

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

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[report prepared by Katherine Elliott]

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Table 1. Overview of the Data

Data Subsets	Observations
Total stops	72,360
-2014	3,078
-Passengers	712
-Checkpoint stops	390
Total number of cases deleted	4,079
Stops remaining for analysis	68,281
Searches	1,569
Percent of stops leading to search (search rate)	2.30

Figure 1. Number of Traffic Stops per Year

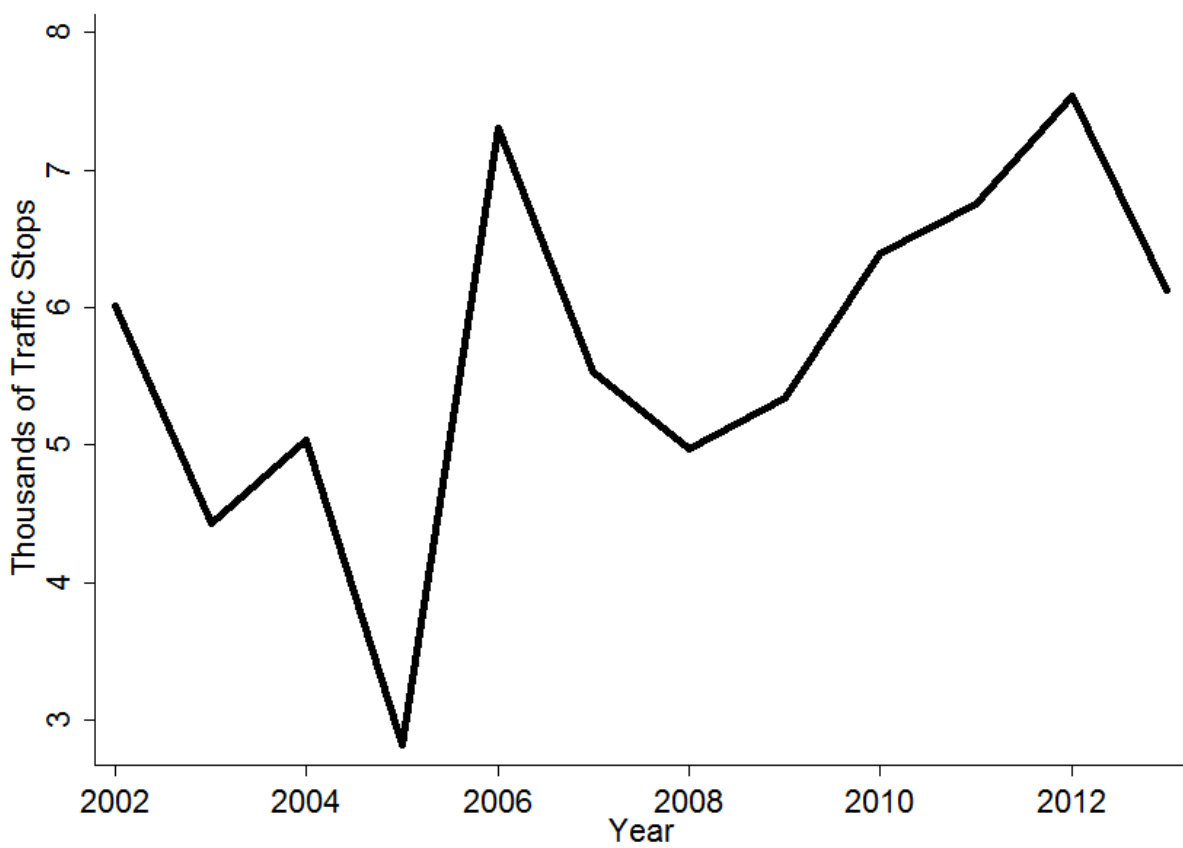


Figure 2. Racial Composition of Traffic Stops by Year

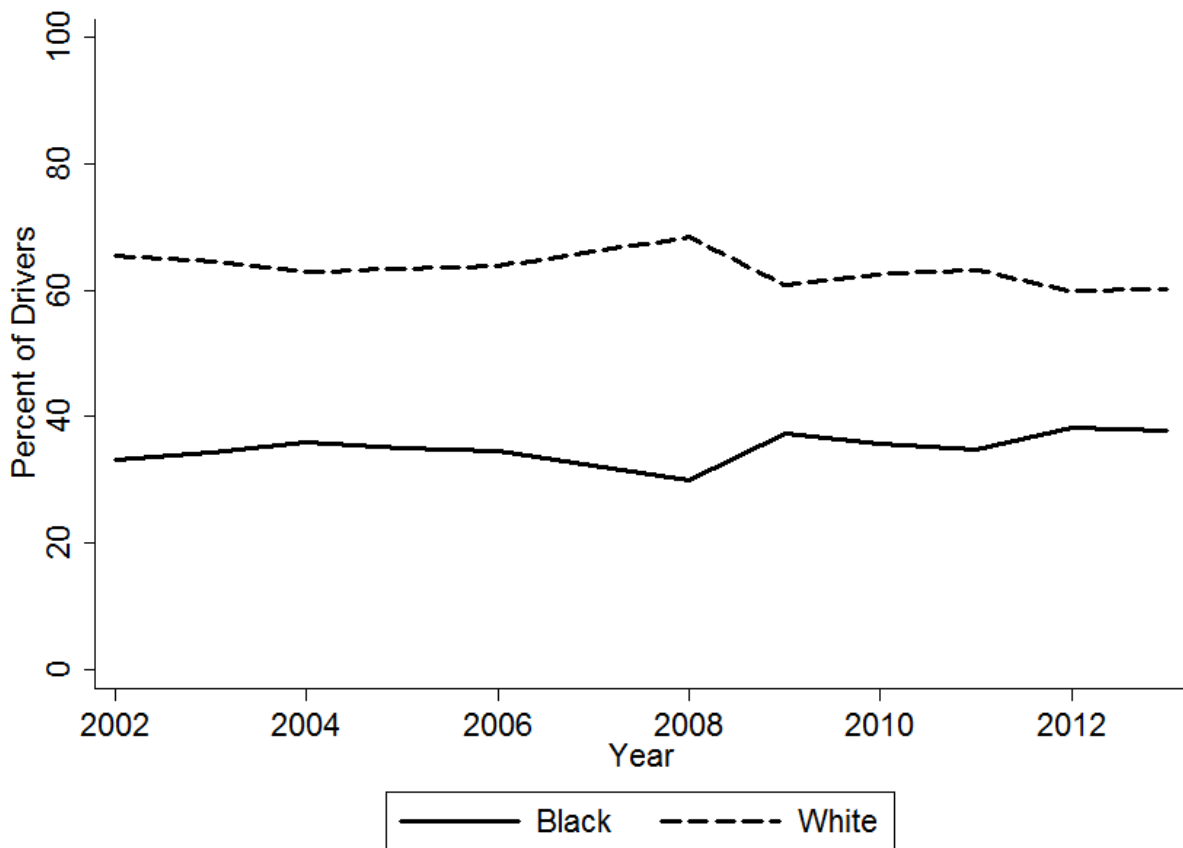


Table 2. Racial Composition of Traffic Stops by Purpose, Drivers

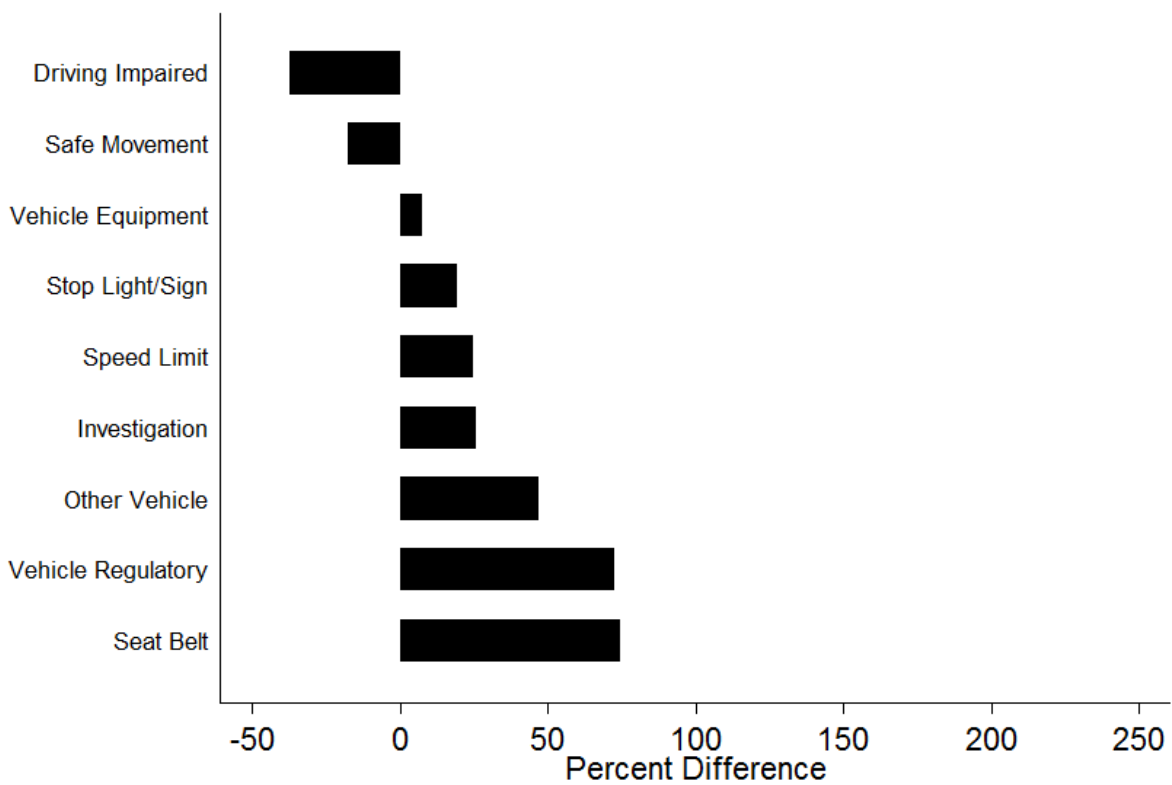
Purpose	Number	Percent	
		White	Black
Total Stops	68,281	63.31	35.09
Speed Limit	32,755	65.78	32.36
Stop Light/Sign	5,113	64.19	33.72
