Better for Everyone: Black Descriptive Representation and Police Traffic Stops

Leah Christiani*, University of Tennessee
Kelsey Shoub, University of South Carolina
Frank R. Baumgartner, University of North Carolina at Chapel Hill
Derek A. Epp, University of Texas at Austin
Kevin Roach, University of North Carolina at Chapel Hill

Abstract:

Racial disparities in citizen interactions with police are ubiquitous concerns in American communities. What difference does electoral representation make? We demonstrate that black descriptive representation in local government affects police activity and scrutiny in a given community. We use a new dataset comprised of over 79 municipal police departments spanning six states, based on tens of millions of individual-level traffic stops. In cities and towns with majority-black city councils, traffic stops are less likely to result in a search. This decline in search rates affects both white and black drivers, though the decline is larger for black drivers. Even after controlling for socioeconomic factors, segregation, and crime rates, descriptive representation still matters. A city council composed of a majority of black members is associated with important differences in policing, affecting both white and black residents.

Key words: policing, racial disparities, traffic stops, descriptive representation

Abstract count: 135
Word count: 4,363

*Corresponding author: email: christiani@utk.edu
As national attention has focused on questions of racial justice and the relations between police departments and the communities they serve, scholars have consistently found that black drivers are indeed treated differently than whites on the nation’s roadways. In many states, black drivers are more likely to be searched or arrested following a traffic stop, and they are frequently pulled over at rates that far exceed their numbers in the population (Epp et.al. 2014; Baumgartner et.al. 2017; Baumgartner, Epp, and Shoub 2018; Christiani 2020). Contact between black communities and the police occurs frequently (Fagan and Davies 2000; Legewie 2016), in multiple contexts (Gelman, Fagan, and Kiss 2007), and tends to erode civilian trust (Carr, Napolitano, and Keting 2007; Gau and Brunson 2009; Jones 2014; Bell 2016; Burch 2013; Lerman and Weaver 2014). These consequences have led scholars to ask important questions about what can be done, if anything, to combat the negative aspects of these interactions and in what circumstances disparities may be diminished.

We ask: Can this disparate treatment be mitigated by descriptive representation? On the one hand, we know that descriptive representation is important in pushing back against disparate outcomes (Browning et al. 1984; Hicklin and Meier 2008; Preuhs 2006). On the other hand, police chiefs and police officers are not elected and frequently the municipal government does not fully control a police department’s budget. Thus, individual officers are potentially less responsive to the community than elected officials. Still, there are reforms that elected officials can put into place, such as cuts to the budget, mandatory trainings, or banning certain behaviors like chokeholds, that could affect police behavior. This paper evaluates the effect of the racial makeup of the city council on police traffic stop outcomes using an original dataset spanning 467 annual observations from 79 police departments across six states. We find that traffic stops are less likely to involve a search in cities and towns with a majority-black city council. These differences work
to the benefit of both black and white drivers. Even though increased black representation would not eliminate racial disparities, it may be an important part of reducing the amount of negative police contact that individuals experience.

**The Diffuse Benefits of Descriptive Representation**

Existing scholarship suggests that local policing can be affected by political representation. Black descriptive representation leads to a decline in the use of lethal force by the police (Ochs 2011), a change in policing policies (Marschall and Shah 2007), an increase in black representation on the police force (Saltzstein 1989), and an adoption of citizen controls over the police (Saltzstein 1989). Stucky (2012) analyzes black violent crime arrests, finding that they are lower in cities with more black members on the city council and with black mayors. Sharp (2014) finds that black political representation on the city council contributes to a decrease in the rate at which blacks are arrested for “order maintenance violations.”

