Recreational Drugs and Police Data

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No Free Lunch

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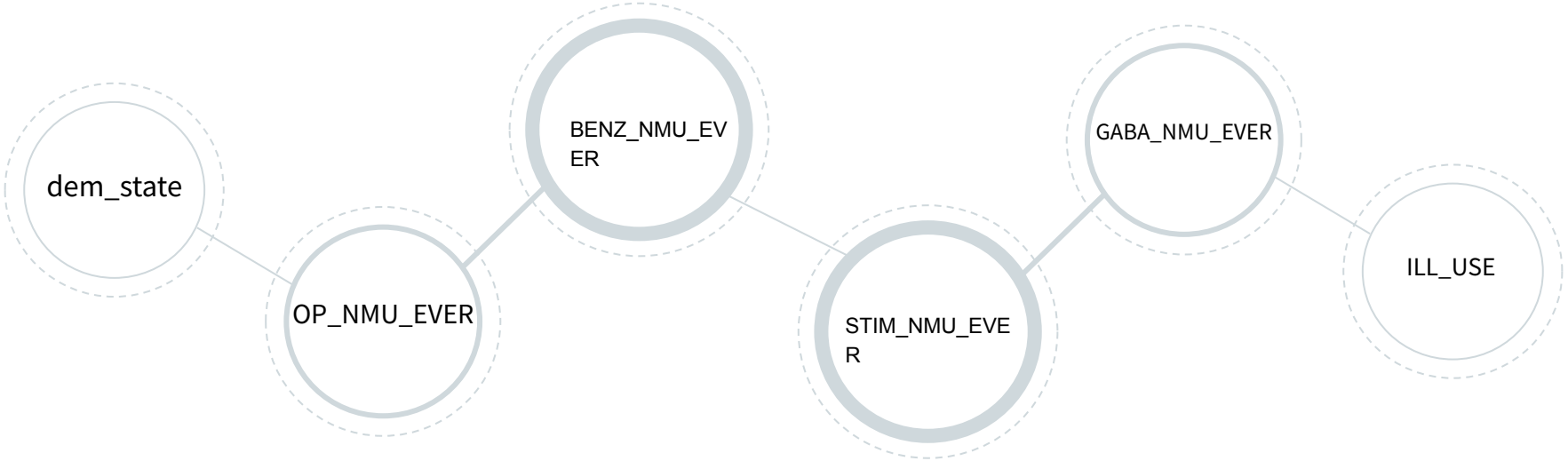
Research Questions

- How does non-medical drug usage correlate with police density by state for different drugs?
  - Ex: non-medical drug usage of different drugs vary with police density.
- What policing variables predict drug use (police density, drug arrests made) of different drugs?
  - Ex: Are certain drug usages more sensitive to police density, others more sensitive to arrests made.

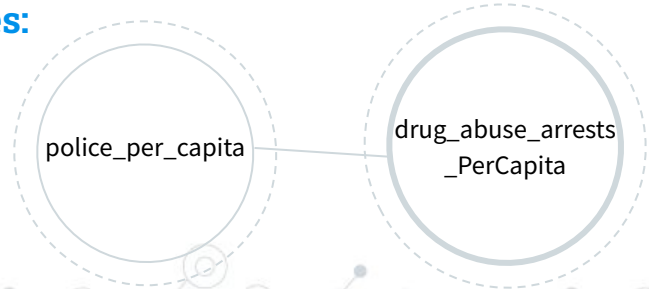
Methods

1. Clean Data & normalize data by mean, find external policing data, calculate per capita of arrests and police density, and combine selected variables
2. Ran Regression on all drug variables against police per capita and against drug arrests per capita
3. Create scatter plots with regression models for visualization and run summary stats to find significant and nonsignificant p-values
4. Run Lowess Smoothing to check for nonlinearity on all drug variables against police per capita and against drug arrests per capita
5. Create scatter plots for lowess models to visualize any nonlinearity and to check different smoothing fractions
6. Create Choropleth Maps to visualize all drug variables, police per capita, and drug arrests per capita by states

