

Racial Disparities in Charlotte Traffic Stops

Frank R. Baumgartner
Derek A. Epp
Kelsey Shoub¹

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In a forthcoming book, we have analyzed racial difference across 20 million traffic stops in North Carolina, from 2002 through 2016. In this short report, we replicate some of our analyses for one police department: Charlotte.

¹ Baumgartner is Richard J. Richardson Distinguished Professor of Political Science at UNC-Chapel Hill. Frankb@unc.edu. Epp is Assistant Professor of Government at the University of Texas, Austin. depp@austin.utexas.edu. Shoub is a doctoral candidate in Political Science at UNC-Chapel Hill. shoub@live.unc.edu.

Figure 1. Stops and Searches from 2002 to 2016

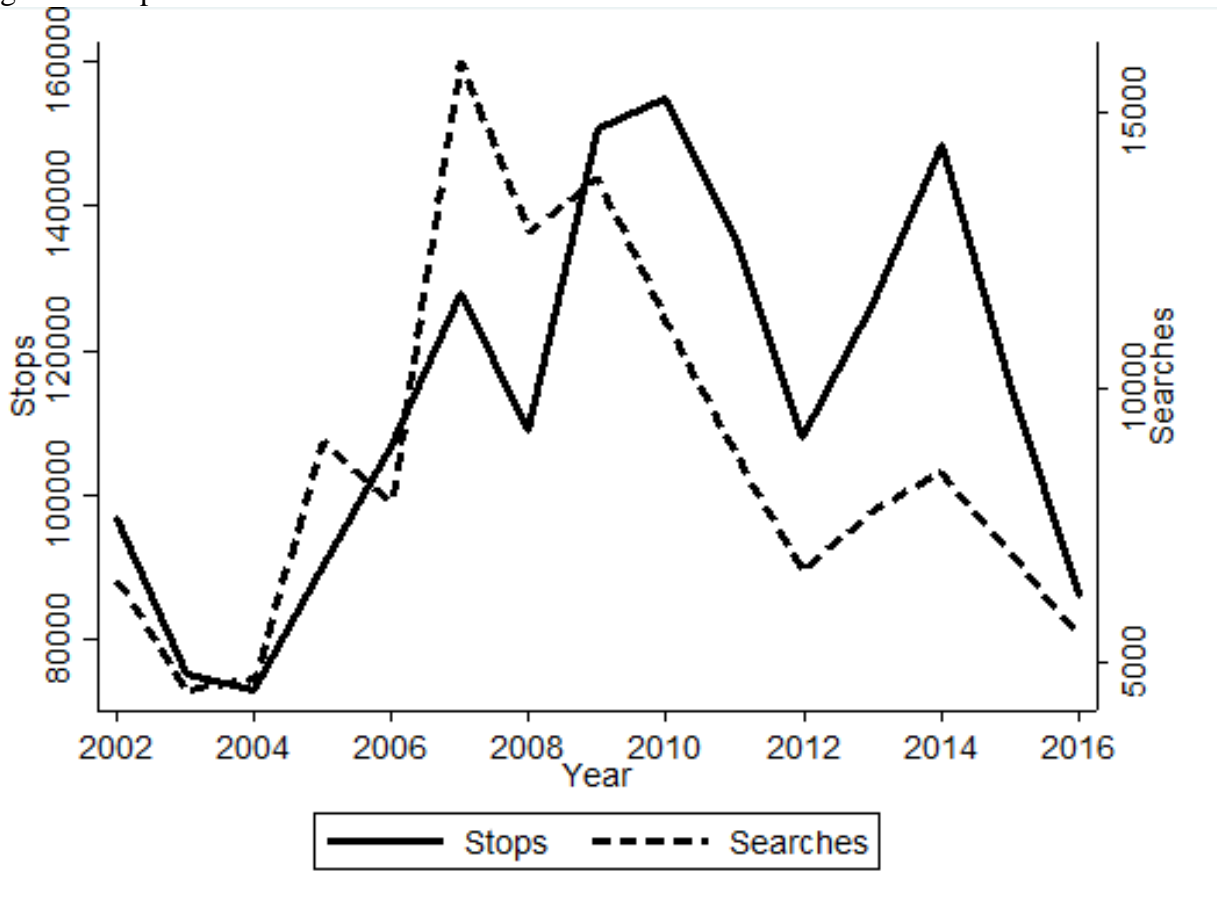


Figure 1 shows the number of stops (x-axis) and searches (y-axis) made by officers from the Charlotte-Mecklenburg PD. Both series correlated closely with one another over time. The most stops were made in 2010 (almost 160,000) and the most searches were made in 2007 (just over 15,000).

