

Analysis of Black-White Differences in Traffic Stops and Searches in High Point, NC, 2002-2013

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Frank R. Baumgartner, Derek Epp, and Kelsey Shoub¹
University of North Carolina at Chapel Hill
Department of Political Science
<http://www.unc.edu/~fbaum/traffic.htm>

Contact: Frankb@unc.edu

¹ Baumgartner is the Richard J. Richardson Distinguished Professor of Political Science at UNC-Chapel Hill. Epp and Shoub are graduate students in political science. We thank UNC undergraduates Katherine B. Elliott, Amirah Jiwa, Morgan Herman, and Reena Gupta for assistance on the logistics of this project. We also acknowledge the assistance of the NC Department of Justice and State Bureau of Investigation for making available the official statistics on which this analysis relies, and for answering technical questions about the organization of this complex database.

Table 1. Overview of the Data

Data Subsets	Observations
Total stops	259,426
-2014	4,916
-Passengers	7,079
-Checkpoint stops	1,328
Total number of cases deleted	13,176
Stops for analysis	246,250
Searches	11,266
Percent of stops leading to search (search rate)	4.58%

Figure 1. Number of Traffic Stops per Year

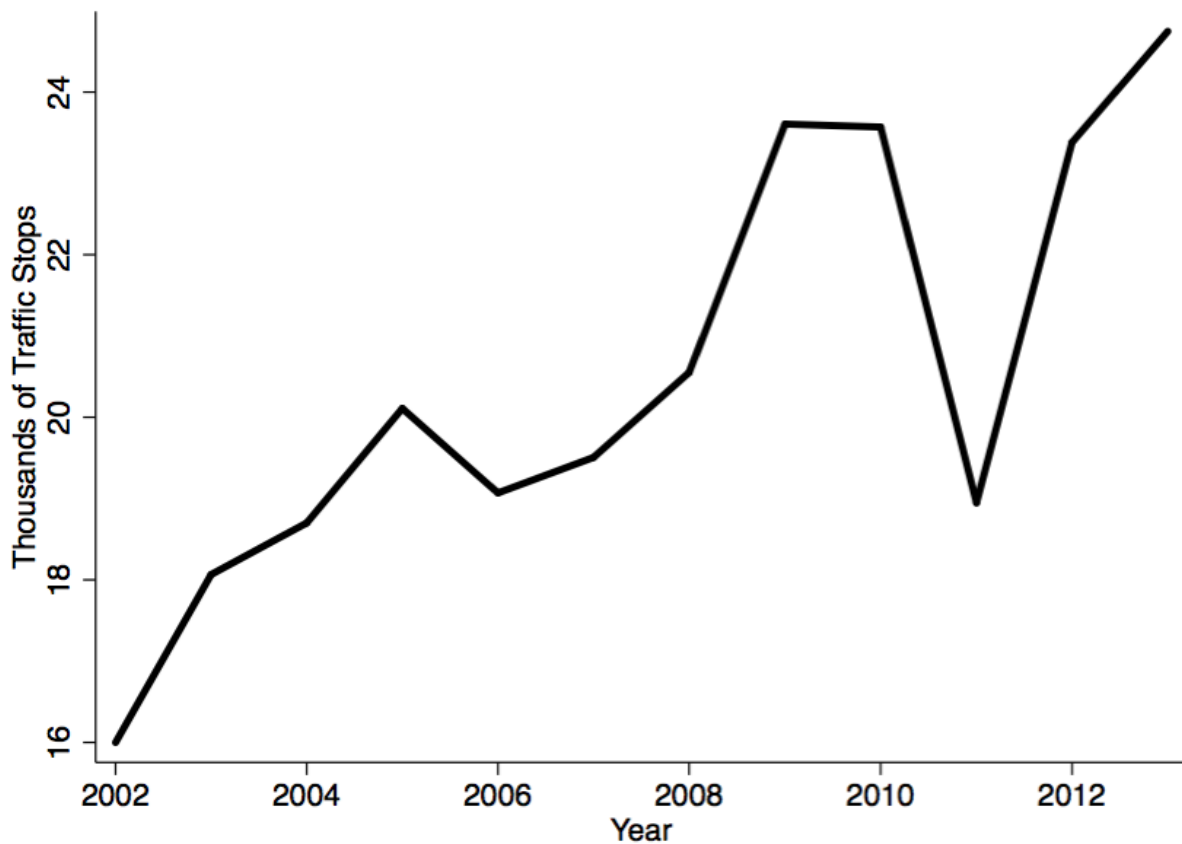


Figure 2. Racial Composition of Traffic Stops by Year

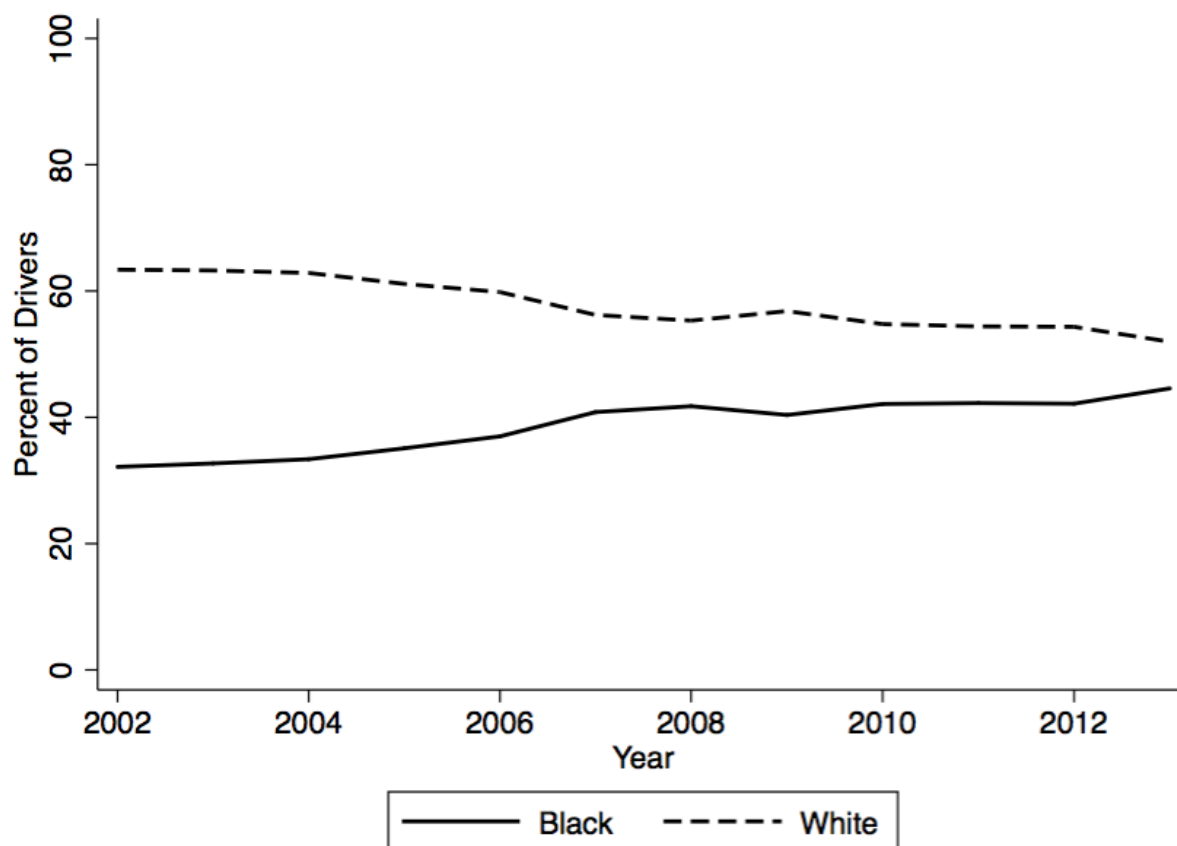


Table 2. Racial Composition of Traffic Stops by Purpose, Drivers

Purpose	Number	Percent	
		White	Black
Total Stops	246,250	57.48	39.10
Speed Limit	90,341	63.93	31.79
Stop Light/Sign	14,308	55.42	40.19
Driving Impaired	1,764	69.27	26.59
Safe Movement	15,371	60.24	35.70
Vehicle Equipment	33,910	51.77	45.03
Vehicle Regulatory	51,896	52.90	44.94
Seat Belt	11,387	51.63	45.46
Investigation	18,367	52.29	45.59
Other Vehicle	8,906	54.85	41.85

Note: Includes only drivers. Excludes 1,328 checkpoint stops. Excludes 7,079 passengers.

