The Association Between Race, Socioeconomic Level, and Traffic Stop Arrests in Connecticut

Kat Basilio, Quantitative Analysis Center, Wesleyan University

Introduction

- In 2022, an estimated 19% of U.S. residents aged 16 or older (about 49.2 million people) reported having contact with police within the past 12 months. Of these encounters, 12.4 million were traffic stops (Tapp, S. & Davis, E.J., 2024).
- Research indicates that Black and Hispanic drivers across the U.S. are more likely to be stopped by police and more likely to be arrested during a traffic stop compared to White drivers (Widra, 2024; Pierson et al., 2020; Baumgartner, Epp, & Shoub, 2018).
- Race may not be the sole factor influencing arrest decisions during traffic stops. Evidence suggests that an area's socioeconomic level may also play a role in determining whether a driver is arrested (Petrocelli, Piquero, & Smith, 2003; Zhang & Zhang, 2021; Roh & Robinson, 2009; Ekstrom, Le Forestier, & Lai, 2022).
- Gap in Literature: Few studies have investigated the relationship between race, socioeconomic status, and traffic stop arrests in the state of Connecticut.

Methods

Sample

- Drivers from traffic stops conducted in Connecticut in 2022, recorded by Connecticut police departments and reported to the Institute for Municipal and Regional Policy (IMRP) at the University of Connecticut.

Measures

- Driver race was recorded by officers as White ("W") and Black ("B"). Driver ethnicity was recorded as Hispanic ("H") and non-Hispanic ("N"). A category was constructed to identify drivers who were both White and non-Hispanic.
- Arrests were recorded dichotomously. Town-level arrest rates were calculated as the proportion of stops resulting in arrest in each town. Race-specific arrest rates were calculated as the proportion of stops resulting in arrest within each race–town combination.
- Socioeconomic level was measured using the median household income of the town where each stop occurred, obtained from U.S. Census data. Median income was used both as a continuous predictor and binned into income categories.

Research Questions

- What is the association between the median incomes of areas where a traffic stops occur and rates of drivers being arrested from traffic stops in Connecticut?
- Does this association differ by driver race, specifically for Black, Hispanic, and White drivers?

Results

Univariate

- In 2022 in Connecticut, 1.86% of traffic stops involved police performing a custodial arrest on the driver.

Bivariate

- A slight negative relationship exists between proportion of stops ending in arrest and town median income (Figure 1).
- Linear regression shows that median income of a town is not significantly associated with the rate of arrests from traffic stops ($p = 0.055$).
- Linear regression also shows for every $10,000 increase in median income, the rate of arrest decreases by 0.18%.
- Correlation coefficient test also indicates that a weak negative correlation exists between median income and arrest rate (cor = -0.148).

Multivariate

- Linear regression shows that, holding income constant, the predicted arrest rate for Black drivers is 3.1%.
- Hispanic drivers have a significantly higher arrest rate, 1.32% higher than Black drivers ($p = 0.026$), also holding income constant.
- White drivers have a very slightly higher arrest rate than Black drivers (0.53%), though this is not statistically significant ($p = 0.366$).
- Hispanic drivers have the highest arrest rates in every income bracket except $80–100k (Figure 2).

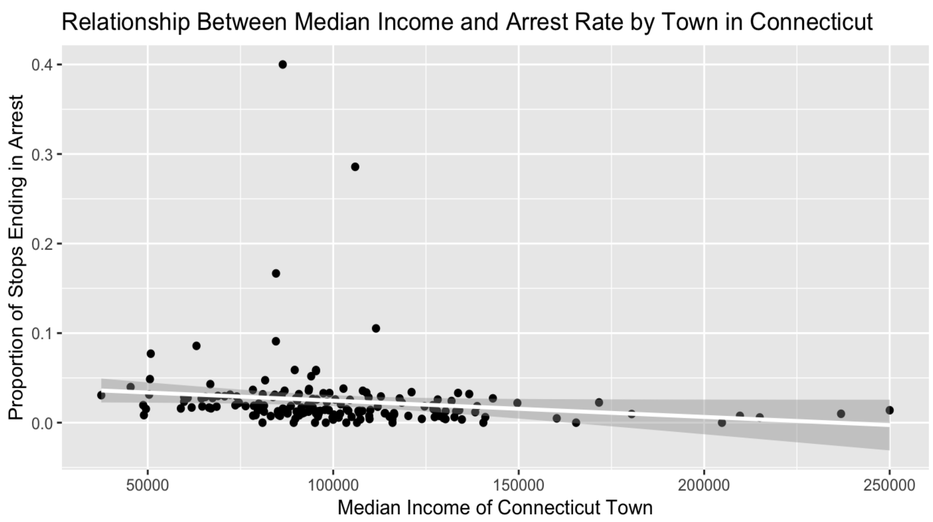

Figure 1: Relationship Between Median Income and Arrest Rate by Town in Connecticut

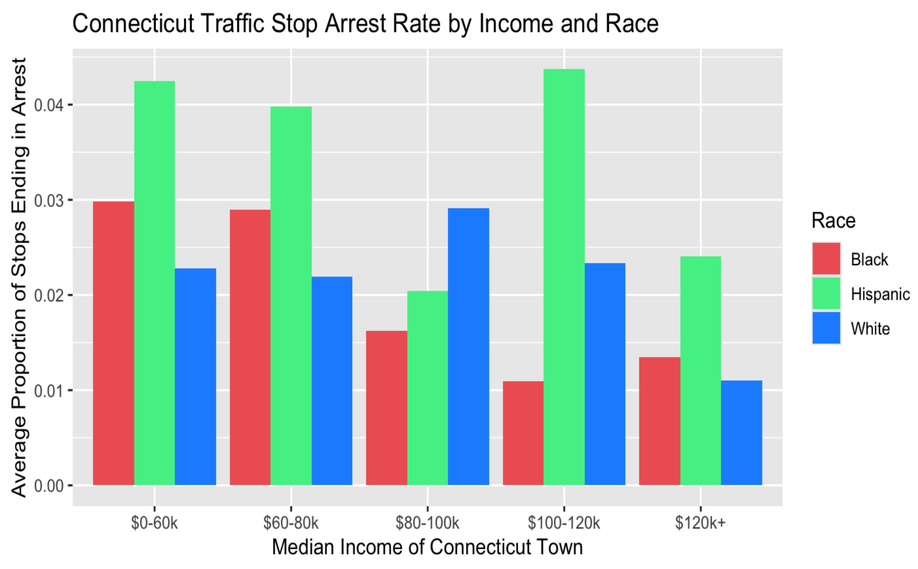

Figure 2: Relationship Between Arrest Rate, Town Median Income, and Driver Race

Multivariate (cont.)

- In the income ranges $0-60k, $60-80k, and $120k+, Black drivers have higher arrest rates than White drivers (Figure 2).
- Controlling for race, for every $10,000 increase in town median income, the arrest rate decreases by approximately 0.13%, but this is not statistically significant ($p = 0.685$).

Discussion

- The present findings show that racial disparities in policing persist even after accounting for median income. For example, a town's median income does not explain the higher arrest rates observed for Hispanic drivers.
- Because median income has only a weak relationship with arrest rates, disparities may be influenced by other unmeasured socioeconomic or structural factors beyond town median income.
- Hispanic drivers show consistently higher arrest rates across most income categories, while Black drivers show higher arrest rates in some income ranges but not others. This indicates that racial disparities are not uniform and may vary depending on other local economic or demographic conditions.
- Further research is needed to determine the role of other socioeconomic covariates (e.g. neighborhood crime rate, poverty rate, town-level demographics) not explored in this study.

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