Figure 2. Search Rates by Race

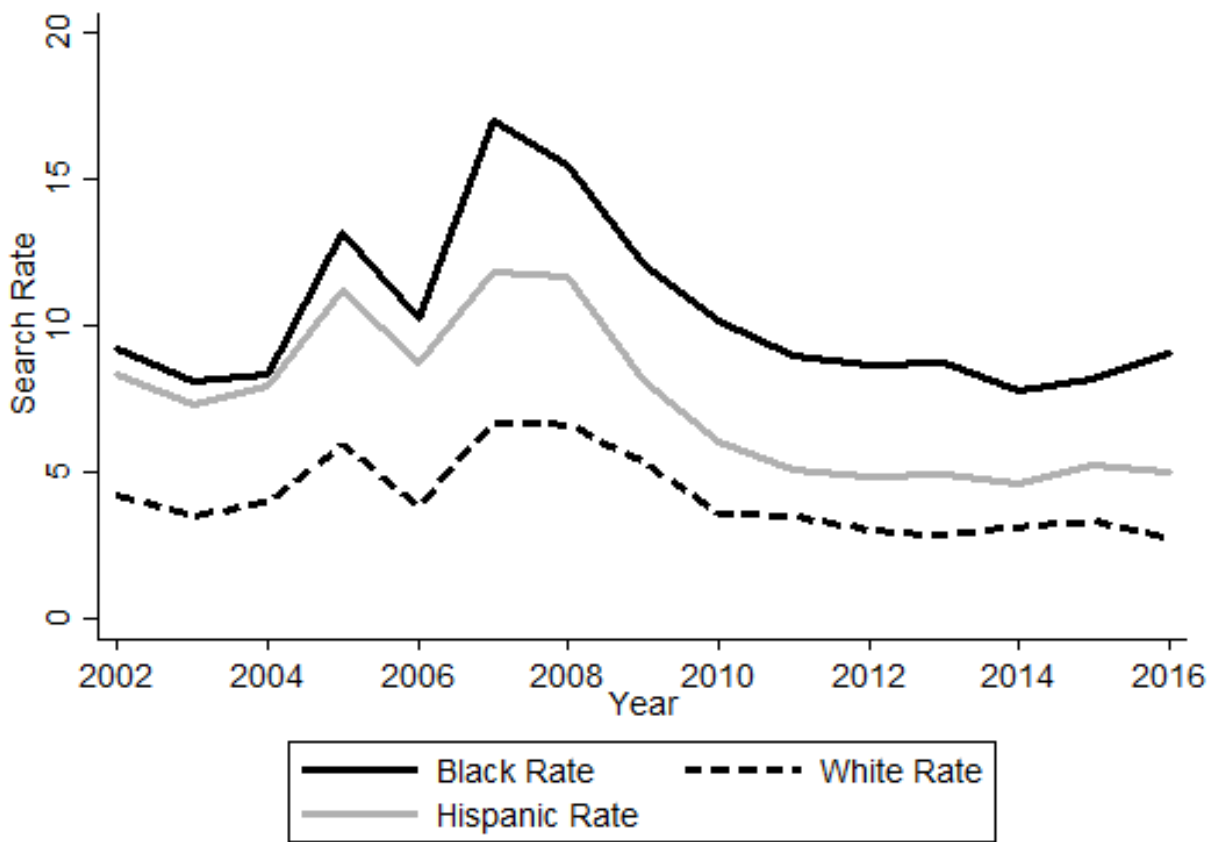


Figure 2 shows the search rates for white, black, and Hispanic drivers. Although the series trend together, in every year, Charlotte officers are significantly more likely to search black and Hispanic drivers. Combining the data from all years, we see these breakdowns. Black drivers are 150 percent more likely to be searched, and Hispanic drivers 78 percent more likely to be searched compared to white drivers. These differences vary by the type of search, and by the reason for the traffic stop, as shown in Table 1 and 2.

Table 1. Search Rates by Race, by Type of Search

Search Type	White	Black	Hispanic	B-W Ratio	H-W Ratio
Consent	1.95	5.21	3.04	2.67	1.56
Search Warrant	0.01	0.01	0.01	1.00	1.00
Probable Cause	0.66	2.79	1.01	4.23	1.53
Incident to Arrest	1.52	2.24	3.27	1.47	2.17
Protective Frisk	0.06	0.22	0.14	3.67	2.33
Total Searches	4.18	10.45	7.46	2.50	1.78

Table 2. Search Rates by Race, by Stop Type

	White	Black	Hispanic	B-W Ratio	H-W Ratio
Safety Stops	3.06	6.48	7.47	2.12	2.44
Investigatory Stops	5.47	12.52	7.46	2.29	1.36
All Stops	4.18	10.45	7.46	2.50	1.78

Black and Hispanic drivers are much more likely to be searched than Whites. These disparities are even greater when we look at males only, as we do in Figure 4 below.