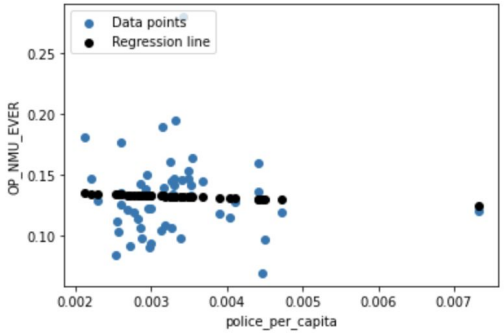
Final Variables Analyzed

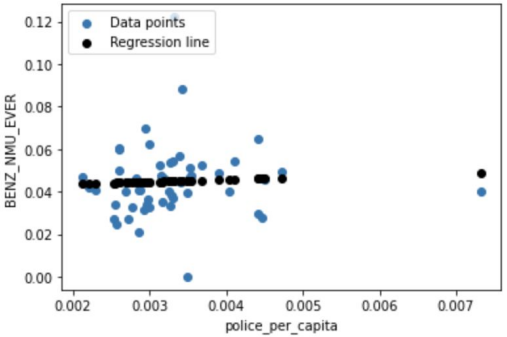


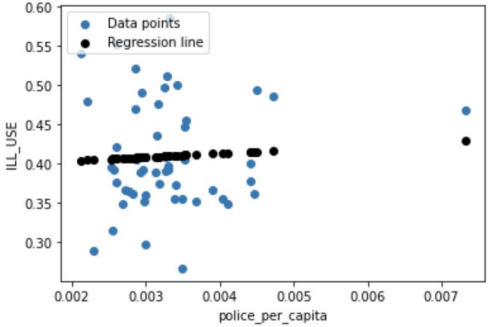
External Variables:

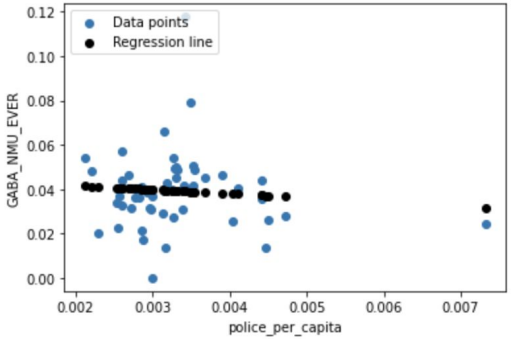


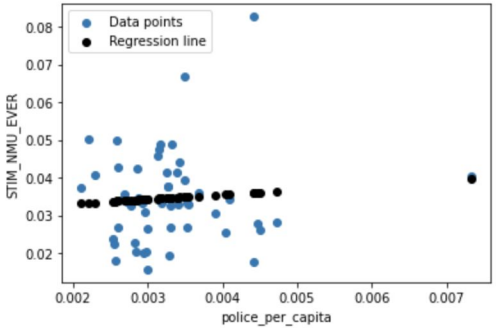
Regression Models for Police Per Capita VS Drugs





