Searching Less and Finding More: How Bureaucratic Representation Leads to Efficient Policing

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Democratic theory requires that citizens be treated equal under the law. This requirement involves both the provision of services and the enforcement of laws. Recently, the idea that minority or female bureaucrats may use their discretion to improve outcomes for clients that share their demographic characteristics (active representation) has come under attack for introducing “partiality” into the provision of government services (Lim 2006). This critique assumes that active representation can create tradeoffs and that there are winners and losers when organizations become more representative, making the “benefits” of representative bureaucracy irreconcilable with democratic values. To address these concerns we address two important questions. First, does representation create tradeoffs? Are some clients made worse off as the bureaucracy becomes more representative? Second, if there are no tradeoffs, can representation improve organizational performance?

A small but growing body of research examines the relationship between bureaucratic representation and organizational performance. Early work examined cross-group tradeoffs for minority and nonminority students when you increase the representation of minority teachers (Meier et al. 1999; 2001). More recent work investigates the relationship between representative bureaucracy and organizational performance (Pitts 2005; Roch, Pitts, and Navarro 2010). Pitts (2005) finds that as the faculty and administration of a school more closely mirrors the students in terms of ethnic composition, performance improves. Additionally, Roch et al. (2010) shows that schools with more representative faculties are more likely to shift from punitive disciplinary policies to more corrective policy, which ultimately improves outcomes. We extend this research to a new policy area and offer an examination of how the impact of increased passive representation may vary across majority and minority bureaucrats.
Using traffic stop data collected by the Florida Highway Patrol from 2000-2009, we empirically investigate the impact of minority representation on organizational performance in the context of policing. Specifically, we examine the decision to search a vehicle and the efficiency of searches. We find that representation of African American and Latino troopers improves outcomes for all groups of drivers, by increasing efficiency in searches. More representative troops strike the proper balance between the level of searches the troopers undertake and the hit (evidence of illegal activity) they achieve. The strongest effect seems to be on the behavior of white officers serving in troops with greater numbers of minority troopers, members of the dominant group appear to adjust their searching patterns to align with the norms of the minority troopers they serve alongside. This increase in efficiency not only reduces unnecessary and often discriminatory searches faced by drivers, but in addition it maximizes public safety.

Benefits of a Representative Bureaucracy

The premise underlying the research on representation is that a representative bureaucracy is a good to be provided. A bureaucracy broadly reflecting the interests, opinions, needs, desires, and values of the general public has a legitimate claim to participate in the policy process (Selden 1997). The theory of representative bureaucracy concerns how the demographic characteristics of bureaucrats affect the distribution of outputs to clients who share these demographic characteristics. Mosher (1968) distinguished between two forms of representation - passive and active representation. Passive representation is concerned with the extent to which government bodies are representative of clients or constituents in terms of race, ethnicity, gender, sexual orientation, class, religion, and other identities. Active representation, in contrast, is defined as bureaucrats’ advocating their constituents’ interests and making policy decisions that
benefit one group or another among the agency’s clientele (often by eliminating discrimination; Mosher 1968; Hindera 1993a).

Studies of passive representation examine whether the composition of the bureaucracy mirrors the demographic composition of the general population or whether women and minorities are under-represented in the bureaucracy (Kellough 1990, Dolan 2000, Dolan 2002, Naff and Crum 2000, Riccucci and Saidel 2001). Recent research examines not only the symbolic value of passive representation, but also how the correlates of passive representation can influence policy outcomes and impact the performance of public organizations.

Passive representation can influence policy outcomes and has other important consequences for citizens and for government without minority or female bureaucrats necessarily acting on behalf of clients that share their identities (e.g. Meier and Nicholson-Crotty 2006). Specifically, minority bureaucrats may send cues to clients through their presence or absence that minority clients will receive fair treatment by the organization. In turn, the behavior of citizens may be changed based on these cues. For example, a rape victim may be more likely to report the rape, even to a male officer, if she has seen female police officers in her community (Meier and Nicholson-Crotty 2006). Additionally, passive representation can influence policy outcomes by producing changes within the organizations. The presence of women or minorities can shift the priorities and improve the performance of an organization. Similarly, working with nonmajority bureaucrats may influence the behavior of the majority bureaucrat. This differs from active representation, which involves purposeful action by the political actor on behalf of a group.