These findings are not surprising. Any group that felt as though it was being treated unfairly by the police, would, given adequate resources, seek to effect changes. This is why descriptive representation is thought to be so important. With respect to race, it has been found that descriptive representation in local government can lead to better policy outcomes for minority groups (Browning, Marshall and Tabb 1984; Sonenschein 1993; Saltzstein 1989; Sances and You 2017; Sharp 2014). Black politicians are more likely to listen and respond to black constituents than white politicians (Broockman 2013), encourage voter turnout (Rocha et. al. 2010; Whitby 2007; Gay 2001a; but see Gay 2001b) and bring attention to and advocate for their concerns (Cannon 1999; Clark 2019). Black descriptive representation leads to an increase in satisfaction with government (Marschall and Ruhil 2007) and promotes trust, political efficacy, and participation (Banducci, Donovan, and Karp 2004; Bobo and Gilliam 1990; Tate 2003). When local officials
share the identity of the citizens they represent, their constituents are more likely to have their voices heard and concerns prioritized.

Clearly then, having more black representatives can lead to better social outcomes for black citizens. What does this mean for police traffic stops? Highly discretionary traffic stops have long been known to disproportionately affect black drivers, singling them out for extra police scrutiny (Epp et.al. 2014). It is plausible then that black representatives would seek to curtail police discretion to carry out this type of high-contact policing. White drivers might also benefit from any such shift in policing practices, but to a statistically lesser degree than black drivers. For example, Baumgartner et al. (2020) evaluated the effect of racial diversity among police officers on the percentage of drivers searched. They found that search rates were lower for both black and white drivers when the officers were females or racial minorities as opposed to white males. Something similar might happen when racial minorities are adequately represented in local politics. A city council member could bring about these types of change by pressuring police departments to change their approach either explicitly, by writing changes to police protocol into law, or implicitly through private conversations with police leadership.

However, if reform-oriented pressures are to be effective it may require substantial numbers of racial minorities in elected positions. Eckhouse (forthcoming) finds that when the city council is at least 50 percent non-white, racial disparities in arrests decline. The largest decline in racial disparities in arrests occurs when city councils are composed of a majority of people of color (compared to when there is just one non-white member or when there the council is 30% non-white). She argues that descriptive representation is influential through its ability to enhance the power, not just presence, of a minority group.
For issues like criminal justice and policing, race often determines attitudes (and thus, political priorities) more than party (Eckhouse 2019). As such, the presence of a majority of black members on the city council is likely one way forward for affecting changes in policing practice. Following this logic, we expect that when the city council is made up of a majority of black members, police behavior will become less intrusive. Specifically, we expect to see fewer traffic stops result in searches of the driver or vehicle. These differences should affect both white and black drivers, but be stronger among black drivers, and lead to a reduction in racial disparities. We therefore propose the following hypotheses:

**H1:** Cities with majority-black city councils will have lower search rates following traffic stops than other cities.

**H2:** Cities with majority-black city councils will have lower racial disparities in search rates following traffic stops than other cities.

**Studying Police Searches in Municipalities**

For many people, traffic stops are the most common way that they interact with the police. For example, a 1999 supplement to the National Crime Victimization survey on police-citizen encounters (Langan et al. 2001) found that 8.7 percent of individuals 16 years of age or older had experienced a traffic stop in the previous twelve months (see Huggins 2012, 97). Once a decision to pull a motorist over has been made, an officer may then decide whether or not to carry out a search. Because these decisions are highly discretionary, they are malleable (see Sharp 2014). While we cannot know who is actually on the road driving, we limit our analyses to what occurs once a driver is stopped by the police (for discussions of this see: Baumgartner, Epp, and Shoub 2018, Knox, Lowe, and Mummolo 2020, or Pierson et al. 2020).
In order to assess the role of representation in police encounters, we developed a new dataset. Our goal was to compile the most comprehensive dataset of traffic stop data possible, and to link it with the corresponding data on descriptive representation. We are interested in descriptive representation so we focus exclusively on municipalities where it was possible to collect information on the political and demographic composition of city councils, excluding data on stops made by the state highway patrol and county sheriffs’ offices. A few states make available comprehensive databases of virtually every traffic stops conducted in those states. In states where comprehensive data is not available, some individual cities still publish reports with traffic stop data. From these scattered traffic stops reports and datasets, we record the number of stops and searches by racial group, year, and agency. From these data, search rates will become the dependent variables in our analyses. However, searches are relatively rare (typically fewer than five percent of all traffic stops lead to a search). We therefore impose a number of thresholds in order to ensure robust statistical indicators. We retain only those agency-years when at least 10,000 traffic stops in a given year were made, including at least 100 stops each of black and white drivers.\(^1\) This means that much of the analysis that follows then, is focused on medium and larger sized towns and cities.

