‘HANDS UP, DON’T SHOOT’:

Is police violence higher in American suburbs?

SUMMARY

Recent advocates and media sources propose that police violence may be more elevated in suburbia. Despite this, we find consistently even rates of police violence across rurality when calculated as a rate per 100,000 person-years. Testing both linear and non-linear models for the data, we found no reason to suspect there is a correlational or causal link between rurality and police violence.

POLICY RECOMMENDATIONS

1. Create a comprehensive federal national registry for police violence and misconduct.
2. Shift public focus to institutional factors of policing and police violence, citing a lack of connection between rurality and police violence.
3. Experiment and rigorously research different policing models to improve public safety and health.

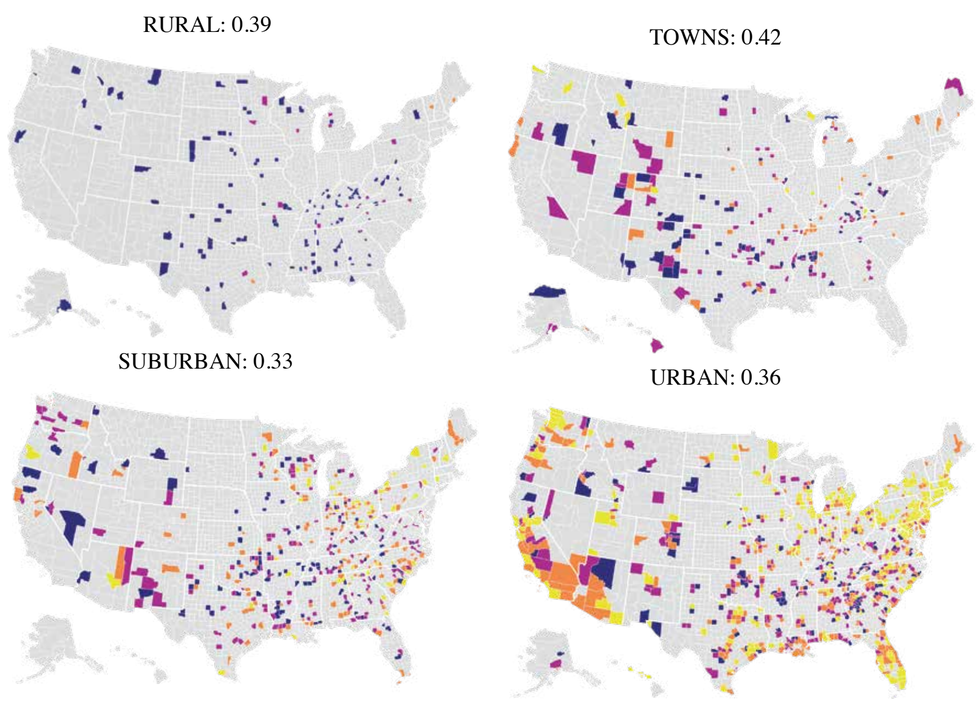
Problem

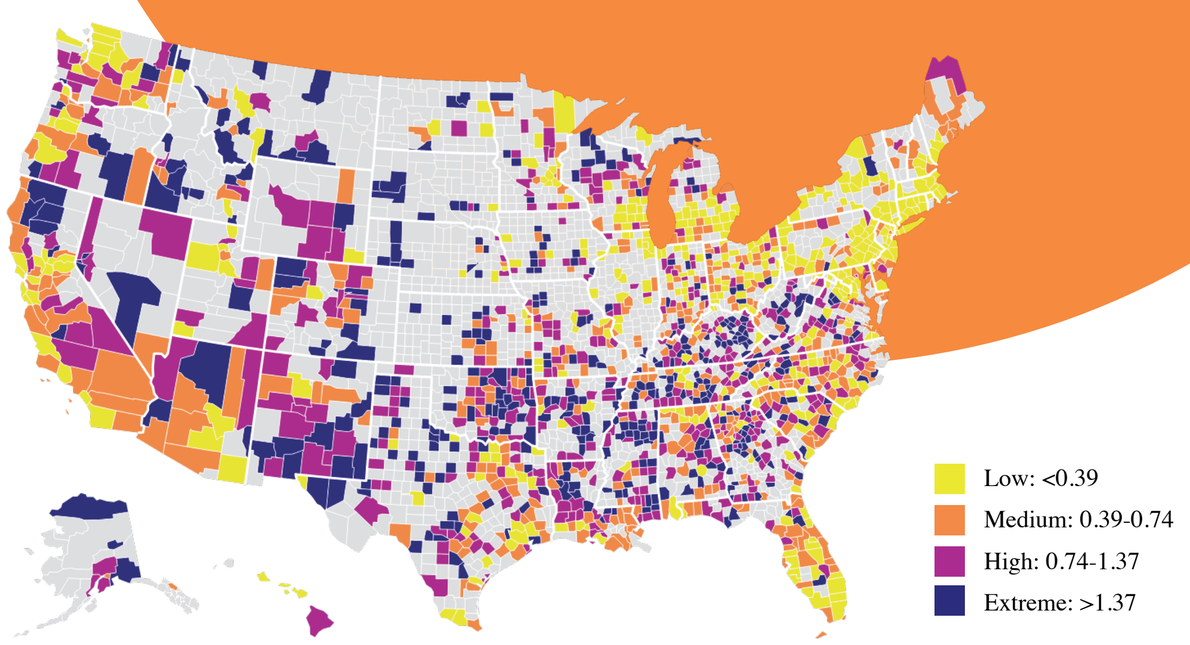
The United States is one of the leading nations for deaths at the hands of the police. Over 1,000 people die as a result of police intervention each year.