Figure 3 shows how these search rates differ in Charlotte as compared to state totals and the major police agencies in the state. Charlotte has the highest search rate by far. Note that the scales differ in each of the graphs in Figure 3.

Figure 3. Search Rates Compared across the Largest police Agencies in North Carolina

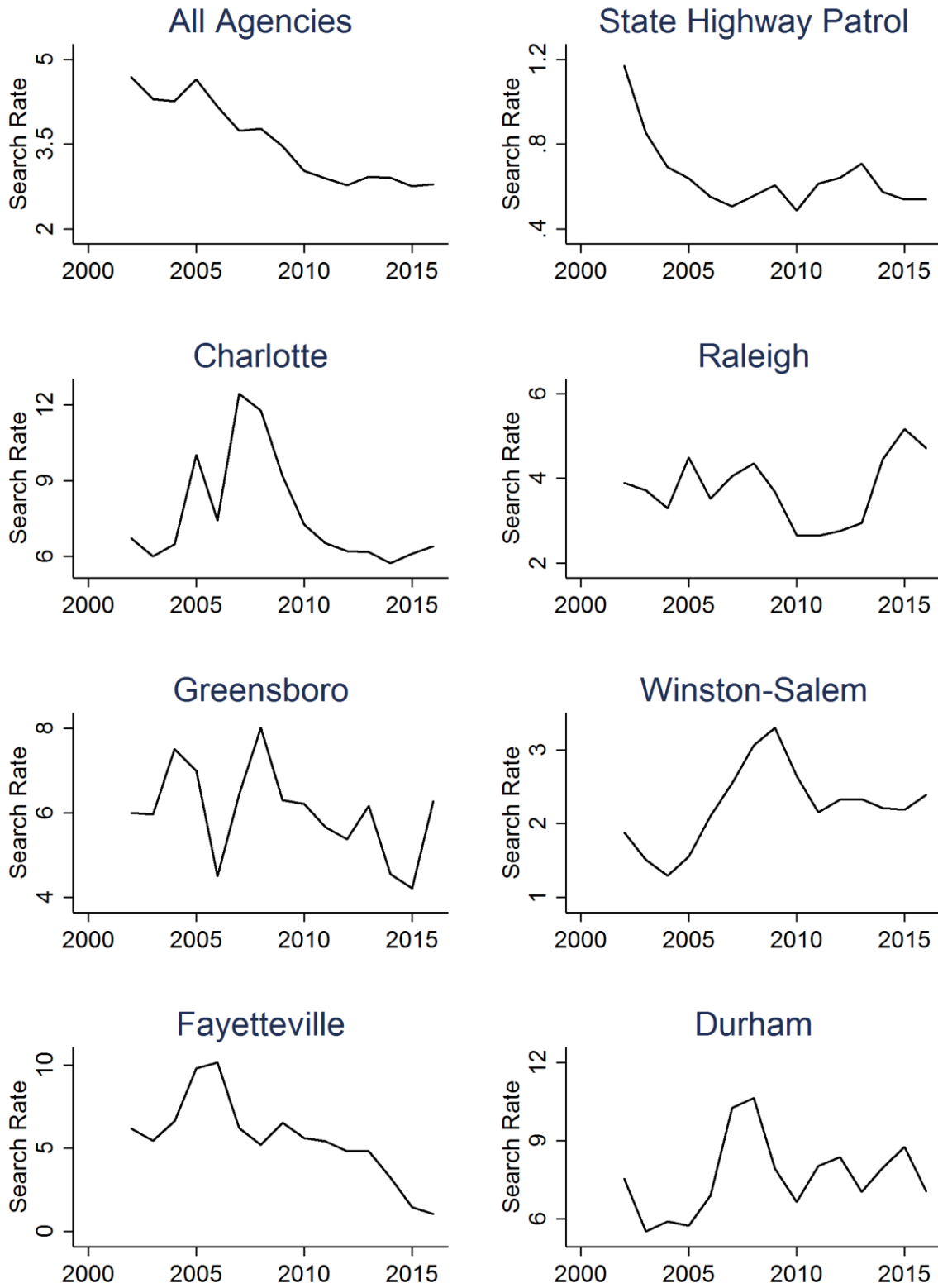
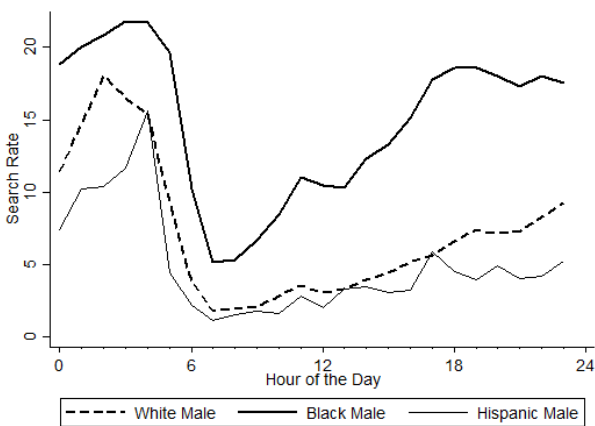


