

Analysis of Hispanic – White Differences in Traffic Stops and Searches in Greenville, NC, 2002-2013

September 28, 2015

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	110,277
-2001	1
-2014	2,773
-Passengers	1,915
-Checkpoint stops	47
Stops for analysis	105,547
Searches	4,044

Search Rate = 3.83

Figure 1. Number of Traffic Stops per Year

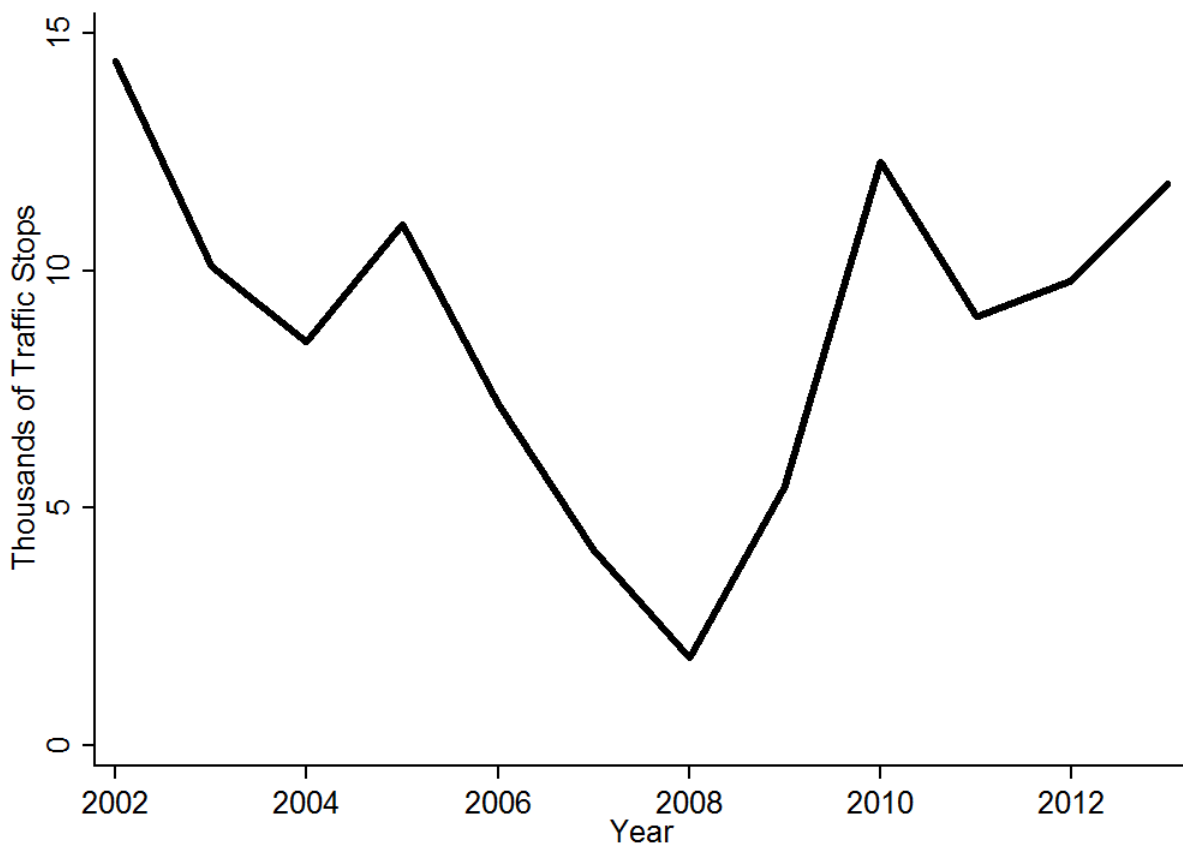


Figure 2. Ethnic Composition of Traffic Stops by Year

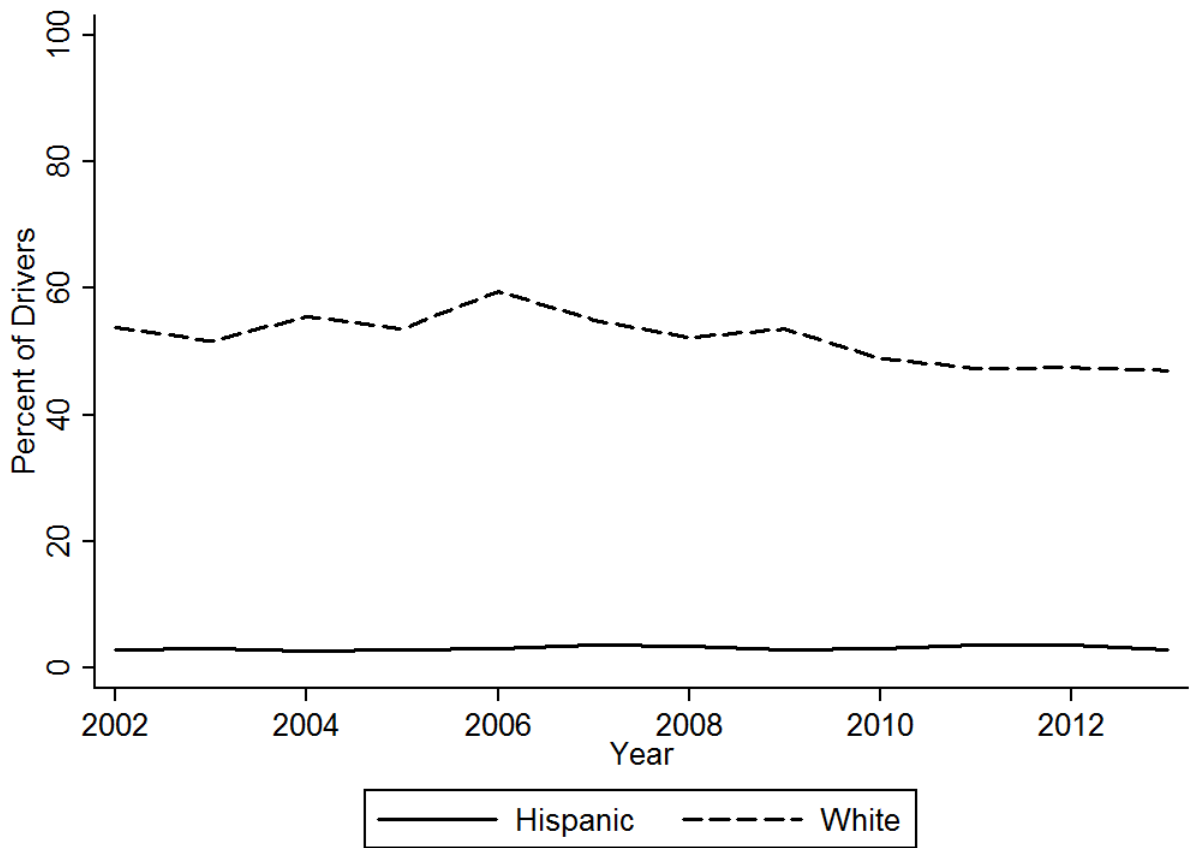


Table 2. Ethnic Composition of Traffic Stops by Purpose, Drivers

Purpose	Number	Percent	
		White	Hispanic
Total Stops	105,547	53.28	3.05
Speed Limit	38,144	58.19	3.01
Stop Light/Sign	7,940	58.21	2.96
Driving Impaired	877	70.94	5.82
Safe Movement	4,662	51.16	3.47
Vehicle Equipment	8,206	41.78	3.36
Vehicle Regulatory	23,092	48.61	2.57
Seat Belt	11,648	62.48	2.12
Investigation	4,774	34.91	4.59
Other Vehicle	6,204	44.99	4.63