Numerous studies (Hindera 1993, Meier et al. 1989, Meier and Stewart 1992, Selden 1997) have concluded that when minority bureaucrats have the necessary discretion they
implement policies or use their discretion to reduce the disparate treatment minority clients have historically received from various public bureaucracies. Similarly, researchers have found active representation for gender in several public organizations (Keiser et al. 2002, Wilkins and Keiser 2005, Meier and Nicholson-Crotty 2006).

The previous research on representation has focused on how representation may improve outcomes for an individual or given group of clients, however, little work considers how representation relates to the overall performance of the agency. One of the first studies to analyze this relationship examined whether an increase in minority teachers negatively affected the performance of nonminority students (Meier et al. 1999; 2001). Meier and his co-authors hypothesized that representative bureaucracies would be more effective than non-representative bureaucracies. This hypothesis was supported by the empirical findings that minority teachers did not negatively affect Anglo students. Indeed, the nonminority students experienced greater educational outcomes with minority teachers than did minority students (Meier et al. 1999; 2001), suggesting that there are not trade-offs to increased representation and that the performance of all students (and by extension the school) is improved.

In more recent work, Pitts (2005) addresses the question by examining how the representation of school managers (principals, assistant principals, superintendents, and assistant superintendents) and teachers impacts performance. He finds that representation among school managers is positively related to all three performance outcomes (lowering the drop-out rate, increasing the overall pass rate on the state-mandated test, and the percentage of students earning above 1110 on the SAT college entrance examination), while representation of teachers is negatively related to the percentage of students earning above 1110 on the SAT college entrance examination. In subsequent research (Roch, Pitts and Navarro 2010) demonstrate that schools
with more representative teaching faculties tend to shift from punitive disciplinary policies to more corrective policies. This shift in policies results in better performance by the school.

The research testing the relationship between bureaucratic representation and organizational performance relies on data from public schools that has been aggregated to the school or district level; we are interested in whether the findings hold in other policy context and when examining individual level data. The prior research contends that the improved performance may be the result of changed behavior on the part of minority or majority bureaucrats working in organizations with greater numbers of minority bureaucrats. As passive representation increases, majority bureaucrats may modify their behavior and practices to better align with the minority bureaucrat in their work unit. These behavior modifications may improve the performance of the organization. However, a competing hypothesis offered in the research on in-group and out-group behavior would be that majority bureaucrats will feel threatened by or distrustful of minority bureaucrats and this could lead to an unwillingness to work together and ultimately decrease performance.

On the other hand, demonstrated improvements in performance that are identified may be the result of the changing behavior on the part of minority bureaucrats and the provision of active representation. The theory of critical mass argues that a critical mass may be needed for minorities and women to take an advocacy role (Kanter 1977, Meier 1993, Thompson 1978). Given this, increased representation may result in minority bureaucrats taking more of an advocacy role (e.g. directly working to lessen the disparate treatment of minority clients or by influencing the behavior of majority co-workers), which could result in improved performance. Ideally, the data would also allow us to examine the effect of increased passive representation of minority bureaucrats on the behavior of majority and minority bureaucrats separately. Based on
this previous research, we expect to find that once the representation of minority bureaucrats reaches a critical mass in the organization the performance of the organization will improve. In addition, we hope to be able to disentangle whether this effect is due to a shift in behavior by majority or minority bureaucrats.

The Empirical Case – The Decision to Search

Members of minority racial groups, in particular Latinos and African Americans, often claim they are subjected to racially biased traffic stops, searches, and enforcement actions. This phenomenon is popularly known as “driving while brown” or “driving while black.” Anecdotal evidence supporting the claim that law enforcement engages in racial profiling is frequently cited in conversations among minority group members. Indeed, the perception that law enforcement officers routinely engage in racial profiling is a major tenet of the minority community’s conventional wisdom regarding police practice. This is especially so among young black and brown males. Nevertheless, the perception of racial profiling as a legitimate and widespread tool of law enforcement is clearly at odds with the stated policies of most law enforcement agencies.

Racial, ethnic, and gender differences in the outcomes of traffic enforcement may occur for a variety of reasons: racial, ethnic, and gender differences in ages, driving style and road utilization, demographic composition of areas under surveillance for drugs, propensity for traffic violations or other illegal activities. Of course, it is also possible that racial, ethnic, and gender differences in traffic enforcement may represent discrimination in traffic stops, vehicle searches, and enforcement actions.