Figure 4. Search Rates by Hour of Day

A) Men



B) Women

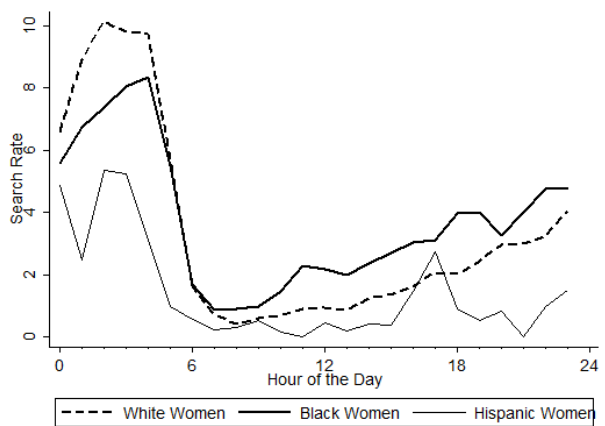


Figure 4 shows the likelihood that a white, black, or Hispanic drivers will experience a search at different hours of day (in military time). The left panel looks at male drivers and the right panel at female drivers. Drivers of all three demographic groups are most likely to be searched between 1am and 4am. Note, however, that black male drivers are more likely to be searched than whites or Hispanics at every hour, and that, following the morning drop in search rates, the search rate for black (male and female) drivers ramps back up much faster. These trends are similar to what we see state-wide.