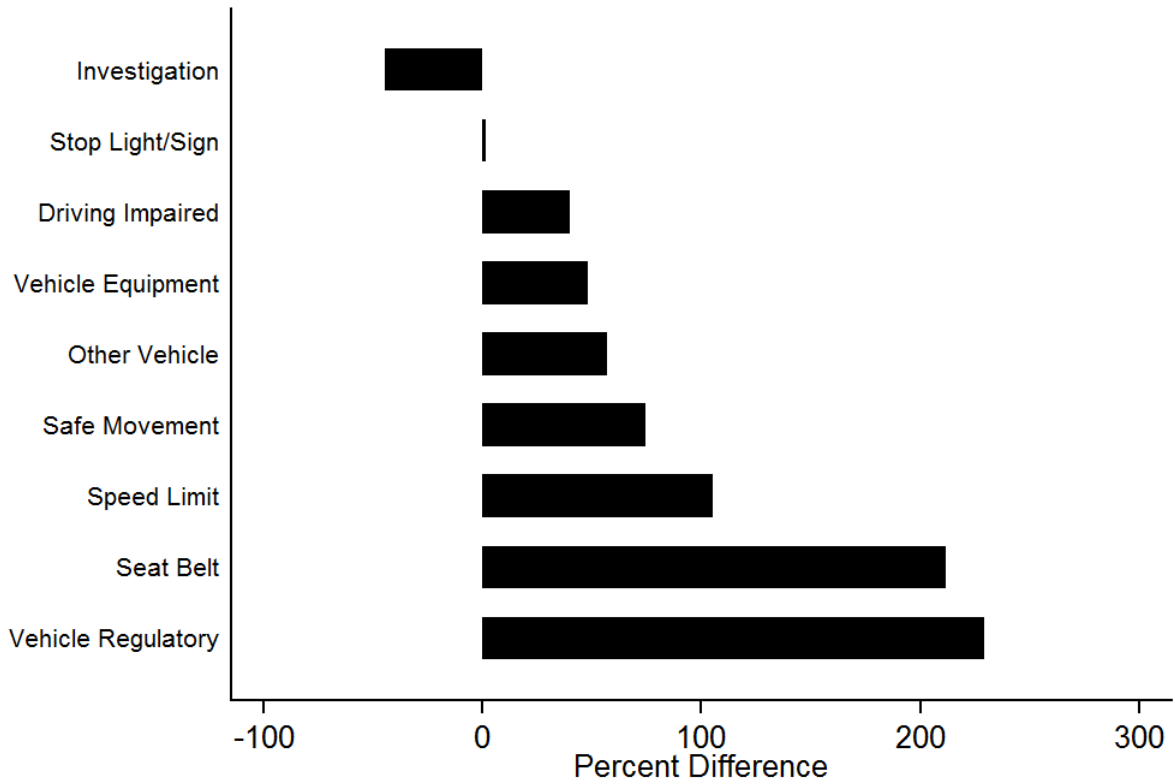
Note: Includes only drivers. Excludes 47 checkpoint stops. Excludes 1,915 passengers.

Table 3. Percent Searched by Ethnicity and Purpose of Stop

Purpose	Number	% Total	% White	% Hisp	Ratio
					Hisp:White
Total Stops	105,547	-	53.28	3.05	-
Total Searches	4,044	3.83	2.83	5.84	2.06
Speed Limit	38,144	1.55	1.31	2.70	2.06
Stop Light/Sign	7,940	3.07	2.10	2.13	1.01
Driving Impaired	877	47.55	48.98	68.63	1.40
Safe Movement	4,662	5.19	5.30	9.26	1.75
Vehicle Equipment	8,206	6.21	5.13	7.61	1.48
Vehicle Regulatory	23,092	4.06	2.05	6.75	3.29
Seat Belt	11,648	1.75	1.04	3.24	3.12
Investigation	4,774	11.52	10.69	5.94	0.56
Other Vehicle	6,204	5.63	4.43	6.97	1.57

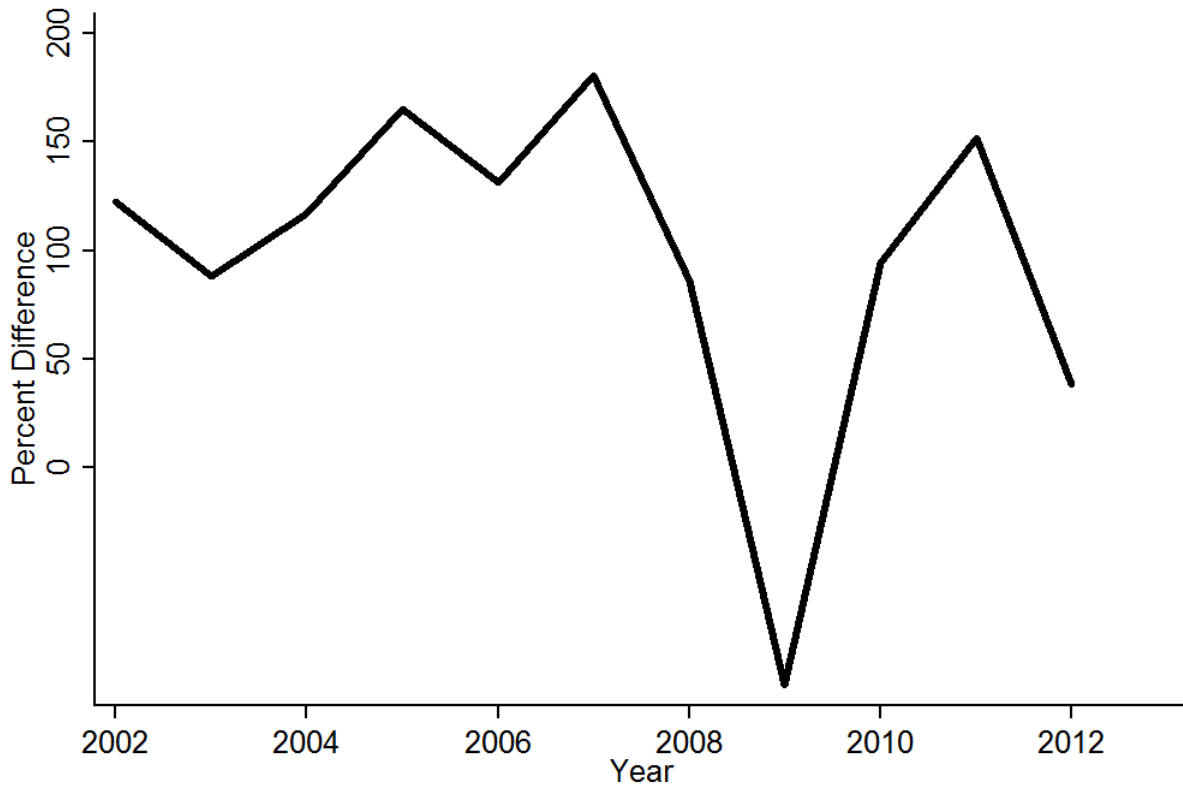
Note: See the appendix for this same table broken down for Men and Women.