The availability of traffic stop data and whether it met our thresholds determined our case selection. We then collected descriptive representation of the city council for that municipality, as well as control variables from the census bureau. The vast majority of the councils were nonpartisan, so we do not analyze partisanship. See Appendix A.1 for a more comprehensive discussion of the collection of political variables. The resulting number of agency-years is

---
\(^1\) The purpose of imposing a threshold is to ensure that the search rates we calculate, by agency, are robust (i.e. that they will not change drastically with the introduction of one or two additional searches or stops). This is especially important because searches after a traffic stop are relatively rare – meaning rates can be subject to fluctuations. We used this threshold to determine the municipalities for which we would collect political variable data.
presented in Table 1. Note that we have the most information on Illinois and North Carolina. We investigate these states further in Appendix C.5.

Table 1: Distribution of states, agencies, and years

<table>
<thead>
<tr>
<th>State</th>
<th># Agencies</th>
<th>Years</th>
<th># Agency-Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illinois</td>
<td>43</td>
<td>2004-2014</td>
<td>283</td>
</tr>
<tr>
<td>Maryland</td>
<td>1 (Frederick)</td>
<td>2014, 2016</td>
<td>2</td>
</tr>
<tr>
<td>Missouri</td>
<td>15</td>
<td>2015</td>
<td>15</td>
</tr>
<tr>
<td>North Carolina</td>
<td>18</td>
<td>2002-2016</td>
<td>149</td>
</tr>
<tr>
<td>Oregon</td>
<td>1 (Portland)</td>
<td>2004-2014</td>
<td>11</td>
</tr>
<tr>
<td>Texas</td>
<td>1 (Austin)</td>
<td>2009-2015</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>79</td>
<td></td>
<td>467</td>
</tr>
</tbody>
</table>

We construct four dependent variables: The overall search rate (regardless of driver race), white search rate (that is, the number of white drivers searched per 100 who are stopped); black search rate; and the black-white search rate ratio (the search rate for black drivers divided by the search rate for white drivers; for a broader discussion of this measure see Baumgartner et al. 2017 or Shoub et al. 2020).

Figure 1 plots the distribution of the black search rate, the white search rate, and the black-white search rate ratio (a measure of inequality).² There is much more variation in the black search rate, and its values greatly exceed that of the white search rate: the mean of the black search rate (7.68%) is double that of the white search rate (3.18%), and this difference is significant (p < 0.0001). The plot of the black-white search rate ratio has a vertical line at one (indicating equal rates between blacks and whites), values greater than one (to the right of the vertical line) indicate black drivers are searched more frequently, and values less than one (to the left of the vertical line) indicate the reverse. Note that almost all observations exceed this value, meaning that black drivers tend to be searched at higher rates than white drivers.

² All results hold when we use the black-white search rate difference, another measure of inequality. See Appendix C.2 for these analyses.
Note: In Figure 1(c), the vertical line at one indicates equal search rates between black and white drivers. Values less than one (to the left of the line) indicate white drivers are more likely to be searched, while values greater than one (to the right of the line) indicate black drivers are more likely to be searched. It is noteworthy that not only are the bulk of the observations to the right of the equality line indicating that black drivers are searched more frequently in most departments but also that a majority of departments have a search rate of 2 or greater indicating that black drivers are searched twice or more as frequently as white drivers in most departments.

The main independent variable of interest is an indicator variable that is coded one if 50% or more of a municipality’s city council is composed of black members and zero otherwise, following our expectation that a majority of the council must be black in order for there to be enough power to change policing practice. Of the 467 agency-years, this is observed 35 times, comprising about 7.45% of observations. These observations come from Durham (11 years), Fayetteville (8 years), Goldsboro (1 year), Greensboro (1 year), and Winston-Salem (14 years); all cities in North Carolina. Among cities with a majority-black city council, the average proportion of the population that is black is 0.38, and the average search rate ratio is 2.19. These values compare to 0.14 and 2.65, respectively, in cities without a majority black city council.