Driving Impaired	668	75.30	23.05
Safe Movement	2,958	64.50	33.77
Vehicle Equipment	5,613	53.63	45.06
Vehicle Regulatory	10,721	60.82	38.19
Seat Belt	3,924	69.06	29.66
Investigation	3,163	50.52	48.34
Other Vehicle	3,366	63.90	34.61

Note: Includes only drivers. Excludes 712 passengers.

Table 3. Percent Searched by Race and Purpose of Stop

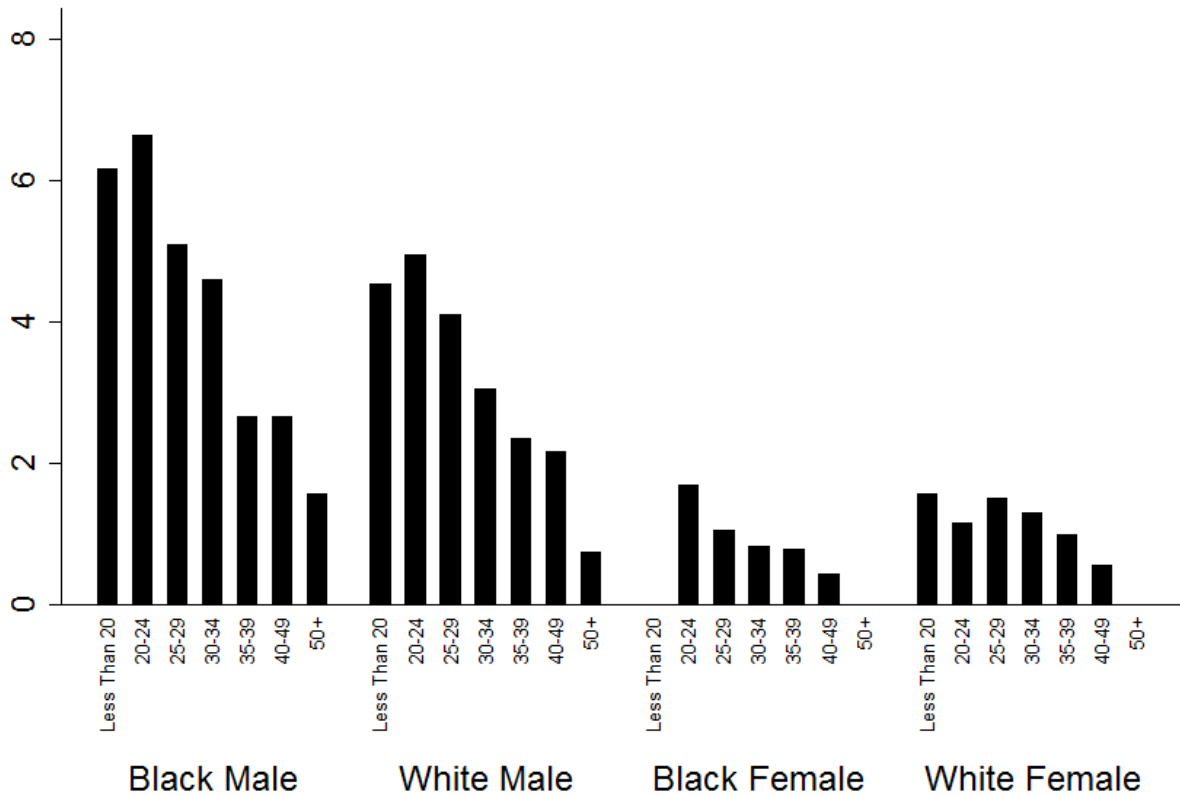
Purpose	Number	% Total	% White	% Black	Ratio
					Black:White
Total Stops	68,281	-	63.31	35.09	-
Total Searches	1,569	2.30	2.18	2.57	1.18
Speed Limit	32,755	1.21	1.13	1.41	1.25
Stop Light/Sign	5,113	1.62	1.55	1.86	1.20
Driving Impaired	668	34.58	38.17	24.03	0.63
Safe Movement	2,958	4.33	4.61	3.80	0.82
Vehicle Equipment	5,613	3.83	3.75	4.03	1.07
Vehicle Regulatory	10,721	1.86	1.46	2.52	1.73
Seat Belt	3,924	1.45	1.18	2.06	1.75
Investigation	3,163	4.84	4.32	5.43	1.26
Other Vehicle	3,366	3.21	2.74	4.03	1.47