The criminal justice research has extensively examined whether the race or ethnicity of an officer influences their behavior on the job, especially during a traffic stop. Antonovics and Knight (2004) find that Boston police are more likely to search a stopped driver if the race of the
officer differs from the race of the driver. Similarly, Dohohue and Levitt (2001) show that increases in the minority composition of a city’s police force increases arrests of whites, but has little impact on arrests of nonwhites. They also find that increases in the presences of white officers lead to increases in the number of arrests of nonwhites, but has no effect on the number of white arrests. Meehan and Ponder (2002) report a clear case of contextual racial profiling. Specifically, African American motorists stopped and searched in neighborhoods with higher populationss of white residents are less likely to have contraband than white motorists stopped in these same neighborhoods, but African American motorists are burdened with disproportionate surveillance and stopping by police in neighborhoods with a higher fraction of white residents.

Effective law enforcement requires discretionary decision-making by police. However, police discretion may lead some officers to indulge prejudicial biases or the belief that members of minority racial groups represent a social threat (Blalock, 1967). Much depends on the discretion of police officers. Most non-traffic illegal activities do not receive law enforcement attention until the victims or witnesses of the crimes notify law enforcement. With traffic enforcement and the other activities of state law enforcement officers, troopers use their own discretion to determine if a driver has committed an infraction, if the infraction is sufficiently serious to warrant intervention, and finally the appropriate nature of the law enforcement remedy. Accordingly, even if executive policy and managerial oversight does not encourage or condone discriminatory behavior, trooper biases, stereotypes, and prejudices combined with the high level of trooper discretion required for effective law enforcement may produce self-fulfilling hypotheses regarding the presumed nature of racial, ethnic, and gender differences in the propensity for crime.
Crime-minimizing efficient enforcement policing is a special case, not the general case. We use the traffic search game presented in Close and Mason (2006, 2007) to formalize some empirical predictions associated with the theory of representative bureaucracy. We assume that police executives seek to minimize crime. Nevertheless, line officers use discretion in determining the appropriateness of stops, searches, and enforcement actions. We posit that African American, Latino, and white officers differ in their utilization of discretionary authority; thereby, the enforcement norms of a given police unit may vary according to the racial composition of the force. “Majority” troops do not have a critical mass\(^1\) of racial minority officers. “Minority” troops have a critical mass of African American and Latino officers, sufficiently so such that these officers are able to alter the policing norms of the entire troop. Hence, an agency’s norms of policing will vary according to whether the agency is a majority or minority troop.

For illustrative purposes, we use the traffic search game presented in Close and Mason (2006, 2007) to derive some empirical predictions from the theory of representative bureaucracy. Consider Figure 1, which captures the strategic interactions of drivers and police. The police search rate is measured along the Y-axis and may range from 0 (no drivers is searched) to 1 (all drivers are searched or drivers receive the most severe enforcement action). Driver criminal behavior is captured along the X-axis and ranges from 0 (no driver engages in crime) to 1 (all drivers engage in crime). For drivers, as the probability of police search increases (decreases), the probability that drivers will engage in criminal activity decreases (increases). For officers, as

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\(^1\) A discontinuity effect or break point exists such that there is a discrete change in policing norms when the racial minority composition of the police unit, that is, the troop, rises above a certain level of the force. Accordingly, we posit that there will be a distinct change in the probability of driver searches when the percent of racial minority officers rises above or falls below a particular percentage of the police force. Officers will adjust to the policing norms of their administrative units. In previous research, we empirically identified that the “tipping point” for this data was 33 percent, a troop that has 33 percent minority troopers (this includes African Americans and Latinos) the behavior of the troop is distinct from troops with fewer minority members.
the probability that drivers will engage in criminal activity increases police increase the probability of searching stopped drivers.

[Insert Figure 1]

The equilibrium search and crime rates are $\sigma_e$ and $\chi_e$, respectively. To the extent that this is a stable interior equilibrium, small perturbations from $\chi_e$ by drivers or from $\sigma_e$ by officers will generate countervailing responses by the alternative strategic agent, which in turn will generate a counter-response from the original agent, and so forth until equilibrium is restored at $(\chi_e, \sigma_e)$. The equilibrium search and hit rates represent the efficient enforcement outcome, that is, the minimal level of crime (or maximal level of public safety) associated with a given level of policing resources, criminal propensities, and policing strategy.