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



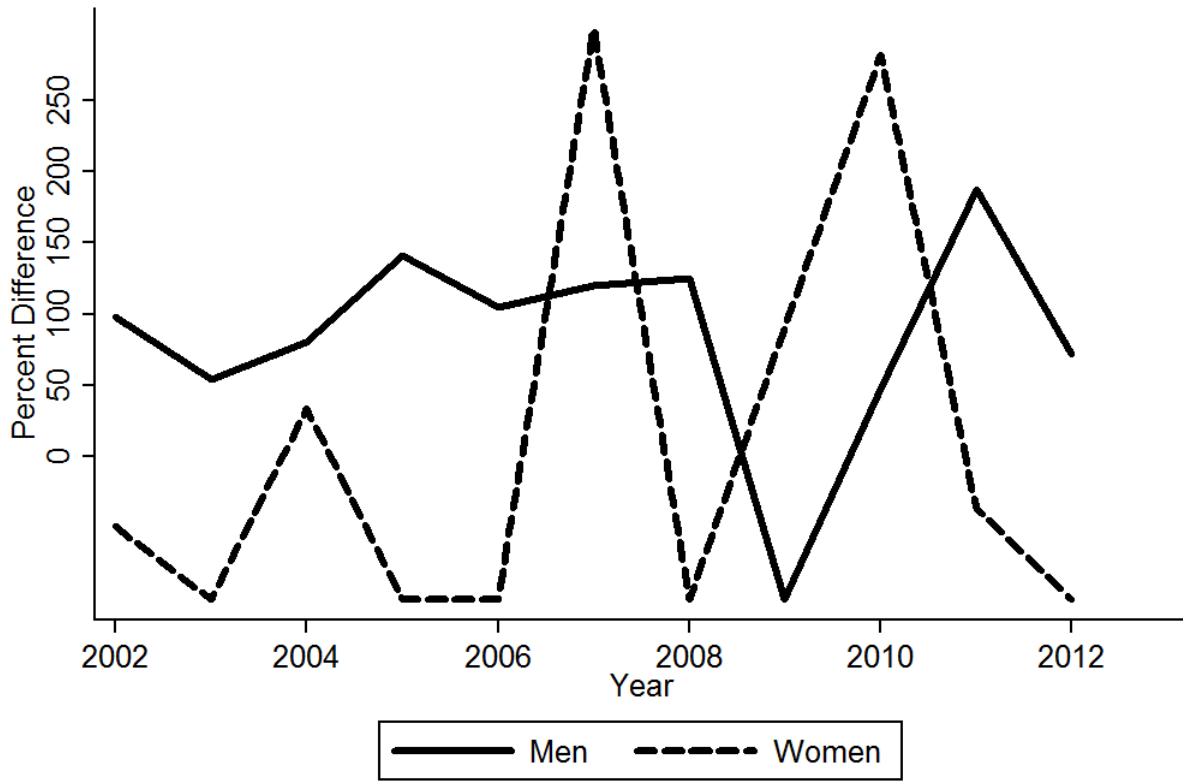
The figure shows the percentage difference in the likelihood of Hispanics being searched as compared to Whites by purpose of stop.

Figure 4. Ethnic Differences in the Likelihood of Search



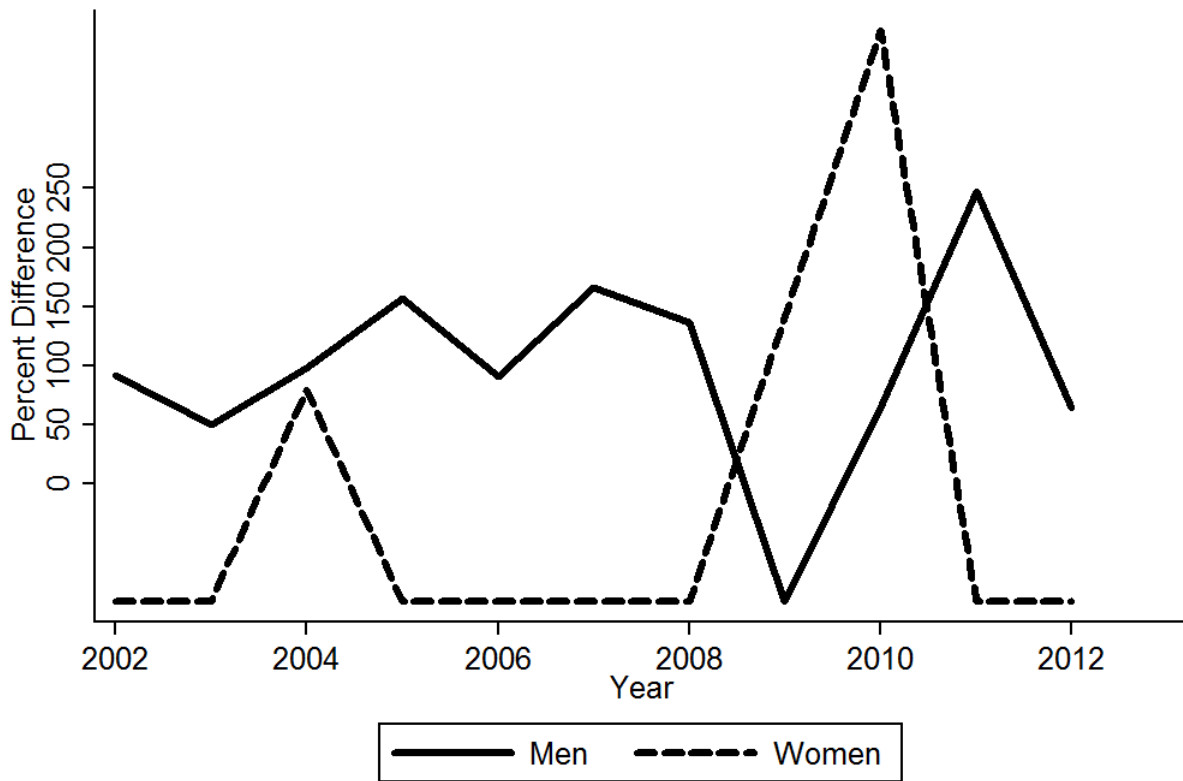
The figure shows the percentage difference in the likelihood of Hispanics being searched as compared to Whites.

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



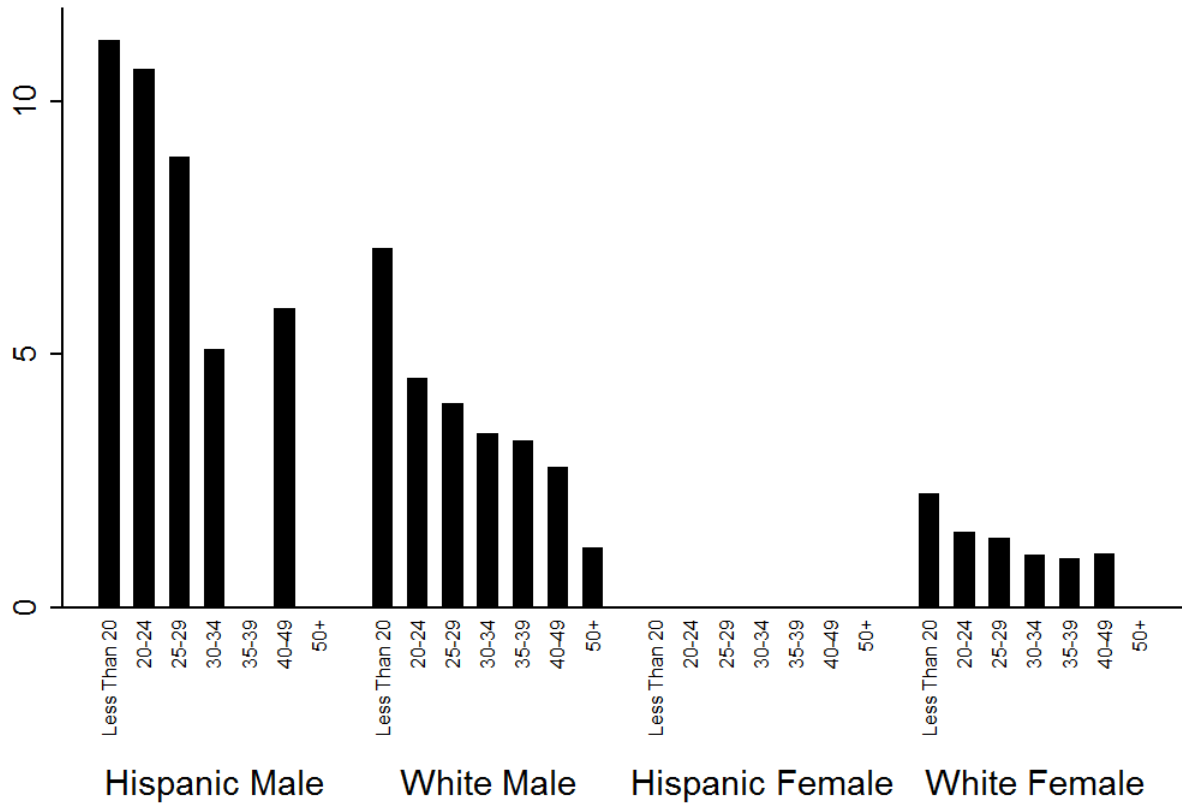
The figure shows the percentage difference in the likelihood of Hispanics being searched as compared to Whites by gender.