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



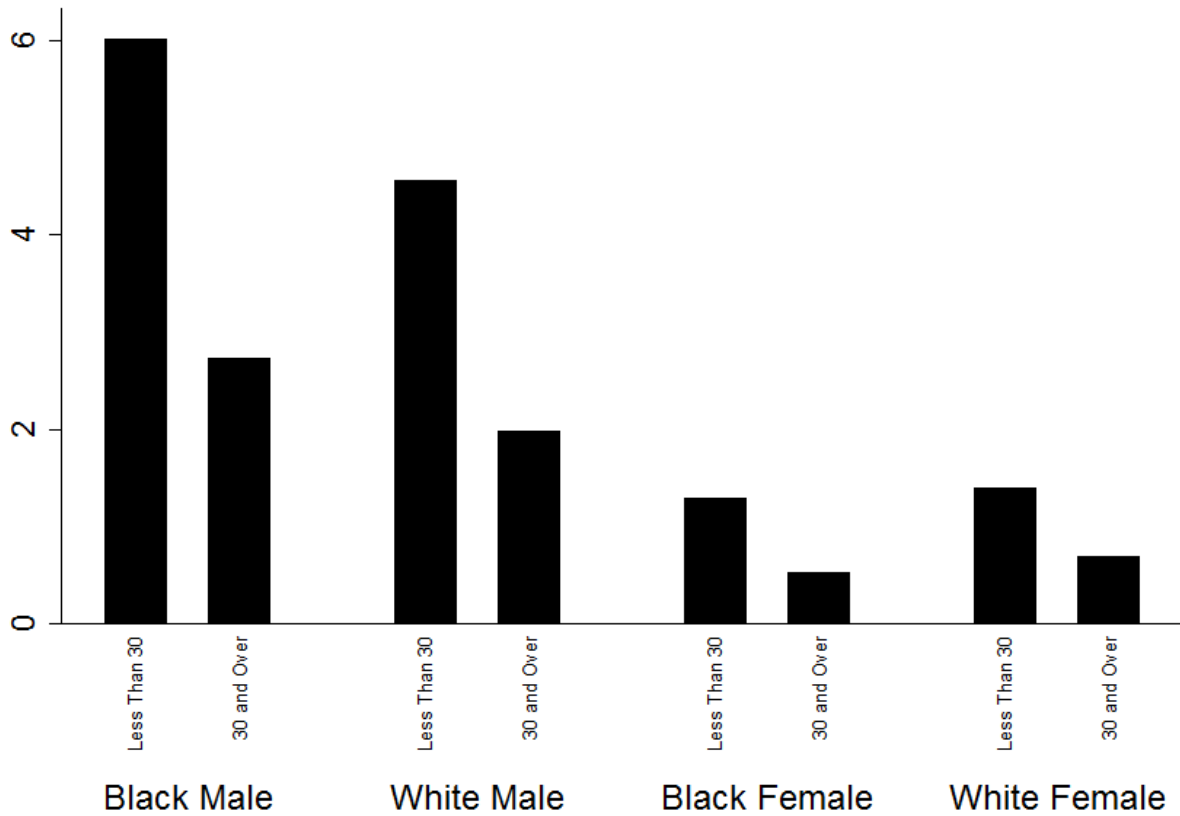
The figure shows the percentage difference in the likelihood of Blacks being searched as compared to Whites by purpose of stop.

Figure 4a. Percentage Searched by Race, Gender, and Age



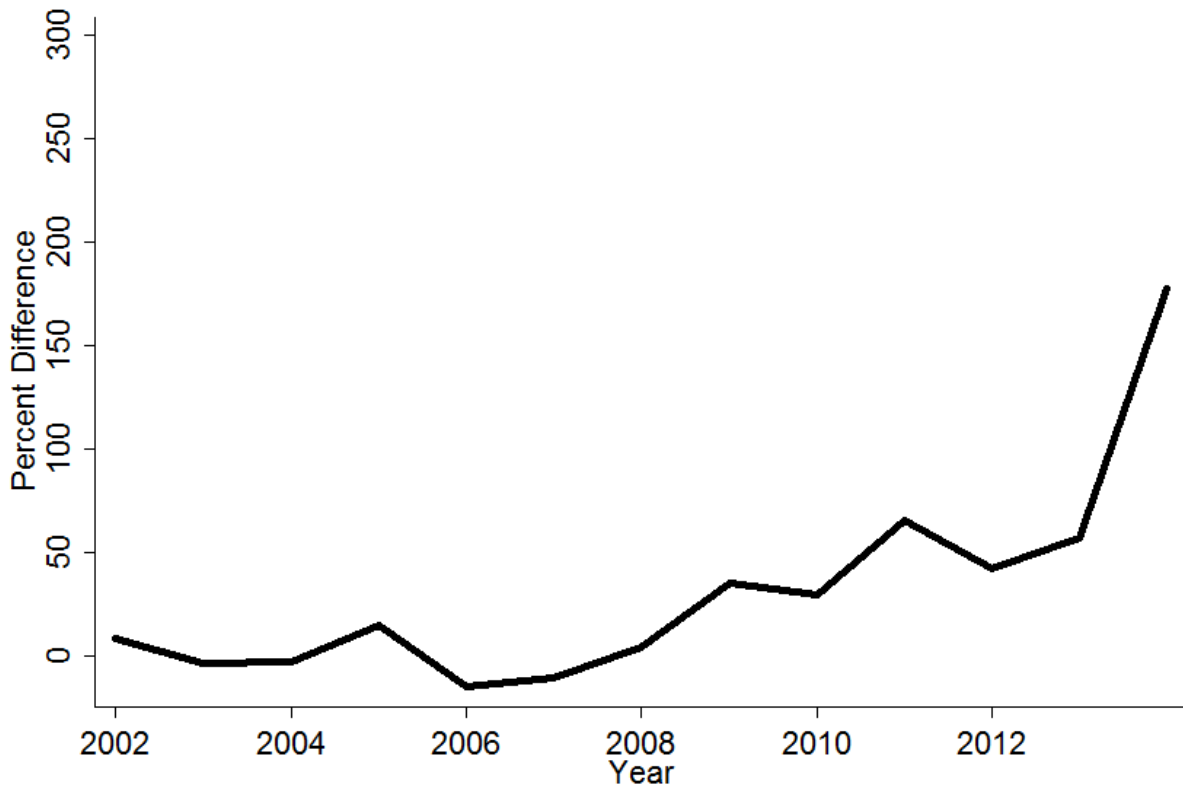
Based on 68,281 traffic stops from 2002 through 2013, and 1,569 searches. Overall rate of search: 2.30 percent. No data are presented for categories with fewer than 10 searches.

Figure 4b. Percentage Searched by Race, Gender, and Age



Based on 68,281 traffic stops from 2002 through 2013, and 1,569 searches. Overall rate of search: 2.30 percent.

Figure 5. Racial Differences in the Likelihood of Search



The figure shows the percentage difference in the likelihood of Blacks being searched as compared to Whites.