Consider drivers from distinct social groups $D \in \{\text{African American, Latino, white}\}$, officers from distinct social groups $G \in \{\text{African American, Latino, white}\}$, and heterogeneous troops $T \in \{\text{majority, minority}\}$. Previous research has shown that search rates vary by the race of the driver: African American drivers have the highest search rate, white drivers have the lowest search rate, and Latino drivers have an intermediate search rate. Additionally, search rates and hit rates vary by the race of an officer. White officers search all drivers more (regardless of race or gender) and have lower hit rates than Latino officers and Latino officers search all drivers more (regardless of race or gender) and have lower hit rates than African American officers. However, given the nature of policing and high-levels of organizational socialization, individual officers will face strong incentives to adjust their policing practices to the norms of the administrative agency. All other things equal, majority agencies will have a “high search rate” norm, that is, all officers within these agencies will have a greater than average probability of searching stopped drivers, regardless of the social group membership of the driver. Similarly, all
other things equal, minority agencies will have a “low search rate” norm, that is, all officers within these agencies have a lower than average probability of searching stopped drivers, regardless of the social group membership of the driver.

We assume that police seek to minimize crime. If so, drivers with the highest search rates also have the highest criminal propensities. Officers with the highest search rates should have the lowest hit rates. Figure 2 presents the empirical implications of active representation and identity theory in police-driver interactions. $D_m$ and $D_w$ are the driver reaction functions for minority (African American and Latino) and white drivers, respectively. These reactions functions capture the association that minority drivers have a greater criminal propensity, that is, for a given search rate minority drivers are more likely to engage in crime than white drivers; hence, $D_m$ is further from the origin than $D_w$.

[Insert Figure 2]

$O_{ww}$ and $O_{mw}$ are the reaction functions of white officers in majority troops and minority officers in majority troops, respectively, while $O_{wm}$ and $O_{mm}$ are the reaction functions of white officers in minority troops and minority officers in minority troops, respectively. These reaction functions capture two assumptions. First, white officers search all drivers more than minority officers; hence, for a given intensity white officers have higher search rates than minority officers, that is, $O_{wm}$ is higher up than $O_{mm}$ and $O_{ww}$ is higher up than $O_{mw}$. Second, majority troops have a higher search norm than minority troops; hence, for a given intensity majority troops have higher search rates than minority troops, that is, $O_{ww}$ is higher up than $O_{wm}$ and $O_{mw}$ is higher up than $O_{mm}$.

Given heterogeneous drivers, officers, and troops, Figure 2 presents the equilibrium search conditions for efficient enforcement. Consider first the interaction between drivers and
officers in minority troops. Crime minimizations requires that the maximum search rate (shown at point B) for the combination of officers with the most intense search practices and drivers with the most criminal activity, that is, white officers with minority drivers. The minimum search rate (point A) will occur for the combination of officers with the least intense search practices and drivers with the least criminal activity, that is, minority officers and white drivers. For public safety maximization, we should observe the maximum hit rate for the combination of officers with the least intense search practices and drivers with the most criminal activity (point F), that is, minority drivers and minority officers. The minimum hit rate will occur for the combination of officers with the most intense search practices and drivers with the least criminal activity, that is, point E which captures the interaction between white drivers and white officers.

Consider now the interaction between drivers and officers in majority troops. Points A’, B’, E’, and F’ are analogous to the outcomes for minority troops. Note however that all race-driver interactions in majority troops should have higher search rates and lower hit rates than the same race-driver interaction in minority troops. For example, the minority driver – minority officer interaction in a minority troop (F) should have a lower search rate and a higher hit rate than the minority driver – minority officer interaction in a majority troop (F’).

Let $\sigma(mw,m)$ represent the search rate of minority drivers (either African American or Latino) by white officers within a minority troop, that is, point B in Figure 2. Similarly, $\chi(ww,m)$ represents the hit rate of white drivers by white officers within a minority troop, that is, point E in Figure 3. At Point A we have $\sigma(wm,m)$, the search rate of white drivers (either African American or Latino) by white officers within a minority troop and at Point F we have $\chi(mm,m)$ represents the hit rate of minority drivers by own-group minority officers within a minority troop. For given agency policing norms $T \in \{\text{majority, minority}\}$, crime minimizing efficient
enforcement exists if and only if both of the following conditions hold:

\[
\text{maximum search rate } = \sigma(mw,T) > \sigma(wm,T) = \text{minimum search rate},
\]
\[
\text{maximum hit rate } = \chi(mm,T) > \chi(ww,T) = \text{minimum hit rate}.
\]

We expect that the searching strategies employed by troopers in majority troops will not be consistent with efficient policing and will fail to meet the above conditions. On the other hand, we hypothesize that the searching behavior of troopers in minority troops will be more efficient.

