**Analyzing Justice System Expenditures in the United States 2007 – 2017**

**Introduction**

According to the U.S. Bureau of Justice Statistics, in 2022, the United States imprisoned more than 1.8 million people, which equates to approximately 541 citizens out of every 100,000. The U.S. has for the largest prison population of any country in the world, and more than double the size of every other country’s prison population outside of China. Mass incarceration has been a glaring issue for decades, with extremely harmful effects that continue to ravage communities all across the nation. The goal of this analysis report is to examine the efficacy of America’s criminal justice approach by exploring a panel dataset that includes each of the 50 U.S. states and Washington D.C. from 2007 to 2017.

**Data Sources**

**NIBRS data on crime**

2017 National Incident-Based Reporting System

<https://ucr.fbi.gov/nibrs/2017/tables/data-tables>

2012 National Incident-Based Reporting System

<https://ucr.fbi.gov/crime-in-the-u.s/2012/crime-in-the-u.s.-2012/tables/5tabledatadecpdf/table_5_crime_in_the_united_states_by_state_2012.xls>

<https://ucr.fbi.gov/nibrs/2012/data-tables>

2007 National Incident-Based Reporting System

<https://www.icpsr.umich.edu/web/NACJD/studies/25341>

<https://ucr.fbi.gov/crime-in-the-u.s/2007>

**FBI Uniform Crime Reporting Program**

2017 Crime by U.S. State – Table 5

<https://ucr.fbi.gov/crime-in-the-u.s/2017/crime-in-the-u.s.-2017/topic-pages/tables/table-5>

1998 – 2017 Crime in the United States

<https://ucr.fbi.gov/crime-in-the-u.s/2017/crime-in-the-u.s.-2017/topic-pages/tables/table-1>

**Justice Expenditures**

Justice Expenditures and Employment in the United States, 2017

<https://bjs.ojp.gov/library/publications/justice-expenditures-and-employment-united-states-2017>

Justice Expenditures and Employment in the United States, 2012

<https://bjs.ojp.gov/library/publications/justice-expenditure-and-employment-extracts-2012-final-update>

Justice Expenditures and Employment in the United States, 2007

<https://bjs.ojp.gov/library/publications/justice-expenditure-and-employment-extracts-2007-revised>

Justice Expenditures and Employment in the United States, 1982 - 2007

<https://bjs.ojp.gov/library/publications/justice-expenditures-and-employment-1982-2007-statistical-tables>

<https://www.prisonstudies.org/highest-to-lowest/prison-population-total?field_region_taxonomy_tid=All>

**Correlation Matrix**

A graph of numbers and text

Description automatically generated with medium confidence

The correlation matrix above illustrates the linear relationships between 14 different variables included in this analysis. Inside each box is a Pearson correlation coefficient, or “r-value,” which ranges between -1 and 1 depending on the “direction” and “strength” of the linear relationship between two variables. A negative correlation coefficient between two variables signifies that as one of the variables increases, the other variable generally decreases. A positive correlation coefficient signifies the opposite, meaning that both variables typically increase or decrease at the same time as each other. An r-value of zero means that there is absolutely no quantified linear correlation between the two variables at all. As negative r values get closer to -1, and positive r-values approach +1, the level of covariance between a random assortment of data points would be expected to decrease, and the data will tighten closer along the line of best fit.

A number of insights can be derived from the information provided by the correlation matrix that was created above. Perhaps the most apparent observation is that the nine different crime categories derived from the FBI’s NIBRS program almost all have a positive linear relationship. The only exception appears to be incidence levels of rape, which do not seem to have a strong linear relationship with any of the other 13 variables included.

Another noteworthy piece of information that can be derived from this matrix is that there is a positive correlation coefficient between the portion of total government expenditures allocated towards the justice system and 8 out of the 9 crime classifications listed. This suggests that states that devote a larger portion of their budget towards the justice system actually face higher levels of criminality. However, this does not automatically mean that there is a causal relationship between any these variables. Further analysis would be required to assess the benefits and drawbacks associated with determining how public sector funds should be allocated in order to reduce levels of crime.

However, the linear relationships appear to be relatively weak, as they range between -0.11 and +0.37.

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