Table 3. Percent Searched by Race and Purpose of Stop

Purpose	Number	% Total	% White	% Black	Ratio
					Black:White
Total Stops	246,250	-	57.48	39.10	-
Total Searches	11,266	4.58	3.70	6.04	1.63
Speed Limit	90,341	1.52	1.22	2.17	1.78
Stop Light/Sign	14,308	4.27	3.68	5.36	1.46
Driving Impaired	1,764	36.62	38.95	32.41	0.83
Safe Movement	15,371	7.98	6.42	10.99	1.71
Vehicle Equipment	33,910	5.66	4.90	6.73	1.37
Vehicle Regulatory	51,896	4.10	3.16	5.29	1.67
Seat Belt	11,387	5.14	3.13	7.57	2.42
Investigation	18,367	11.78	10.68	13.20	1.24
Other Vehicle	8,906	6.91	4.67	9.90	2.12

Note: See the appendix for this same table broken down for Men and Women.

Figure 3. Difference in Likelihood of Being Searched, by Race and Type of Stop

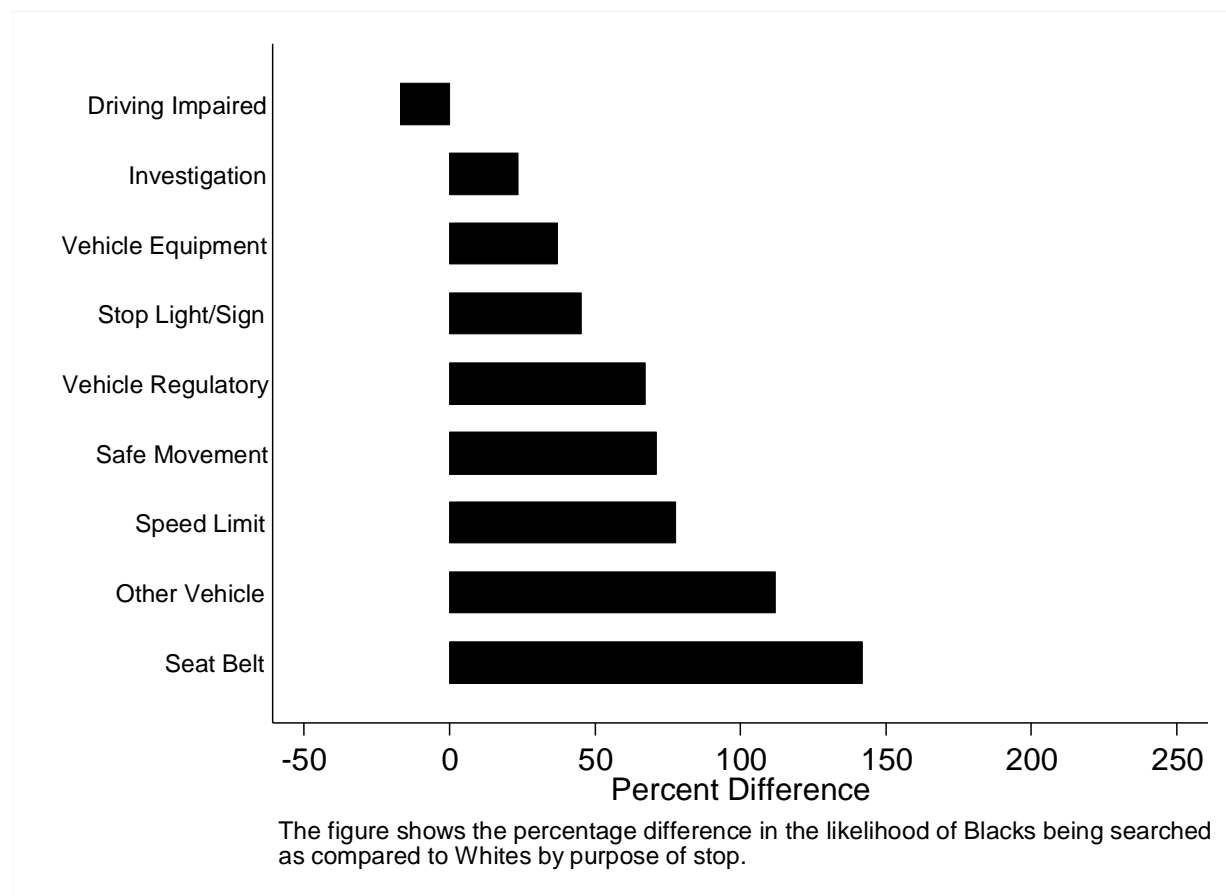


Figure 4. Racial Differences in the Likelihood of Search