**The Florida Highway Patrol**

We examine whether a trooper’s race or ethnicity influences the probability of search and whether that search produces a “hit.” Police stops and searches of drivers serve numerous important purposes. These actions may yield contraband or evidence of illegal activity (achieving a “hit”) and may also deter future criminal behavior. Regardless of whether police seek to maximize hits or maximize public safety, the presence of racial bias in these decisions can produce a sub-optimal outcome (Close and Mason, 2006 and 2007). Efficient enforcement requires that the race or ethnicity of an officer has no effect on the probability of other or own-group drivers being stopped, searched, or charged with a particular crime or code violation.


1. All Florida Highway Patrol sworn personnel are to submit a Traffic Stop Data Report form on a weekly basis.
2. The report should include all traffic stops made during the week except those related to traffic crash investigations, disabled vehicles, and checkpoints.
3. If a stop is initiated based on aircraft and radar observation, the report is to be made by the trooper actually conducting the stop.

4. Traffic Data Stop forms are to be turned in or mailed to the reporting Florida Highway Patrol station no later than the third day following the end of workweek.

Information from the Traffic Stop Data Report includes the county, date, and time of the traffic stop, as well as the trooper’s identification number, the assigned troop identifier, and troop’s headquarters’ county. The stopped vehicle is identified by state of registration. Drivers are identified by race, ethnicity, sex, and driver’s age. The driver’s ethnicity includes whether or not the individual is Hispanic. Racial categories include black, white, Asian, and Native American (American Indian or Alaskan). Hispanics may belong to any racial category. Additional information in the dataset includes the number of passengers in the vehicle, the reason for the traffic stop, the enforcement action, search type, rationale for consent search, the type of contraband seized, and the items seized for forfeiture (other than contraband).

The Characteristics of Troops dataset includes officer’s identification number, date of birth, race, and sex. Unlike Latino drivers, Latino officers are separate for all other racial groups. The combined dataset will allow us to determine whether and to what extent there are racial and/or ethnic differences in the treatment of drivers after a traffic stop has occurred.

[Insert Table 1]

Table 1 reveals that the Florida Highway Patrol made 6,392,439 for the years 2000 – 2009. Speeding was the major reason for traffic stops (69 percent). Just over one percent (1.09) of traffic stops result in a search of any sort. If a consent search does occur, then physical/visual indicators (0.46 percent of all drivers) and verbal indicators (0.12 percent of all drivers) are the major factors that lead troopers to make a search request. Infraction citations are written for
about 78.5 percent of traffic stops. A written warning or no action is taken for 32 percent of stops, while faulty equipment notice is given for 12 percent of stops. Felony or misdemeanor charges occur in 4 percent of stops. These fractions add to more than 100 percent because multiple enforcement actions may be associated with a traffic stop. Most traffic stops do not yield contraband, but when contraband is seized drugs are the most likely item. The average driver is 35 years old and 90 percent of the time drives a car with a Florida tag. The racial distribution of stopped drivers is black (16.5 percent), Hispanic (19.7 percent), and white (71.4 percent). Asian and Native American represent less than 1.5 percent of all stopped drivers are omitted from the sample. African Americans and Hispanics represent 15.0 and 16.8 percent, respectively, of Florida’s citizens (Florida Legislature, 2003). Men are two-thirds of the stopped drivers.

The Florida Highway Patrol (FHP) is responsible for policing 80,967 miles of federal, state, and county roads within the state of Florida (Florida Highway Patrol, 2006). The FHP has 1,770 sworn officers. Non-Hispanic white males represent 66 percent of the sworn officers of the FHP. African American and Latino males are 13 and 10 percent, respectively. Non-Hispanic white females are 7 percent of the sworn force, while African American and Hispanic females represent 2 and 1 percent, respectively. Other minorities, principally Asians and Native Americans, represent about 1 percent of the Florida Highway Patrol. Of course, these percentages vary across the troops.