Figure 5. Search Rates by Race, Age, and Gender

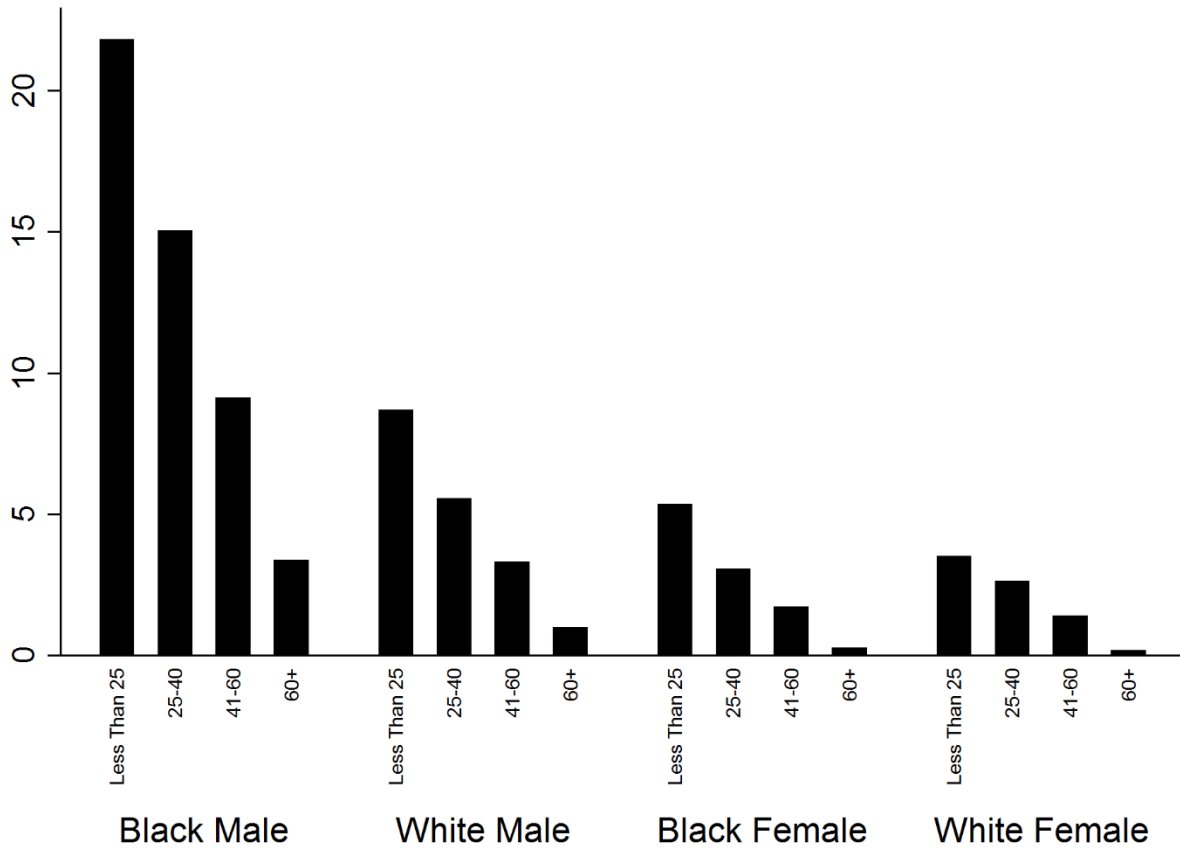


Figure 5 shows the likelihood that drivers in different racial, age, and gender groups will experience a search after being pulled over. The major takeaway is that racial disparities in traffic stops appear to be concentrated among men. Black men of any age category are much more likely to be searched than their white counterparts, highlighting the degree to which black men are seen as suspicious. Disparities exist between black and white females, but they are much less pronounced.

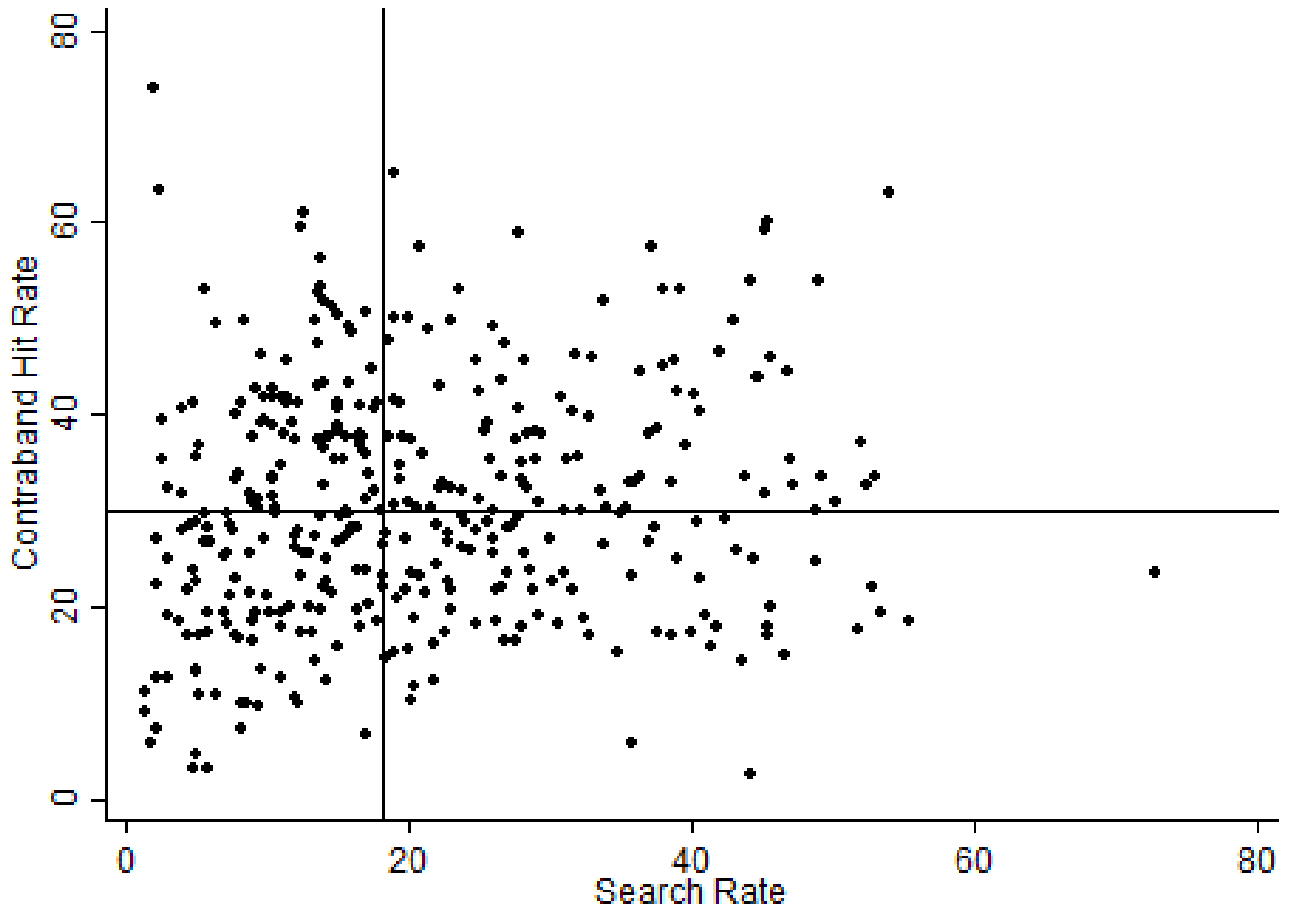
Table 3. Police Actions Resulting from the Discovery of Contraband