Recently, advocates have pointed to American suburbs as a site of intensified police violence, while traditional views saw ‘inner-cities’ as the core of the problem. However, to date, neither method has been proven with robust statistical methods.

In our research, we examine whether or not police violence indeed has a rurality factor and, if so, whether or not we can use linear or non-linear models to determine the relationship.

VISUAL INSPECTION

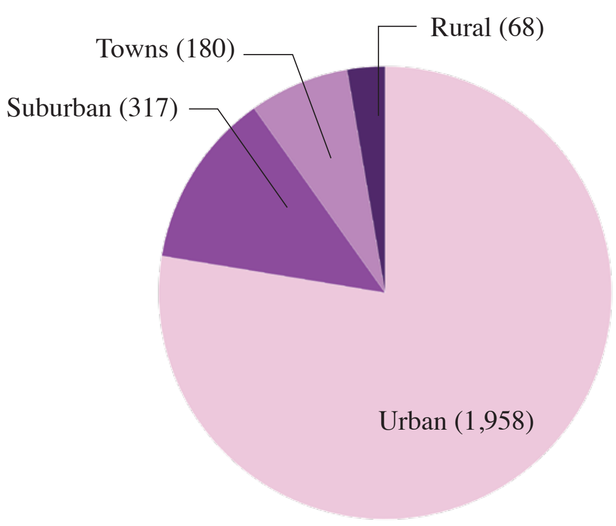




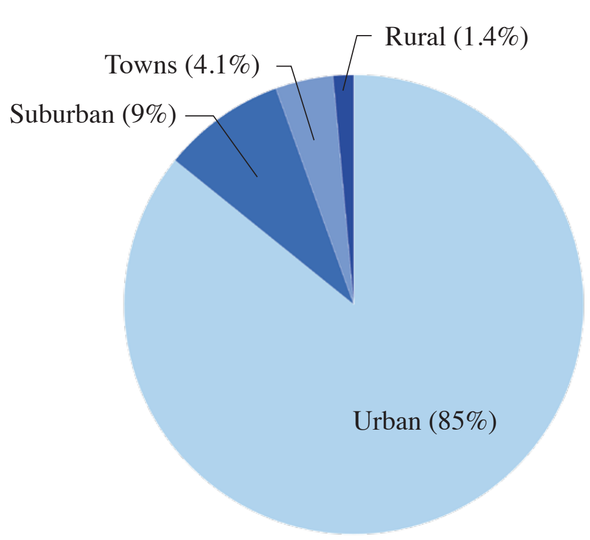
Recorded incidents of police violence from years 2015-2019. Data Source: Mapping Police Violence by Campaign Zero. (Left) Recorded incidents separated by rurality classification as defined by the rural-urban continuum code (RUCC) by the US Department of Agriculture where RURAL = RUCC 8 & 9, TOWNS = RUCC 5 & 7, SUBURBAN = RUCC 4 & 6 and URBAN = RUCC 1-3. RUCC codes are determined by population density and proximity to central metro areas. Here, 2013 RUCC classifications are used, the most recent year of the classification system. Death rates are calculated per 100,000 person-years using a 5 year averages of population according to the US Census.

