An Analysis of Racial Bias in the Association Between Vehicle Search Success and Citation

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Introduction

- Black male drivers, with the average age of 18, are 3.7, 3.4, and 5.0 times more likely than the average driver, to be searched, arrested and have forced used on them during a traffic stop (Engel & Calnon, 2006).
- The success rate for vehicle searches is 11% greater for White drivers than for Black drivers (Gross & Barnes, 2002).
- The probability that force is used during a traffic stop is twice as probable for cases in which the vehicle is searched than for unsearched vehicles (Kramer & Remster, 2018).
- The association between whether searches were conducted, and race can be vital in discerning whether the decision to conduct vehicle searches is racially biased
- Furthermore, the addition of search success rates and stop disposition may provide insight into the efficacy of vehicle searches in the larger scheme of policing.

Research Questions

- Is the association between search success rates and stop disposition statistically different for stops made with Black drivers in comparison to drivers of other races?
- Are stop dispositions for failed searches statistically different for stops made with Black drivers in comparison to drivers of other races?

Methods

Sample

- Data was drawn as a part of the CT Racial Profiling Prohibition Project. The sample consists of all 3.1 million traffic stops made in Connecticut in 2018 but the data utilized in this analysis only consists of 1,016,722 observations.

Measures

- Race is a categorical variable that is coded in 2 levels to assess the race of the driver of the vehicle stopped. B=Black; W=White.
- Search Success was assessed through a sum of dummy codes for the search and contraband variables, both of which were dichotomously coded 1 or 0 for TRUE or FALSE correspondingly. 0=no search conducted; 1=search conducted but no contraband found; 2=contraband found during search.
- Stop Disposition is a 5-level categorical variable that assesses the outcome of the traffic stop. (Infraction, Misdemeanor, No Disposition, Uniform Arrest Report, Warning)
- Citation is a binary variable that collapses the Stop Disposition variable for the logistic regression to access moderation.
  Citation = Infraction/Misdemeanor/Uniform Arrest Report; No Citation = No Disposition/Warning

Results

Univariate

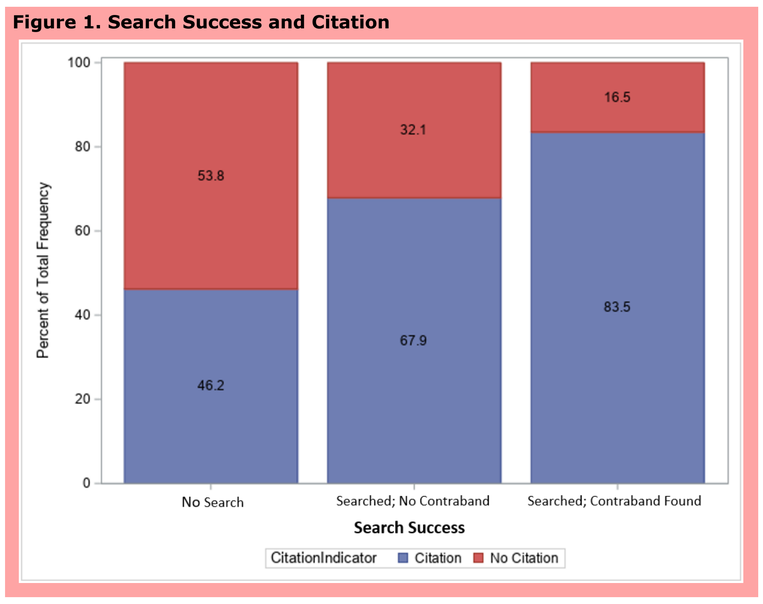
- 3.32% of traffic stops included a vehicle search. Contraband was found in 35.55% of the vehicles searched
- 79.26% of drivers engaged in a traffic stop were white. 17.59% of drivers were black.
- 51.47% of traffic stops ended with either a verbal or written warning. 40.94% of stops were classified as infractions.

Bivariate

Chi-square tests of independence revealed:

- Stops in which a vehicle search resulted in contraband discovery are the most likely to end in arrest (22.99%) [8 df; value=145148; p=<.001]
- Stops in which the driver is Black are the most likely to end in a misdemeanor charge (8.97%) [8 df; value=7887.3567; p=<.001]

Figure 1. Search Success and Citation



The application of the Bonferroni correction showed **that successful searches where contraband was found were more likely to result in arrest (22.99%) than unsuccessful searches (9.60%)** [df 4; value=2645.9808; p=<.0001]

Multivariate

- **Race** is not a moderator for the association between **Search Success** and **Citation**
- A vehicle with contraband found is more likely to result in a citation.
- Logistic Regression Models for Search Success (x) vs Citation (y)

If Black Driver:

$y=0.1365-0.8109x$

If White Driver:

$y=0.1655-.9474x$

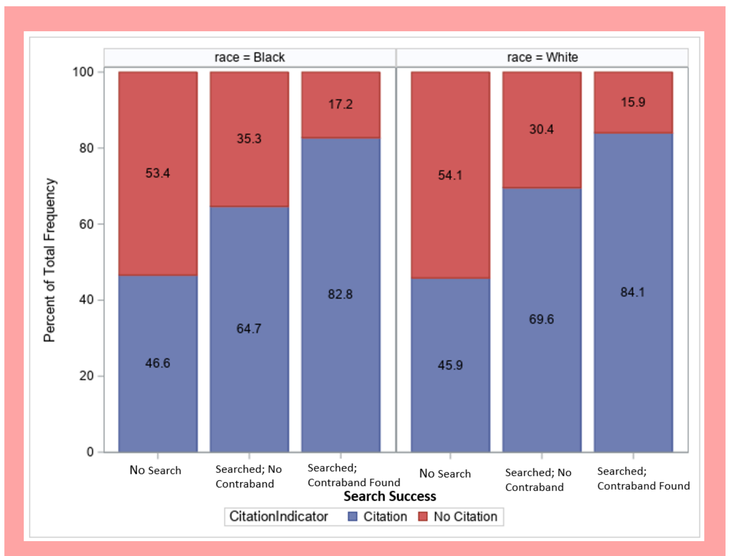


Figure 2. Race as a Covariate for the association between Search Success and Citation

Discussion

- Race does not moderate the association between vehicle search success and citation.
- Vehicles that are searched and discovered to be carrying contraband tend to lead to citation more often than their counterparts.
- The CT Racial Profiling Prohibition Project might use this information to conclude that policing in the state does no perpetuate racial disparities.
- Future resource should analyze the associations between stop reasons and vehicle search rates to assess the extent to which pretextual stops are utilized in the state. If observations regarding use of force can be records, this may also be incorporated.

Engel, R. S., & Calnon, J. M. (2006, August 20). EXAMINE THE INFLUENCE OF DRIVERS' CHARACTERISTICS DURING TRAFFIC STOPS WITH POLICE RESULTS FROM A NATIONAL SURVEY. Justice Quarterly, 21(1), 49-90. Taylor & Francis Online. 10.1080/07418820400095741

Gross, S. R., & Barnes, K. Y. (2002). Road work: Racial profiling and drug interdiction on the highway. Michigan Law Review, 101(3), 651. https://doi.org/10.2307/1290469

Kramer, R., & Remster, B. (2018, November 5). Stop, Frisk, and Assault? Racial Disparities in Police Use of Force During Investigatory Stops. Law & Society Review, 52(4), 960-993. Wiley Online Library. 10.1111/lasr.12366