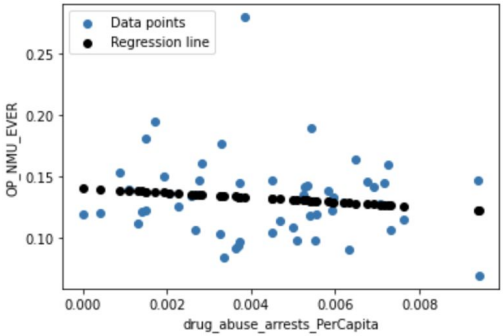


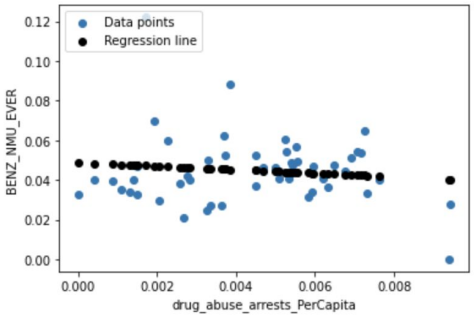


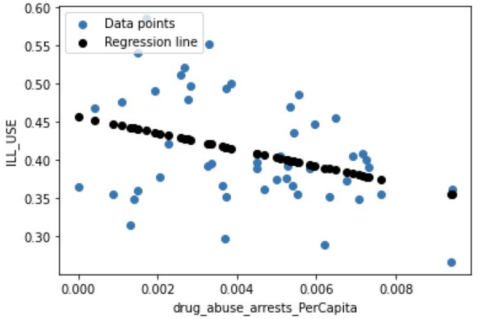


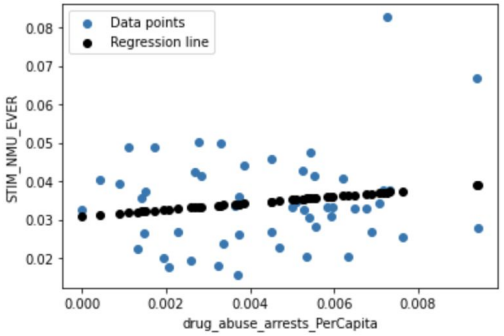
- No significant p-values at alpha level 0.05

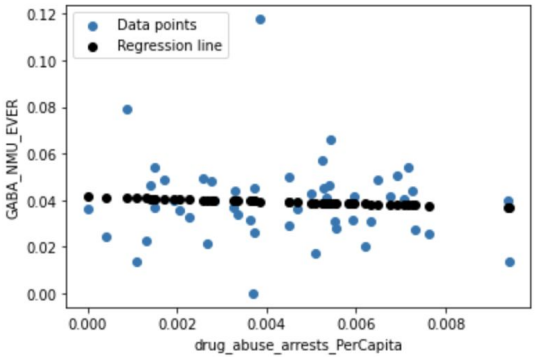
Regression Models for Drug Arrests VS Drugs





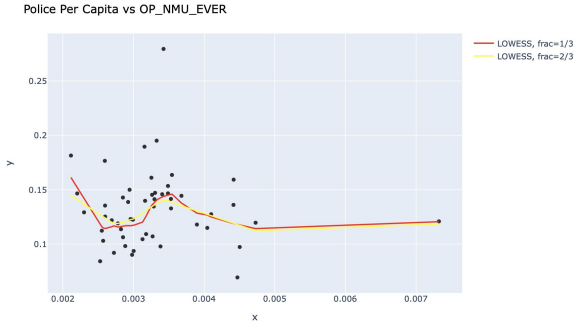


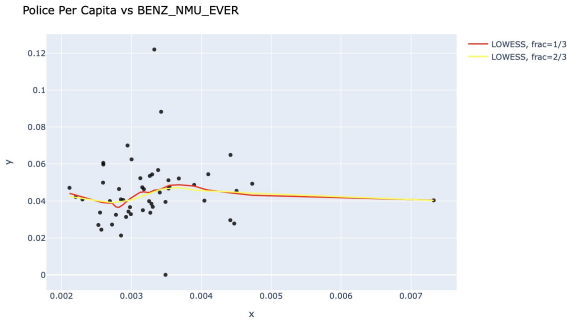


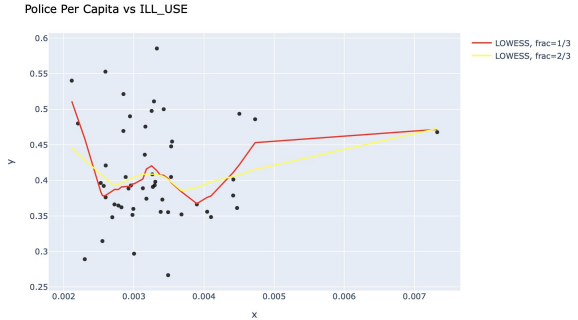


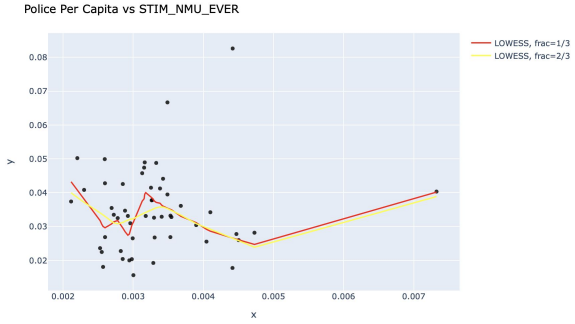
- No significant p-values at alpha level 0.05
  - Except for ILL_USE ($p<0.011$)