Figure 6. Number of Stops, by Race and Gender

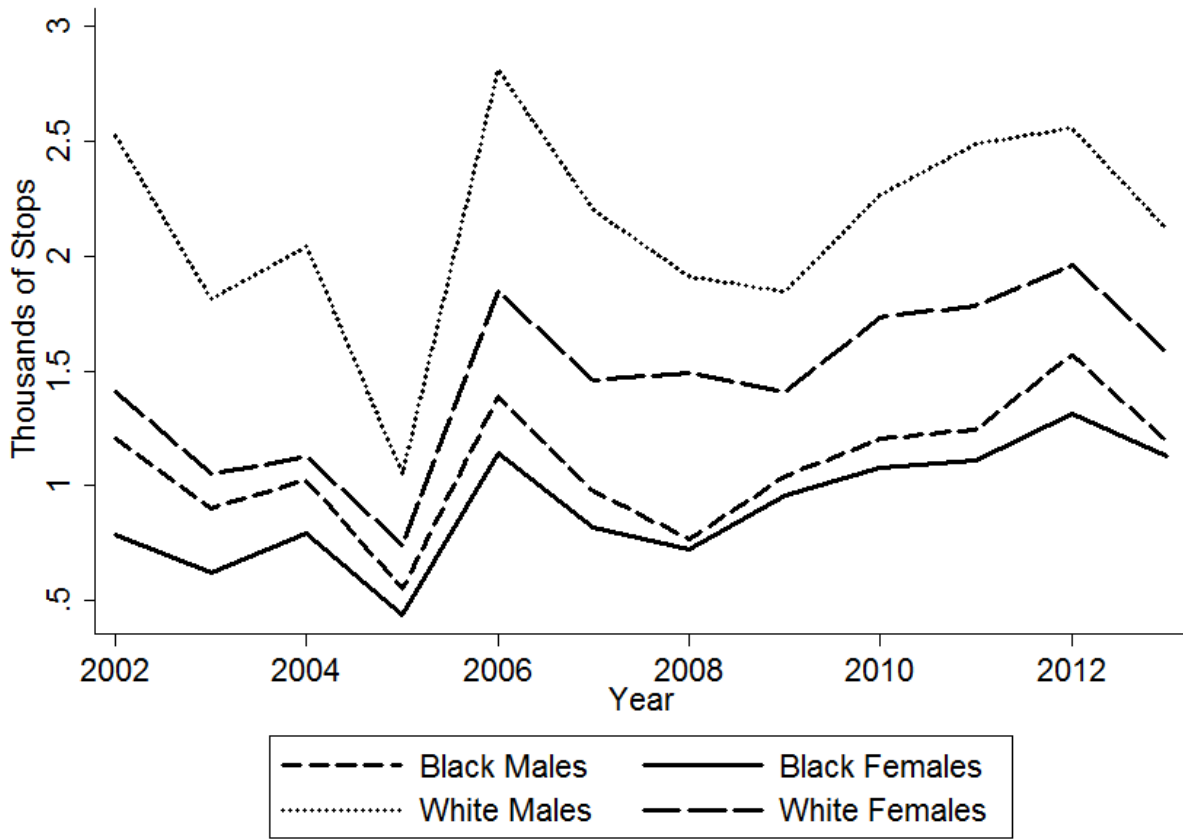
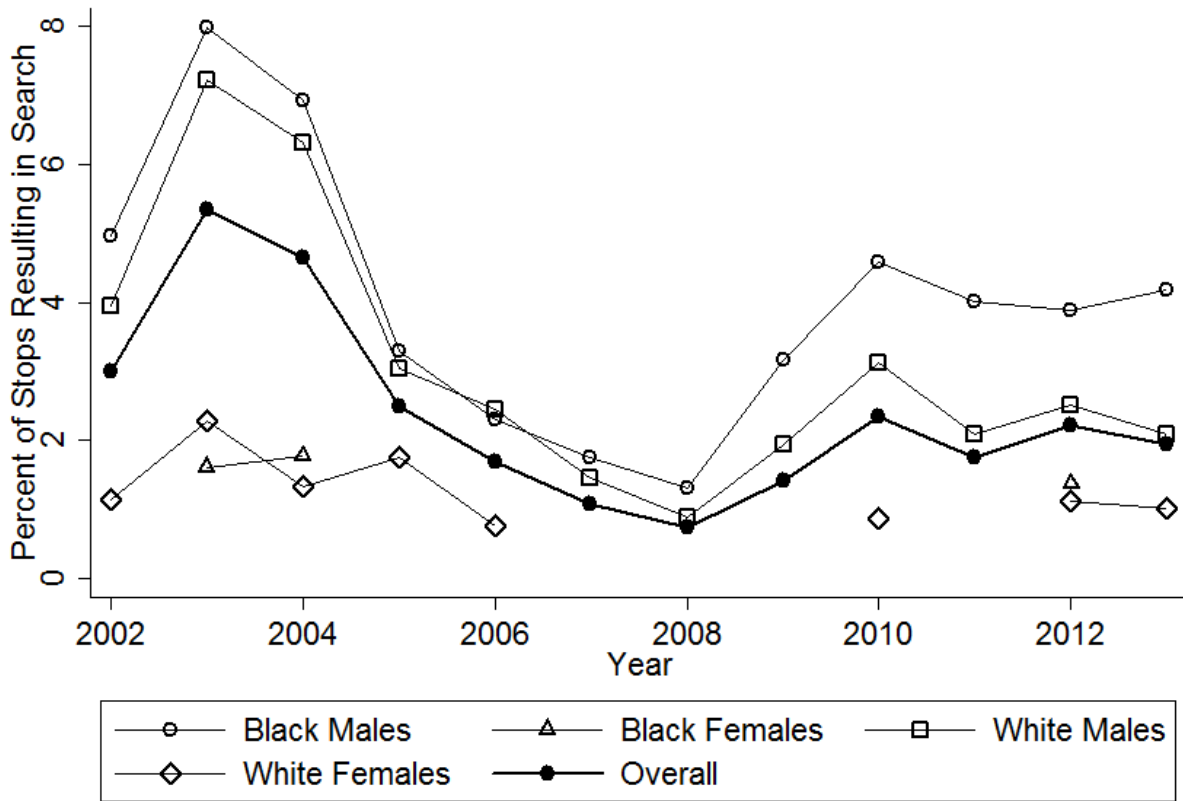


Figure 7. Percent Searched, by Race and Gender



Note: No rate is calculated if based on fewer than 10 searches.