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



The figure shows the percentage difference in the likelihood of Hispanics being searched as compared to Whites by gender for motorists under 30.

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



Hispanic Male White Male Hispanic Female White Female

Based on 105,547 traffic stops from 2002 through 2013, and 4,044 searches. Overall rate of search: 3.83 percent.
No data are presented for categories with fewer than 10 searches.

Figure 8. Number of Stops, by Ethnicity and Gender

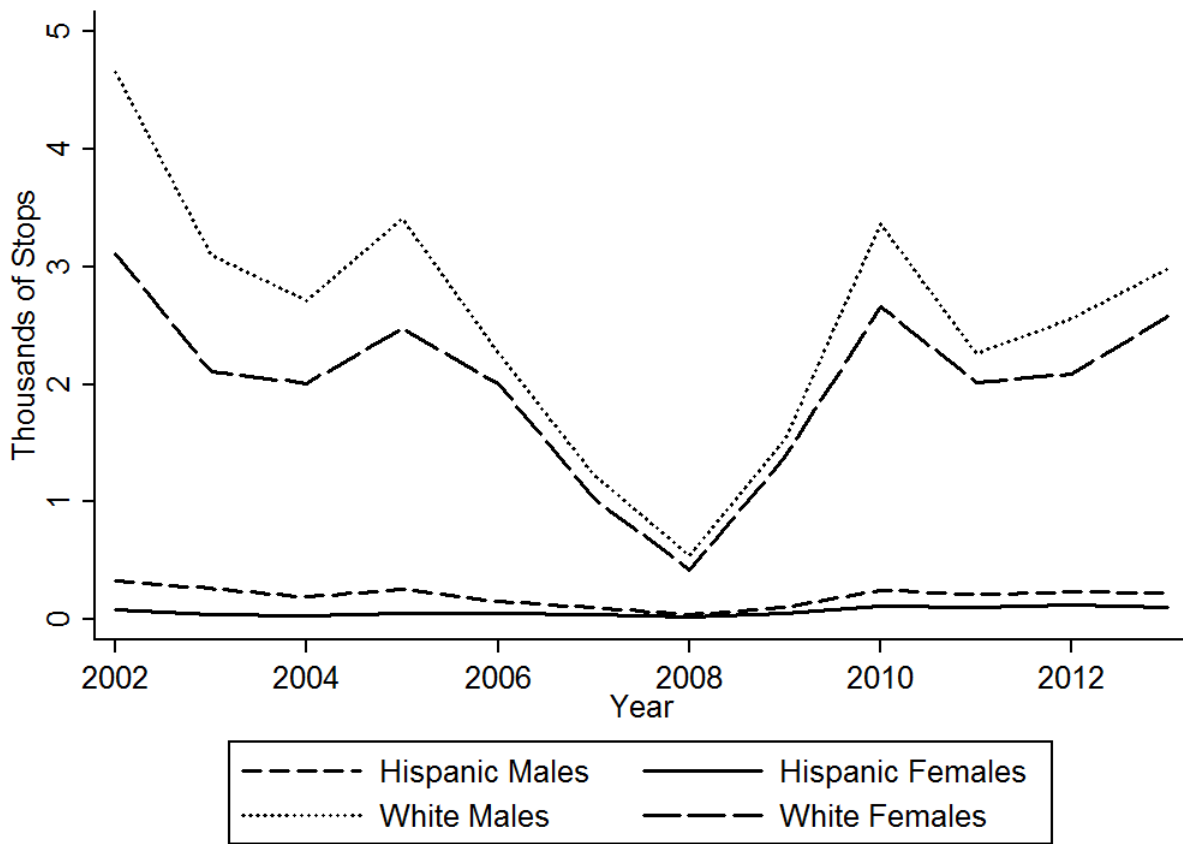


Figure 9. Percent of Stops Resulting in a Search, by Ethnicity and Gender

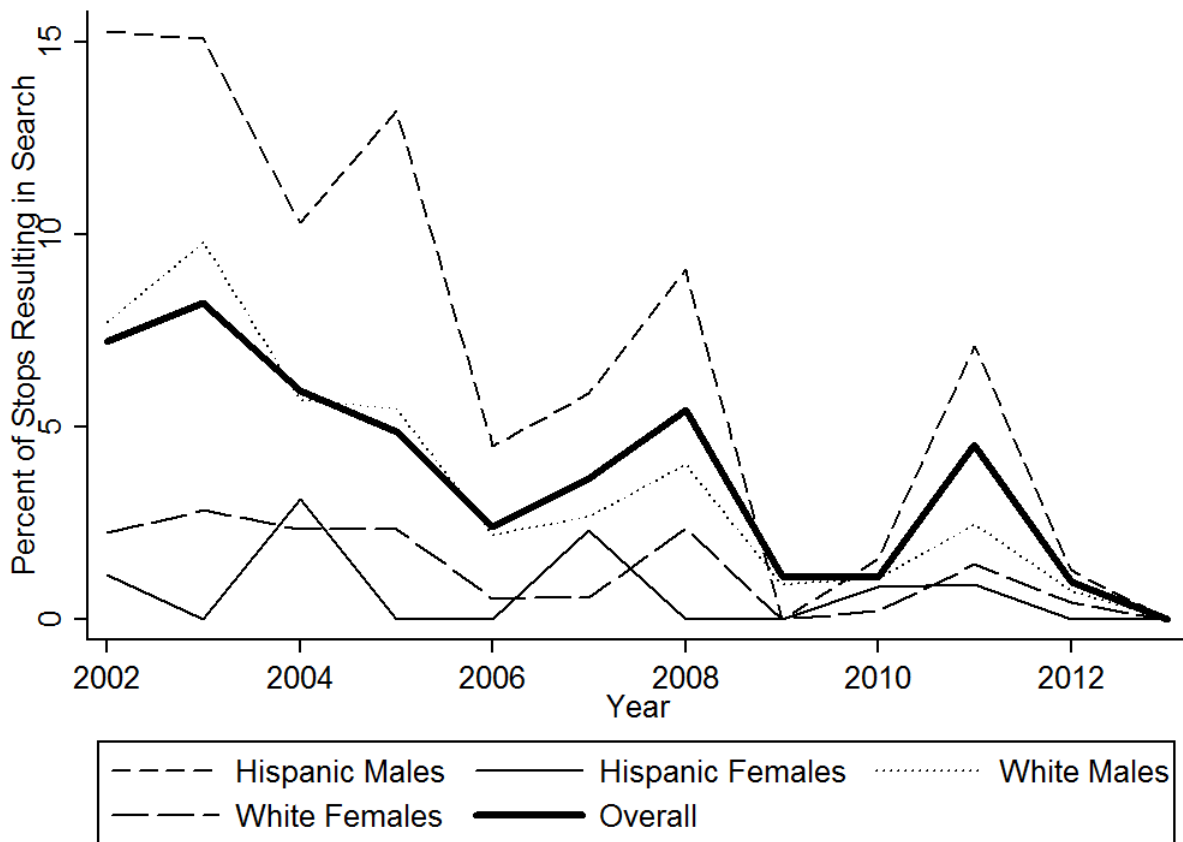


Table 4. Type of Search by Ethnicity

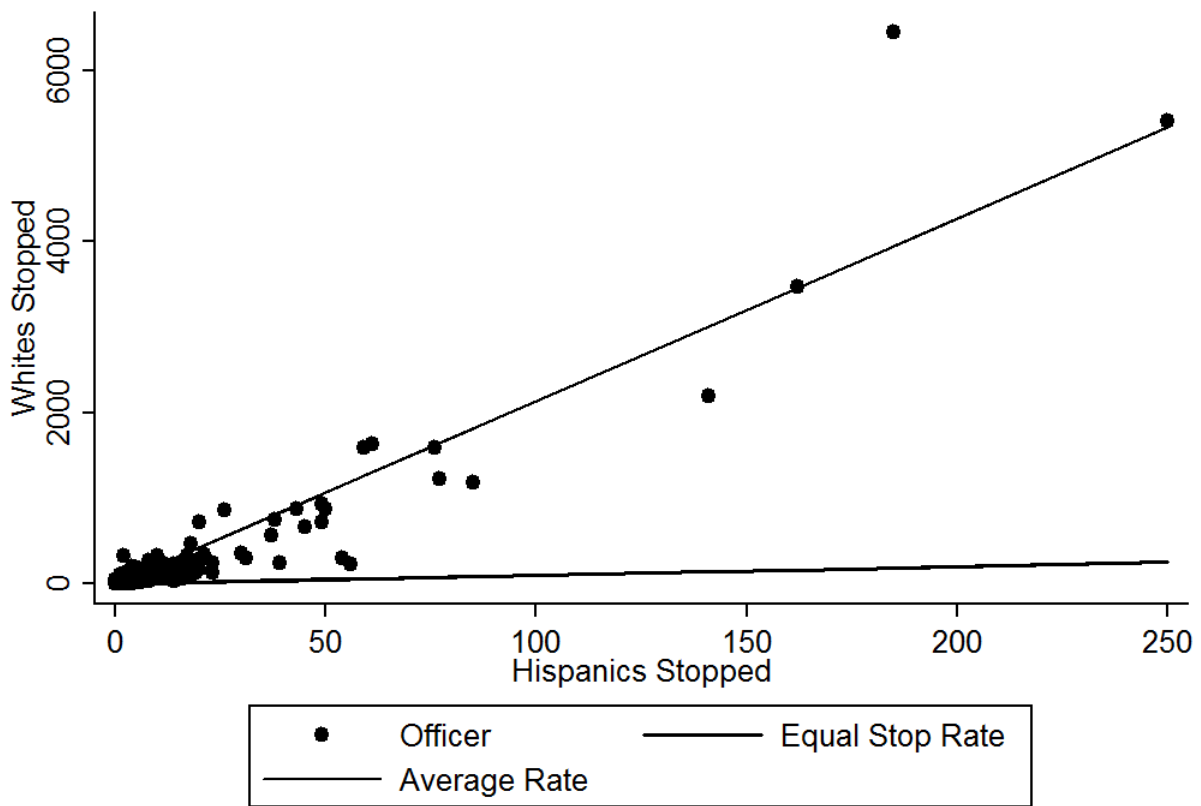
Search Type	Number	% Total	% White	% Hisp	Ratio