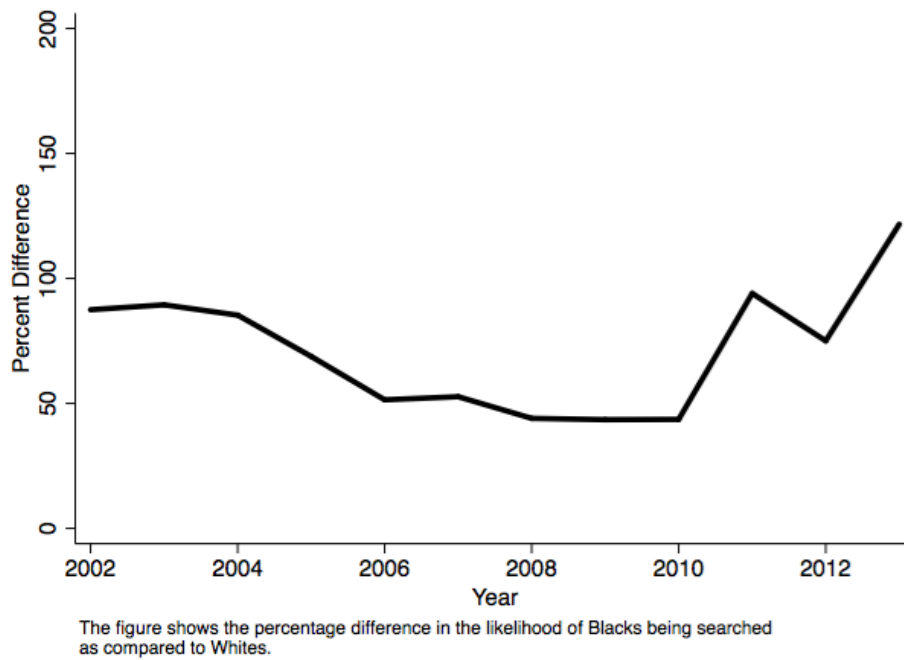


Figure 5. Racial Differences in the Likelihood of Search by Gender

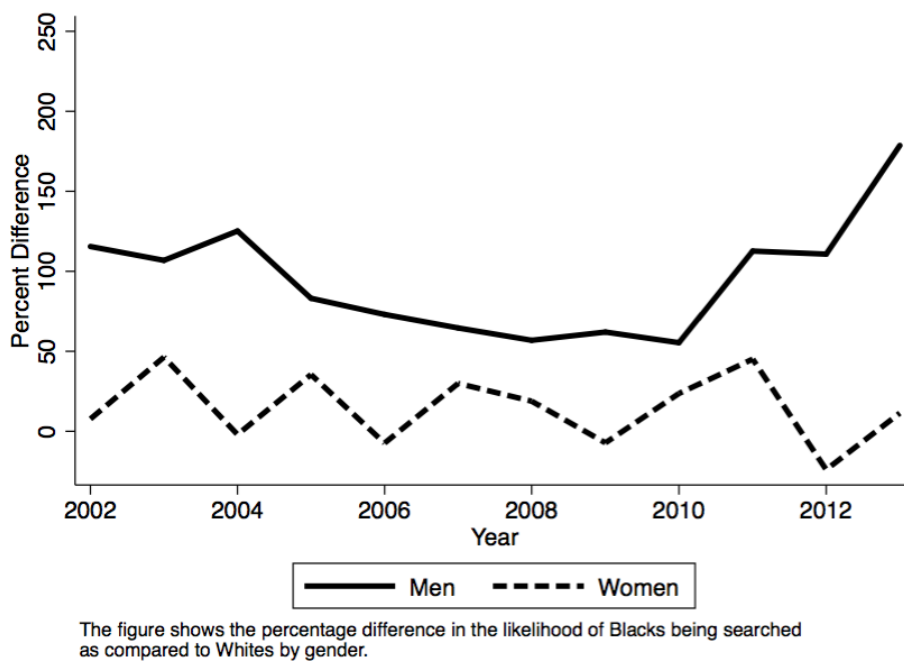


Figure 6. Racial Differences in the Likelihood of Search by Gender, for Drivers Under 30

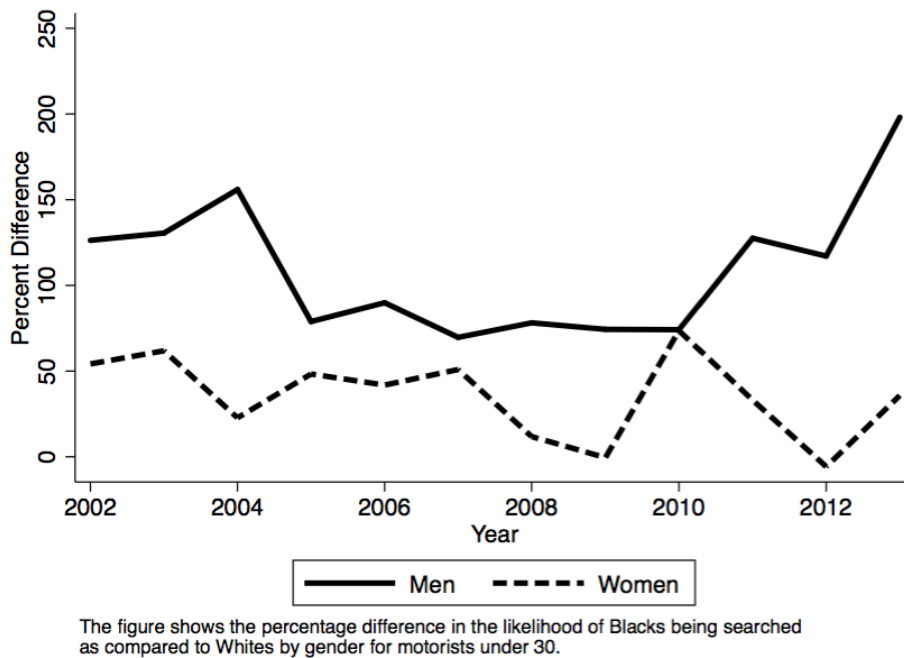
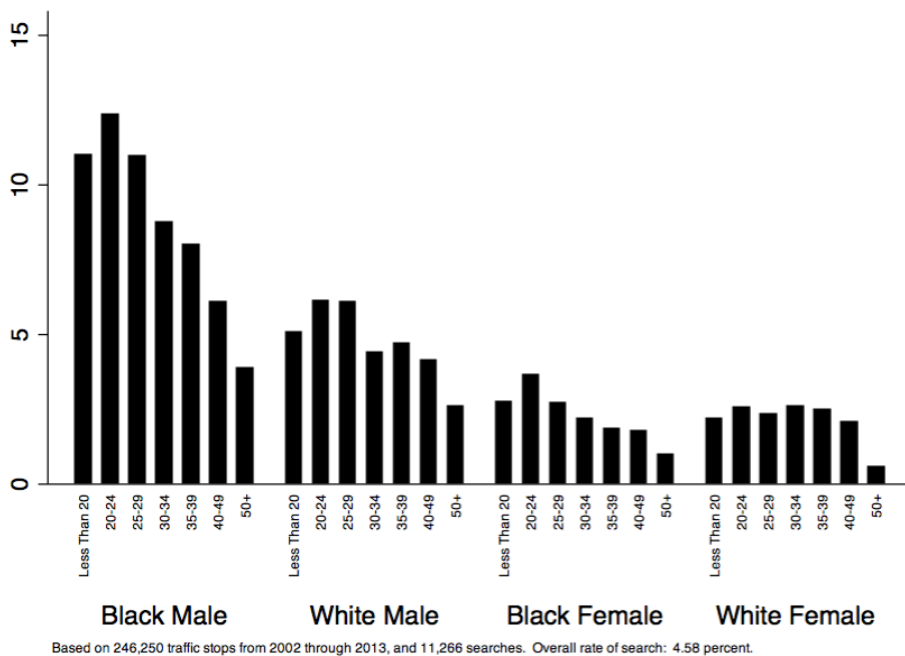


Figure 7. Search Rates by Race, Gender, and Age Group



Black men under the age of 30 are searched at rates of about 12 percent whereas white men of that age see rates of about 6 percent, and women in general are typically below 4 percent. The figure makes clear how race, gender, and age combine to indicate where searches are most likely.

The patterns in Figure 7 are highly consistent over time. Figures 8 and 9 show the number of stops, then searches, by the four race/gender groups.