Note that we consider the possibility that a majority of black members may not be necessary to affect policing. Rather than using a dichotomous variable, we instead take the proportion of city council seats held by black members, and use this to predict search rates and disparities. These models are presented in Appendix C.1. The results are largely null. This indicates that a majority is necessary before changes are seen. We also consider whether the proportion of black members may affect policing, conditional on whether there is a majority. We again largely find that it is more about having a majority than about the proportion itself (though we do find this interaction to be significant for the search rate of white drivers). See Appendix C.1 for this analysis.
A variety of other factors may drive policing decisions beyond the racial make-up of the city council. We therefore include several control variables that capture the most prominent alternative explanations: the overall population size, the size of the black population, the education level and unemployment rate among the black population, the crime rate, the degree to which black and white communities are segregated, whether the police chief is black, and the proportion of black officers on the force. Further, we include state and year fixed effects to capture any temporal or geographic variation in policing scrutiny. We also include police agency-level random effects to even more robustly model potential variation by geography.

**Analysis**

The analyses estimate the level of intrusive police activity in a given municipality, in a given year. Each OLS model is first estimated with state and year fixed effects in order to control for geographic and temporal features that may exist. Then, models are estimated with agency random effects, which are included to control for additional differences between agencies and as our controls vary at the agency not state level, and year fixed effects to control for more local features that may account for traffic stop outcomes. The second set of models is more restrictive as it introduces 79 new intercepts to estimate, and controls for agency characteristics that may truly be shaped by the city council (if, for example, the council passed policies that were then implemented by the police agency), reducing some variability that may indeed pertain to the main independent variable of interest. As such, they are more conservative estimates. Table 2 reports the results for models that predict the overall (total) search rate, the white search rate, and the black search rate.

---

4 Demographic and municipal information comes from the U.S. Census Bureau and American Community Survey. Race of the police chief is original data, collected by the authors. The proportion of the police force that is black is the mean level, calculated from the 2000, 2003, 2007, and 2011 Law Enforcement Management and Administrative Services survey). See Appendix A for more detail on these measures.
Table 3 presents results predicting the black-white search rate ratio, which is a measure of racial disparity in search rates.

**Table 2: OLS Regressions Explaining the White, Black, and Total Search Rates**

<table>
<thead>
<tr>
<th></th>
<th>All Drivers</th>
<th>White Drivers</th>
<th>Black Drivers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>Majority black council</td>
<td>-0.02***</td>
<td>-0.01**</td>
<td>-0.02***</td>
</tr>
<tr>
<td></td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.00)</td>
</tr>
<tr>
<td>Controls</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Year Fixed Effects</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>State Fixed Effects</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Agency Random Effects</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Adj. R2</td>
<td>0.30</td>
<td>0.33</td>
<td>0.33</td>
</tr>
<tr>
<td>Num. obs.</td>
<td>467</td>
<td>467</td>
<td>467</td>
</tr>
<tr>
<td>Log Likelihood</td>
<td>998.83</td>
<td>1155.69</td>
<td>840.79</td>
</tr>
</tbody>
</table>

*p<0.1, **p<0.05, ***p<0.01

**Table 3: OLS Regressions Explaining the black-white search rate ratio**

<table>
<thead>
<tr>
<th></th>
<th>(7)</th>
<th>(8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Majority black council</td>
<td>-0.47**</td>
<td>-0.13</td>
</tr>
<tr>
<td></td>
<td>(0.18)</td>
<td>(0.23)</td>
</tr>
<tr>
<td>Controls</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Year Fixed Effects</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>State Fixed Effects</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Agency Random Effects</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Adj. R2</td>
<td>0.43</td>
<td></td>
</tr>
<tr>
<td>Num. obs.</td>
<td>466</td>
<td>466</td>
</tr>
<tr>
<td>Log Likelihood</td>
<td>-558.08</td>
<td></td>
</tr>
</tbody>
</table>