DESCRIPTIVE STATISTICS

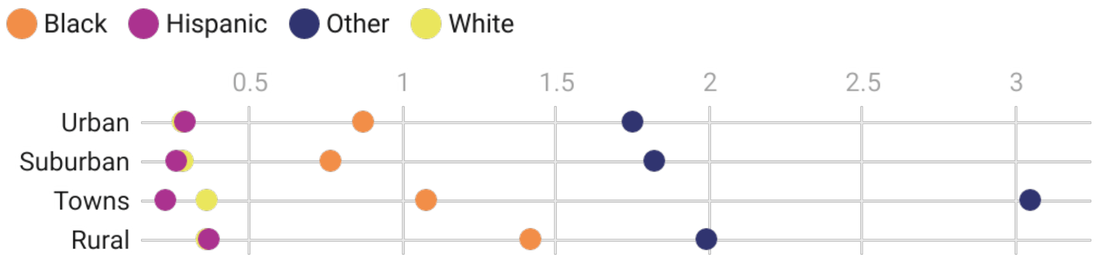
Recorded deaths by rurality



US Population by rurality



Rates of victimization by police (race disaggregated)



Key Findings

While more fatalities at the hands of the police happen in urban areas, the numbers across all ruralities are more or less proportional to population estimates of the rurality type. Furthermore, estimates by the US Department of Agriculture and US Census show that 85% of Americans live in urban areas. Deaths in urban areas account for 85% of total deaths while deaths in suburban areas account for 8.5% of total deaths, which correlates to the 9% of the American population residing in suburban areas.

While rates vary drastically by race (by far a more powerful indicator of outcomes of policing in the United States), rates across rurality for each race do not vary greatly, with the notable exception of high death rates for individuals classified as ‘Other’ in towns. Across all ruralities, deaths of the ‘Other’ population lead the category, three times that of the Black population and six times higher than those of the white and Hispanic populations. Very often, these are driven by exceptionally high rates of violence experienced by Native American populations in less urban places. When looking at rates between urban and suburban, rates across races tend to be only marginally different.

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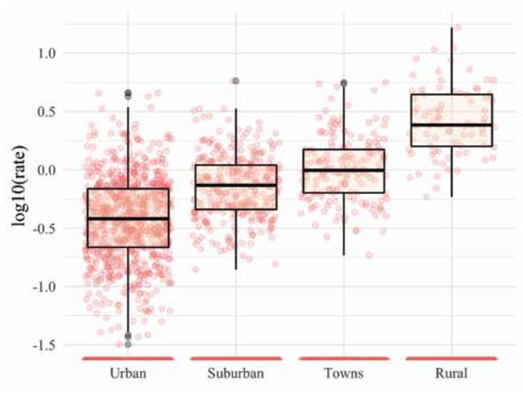
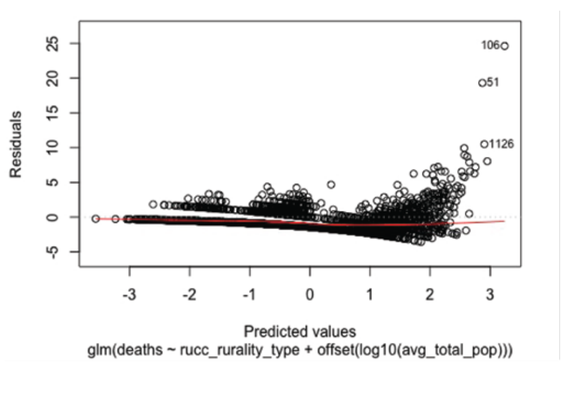
Deaths recorded from 2015-2019

UNDERSTANDING THE RELATIONSHIP

Distribution of rates by county v. rurality



Residuals v. fitted values Poisson Model



Model fit

Based on speculation from the calculated death rates, we have only limited reason to suspect a linear relationship. If, as advocates argue, suburban death rates are higher, we would expect curvature. The first graph shows an unclear indication of the relationship between rurality and violence. Attempts to transform the data also yielded similar results. To test more empirically, we attempted to map the data to a Poisson model, a common distribution for public health research with ‘zero-heavy’ infrequent, significant outcomes. Examining the residuals v. fitted values we see the model is a poor fit for the data due to clustering and fanning. All subsequent diagnostics tests resulted in assumption violations for both linear and non-linear models. For this, we cannot conclude there is a relationship.

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Master of Public Policy — Cohort of 2021
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