Figure 8. Number of Stops, by Race and Gender

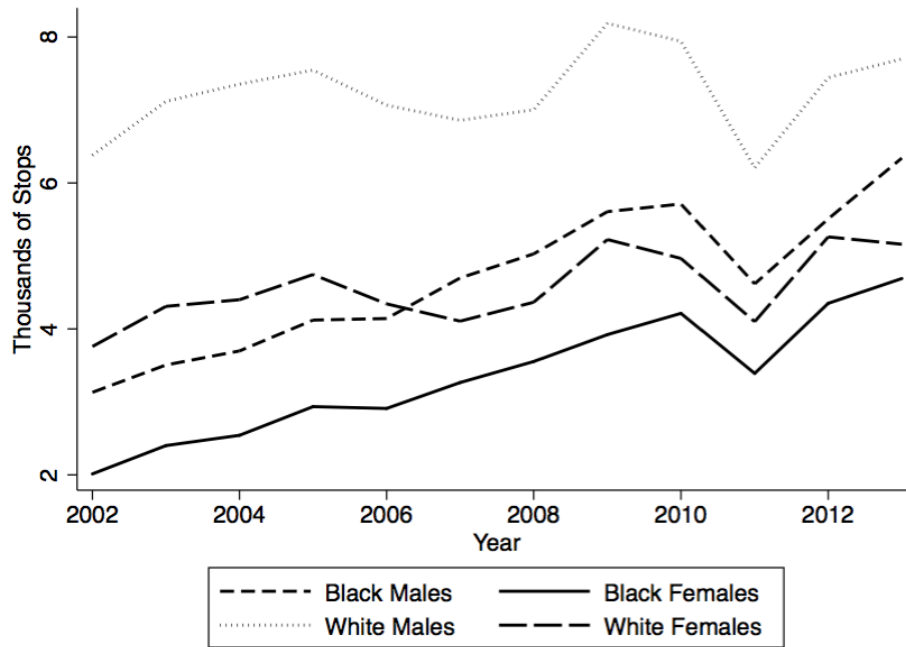


Figure 9. Percent of Stops Resulting in a Search, by Race and Gender

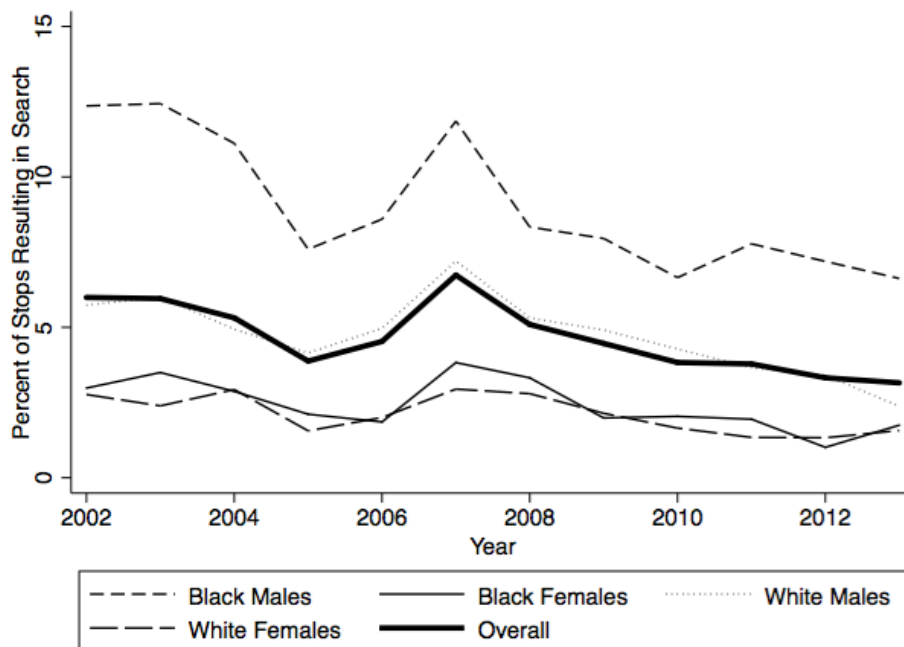


Table 4. Type of Search by Race

Search Type	Number	% Total	% White	% Black	Ratio Black:White
Total Stops	246,250	-	57.48	39.10	-
Total Searches	11,266	4.58	3.70	6.04	1.63
Consent	4,321	1.75	1.60	2.06	1.29
Search Warrant	18	-	-	-	-
Probable Cause	2,220	0.90	0.51	1.51	2.96
Incident to Arrest	4,526	1.84	1.53	2.36	1.54
Protective Frisk	181	0.07	0.06	0.10	1.67

Note: See the appendix for this same table separately for Men and Women.

Table 5. Distribution of Officer IDs by Stop

Number of Stops	Officers w/ this many Stops	Percent of Officers	Cumulative Percent	Percent of Stops	Cumulative Percent
1	748	36.42	36.42	0.30	0.30
2 – 10	445	21.67	58.08	0.75	1.05
11 - 100	393	19.13	77.22	6.61	7.66
101 – 1,000	411	20.01	97.22	53.13	60.79
1,001 +	57	2.78	100.00	39.20	100.00
Total	2,054	100	-	100	-