Results

Tables 2a and 2b present search rates and hit rates, respectively, by race of driver, race of officer, and racial composition of troop. Troops are separated according to percent of white officers, those with at least 67 percent white officers and those with less than 67 percent white
officers (or at least 33 percent African American and Latino officers). The data show that regardless of race of driver or racial composition of the administrative unit, white officers have a higher search rate than Latino officers and Latino officers have a higher search rate than African American officers. For example, the African American male driver – white officer search rate is 2.73 percent in majority troops and 1.65 percent in minority troops. The African American male driver – African American officer search rate is 0.53 percent in majority troops and 0.20 percent in minority troops. The equivalent African American male driver – Latino officer search rates is 1.61 percent and 0.95 percent, respectively. A similar pattern is repeated for all other driver race groups. Accordingly, the majority troop is the “high search” administrative unit, while the minority troop is the “low search” administrative unit.

**Inefficient enforcement**

Per the Close and Mason outcomes test of efficient enforcement, the Florida Highway Patrol is not engaged in efficient search activity. The rank ordering of searches among officers is white officers > Hispanic officers > African American officers. The rank ordering of searches among drivers is white drivers < Hispanic drivers < African American drivers. Table 3 shows that the binary comparisons satisfy the search criterion for efficient policing. However, none of the binary comparisons satisfy the hit rate criterion for efficient policing. Consider for example white male and African American male drivers searched by white and African Americans officers. If efficient enforcement exists, we should observe the following outcomes: the maximum search rate (African American drivers searched by white officers) should be greater than the minimum search rate (white drivers searched by African American officers) and the maximum hit rate (African American drivers searched by African American officers) should be greater than the minimum hit rate (white drivers searched by white officers). For both majority
and minority troops, the data are not consistent with efficient enforcement. In all cases, maximum hit rates are less than the minimum hit rates. For majority troops, Table 3 shows maximum search rate $\sigma_{AW} = 2.73\% > 0.17\% = \sigma_{WA}$ = minimum search rate & maximum hit rate $\chi_{AA} = 3.61\% < 18.91\% = \chi_{WW}$ = minimum hit rate.

Similarly, for minority troops, Table 3 shows maximum search rate $\sigma_{AW} = 1.65\% > 0.11\% = \sigma_{WA}$ = minimum search rate & maximum hit rate $\chi_{AA} = 0.0370 < 0.1836 = \chi_{WW}$ = minimum hit rate.

[Insert Table 3]

Table 4 presents intertroop differences in policing outcomes. In particular, for each officer-driver combination, Table 4 presents the net difference in search rates and hits between majority and minority troops. For example, the white officer search rate of white drivers is 0.38 percent higher in white troops than in minority troops, while the white officer hit rate for white drivers is 0.55 percent lower in white troops than in minority troops. Given downward-sloping driver reaction functions, a higher search should result in a lower hit rate. Hence, the positive intergroup net difference in search rates should be matched by a negative intergroup net difference in hit rates. Nearly all the search differences are positive, confirming that officers in majority troops search more – regardless of the race of driver-race of officer interaction. A positive search rate difference should be associated with a negative hit rate difference. However, not all of the hit rate differences are negative. A positive hit rate difference implies relatively too much and inefficient searching by majority troops. Notably, white, African American, and Latino officers within majority troops over-search African Americans with respect to non-consent searches.
Table 5 provides further assistance in locating the sources of inefficiency in officer source activity. The search rate net differences shown here are the differences between majority and minority officers for each driver group. For example, white officers have a search rate of African American drivers that is 2.20 percent higher than the African American officer search rate of African American male drivers. Similarly, white officers have a hit rate for African American drivers that is 17.61 percent higher than the African American officer hit rate of African American male drivers. Again, with down-sloping reaction functions, relatively higher search activity should be associated with relatively lower hit rates. So, efficiency requires that the positive search rate gap should be associated with a negative hit rate gap. All the search rate gaps are positive, that is, regardless of the race of the driver or race of the troop, white officers have greater search rates than both African American and Latino officers. Yet, regardless of the race of the driver, there is a positive hit rate gap, implying that for nearly every race of driver in both majority and minority troops, white officers are relatively more inefficient than African American and Latino officers.