					Hisp:White
Total Stops	105,547	-	53.28	3.05	-
Total Searches	4,044	3.83	2.83	5.84	2.06
Consent	1,994	1.89	1.26	2.76	2.19
Search Warrant	12	0.01	0.01	0.00	-
Probable Cause	348	0.33	0.19	0.37	1.95
Incident to Arrest	1,613	1.53	1.33	2.48	1.86
Protective Frisk	77	0.07	0.04	0.22	5.50

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	405	39.59	39.59	0.38	0.38
2 – 10	233	22.78	62.37	0.92	1.30
11 - 100	213	20.82	83.19	8.43	9.73
101 – 1,000	155	15.15	98.34	40.65	50.38
1,001 +	17	1.66	100.00	49.61	99.99
Total	1,023	100	-	100	-

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



On average, officers stop 21.36 Whites for each Hispanic stopped.

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

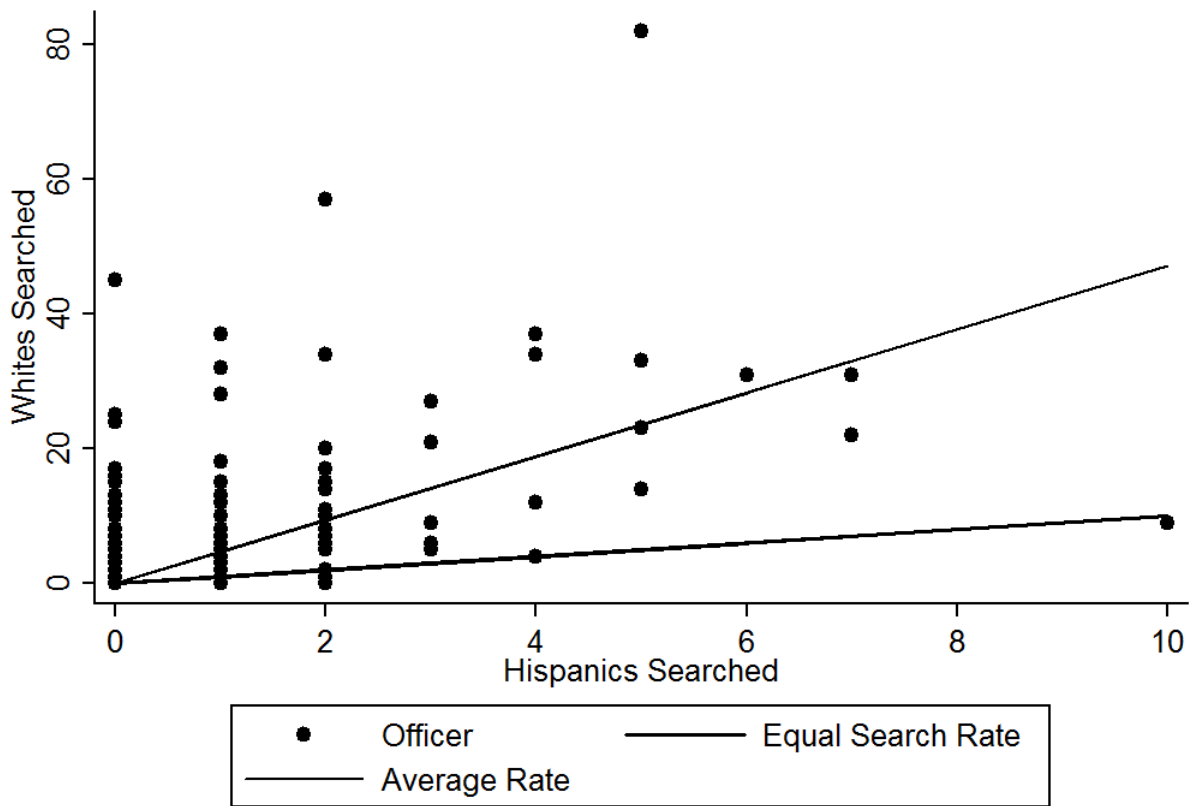
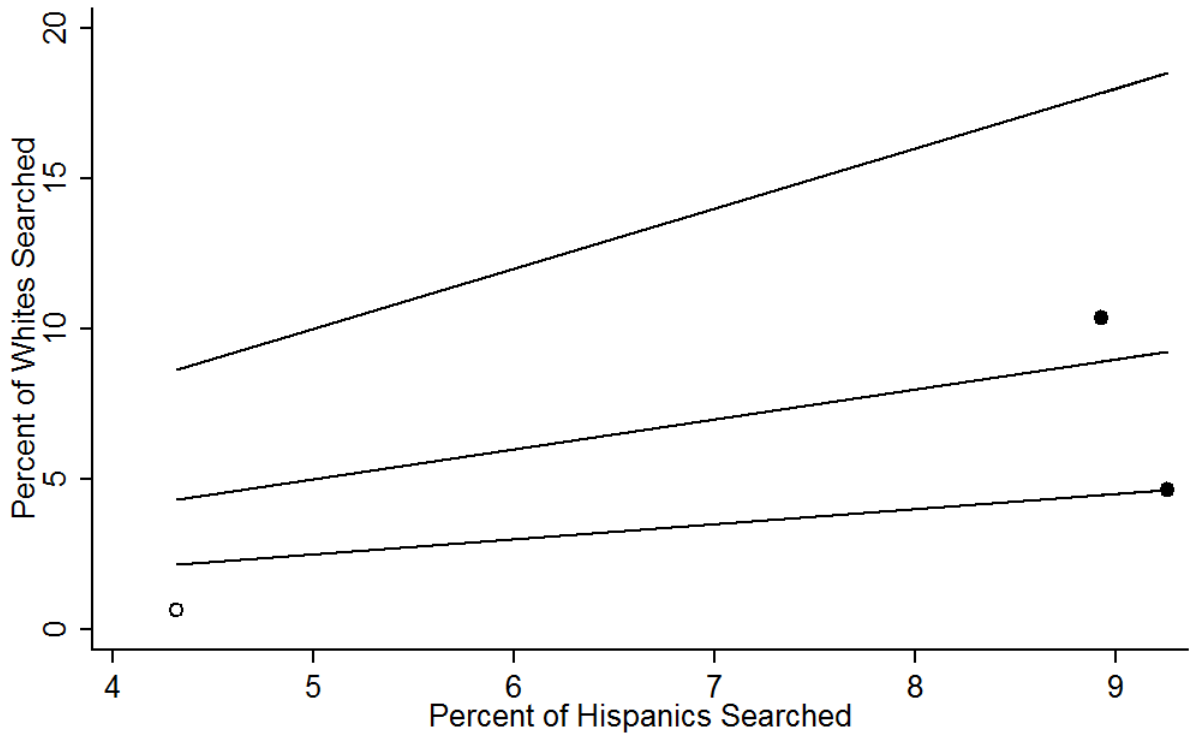