Figure 10. Number of Black and White Motorists Stopped, by Officer

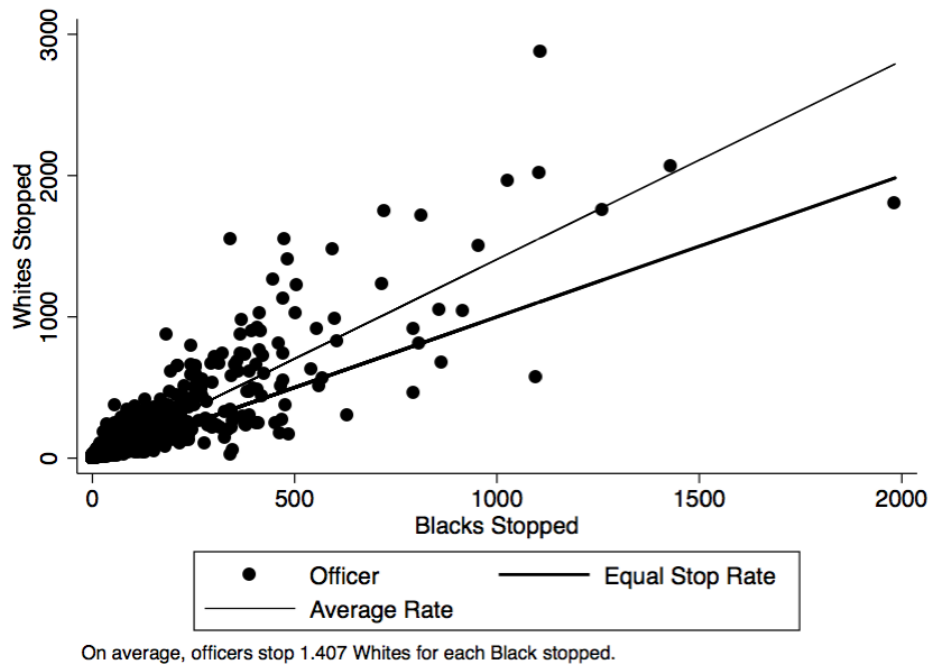


Figure 11. Number of Black and White Motorists Searched, by Officer

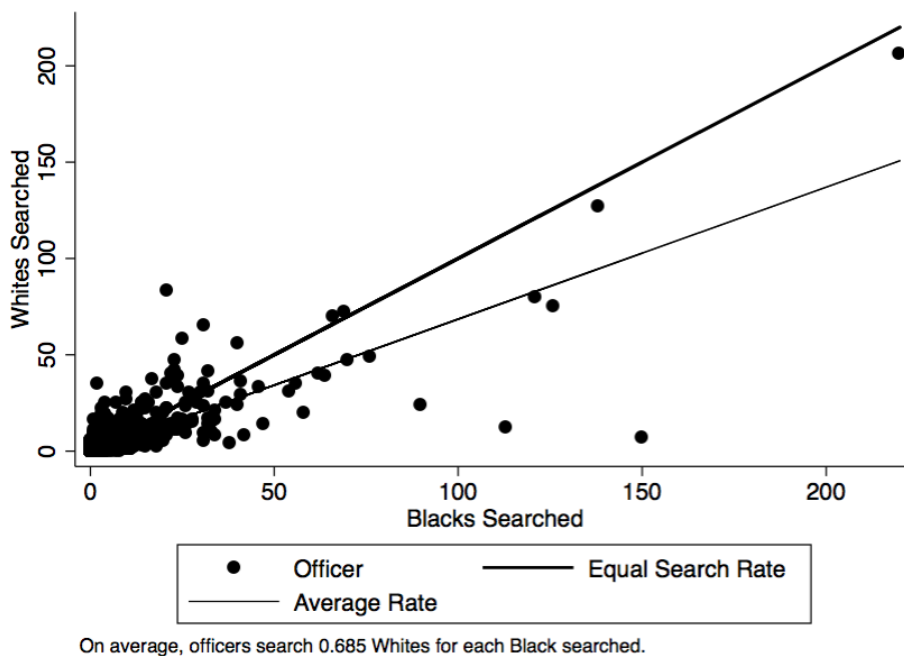
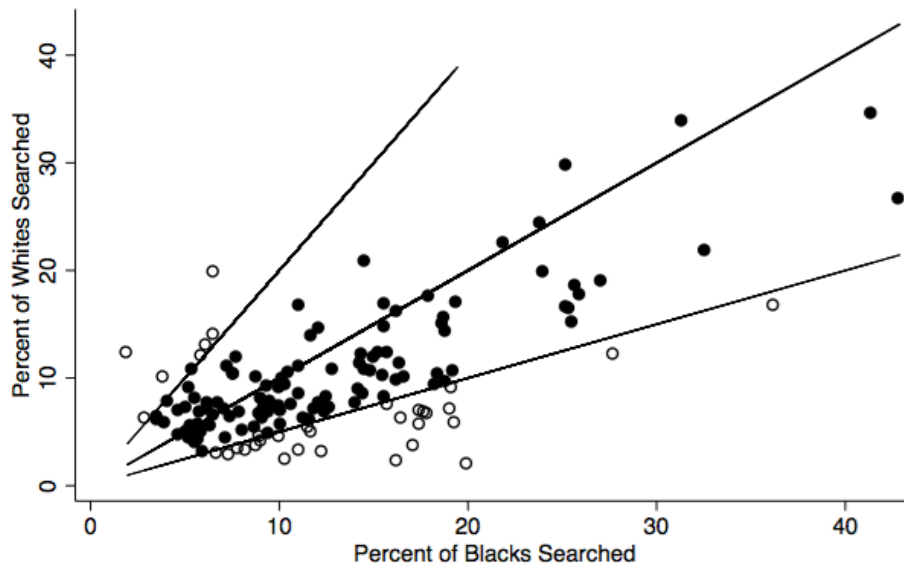


Figure 12. Percent of White and Black Drivers Searched, by Officer



Includes 145 officers with a minimum of 50 White stops, 50 Black stops, and a search rate above the department average of 4.58. The hollow circles indicate high disparity officers. 7 officers search Whites at more than twice the rate that they search Blacks. 27 officers search Blacks at more than twice the rate that they search Whites.

Table 6. Predicting the Occurrence of a Search, Male Drivers

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
Demographics					
Race	2.15*(0.05)	2.12*(0.05)	1.94*(0.05)	1.92*(0.05)	1.90*(0.05)
Hispanic	1.83*(0.07)	1.66*(0.06)	1.26*(0.05)	1.26*(0.05)	1.26*(0.05)
Age	-	0.97*(0.00)	0.97*(0.00)	0.97*(0.00)	0.97*(0.00)
Stop Purpose					
Speed Limit	-	-	-	-	-
Stop Light	-	-	2.57*(0.14)	2.57*(0.14)	2.47*(0.14)
Impaired	-	-	33.16*(2.19)	33.53*(2.23)	26.87*(1.90)
Movement	-	-	4.90*(0.22)	4.87*(0.22)	4.70*(0.22)
Equipment	-	-	3.12*(0.13)	3.12*(0.13)	2.91*(0.13)
Regulatory	-	-	2.52*(0.10)	2.52*(0.10)	2.48*(0.10)
Seat Belt	-	-	2.66*(0.15)	2.66*(0.15)	2.74*(0.16)
Investigation	-	-	6.49*(0.27)	6.44*(0.26)	5.95*(0.26)
Other	-	-	3.73*(0.21)	3.70*(0.21)	3.53*(0.21)
Officer Type					
Black Disparity [†]	-	-	-	1.82*(0.08)	1.82*(0.08)
White Disparity [†]	-	-	-	1.24 (0.15)	1.07*(0.14)
Time					
Hour of Day	-	-	-	-	Included
Day of Week	-	-	-	-	Included
Constant	0.04*(0.00)	0.10*(0.00)	0.04*(0.00)	0.04*(0.00)	0.05*(0.00)
N	142,913	142,913	142,913	142,913	136,794
Pseudo R²	0.017	0.029	0.089	0.091	0.094

Note: Entries are odds-ratios, with standard errors in parenthesis.

Note: The number of observations is smaller for Model 5 because the “hour of stop” variable is missing in some cases.

* $p < 0.05$

† See Figure 12 for an explanation of the identification of high disparity officers.

Table 7. Predicting the Occurrence of a Search, Female Drivers

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
Demographics					
Race	1.09*(0.05)	1.07*(0.05)	0.92 (0.04)	0.92 (0.04)	0.91 (0.04)
Hispanic	0.66*(0.09)	0.61*(0.08)	0.42*(0.06)	0.43*(0.06)	0.44*(0.06)
Age	-	0.97*(0.00)	0.97*(0.00)	0.97*(0.00)	0.98*(0.00)
Stop Purpose					
Speed Limit	-	-	-	-	-
Stop Light	-	-	3.47*(0.40)	3.47*(0.40)	3.22*(0.38)
Impaired	-	-	58.37*(7.64)	58.01*(7.63)	33.30*(4.72)
Movement	-	-	6.49*(0.64)	6.37*(0.63)	5.57*(0.57)
Equipment	-	-	4.84*(0.41)	4.82*(0.40)	3.72*(0.33)
Regulatory	-	-	3.41*(0.27)	3.40*(0.27)	3.20*(0.26)
Seat Belt	-	-	3.50*(0.46)	3.54*(0.46)	3.55*(0.49)
Investigation	-	-	13.06*(1.06)	13.02*(1.06)	10.69*(0.91)
Other	-	-	5.54*(0.68)	5.46*(0.67)	4.87*(0.62)
Officer Type					
Black Disparity [†]	-	-	-	1.71*(0.15)	1.72*(0.16)
White Disparity [†]	-	-	-	2.50*(0.52)	2.50*(0.56)
Time					
Hour of Day	-	-	-	-	Included
Day of Week	-	-	-	-	Included
Constant	0.02*(0.00)	0.05*(0.00)	0.02*(0.00)	0.02*(0.00)	0.03*(0.00)
N	94,922	94,922	94,922	94,922	91,214
Pseudo R²	0.000	0.012	0.090	0.092	0.106