Table 4. Type of Search by Race

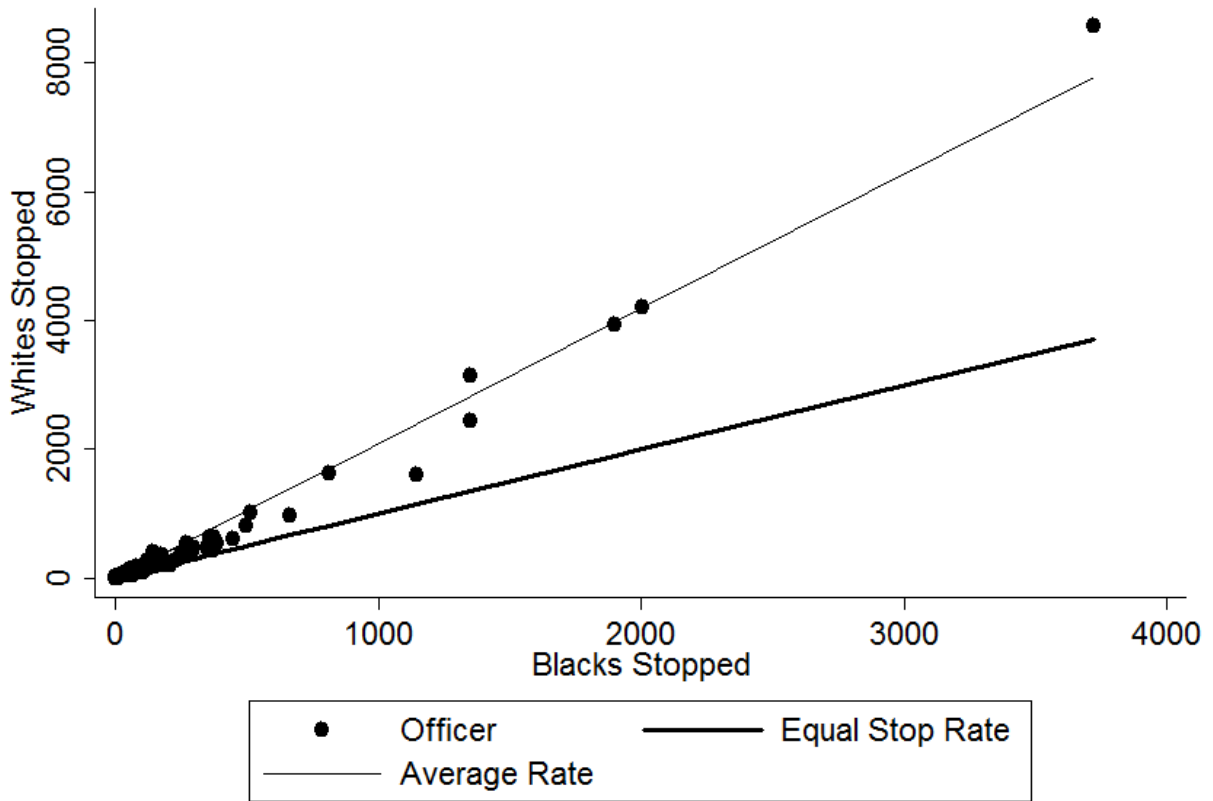
Search Type	Number	% Total	% White	% Black	Ratio
					Black:White
Total Stops	68,281	-	63.31	35.09	-
Total Searches	1,569	2.30	2.18	2.57	1.18
Consent	759	1.11	0.99	1.36	1.37
Search Warrant	3	0.00	0.01	0.00	-
Probable Cause	165	0.24	0.18	0.36	2.00
Incident to Arrest	613	0.90	0.98	0.78	0.80
Protective Frisk	29	0.04	0.03	0.06	2.00

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

Table 5. Distribution of Officer IDs by Stop

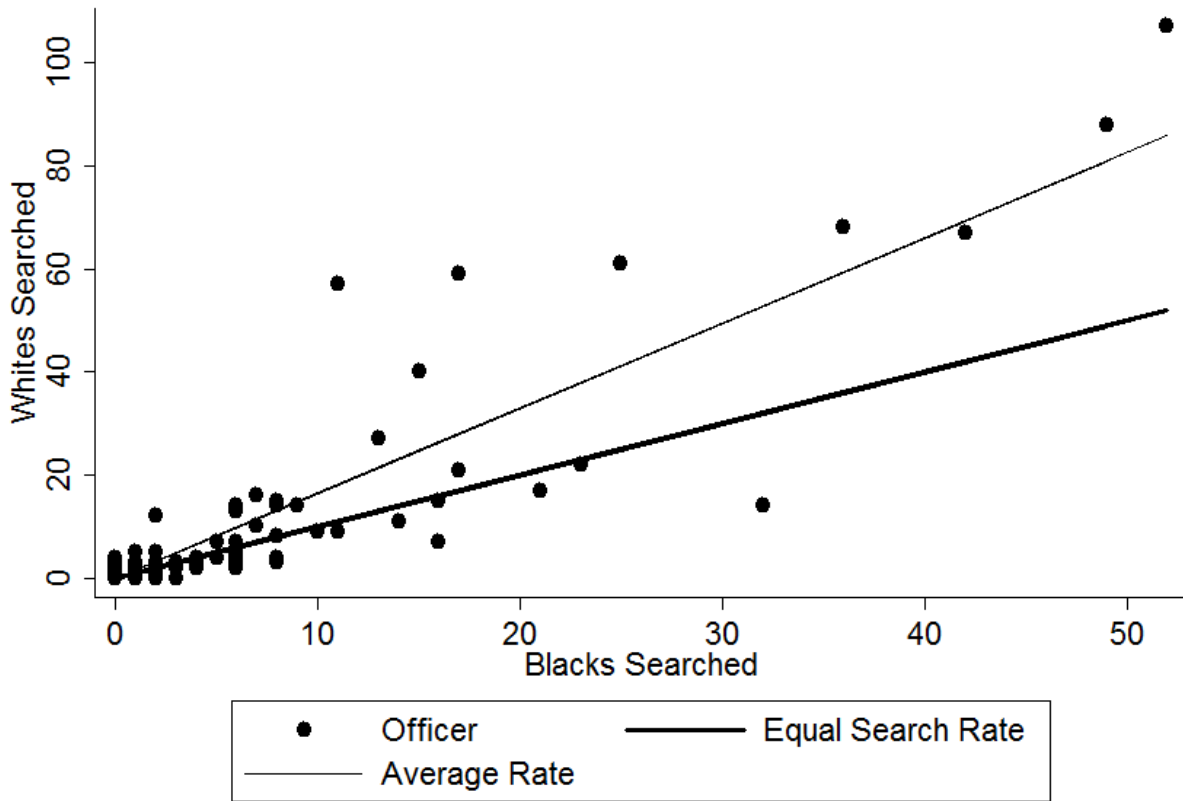
Number of Stops	Officers w/ this many Stops	Percent of Officers	Cumulative Percent	Percent of Stops	Cumulative Percent
1	90	38.30	38.30	0.13	0.13
2 – 10	45	19.15	57.45	0.24	0.37
11 - 100	35	14.89	72.34	2.43	2.80
101 – 1,000	53	22.55	94.89	31.16	33.96
1,001 +	12	5.11	100.00	66.04	100.00
Total		100.00	-	100.00	-

Figure 8. Number of Black and White Motorists Stopped, by Officer



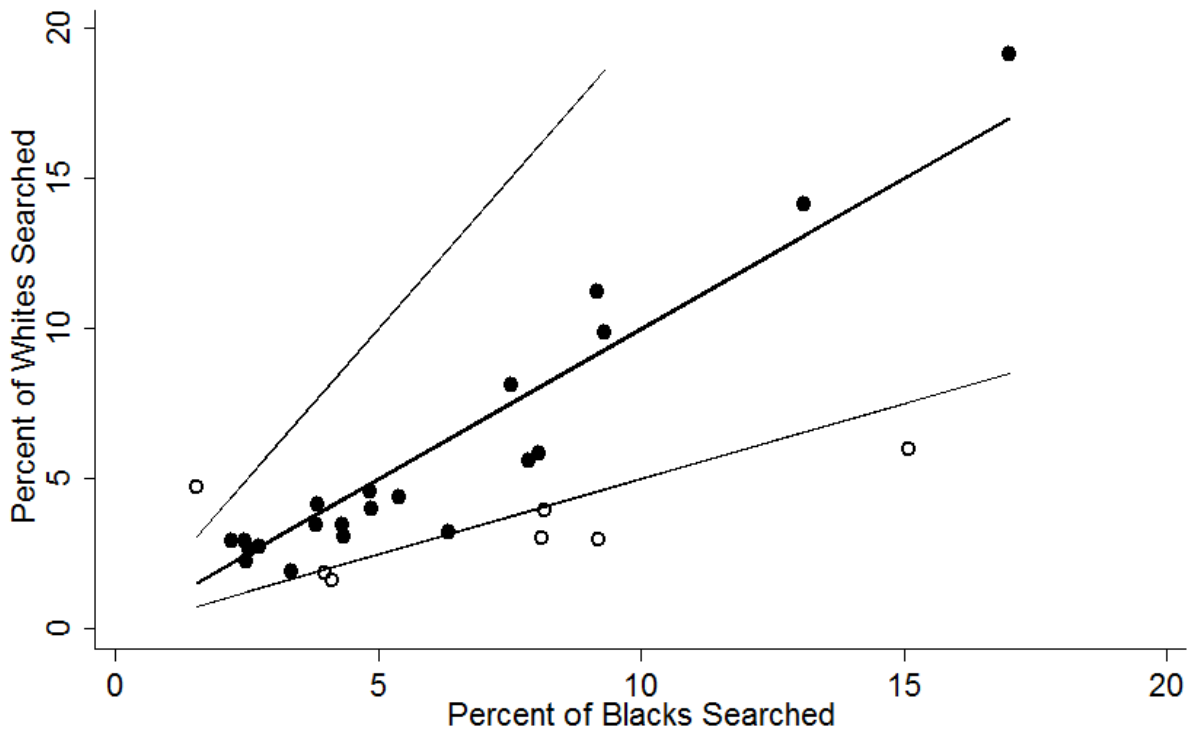
On average, officers stop 2.095 Whites for each Black stopped.