Further, regardless of the race of driver, the white officer – African American and white – Latino search rate gaps are higher for white troops than minority troops. For example, the white officer – Latino officer search rate gap is 2.02 percent for Latino drivers in white troops, but it is 0.75 percent for Latino drivers in minority troops. The white officer – Latino officer hit rate gap is 3.46 percent for Latino drivers in majority troops, but it is 2.66 percent for Latino drivers in minority troops. Accordingly, if police seek to maximize public safety, the white officer – Latino officer hit rate gap is inconsistent with the white officer – Latino officer search rate gap. Similar
inconsistencies also exist for white officer – African American officer searches of and hits for African American drivers during consent searches and for white drivers during non-consent searches.

Hence, regardless of the troop search norm or type of search, the search and hit rate data are not consistent with the outcomes test of efficient enforcement. The most inefficient searches occur for white officers within majority troops and we see significant gains in efficiency as white troopers align their search behavior in minority troops.

**Conclusion**

This study examines the relationship between bureaucratic representation and organizational performance. In particular, we explore whether increasing the passive representation of minorities in an organization can lead to enhanced performance at the organizational level. Most of the previous work on the benefits of passive and active representation concentrates on how higher levels of representation can improve outcomes for individual clients or groups of clients. This leads to criticism about introducing “partiality” into the provision of government services (Lim 2006). This critique assumes that representation creates tradeoffs and leaves some groups worse off as an organization becomes more representative, and that there are winners and losers when organizations become more representative, making the “benefits” of representative bureaucracy incompatible with democratic values. To combat this criticism a growing body of research examines whether increased representation creates winners and losers in public programs and whether more representative organizations are effective than non-representative organizations. Our results suggest that in the context of policing, increasing racial representation in police troops produces positive results for minority drivers, as well as nonminority drivers. In addition, the search behavior of the entire troop becomes more efficient. Indeed, we find that
minority troops search less, but find more.

As many questions as we are able to address, we leave plenty unanswered. First, the impact of increased representation appears to vary by type of search (non-consent v. consent). In future research we will need to parse out the effect of representation across these more nuanced measures. Second, more work is needed to continue examining the relationship between representation and behavior across the different demographic groups in the organization. Finally, we now have evidence that more representative schools and police troops are more effective than non-representative schools and police troops; it is important to expand this work to additional policy contexts.
Bibliography


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Figure 1. Traffic stop enforcement game

Figure 2. Efficient policing with heterogeneous officers, heterogeneous drivers, and heterogeneous troops
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Table 2b. Drivers hit rates by racial composition of troop, race of officer, and race-gender of driver

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<td>African</td>
<td>White</td>
<td>African</td>
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<td></td>
<td>Mean</td>
<td>Std. Err.</td>
<td>Mean</td>
<td>Std. Err.</td>
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<td>18.36%</td>
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<td>9.59%</td>
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<td>0.0084</td>
<td>13.98%</td>
<td>0.0178</td>
</tr>
<tr>
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<td>2.33%</td>
<td>0.0233</td>
<td>0.00%</td>
<td>0.0000</td>
</tr>
<tr>
<td>Non-consent</td>
<td>22.11%</td>
<td>0.0075</td>
<td>20.52%</td>
<td>0.0146</td>
</tr>
<tr>
<td></td>
<td>3.45%</td>
<td>0.0242</td>
<td>10.94%</td>
<td>0.0393</td>
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<td>N = 890</td>
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</tr>
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<td>3.61%</td>
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<td>0.0259</td>
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<td>13.71%</td>
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<td>0.0000</td>
<td>8.33%</td>
<td>0.0833</td>
</tr>
<tr>
<td>Non-consent</td>
<td>26.46%</td>
<td>0.0100</td>
<td>25.39%</td>
<td>0.0172</td>
</tr>
<tr>
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<td>8.11%</td>
<td>0.0455</td>
<td>2.38%</td>
<td>0.0238</td>
</tr>
<tr>
<td>Latino</td>
<td>N = 1760</td>
<td>N = 37</td>
<td>N = 928</td>
<td>N = 120</td>
</tr>
<tr>
<td>All</td>
<td>9.60%</td>
<td>0.0070</td>
<td>10.45%</td>
<td>0.0100</td>
</tr>
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<td>5.41%</td>
<td>0.0377</td>
<td>4.17%</td>
<td>0.0183</td>
</tr>
<tr>
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<td>8.12%</td>
<td>0.0106</td>
<td>7.53%</td>
<td>0.0194</td>
</tr>
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<td></td>
<td>0.00%</td>
<td>0.0000</td>
<td>11.11%</td>
<td>0.1111</td>
</tr>
<tr>
<td>Non-consent</td>
<td>10.50%</td>
<td>0.0093</td>
<td>11.19%</td>
<td>0.0116</td>
</tr>
<tr>
<td></td>
<td>10.53%</td>
<td>0.0723</td>
<td>3.60%</td>
<td>0.0178</td>
</tr>
</tbody>
</table>
## Table 3. Outcomes Tests for Efficient Enforcement