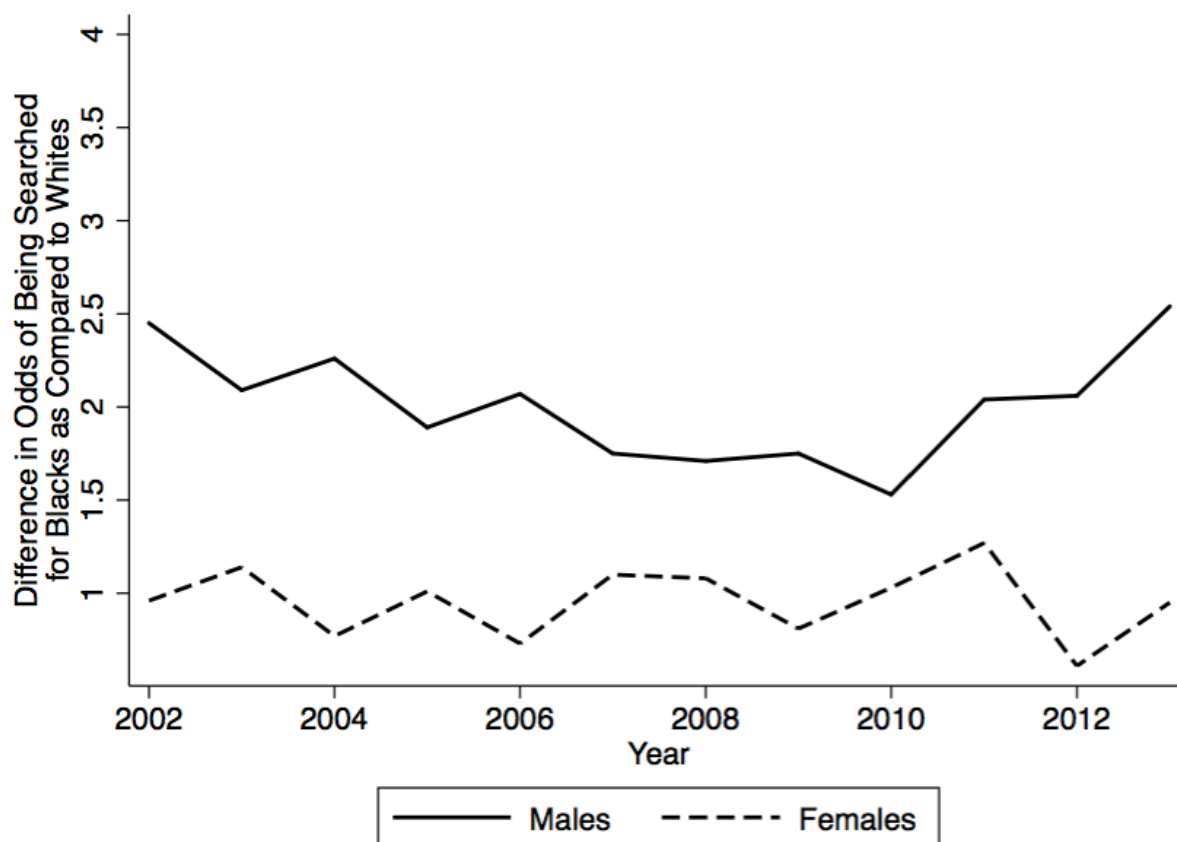
Note: Entries are odds-ratios, with standard errors in parenthesis.

Note: The number of observations is smaller for Model 5 because the “hour of stop” variable is missing in some cases.

* $p < 0.05$

† See Figure 12 for an explanation of the identification of high disparity officers.

Figure 14. Increased Odds of Search for Blacks, by Gender, 2002-2013



Appendix

Table A1. Racial Composition of Traffic Stops by Purpose, Passengers

Purpose	Number	Percent	
		White	Black
Total Stops	7,079	45.64	52.76
Speed Limit	754	55.17	43.37
Stop Light/Sign	355	38.59	59.72
Driving Impaired	204	72.06	24.51
Safe Movement	720	48.47	49.86
Vehicle Equipment	1,302	43.55	54.92
Vehicle Regulatory	1,394	39.31	59.47
Seat Belt	453	35.32	63.13
Investigation	1,538	49.02	49.15
Other Vehicle	337	43.03	55.49

Table A2. Percent of Men Searched by Race and Purpose of Stop

Purpose	Number	% Total	% White	% Black	Ratio
					Black:White
Total Stops	148,697	-	58.38	37.73	-
Total Searches	9,169	6.17	4.72	8.70	1.84
Speed Limit	50,347	2.22	1.68	3.52	2.10
Stop Light/Sign	8,799	5.66	4.47	7.85	1.70
Driving Impaired	1,338	40.28	42.30	36.16	0.85
Safe Movement	10,398	10.04	7.72	14.42	1.87
Vehicle Equipment	21,877	7.12	5.83	9.08	1.56
Vehicle Regulatory	29,744	5.62	4.01	7.83	1.95
Seat Belt	7,824	6.47	3.61	9.74	2.70
Investigation	12,405	13.87	11.84	16.53	1.40
Other Vehicle	5,965	8.63	5.57	12.91	2.32

Table A3. Percent of Women Searched by Race and Purpose of Stop

Purpose	Number	% Total	% White	% Black	Ratio
					Black:White
Total Stops	97,553	-	56.11	41.19	-
Total Searches	2,097	2.15	2.08	2.32	1.12
Speed Limit	39,994	0.64	0.61	0.69	1.13
Stop Light/Sign	5,509	2.05	2.34	1.84	0.79
Driving Impaired	426	25.12	28.33	20.87	0.74
Safe Movement	4,973	3.68	3.74	3.87	1.03
Vehicle Equipment	12,033	3.02	3.02	3.06	1.01
Vehicle Regulatory	22,152	2.05	1.94	2.19	1.13
Seat Belt	3,563	2.22	2.16	2.41	1.12
Investigation	5,962	7.41	8.11	6.88	0.85
Other Vehicle	2,941	3.40	2.81	4.03	1.43

Table A4. Type of Search by Race: Men

Search Type	Number	% Total	% White	% Black	Ratio
					Black:White
Total Stops	148,697	-	58.38	37.73	-
Total Searches	9,169	6.17	4.72	8.70	1.84
Consent	3,491	2.35	2.01	2.99	1.49
Search Warrant	14	-	-	-	-
Probable Cause	1,869	1.26	0.65	2.25	3.46
Incident to Arrest	3,633	2.44	1.96	3.30	1.68
Protective Frisk	162	0.11	0.08	0.15	1.89

Table A5. Type of Search by Race: Women

Search Type	Number	% Total	% White	% Black	Ratio Black:White
Total Stops	97,553	-	56.11	41.19	-
Total Searches	2,097	2.15	2.08	2.32	1.12
Consent	830	0.85	0.95	0.76	0.80
Search Warrant	4	-	-	-	-
Probable Cause	351	0.36	0.28	0.48	1.71
Incident to Arrest	893	0.92	0.84	1.05	1.25
Protective Frisk	19	0.02	0.01	0.03	3.00