Action	Type of Contraband					Total	
	Drugs	Alcohol	Weapons	Money	No amount recorded	N	%
No action	1.88	1.88	2.13	2.68	1.31	614	1.93
Verbal warning	5.18	12.80	7.65	9.15	10.21	2,951	9.28
Written warning	0.61	1.30	0.99	0.80	0.70	272	0.86
Citation	37.40	54.22	21.52	34.83	48.17	13,598	42.77
Arrest	54.92	29.80	67.71	52.54	39.60	14,359	45.16
Total Percent	100.00	100.00	100.00	100.00	100.00	-	100.00
N	9,686	4,312	2,866	6,351	10,572	31,794	-

Note: Entries are column percentages, summing to 100 percent for each contraband type. The table excludes 34,674 searches that took place “incident to arrest,” as in these cases the arrest precipitated the search, rather than the search determining the outcome.

This table shows what is most likely to happen to a driver after an officer finds him or her with contraband. What’s notable is that arrests are far from guaranteed. In fact, looking at the last column in the table, we see that an arrest takes place only about 45% of the time after discovering contraband. The form does not ask officers to record the exact nature of the contraband (we don’t know if it is marijuana or heroin) but the fact that drivers are arrested less than half the time suggests that most of the contraband that has been discovered on drivers by the Charlotte PD in the last 14 years has not been in substantial amounts.

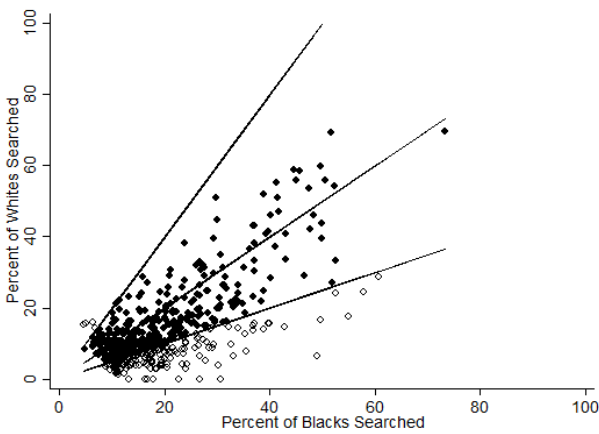
Figure 6. Comparing Officer-Level Search and Hit Rates



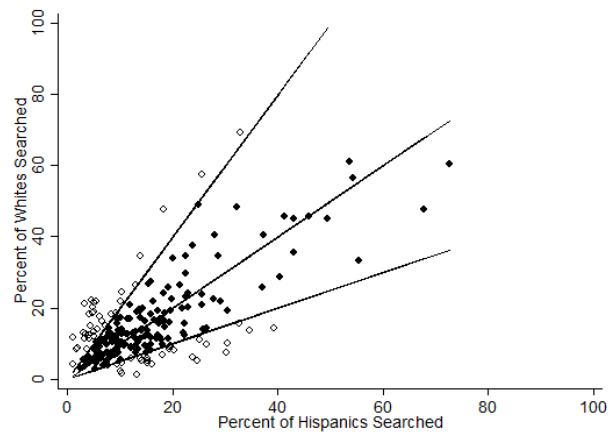
Note: based on the 369 police officers that searched at least 100 motorists. Correlation between searches and contraband hits is 0.120. Lines show median values.

This figure looks at the track record of individual officers employed by the Charlotte-Mecklenburg Police Department over the last 14 years. (We limit our focus to 369 officers who have conducted at least 100 searches over that time period to avoid drawing statistical conclusions from small base values.) Our interest was to determine if there is any relationship between an officer's propensity to conduct searches (their search rate, displayed on the x-axis) and their success in finding contraband (their hit-rate, shown on the y-axis). The figure reveals that there isn't. This suggests that there are no firm standards to which Charlotte officers are being held when it comes to searching; officers are free to conduct many searches with little to show for it.

Figure 7. Outlying Officers
A) Black-White Disparities



B) Hispanic-White Disparities



Note: The left panel (black-white) includes 482 officers with a minimum of 50 white stops, 50 black stops, and a search rate above the department average of 7.66. The hollow circles indicate high-disparity officers. Of these officers, 4 search whites at more than twice the rate that they search blacks; 151 officers search blacks at more than twice the rate that they search Whites. The right panel (Hispanic-white) includes 224 officers with a minimum of 50 white stops, 50 Hispanic stops, and a search rate above the department average of 7.66. Of these officers, 34 search whites at more than twice the rate that they search Hispanics; 26 officers search Hispanics at more than twice the rate that they search Whites.