Figure 9. Number of Black and White Motorists Searched, by Officer



On average, officers search 1.650 Whites for each Black searched.

Figure 10. Percent of White and Black Drivers Searched, by Officer



Includes 28 officers with a minimum of 50 White stops, 50 Black stops, and a search rate above the department average of 2.30. The hollow circles indicate high disparity officers. 1 officer searches Whites at more than twice the rate that they search Blacks. 6 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	1.56*(0.10)	1.53*(0.09)	1.52*(0.10)	1.51*(0.10)	1.47*(0.10)
Hispanic	2.01*(0.16)	1.70*(0.14)	1.35*(0.12)	1.36*(0.12)	1.38*(0.12)
Age	-	0.96*(0.00)	0.96*(0.00)	0.96*(0.00)	0.96*(0.00)
Stop Purpose					
Speed Limit	-	-	-	-	-
Stop Light	-	-	1.30*(0.17)	1.29(0.17)	1.34*(0.18)
Impaired	-	-	37.83*(4.29)	37.72*(4.29)	26.57*(3.16)
Movement	-	-	2.95*(0.35)	2.89*(0.34)	2.58*(0.31)
Equipment	-	-	2.60*(0.25)	2.53*(0.24)	2.02*(0.20)
Regulatory	-	-	1.51*(0.15)	1.48*(0.14)	1.60*(0.16)
Seat Belt	-	-	1.01(0.15)	1.03(0.16)	1.33(0.21)
Investigation	-	-	2.99*(0.32)	2.94*(0.32)	2.71*(0.30)
Other	-	-	2.34*(0.29)	2.34*(0.29)	2.78*(0.28)
Officer Type					
Black Disparity [†]	-	-	-	1.71*(0.19)	1.67*(0.19)
White Disparity [†]	-	-	-	0.76(0.26)	0.68(0.24)
Time					
Hour of Day	-	-	-	-	Included
Day of Week	-	-	-	-	Included
Constant	0.03*(0.00)	0.10*(0.01)	0.06*(0.01)	0.06*(0.01)	0.09*(0.01)
N	38,693	38,693	38,693	38,693	38,563
Pseudo R²	0.01	0.03	0.11	0.12	0.13

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	0.80(0.11)	0.79(0.11)	0.77(0.11)	0.76*(0.11)	0.76*(0.11)
Hispanic	0.50(0.18)	0.43*(0.16)	0.39*(0.14)	0.38*(0.14)	0.37*(0.14)
Age	-	0.96*(0.01)	0.96*(0.01)	0.96*(0.01)	0.97*(0.01)
Stop Purpose					
Speed Limit	-	-	-	-	-
Stop Light	-	-	1.14(0.37)	1.13(0.37)	1.21(0.40)
Impaired	-	-	50.58*(11.29)	50.86*(11.36)	25.20*(6.05)
Movement	-	-	5.69*(1.35)	5.57*(1.32)	3.66*(0.89)
Equipment	-	-	3.09*(0.68)	2.86*(0.63)	1.56*(0.36)
Regulatory	-	-	1.68*(0.35)	1.65*(0.35)	1.89*(0.40)
Seat Belt	-	-	0.92(0.43)	0.91(0.42)	1.57(0.74)
Investigation	-	-	4.67*(1.15)	4.28*(1.07)	3.23*(0.82)
Other	-	-	2.67*(0.75)	2.66*(0.74)	2.51*(0.71)
Officer Type					
Black Disparity [†]	-	-	-	2.18*(0.53)	1.86*(0.46)
White Disparity [†]	-	-	-	2.71(1.42)	2.39(1.28)
Time					
Hour of Day	-	-	-	-	Included
Day of Week	-	-	-	-	Included
Constant	0.01*(0.00)	0.05*(0.01)	0.02*(0.01)	0.02*(0.00)	0.03*(0.01)
N	28,492	28,492	28,492	28,492	27,045
Pseudo R²	0.00	0.03	0.11	0.12	0.17

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.

Appendix

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

Purpose	Number	Percent	
		White	Black
Total Stops	712	54.78	42.98
Speed Limit	171	54.97	42.69
Stop Light/Sign	41	41.46	58.54
Driving Impaired	34	88.24	8.82
Safe Movement	56	58.93	41.07
Vehicle Equipment	85	58.82	38.82
Vehicle Regulatory	117	52.14	47.01
Seat Belt	33	45.45	51.52
Investigation	115	60.00	36.52
Other Vehicle	58	34.48	60.34

