Introduction

In order to define our policy recommendation for reducing the crime rate in North Carolina, we ask the following research question: Does increasing the likelihood of arrest and conviction without incarceration reduce the rate of crime in North Carolina? Although serious felonies like murder, rape, and armed robbery would still require incarcerations, we are interested in addressing possible overincarceration of less serious crimes like first offense drug possessions and minor theft. With this question, we aim to understand potential policies that could result in both a decrease in crime rate and better allocation of resources for criminal justice policy. On average, incarceration costs the state of North Carolina on average $36,219 per inmate per year, whereas prison alternatives cost less than $5,000 per year1. In this report, we will provide data-driven policy recommendations to support increases of arrests and convictions and reduction of incarcerations.

1 [https://www.ncdps.gov/adult-corrections/cost-of-corrections](https://www.ncdps.gov/adult-corrections/cost-of-corrections" \t "_blank)

Questions:

-How to address relationship between 3 variables? Probpris has opposite direction than probarr/probconv. Argue that probarr and probconv are uncorrelated?

-Is there any omitted variables that increase crime rate but doesn’t increase arrest/conviction?

Omitted Variable Bias

There are many reasons why a person might commit a crime. It could be because that person cannot find a job but still needs to provide for his/her family, has a drug addiction or mental instability, or did not have a good role model growing up. Though it can be difficult to pinpoint the underlying motivation, there are several factors that are not included in the dataset that could influence the inclination of committing a crime and bias our results. We will discuss some of the omitted variables and how it might over or underestimate the relationships between probability of arrest and conviction with crime rate.

*Education*

We expect crime rate to be negatively correlated with education. As the population of the county becomes more educated, they are more likely to understand the consequences of their actions. In addition, they will have more opportunities to pursue, reducing their likelihood to commit a crime. As such, we also expect that the probability of arrests and conviction in these more educated counties to decrease.

*Unemployment*

We expect unemployment to be positively correlated with crime rate. As more people in a given population are unemployed, these people may be unable to support themselves and their families. With no income and more time on their hands, these people may be more likely to commit a crime. Based on this, we would expect the probability of arrest and conviction to also increase in areas with increased unemployment.

Racial diversity

We expect that higher levels of racial diversity would result in a reduction in crime rate, probability of arrest, and probability of conviction. Racially diverse areas provide different perspectives to members of the community, improving understanding and empathy. With a more cohesive community, crimes committed among the population would decrease. In addition, the probability of arrest and conviction would also be reduced in these areas. A proxy for racial diversity could be the percent minority measured in 1980 (pctmin80). A higher percent minority could indicate that there is higher racial diversity.

*Youth programs*

We expect youth programs such as Big Brothers Big Sisters and Boys and Girls Club of America to reduce the likelihood of crime rate and the probability of arrests and conviction. Youths that may grow up in a troubled household or neighborhood may need a good role model which these programs help provide to reduce their inclination to commit crimes when they become adults.

*Drug use*

We expect that areas with increased drug use would have an elevated crime rate. Greater drug use leads to increases in drug-related crimes, including theft. Drug use may influence members of a population to behave irrationally, increasing the likelihood of committing a crime, especially to support a drug addiction. Based on the increase in crime rate, we also expect that areas with increased drug use would have increased probability of arrest and conviction for that population.

Severity of crimes

We expect that areas with higher crime severity would also have a higher crime rate. More serious crimes would require more law enforcement resources, leading to fewer resources to discourage minor crimes. This would result in increased levels of less serious crime. Areas with higher crime severity will also have higher probability of arrest and conviction for people who commit crimes. We expect that these areas are subject to more stringent policing and monitoring. A proxy for severity of crimes could be average sentence (avgsen). Counties with a ratio of more severe crimes would have a higher average sentence.

The potential biases stemming from omitted variables we have discussed are summarized in the table below. All of the omitted variables identified seem to contribute to an underestimation of the slope coefficient of the probability of arrest (prbarr) and convictions (prbconv) on crime rate (crmrate).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Omitted variable | Slope coefficient of prbarr/prbconv on crmrte (beta1) | Slope coefficient of omitted variable on crmrte (beta2) | Slope coefficient of prbarr/prbconv on omitted variable (gamma) | Direction of bias (beta2\* gamma) | Biases away or towards zero |
| **Education** | Negative | Negative | Negative | Positive | Towards zero |
| Income | Negative | Negative | Negative | Positive | Towards zero |
| Income inequality | Negative | Positive | Positive | Positive | Towards zero |
| **Unemployment** | Negative | Positive | Positive | Positive | Towards zero |
| Neighborhood upkeep | Negative | Negative | Negative | Positive | Towards zero |
| Number of parents in house | Negative | Negative | Negative | Positive | Towards zero |
| Racial diversity | Negative | Negative | Negative | Positive | Towards zero |
| **Youth programs** | Negative | Negative | Negative | Positive | Towards zero |
| **Drug use** | Negative | Positive | Positive | Positive | Towards zero |
| Gun ownership | Negative | Positive | Positive | Positive | Towards zero |
| **Severity of crimes** | Negative | Positive | Positive | Positive | Towards zero |
| Mental health issues | Negative | Positive | Positive | Positive | Towards zero |