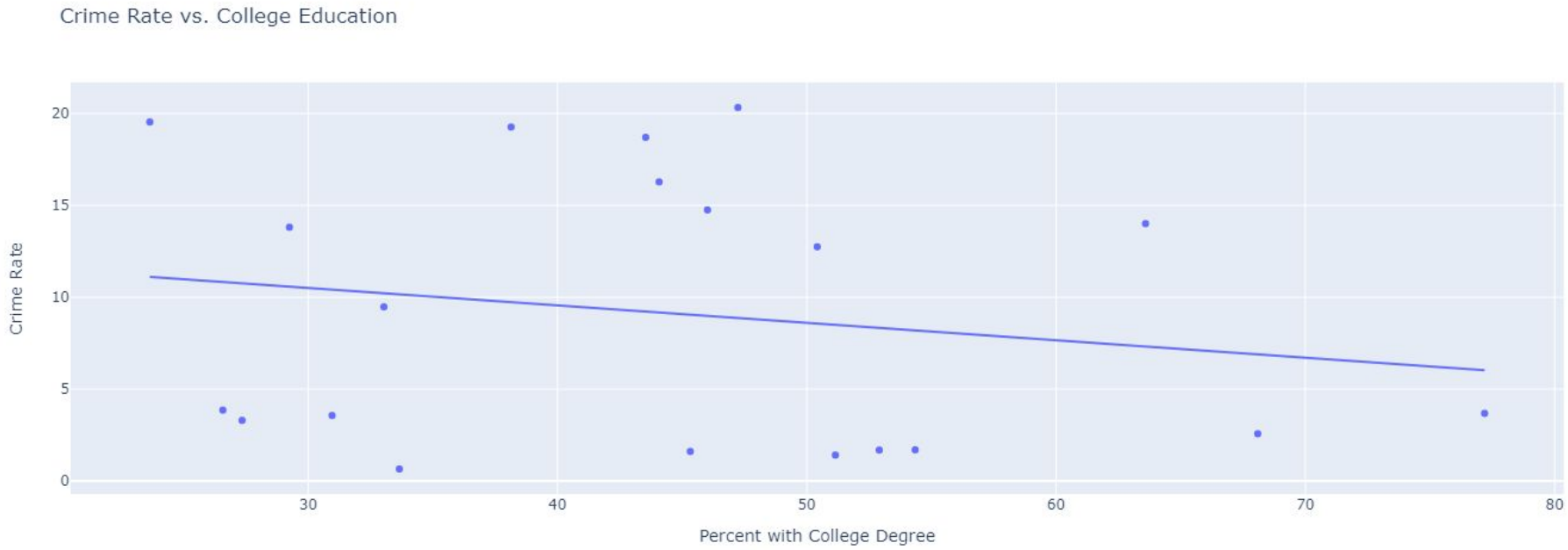
DATA ANALYSIS CONTINUED

p = 0.026; There is a significant relationship between high school education or a GED and violent crime rates.



DATA ANALYSIS CONTINUED

p = 0.022; There is a significant relationship between college education and violent crime rates.



DISCUSSION

- We expected to find a relationship between crime rate and the factors we explored, but what was surprising was the extent of the relationships.

- In general, we can conclude that levels of crime within an area are dependent on a number of complex factors, not just a singular problem. Unfortunately, this data only offers correlation, not causation, so there are not many definitive solutions that can be drawn from this data. However, it does offer a jumping off point for further research and areas to target when attempting to reduce crime in an area.

HOW WE DEALT WITH PROBLEMS

- One of the major limitations we dealt with throughout this project was finding accurate and up to date data that was complete across all the cities we were analyzing. To combat this, we kept the number of cities selected for analysis relatively small and ensured that we would be able to collect enough data for each city before including them in our list.

QUESTIONS?