Figure A1. Stops by Day of the Week

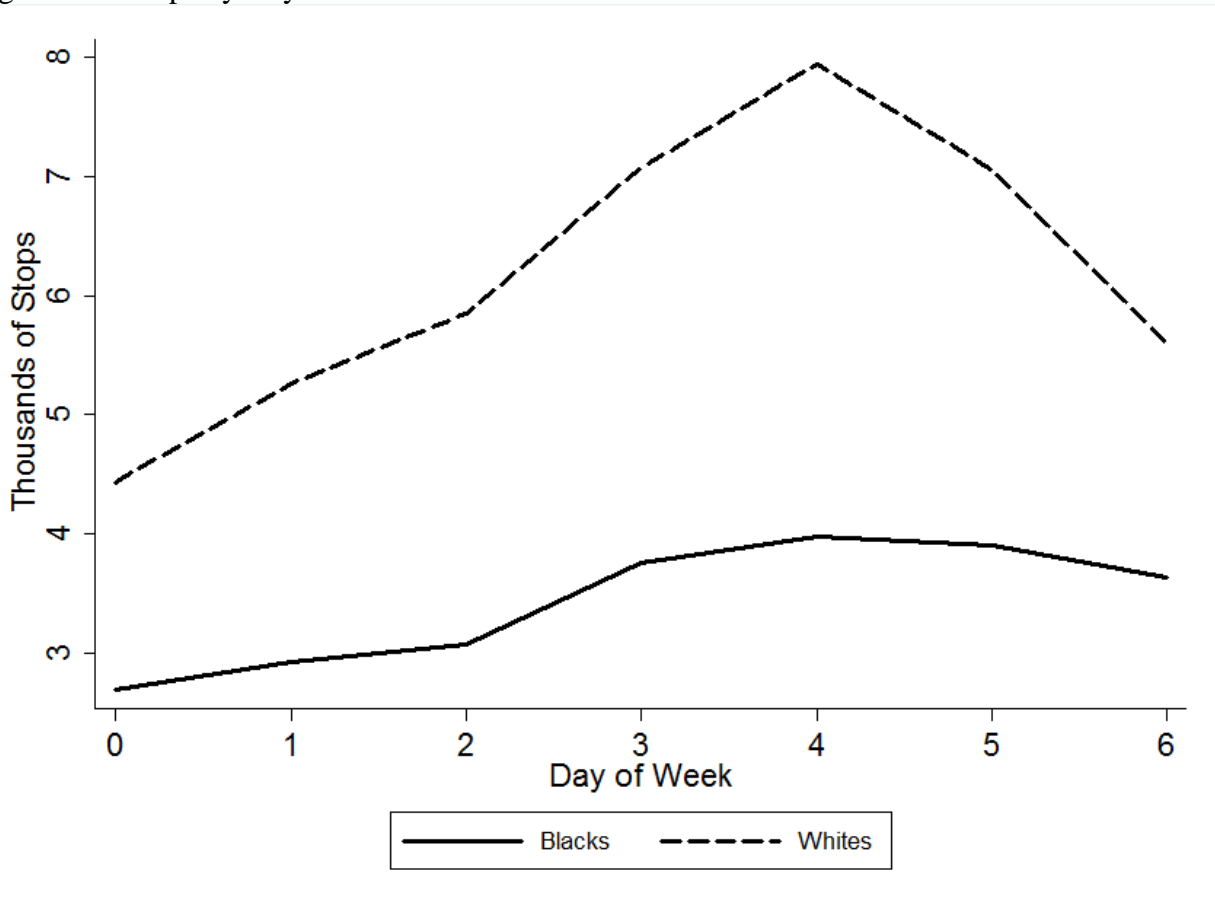


Figure A2. Searches by Day of the Week

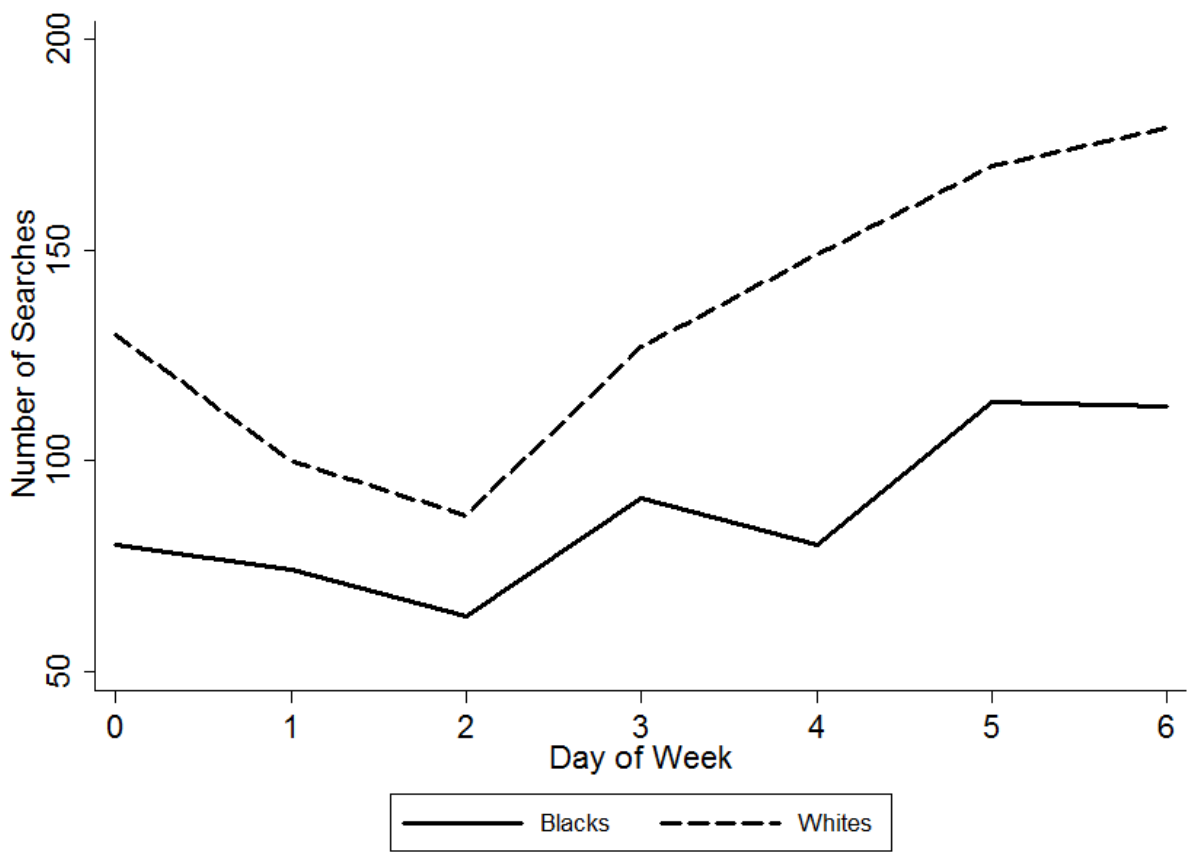
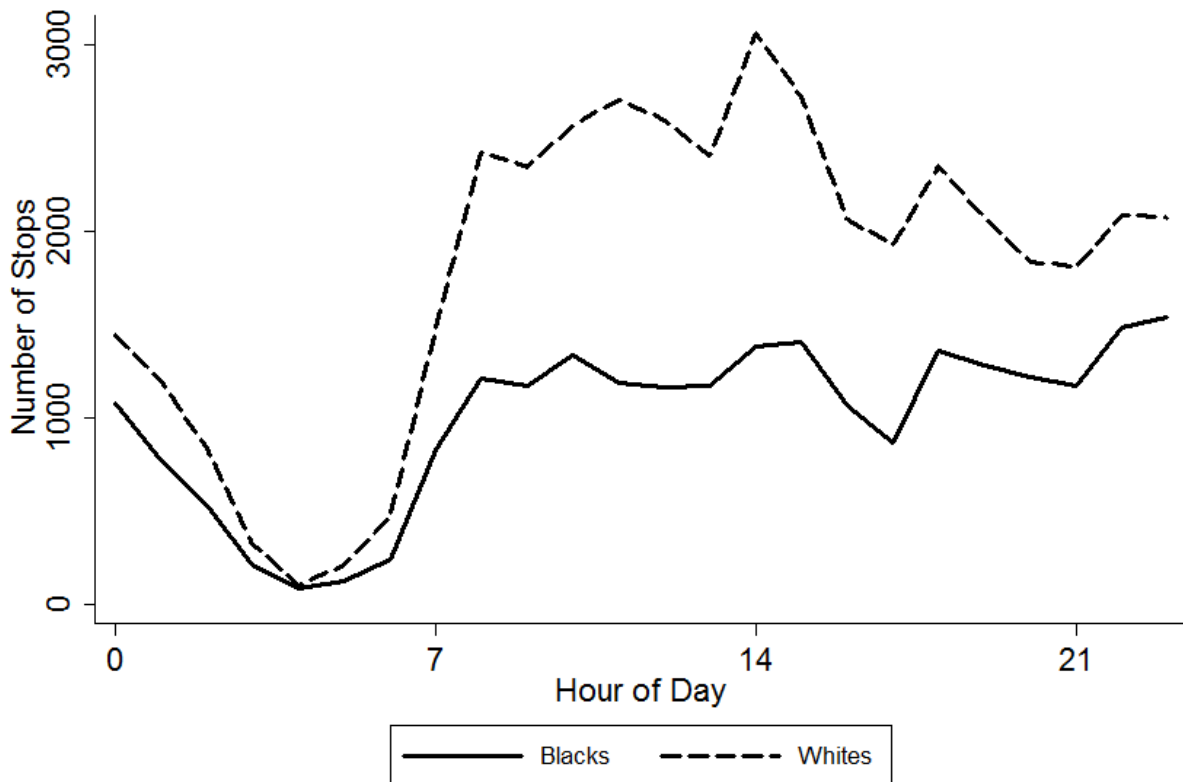
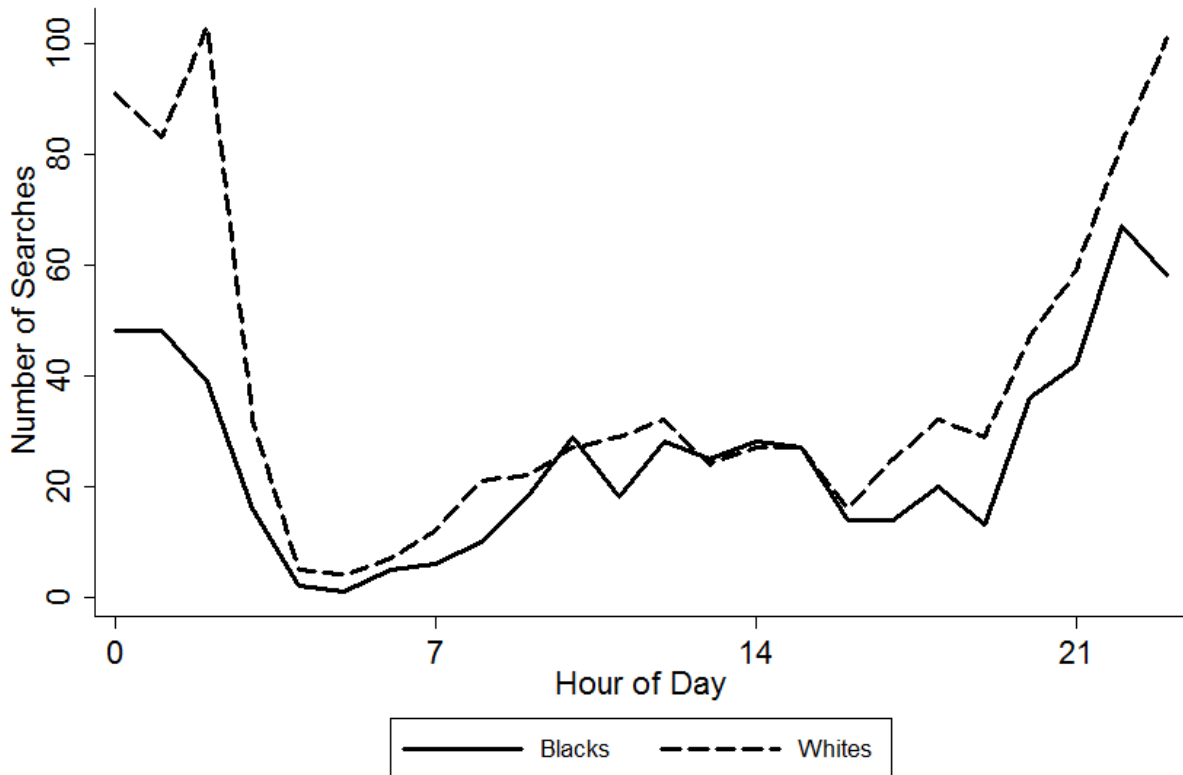