Figure 12. Percent of White and Black Drivers Searched, by Officer



Includes 3 officers with a minimum of 50 White stops, 50 Hispanic stops, and a search rate above the department average of 3.83 for either ethnicity. The hollow circles indicate high disparity officers. 0 officers search Whites at more than twice the rate that they search Hispanics. 1 officer searched Hispanics at more than twice the rate that he/she searched Whites.

Appendix

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

Purpose	Number	Percent	
		White	Hispanic
Total Stops	1,913	30.53	4.13
Speed Limit	227	39.25	5.73
Stop Light/Sign	116	28.45	-
Driving Impaired	127	73.04	9.45
Safe Movement	131	33.61	9.16
Vehicle Equipment	261	24.10	4.60
Vehicle Regulatory	433	20.33	3.46
Seat Belt	97	33.33	1.03
Investigation	357	29.06	1.68
Other Vehicle	164	25.64	4.88

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

Purpose	Number	% Total	% White	% Hisp	Ratio
					Hisp:White
Total Stops	60,567	-	52.63	3.92	-
Total Searches	3,451	5.70	4.04	7.71	1.91
Speed Limit	19,399	2.55	2.07	3.89	1.88
Stop Light/Sign	4,573	4.59	3.13	2.99	0.96
Driving Impaired	637	52.59	54.95	70.83	1.29
Safe Movement	2,975	6.86	6.85	11.28	1.65
Vehicle Equipment	5,177	8.62	7.18	9.01	1.25
Vehicle Regulatory	13,086	6.11	2.79	8.76	3.14
Seat Belt	7,486	2.50	1.42	4.19	2.95
Investigation	3,336	14.15	12.69	6.94	0.55
Other Vehicle	3,898	7.77	5.90	9.57	1.62

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

Purpose	Number	% Total	% White	% Hisp	Ratio
					Hisp:White
Total Stops	44,980	-	54.15	1.88	-
Total Searches	593	1.32	1.28	0.59	0.46
Speed Limit	18,745	0.52	0.56	0.00	-
Stop Light/Sign	3,367	1.01	0.76	0.00	-
Driving Impaired	240	34.17	35.71	33.33	0.93
Safe Movement	1,687	2.25	2.82	0.00	-
Vehicle Equipment	3,029	2.11	1.88	1.85	0.98
Vehicle Regulatory	10,006	1.37	1.06	1.26	1.19
Seat Belt	4,162	0.41	0.35	0.00	-
Investigation	1,438	5.42	6.65	2.17	0.33
Other Vehicle	2,306	1.99	2.18	0.00	-

Table A4. Type of Search by Ethnicity: Men

Search Type	Number	% Total	% White	% Hisp	Ratio Hisp:White
Total Stops	60,567	-	52.63	3.92	-
Total Searches	3,451	5.70	4.04	7.71	1.91
Consent	1,743	2.88	1.84	3.62	1.97
Search Warrant	12	0.02	0.02	0.00	.
Probable Cause	306	0.51	0.29	0.46	1.59
Incident to Arrest	1,317	2.17	1.82	3.33	1.83
Protective Frisk	73	0.12	0.07	0.29	4.14

Table A5. Type of Search by Ethnicity: Women

Search Type	Number	% Total	% White	% Hisp	Ratio Hisp:White
Total Stops	44,980	-	54.15	1.88	-
Total Searches	593	1.32	1.28	0.59	0.46
Consent	251	0.56	0.51	0.35	0.69
Search Warrant	0	0.00	0.00	0.00	-
Probable Cause	42	0.09	0.07	0.12	1.71
Incident to Arrest	296	0.66	0.70	0.12	0.17
Protective Frisk	4	0.01	0.00	0.00	-