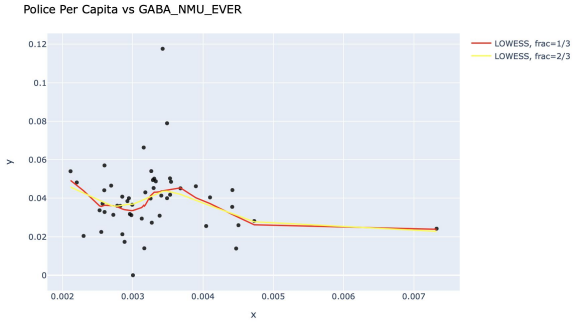
Lowess Smoothing Scatter Plots Police Per Capita





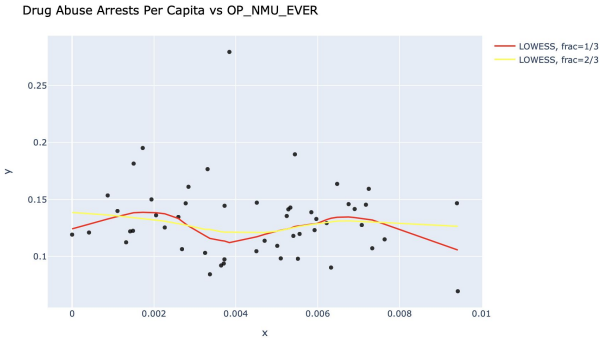


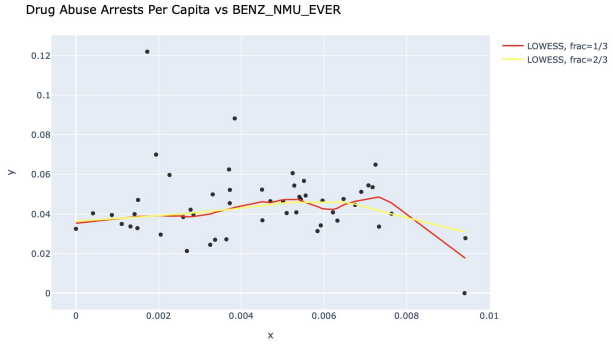


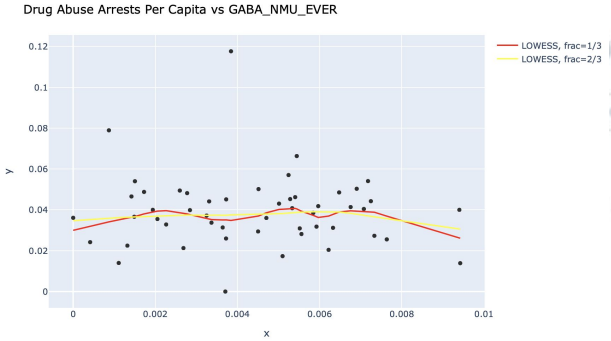


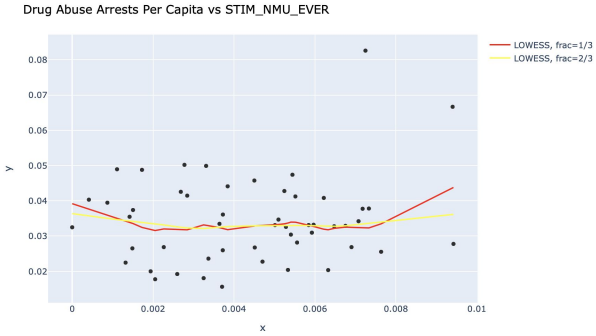
- Insignificant nonlinearity

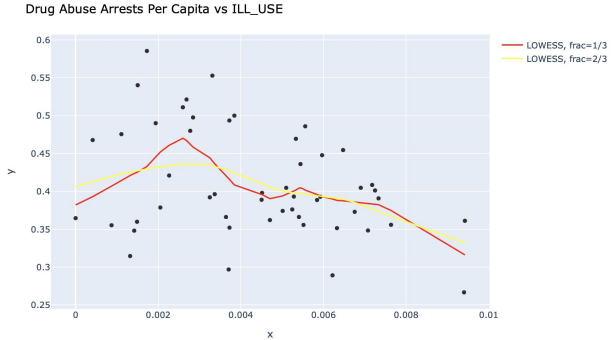
Lowess Smoothing Scatter Plots Arrests Per Capita