Figure A3. Stops by Hour of the Day



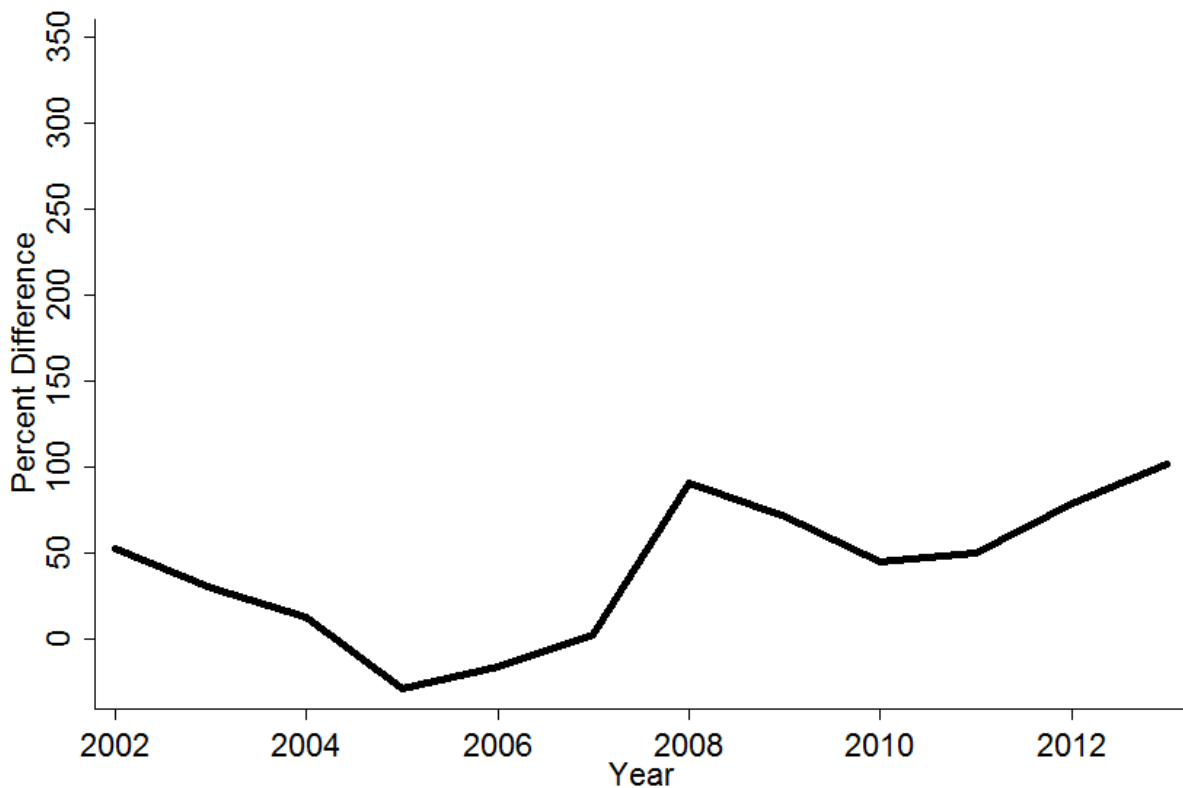
The figure excludes cases where the hour and minute was exactly 0:00. These cases were presumed to be missing data.

Figure A4. Searches 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 A5. Racial Differences in the Likelihood of Search: Consent Searches Only



The figure shows the percentage difference in the likelihood of Blacks being searched as compared to Whites; consent searches only.

Table A2. Likelihood of Finding Contraband Given a Search, by Race

Contraband	Number	% Total	% White	% Black
Yes	283	18.04	17.20	19.35
No	1,286	81.96	82.80	80.65
Total	1,569	100.00	100.00	100.00

Table A3. 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	42,286	0.47	15.68	23.46	60.15	0.23	100.00
Black	No	23,342	0.57	17.17	26.23	55.84	0.19	100.00
Total	No	66,712	0.50	16.15	24.40	58.73	0.21	100.00
White	Yes	942	1.49	12.74	7.54	46.50	31.74	100.00
Black	Yes	615	0.81	14.63	10.08	47.80	26.67	100.00
Total	Yes	1,569	1.21	13.58	8.54	46.91	29.76	100.00