Figure A6. Stops by Day of the Week

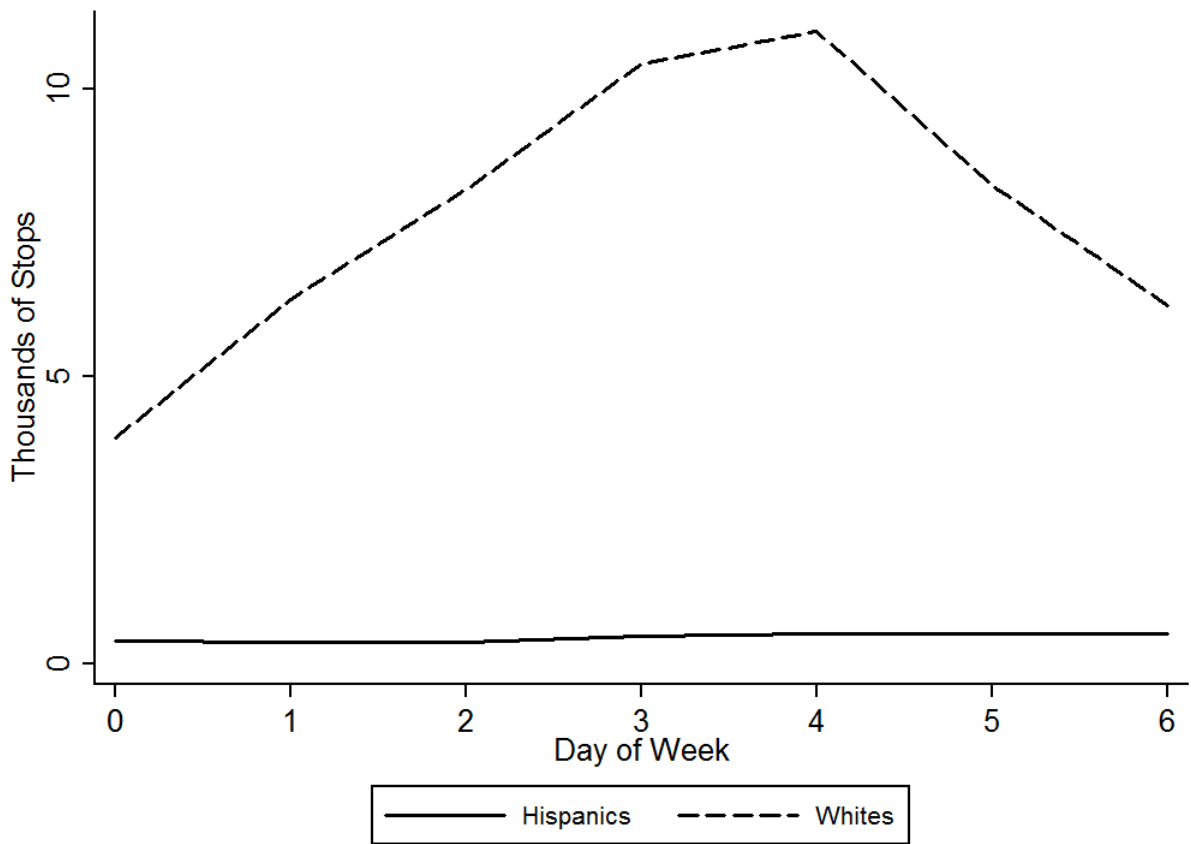


Figure A7. Searches by Day of the Week

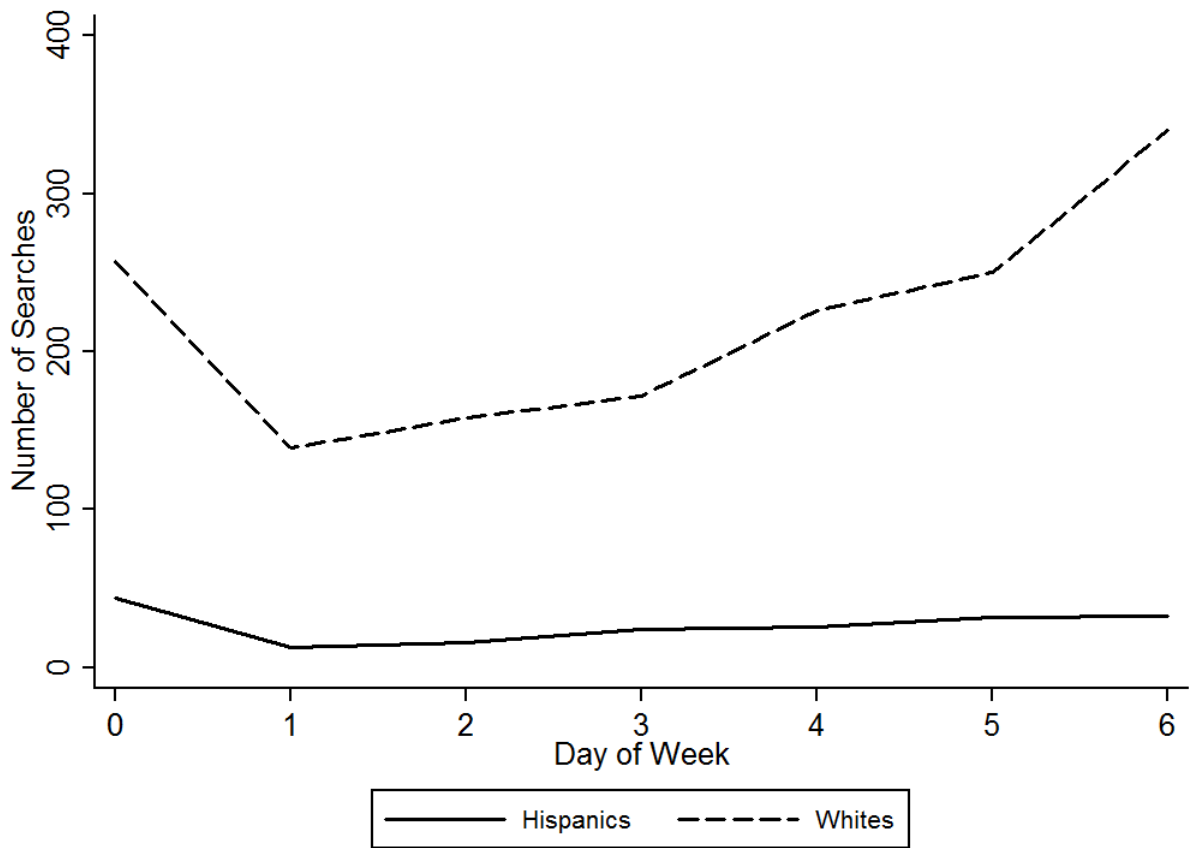
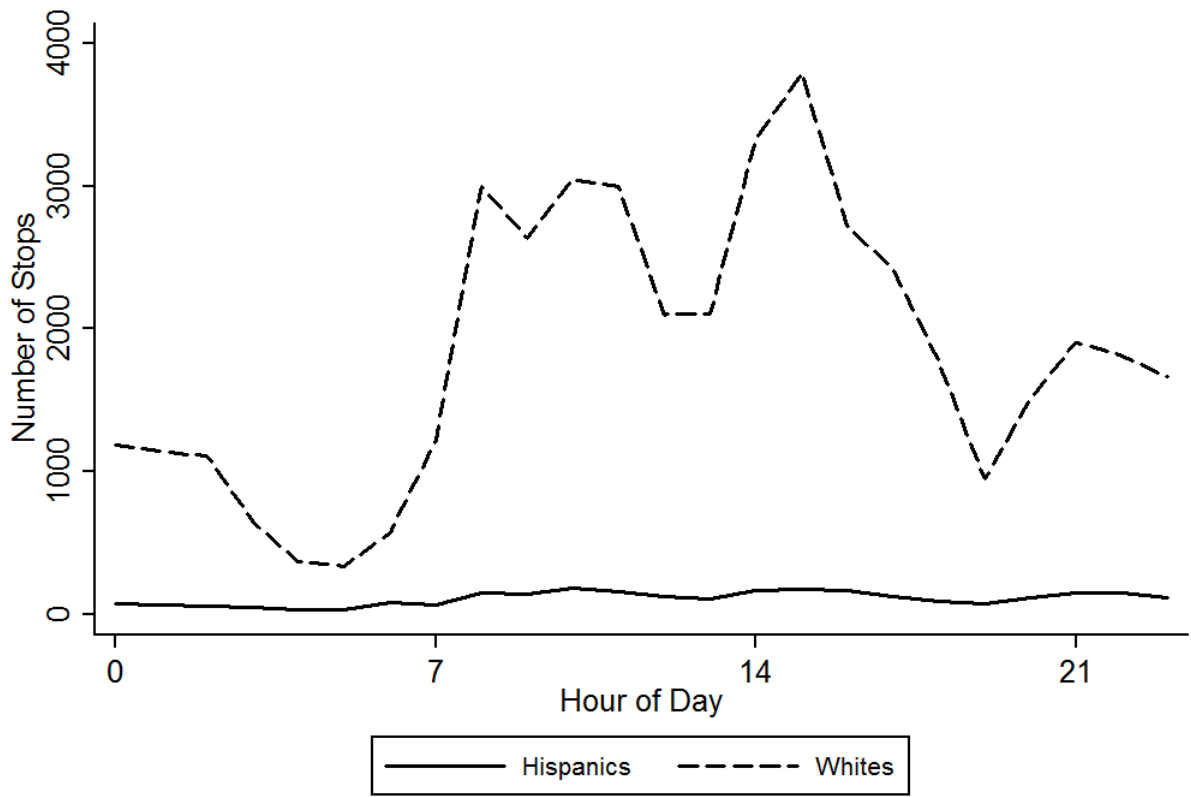
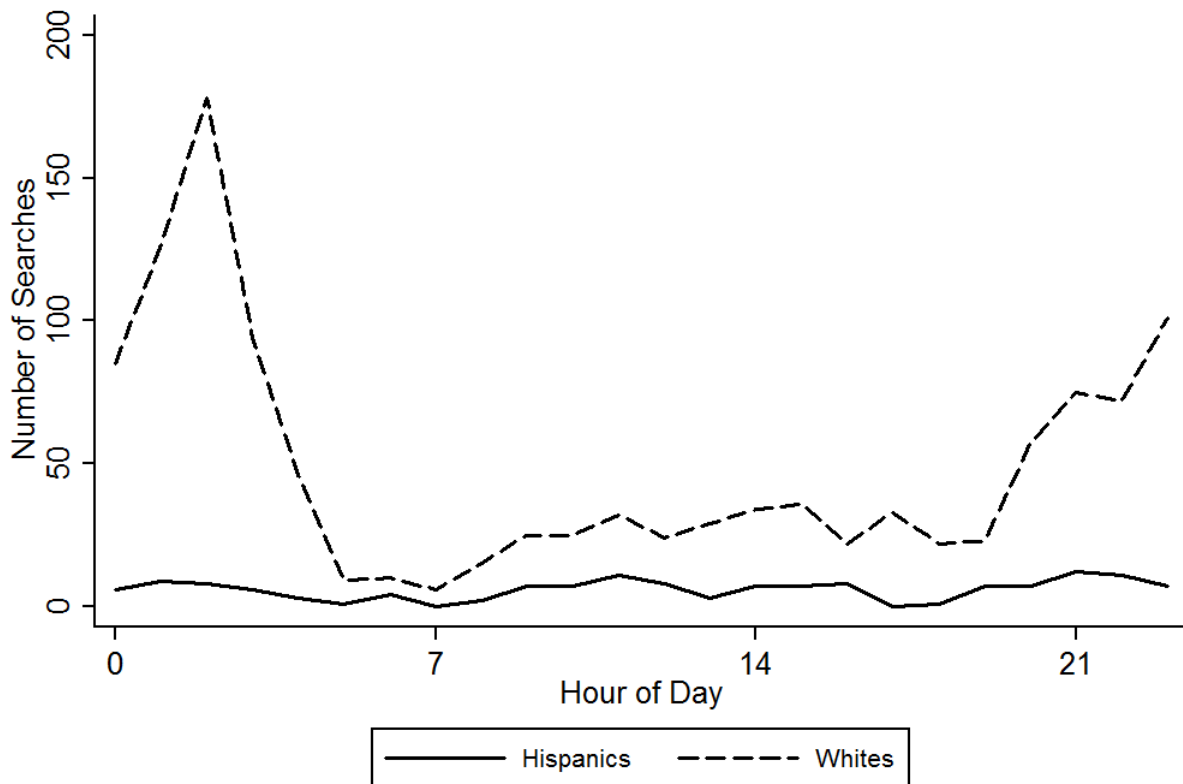