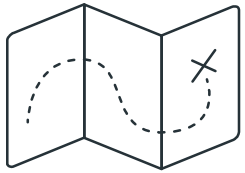






- Insignificant nonlinearity

Finding #1



Policing and arrests have no impact on recreational drug use

Police Density by State

Top 3 States

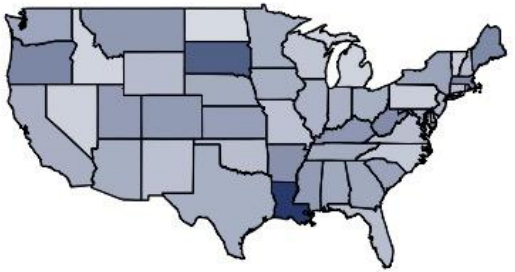
1. **Delaware**
2. **New Hampshire**
3. **New Mexico**

Density of Recreational Drug Use by State

Opioids

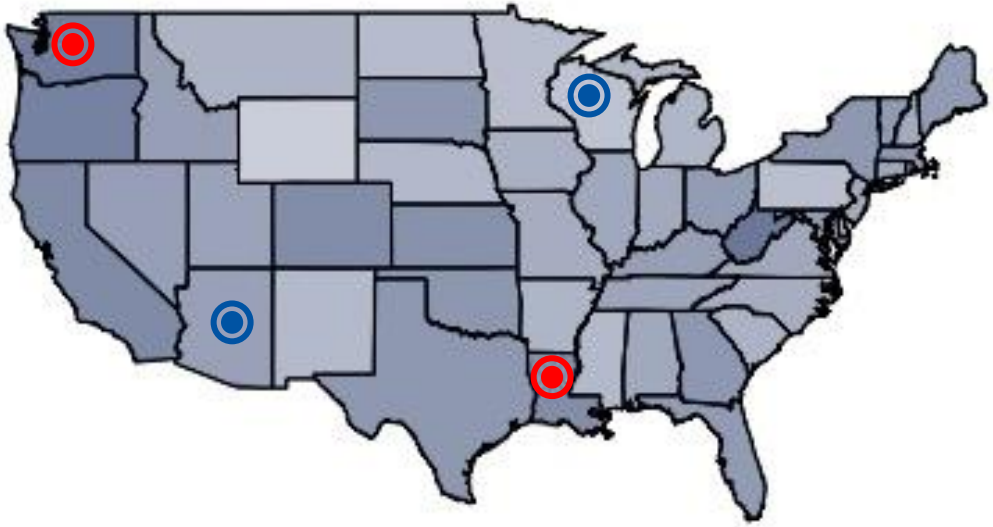
Benzodiazepine

GABA-analogue



Stimulants

Density of Recreational Drug Use (Opioids) by State



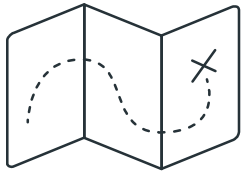
States with Highest Opioid Use

Louisiana
Ranks #5 in Police Density
Washington
Ranks #50 in Police Density

States with Lowest Opioid Use

New Mexico
Ranks #3 in Police Density
Wisconsin
Ranks #46 in Police Density

Finding #2



Higher policing is associated with reduced illegal drug use

Map of Drug Abuse Arrests

Top 3 States

1. **Wyoming**
2. **South Dakota**
3. **Missouri**

Density of Illicit Drug Use by State

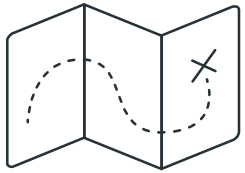
States with Highest Illicit Drug Use

Washington
Ranks #3 in Illicit Drug Use
Ranks # 42 in Drug Abuse Arrests

States with Lowest Illicit Drug Use

South Dakota
Ranks #50 in Illicit Drug Use
Ranks #2 in Drug Abuse Arrests

Overall Finding



Recreational drug use has no correlation with police density

Works Cited

"Table 69." *FBI*, FBI, 12 Sept. 2019,

ucr.fbi.gov/crime-in-the-u.s/2018/crime-in-the-u.s.-2018/tables/table-69.

"Table 77." *FBI*, FBI, 7 Aug. 2019,

ucr.fbi.gov/crime-in-the-u.s/2018/crime-in-the-u.s.-2018/tables/table-77.