Figure 7 looks at individual officers and compares black-white (on the left) and Hispanic-white (on the right) search rates. We have used hollow dots to delineate officers who are at least twice as likely to search one race over the other. Of the 482 officers that meet our threshold for the black-white figure, 151 officers are at least twice as likely to search blacks compared to only 4 officers who are twice as likely to search whites. The balance of high-disparity officers is more even for the Hispanic-white figure: 34 officers are twice as likely to search whites and 26 are twice as likely to search Hispanics.

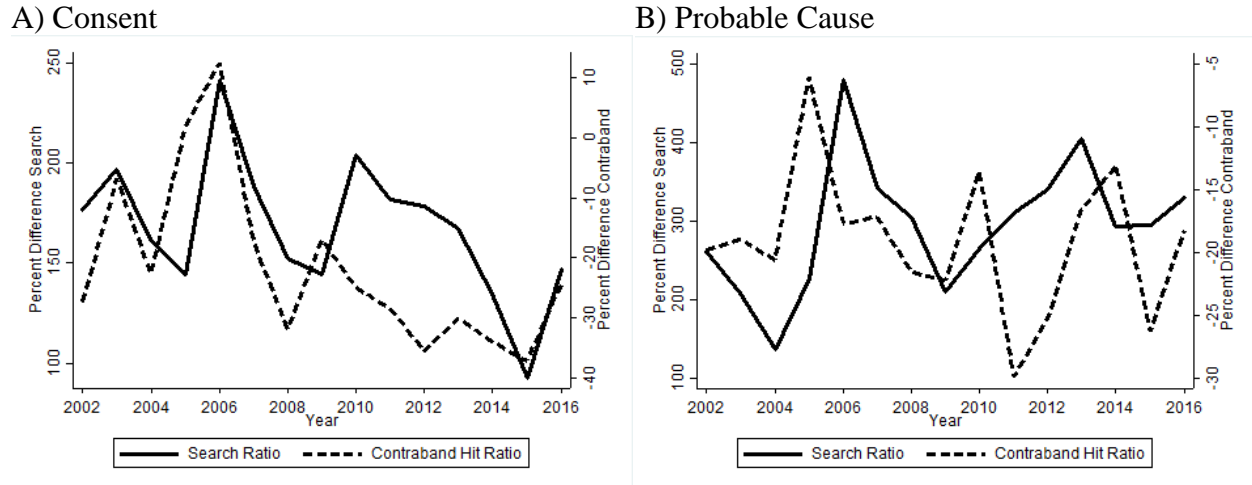
Table 4. Percentage of Searches that Result in Contraband

	Total Searches	% Total	% White	% Black	B-W Ratio
All Searches	130,611	30.53	31.61	31.50	1.00
Consent	62,978	20.90	26.15	20.20	0.77
Probable Cause	30,216	59.36	71.50	57.20	0.80
Incident to Arrest	34,674	23.33	21.52	26.24	1.22
Protective Frisk	2,552	24.41	22.78	25.55	1.12
Warrant	191	36.65	26.00	43.48	1.67

This table shows the contraband-hit rates associated with different types of search for white and black drivers. Reading across the top row we find that Charlotte officers have found contraband on blacks and whites at almost the exact same rate when we consider all searches together. However, officers are about 23% less likely to find contraband on black drivers after searching them with consent as compared to white drivers and 20% less likely for probable cause searches.