Figure A8. Stops by Hour of the Day



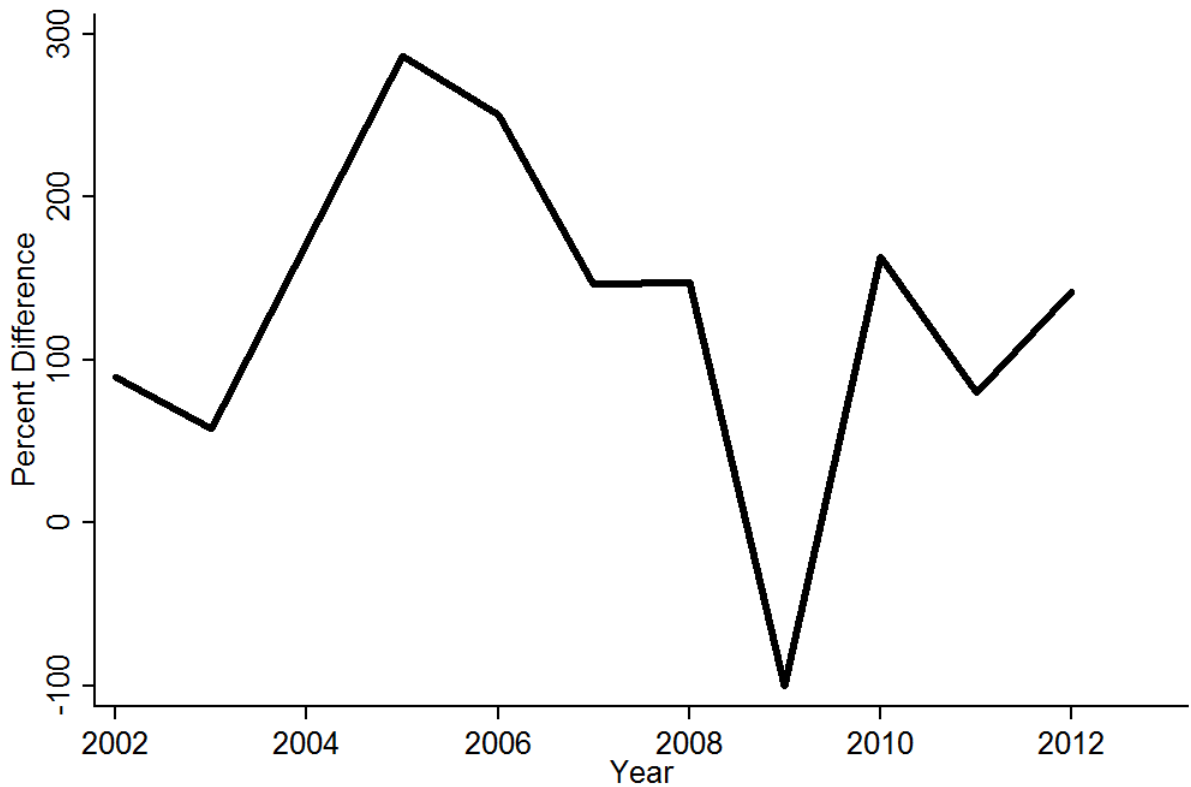
The figure excludes cases where the hour and minute was exactly 0:00. These cases were presumed to be missing data.

Figure A9. Searches by Hour of the Day



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

Figure A10. Ethnic Differences in the Likelihood of Search: Consent Searches Only



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

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

Contraband	Number	% Total	% White	% Hisp
Yes	927	22.92	23.22	11.70
No	3,117	77.08	76.78	88.30
Total	4,044	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	52,981	2.23	8.35	7.05	81.53	0.84	100.0
Hisp	No	3,032	3.20	11.15	5.61	78.40	1.65	100.0
Total	No	101,503	3.12	10.71	6.58	78.51	1.08	100.0
White	Yes	1,542	3.50	8.11	3.37	41.96	43.06	100.0
Hisp	Yes	188	0.53	6.91	2.66	51.60	38.30	100.0
Total	Yes	4,044	3.17	9.17	2.77	47.33	37.56	100.0