### White Troop

**African American and white males**
- Maximum search rate: $\sigma_{AW} = 2.73\% > 0.17\% = \sigma_{WA}$
- Minimum search rate and maximum hit rate: $\chi_{AA} = 3.61\% < 18.91\% = \chi_{WW}$

**Latino and white males**
- Maximum search rate: $\sigma_{HW} = 2.32\% > 0.54\% = \sigma_{WH}$
- Minimum search rate and maximum hit rate: $\chi_{HH} = 6.14\% < 18.91\% = \chi_{WW}$

**African American males and Latinos**
- Maximum search rate: $\sigma_{AH} = 1.61\% > 0.30\% = \sigma_{HA}$
- Minimum search rate and maximum hit rate: $\chi_{AA} = 3.61\% < 6.14\% = \chi_{HH}$

### Minority Troop

**African American and white males**
- Maximum search rate: $\sigma_{AW} = 1.65\% > 0.11\% = \sigma_{WA}$
- Minimum search rate and maximum hit rate: $\chi_{AA} = 3.70\% < 18.36\% = \chi_{WW}$

**Latinos and white males**
- Maximum search rate: $\sigma_{HW} = 1.05\% > 0.42\% = \sigma_{WH}$
- Minimum search rate and maximum hit rate: $\chi_{HH} = 7.80\% < 18.36\% = \chi_{WW}$

**African American males and Latinos**
- Maximum search rate: $\sigma_{AH} = 0.95\% > 0.30\% = \sigma_{HA}$
- Minimum search rate and maximum hit rate: $\chi_{AA} = 3.70\% < 7.80\% = \chi_{HH}$
Table 4. Intertroop differences in policing outcomes

<table>
<thead>
<tr>
<th>Officers</th>
<th>Search Difference</th>
<th>Hit Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>White</td>
<td>African</td>
</tr>
<tr>
<td>White All</td>
<td>0.38%</td>
<td>0.06%</td>
</tr>
<tr>
<td>Consent</td>
<td>0.13%</td>
<td>0.06%</td>
</tr>
<tr>
<td>Non-consent</td>
<td>0.25%</td>
<td>0.00%</td>
</tr>
<tr>
<td>African All</td>
<td>1.08%</td>
<td>0.33%</td>
</tr>
<tr>
<td>Consent</td>
<td>0.38%</td>
<td>0.25%</td>
</tr>
<tr>
<td>Non-consent</td>
<td>0.71%</td>
<td>0.08%</td>
</tr>
<tr>
<td>Latino All</td>
<td>1.28%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Consent</td>
<td>0.67%</td>
<td>0.13%</td>
</tr>
<tr>
<td>Non-consent</td>
<td>0.61%</td>
<td>-0.12%</td>
</tr>
</tbody>
</table>

Table 5. Racial gaps in policing outcomes by racial composition of troop

<table>
<thead>
<tr>
<th>Officers</th>
<th>Search Rate Gap</th>
<th>Hit Rate Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>White Troop</td>
<td>Minority Troop</td>
</tr>
<tr>
<td>White All</td>
<td>0.85%</td>
<td>0.49%</td>
</tr>
<tr>
<td>Consent</td>
<td>0.27%</td>
<td>0.19%</td>
</tr>
<tr>
<td>Non-consent</td>
<td>0.58%</td>
<td>0.30%</td>
</tr>
<tr>
<td>African All</td>
<td>2.20%</td>
<td>1.13%</td>
</tr>
<tr>
<td>Consent</td>
<td>0.54%</td>
<td>0.41%</td>
</tr>
<tr>
<td>Non-consent</td>
<td>1.66%</td>
<td>0.72%</td>
</tr>
<tr>
<td>Latino All</td>
<td>2.02%</td>
<td>1.24%</td>
</tr>
<tr>
<td>Consent</td>
<td>0.73%</td>
<td>0.67%</td>
</tr>
<tr>
<td>Non-consent</td>
<td>1.29%</td>
<td>0.57%</td>
</tr>
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