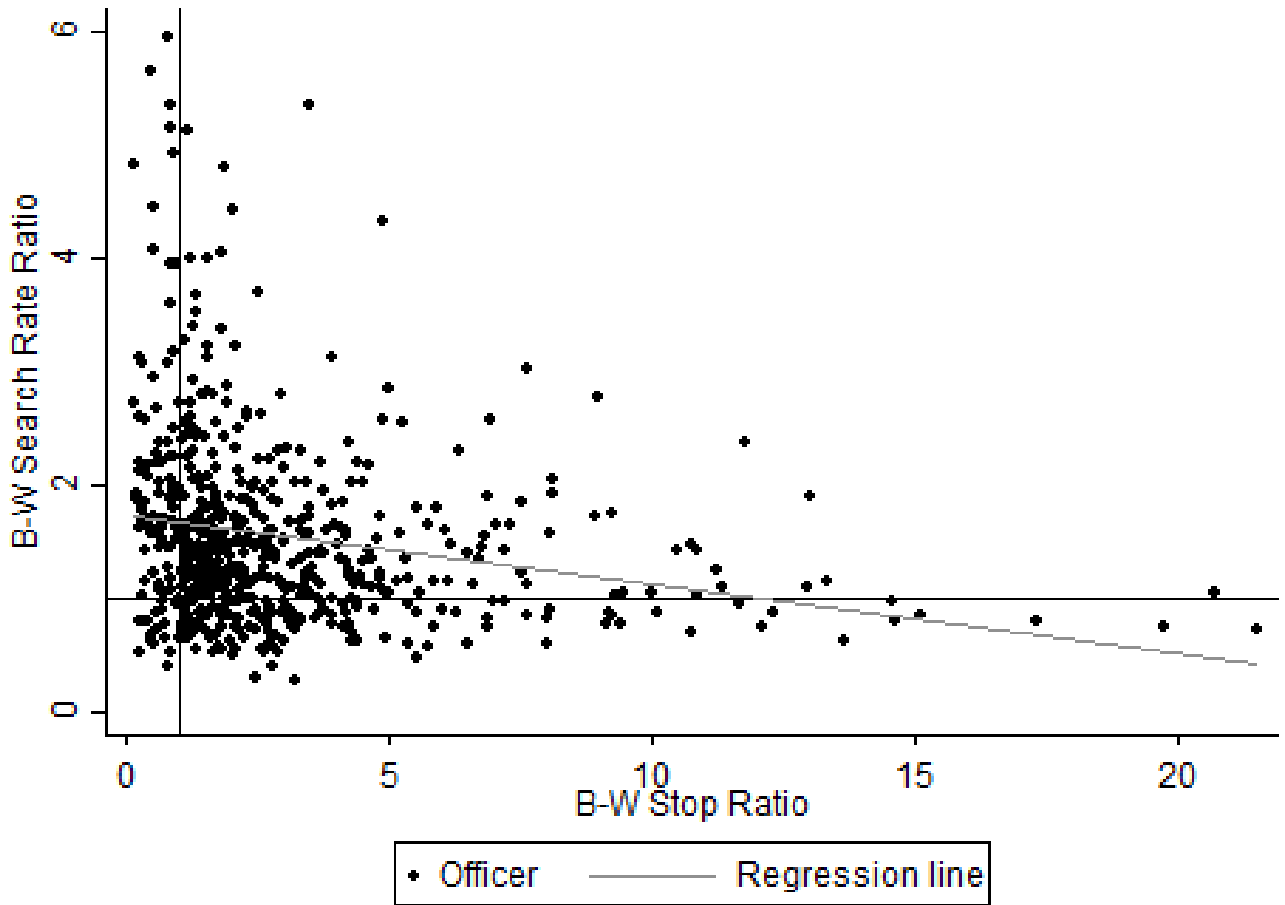
This is important because these are the types of searches that afford officers the greatest discretion; the other three types of search (which are more likely to result in contraband on black drivers) are more procedural. This suggests that Charlotte officers are overly suspicious of black drivers.

Figure 8. Percent Difference across Race in the Likelihood of Searches and Contraband



This figure compares black-white search and hit-rate differentials. For example, if officers search 30% of black drivers and 15% of white drivers, we could calculate the differential to be 100%, meaning that black drivers are twice as likely to be searched. The left panel displays these statistics for consent searches and the right panel for probable cause searches, from 2002 to 2016. The first thing to note is that in every year black drivers are much more likely than white drivers to experience both types of search. In 2006, black drivers were almost 5x more likely to be searched with probable cause, but around 20% less likely to be found with contraband. In their report on Ferguson, the US DOJ states that this type of two-fold disparity can be taken as evidence of racial bias.

Figure 9. Black-white Stop and Search Ratios, by Officer



Note: Based on 568 officers with at least 100 stops and 10 searches of black and white motorists. Slope of regression line is statistically significant at -0.06 with an adjusted R-squared of 0.041.

This figure also looks at individual officers; this time the 568 officers with at least 100 stops and at least 10 searches of white and black drivers. One hypothesis is that the police are more likely to search drivers who look out of place, especially black drivers in white neighborhoods. To investigate this idea, the figure shows individuals officers' black-white search rate ratios (on the y-axis) and their stop rate ratios (on the x-axis). Numbers above 1 indicate a greater likelihood to search or stop blacks and numbers below 1 a greater likelihood to search or stop whites. The “fish out of water” hypothesis appears plausible. Officers who are more likely to stop black drivers (possibly because they work in black neighborhoods) are less likely to search black drivers relative to whites. Still, it is important to note that the vast majority of officers are more likely to search black drivers. This can be seen by the much larger numbers of officers appearing above the horizontal line where the search-rate-ratio is 1.00: all officers above that line are more likely to search black drivers than whites.