*p<0.1, **p<0.05, ***p<0.01

Table 2 demonstrates that when the majority of the city council is composed of black members, there are lower search rates of all drivers, regardless of race. These effects persist even when using agency-level random effects (though for black drivers, the statistical significance falls to the 0.1 level). Models 5 and 6 show that the predicted search rate for black drivers declines by somewhere between two and four percent. Given that the mean search rate is 7.68 (see Figure 1 and surrounding text, above), this is a dramatic effect – almost halving black drivers’ rate at which
they are searched. White search rates (models 3 and 4) also decline sharply, by between one and two percent. Given that the black rate declines by about twice as much as the white search rate, these changes clearly have a differential effect on the black community, though they affect both blacks and whites. Models 1 and 2 corroborate these findings by demonstrating that the overall search rate also declines when the council is majority black.

Table 3 presents results from models addressing whether the racial disparity in search rates declines. Models 7 and 8 indicate that the racial disparity between white and black drivers does decline, by about half a point. However, this effect loses statistical significance when agency-level random effects are included, though it remains in the expected direction (municipalities with majority black city councils see a decline in racial disparities). We thus find strong support for hypothesis 1 and mixed support for hypothesis 2. Figure 2 shows the predicted search rate, by race, based on whether the city has a majority black council. Black search rates decline from 10% to 6%; white search rates move from 4% to 2.5%.

Figure 2: Predicted black and white search rates, by presence of majority-black city council

Note from the full model results presented in Appendix B that there is a counter-intuitive result for the effect of having a black police chief. The presence of a black police chief is
associated with an increase in search rate for all drivers (though the effects disappear when random intercepts are added). The correlation between the presence of a black chief and the presence of a majority black council is not high: $\rho = 0.26$. There are only 13 agency-years in this dataset that have both a black chief and black majority council. When the indicators for black-majority council and black police chief are interacted, there are statistically significant, negative effects on the total search rate ($\beta = -0.03$), white search rate ($\beta = -0.01$), and black search rate ($\beta = -0.04$) – though not on the search rate ratio. See Appendix C.4. Thus, there is some evidence here that the presence of black people in a variety of places of power (e.g. city council and police chief) produce even greater benefits for the population as a whole. Still, more work is needed to unpack the mechanism at work here, especially considering the fairly low number of observations that include both a majority-black council and a black police chief in the same year.

As a final note, to examine the relationship between the racial composition of the city council and traffic stop outcomes further, we also estimate the effect of having a black “super-majority” on the city council, in which black members hold more than 60% of the seats. When this is the case, the effect on the total search rate ($\beta = -0.04$), white search rate ($\beta = -0.03$), and black search rate ($\beta = -0.05$) are indeed even stronger. This lends credence to the notion that when black office holders have a hold on the council, they can work to limit aggressive policing.

**Conclusion**

Representation matters. Cities with majority-black city councils experience less assertive policing, generating benefits for all citizens. White and black drivers alike are less likely to be searched after a traffic stop. While these differences affect both whites and blacks, they are more pronounced among black drivers. In our assessment of almost 500 agency-years, we confirm other studies
showing the racial disparities are alarmingly high, on average. But we note a possible route to improvement: electoral politics. We hope that future work can examine exactly how and why descriptive representation is linked to better outcomes for all drivers, particularly black drivers, who experience the largest degree of targeting on the nation’s roadways.
References


Carr, Patrick J., Laura Napolitano, and Jessica Keating. 2007. We never call the cops and here is


Gelman, Andrew, Jeffrey Fagan, and Alex Kiss, 2007. An analysis of the New York City police department's “stop-and-frisk” policy in the context of claims of racial bias. *Journal of the*


Knox, Dean, Will Lowe, and Jonathan Mummolo. 2020. “Administrative records mask racially biased policing.” *American Political Science Review*. Online First: DOI: [https://doi.org/10.1017/S0003055420000039](https://doi.org/10.1017/S0003055420000039)