Figure A6. Stops by Day of the Week

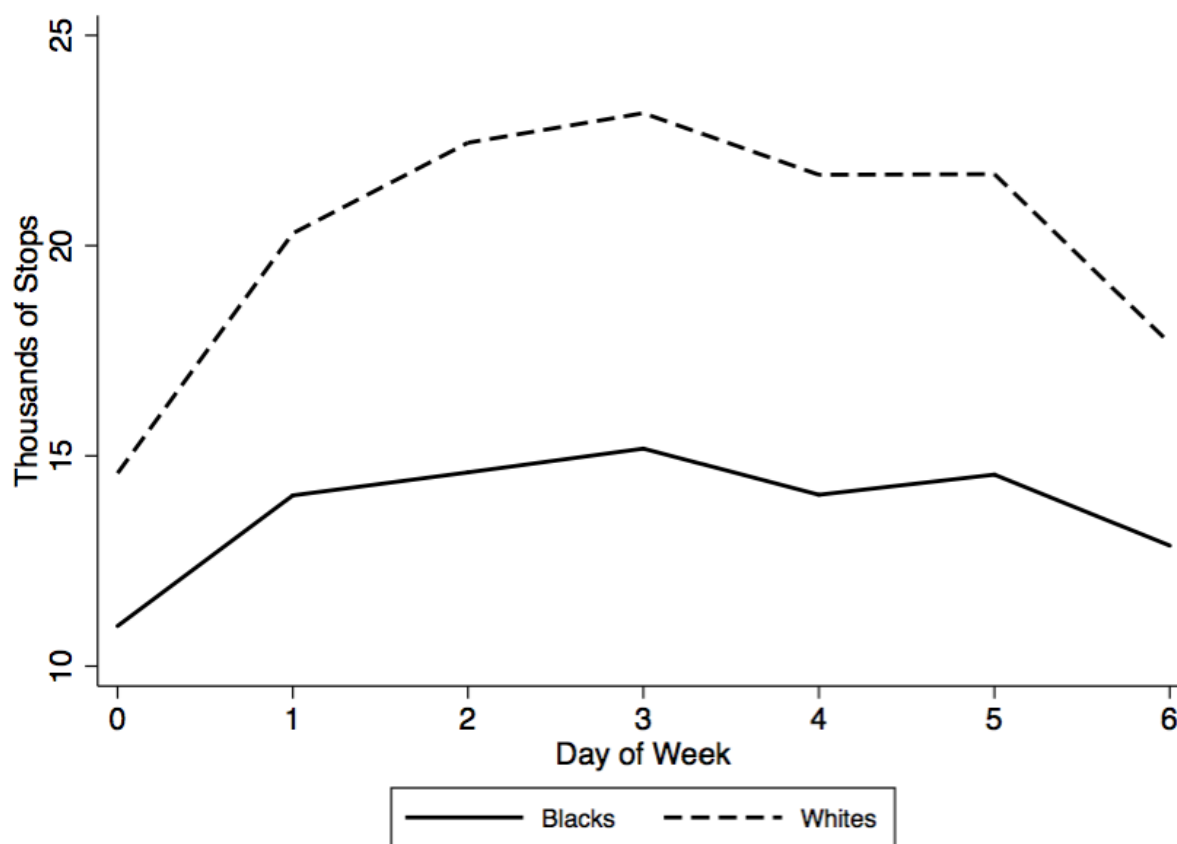


Figure A7. Searches by Day of the Week

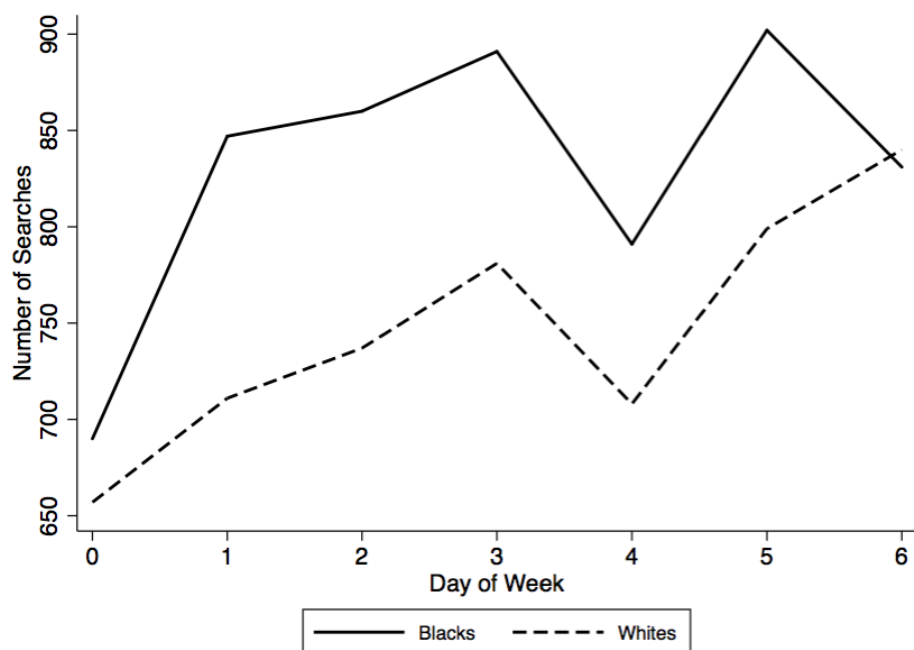
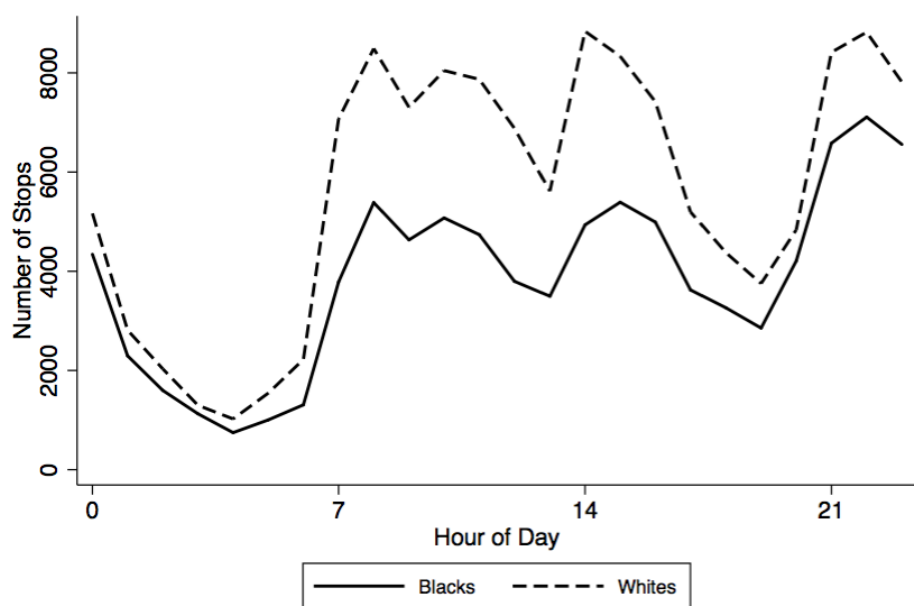


Figure A8. Stops by Hour of the Day



The figure excludes cases where the hour and minute was exactly 0:00. These cases were presumed to be missing data.

Figure A9. Searches by Hour of the Day

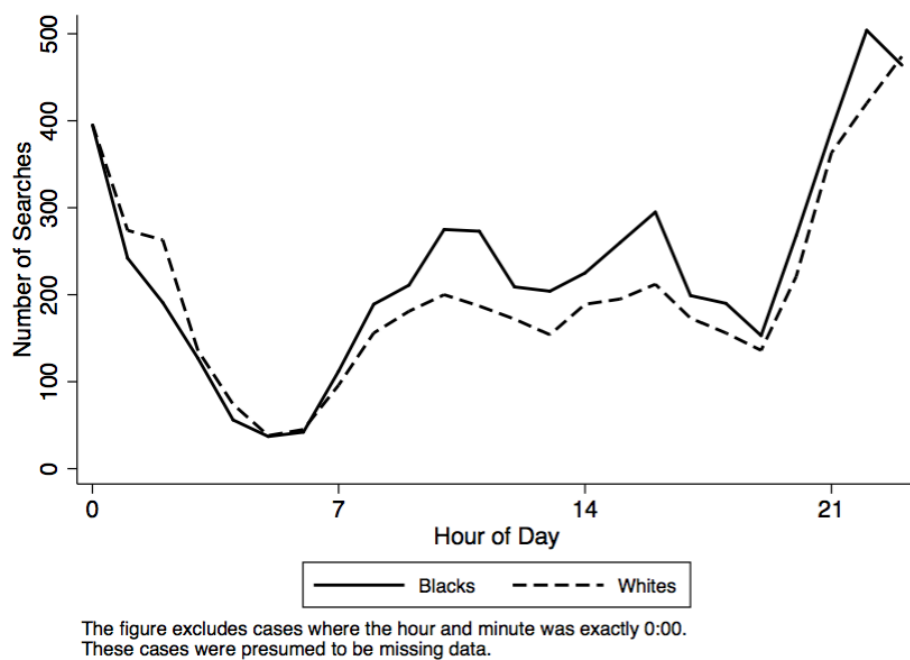


Figure A10. Correlation Between Percent Difference in Likelihood of Black Men being Searched as Compared to Whites and Odds-Ratios from Logistic Regression

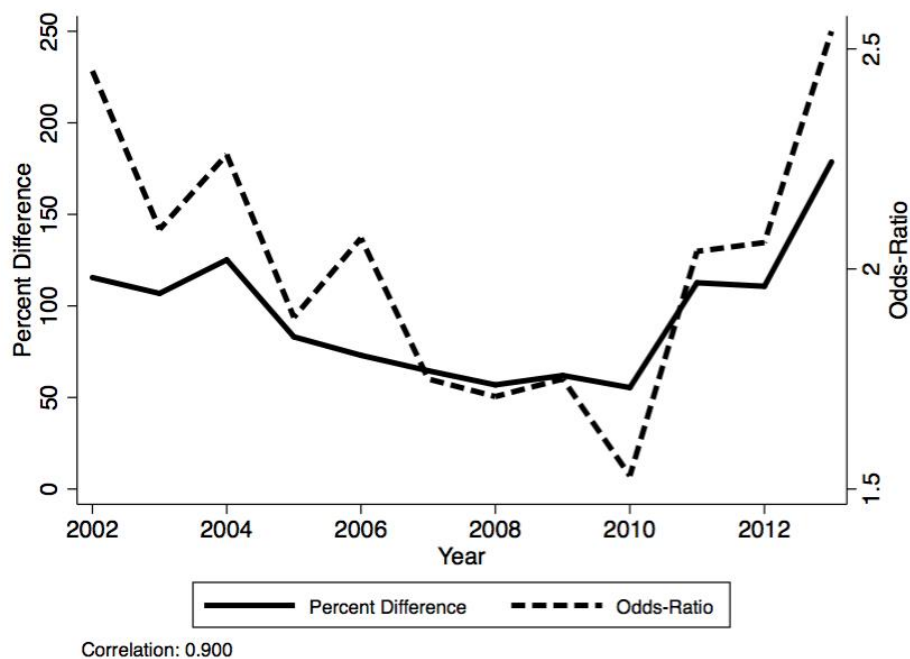


Figure A11. Correlation Between Percent Difference in Likelihood of Black Women being Searched as Compared to Whites and Odds-Ratios from Logistic Regression

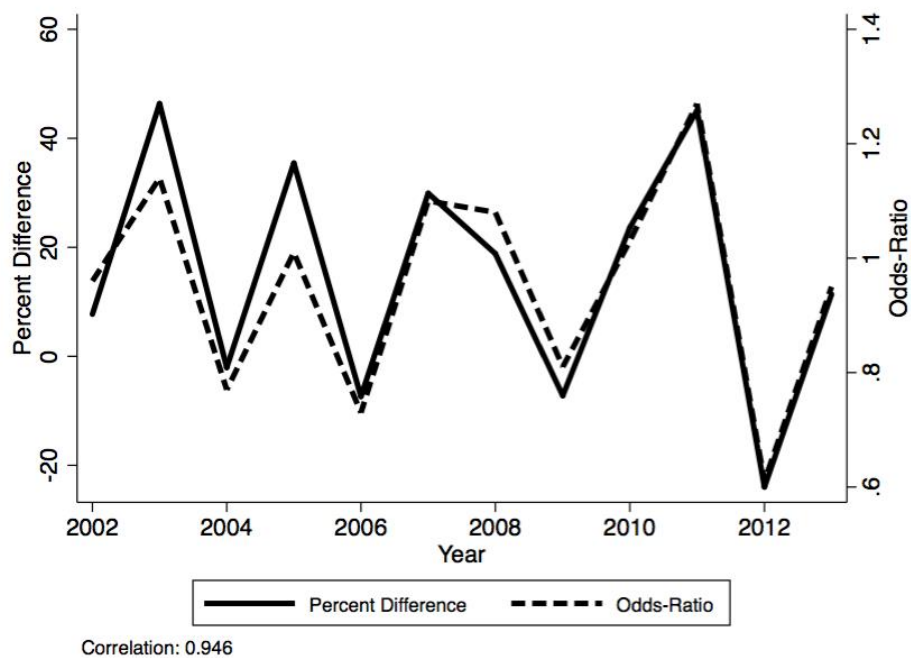


Figure A12. Racial Differences in the Likelihood of Search: Consent Searches Only

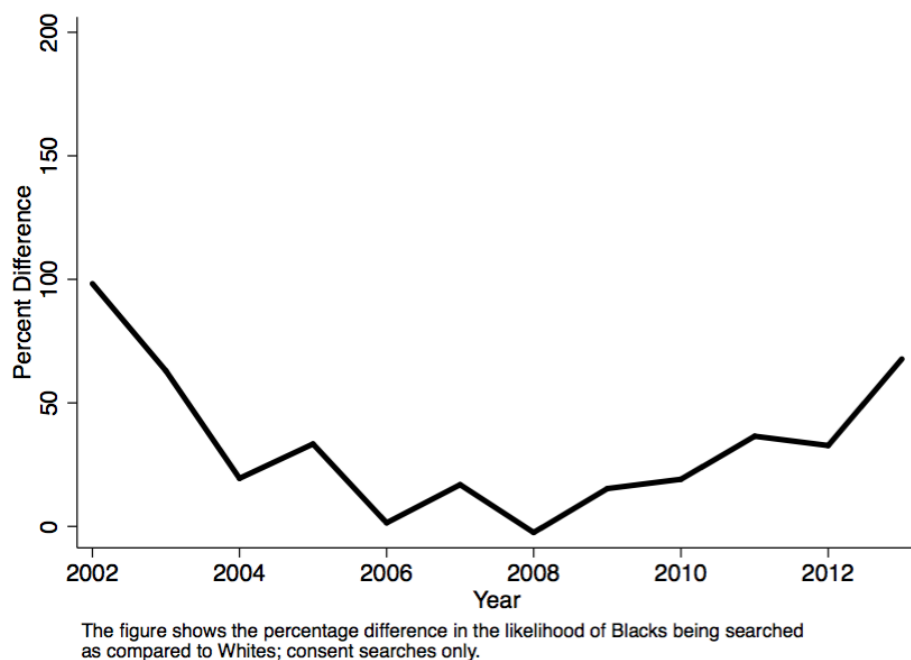


Table A6. Likelihood of Finding Contraband Given a Search, by Race

Contraband	Number	% Total	% White	% Black
Yes	3,008	26.70	24.98	28.27
No	8,258	73.30	75.02	71.73
Total	11,266	100.00	100.00	100.00

Table A7. Differential Outcomes by Whether or not a Search Occurs

Race	Search Occur	N	No Action	Verbal Warning	Written Warning	Citation Issued	Arrest	Total
White	No	136,310	2.37	12.45	19.52	64.53	1.14	100.0
Black	No	90,480	3.18	12.83	20.48	61.99	1.52	100.0
Total	No	234,984	2.68	12.60	19.85	63.61	1.27	100.0
White	Yes	5,233	1.20	5.14	11.73	34.82	47.10	100.0
Black	Yes	5,812	1.24	3.96	11.42	38.49	44.89	100.0
Total	Yes	11,266	1.22	4.51	11.53	36.79	45.95	100.0