Analysis of Hispanic-White Differences in Traffic Stops and

Searches in Winston Salem, NC, 2002-2013

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

June 10, 2015

organization of this complex database.

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

Table 1. Overview of the Data

Data Subsets	Observations
Total stops	408,516
-2014	16,213
-Passengers	3,099
-Checkpoint stops	82
Stops for analysis	389,285
Searches	7,678

Search Rate = 1.97

Figure 1. Number of Traffic Stops per Year

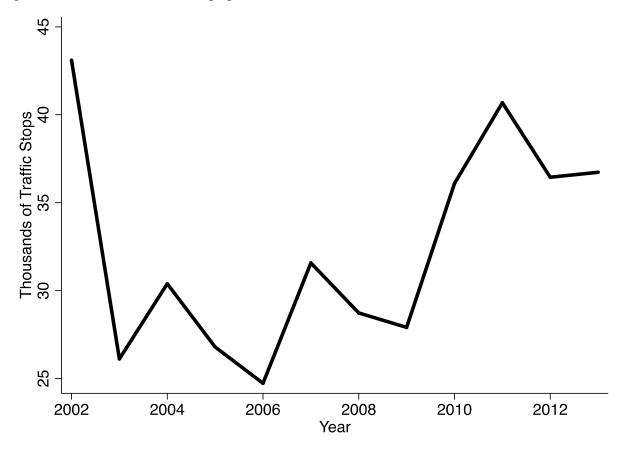


Figure 2. Ethnic Composition of Traffic Stops by Year

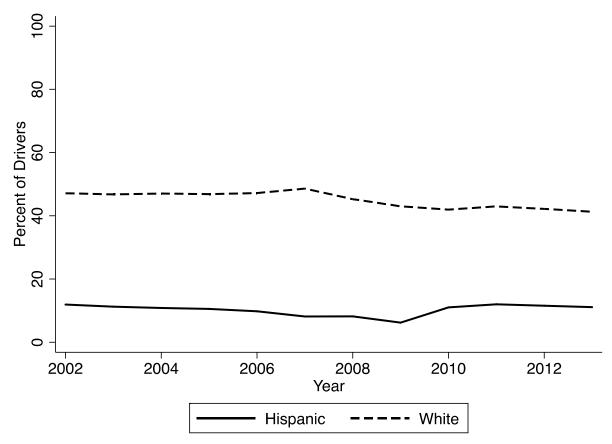


Table 2. Ethnic Composition of Traffic Stops by Purpose, Drivers

		Percent	
Purpose	Number	White	Hispanic
Total Stops	389,285	50.05	10.40
Speed Limit	130,771	60.20	7.35
Stop Light/Sign	28,652	50.84	11.20
Driving Impaired	3,027	57.55	22.73
Safe Movement	19,229	53.38	11.89
Vehicle Equipment	46,911	38.95	12.51
Vehicle Regulatory	109,399	45.38	8.88
Seat Belt	13,341	44.97	10.24
Investigation	11,109	36.48	18.84
Other Vehicle	26,846	39.70	21.05

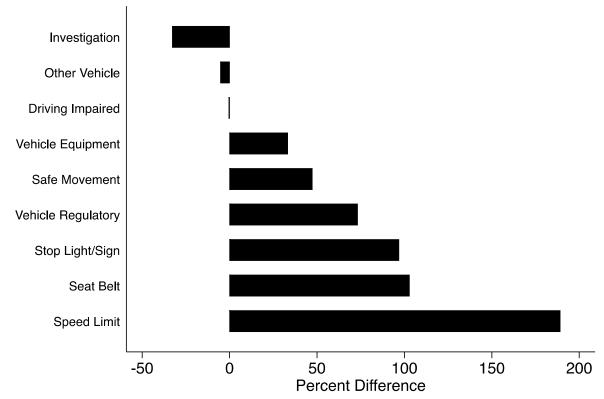
Note: Includes only drivers. Excludes 82 checkpoint stops. Excludes 3,099 passengers.

Table 3. Percent Searched by Ethnicity and Purpose of Stop

					Ratio
Purpose	Number	% Total	% White	% Hispanic	Hispanic:White
Total Stops	389,285	-	50.05	10.40	-
Total Searches	7,678	1.97	1.56	3.01	1.93
Speed Limit	130,771	0.82	0.58	1.66	2.86
Stop Light/Sign	28,652	1.40	1.01	1.99	1.97
Driving Impaired	3,027	38.62	42.35	42.15	1.00
Safe Movement	19,229	5.04	4.90	7.21	1.47
Vehicle Equipment	46,911	2.34	2.01	2.68	1.33
Vehicle Regulatory	109,399	1.26	0.88	1.52	1.73
Seat Belt	13,341	1.93	1.26	2.56	2.03
Investigation	11,109	5.74	5.69	3.82	0.67
Other Vehicle	26,846	2.57	2.22	2.11	0.95

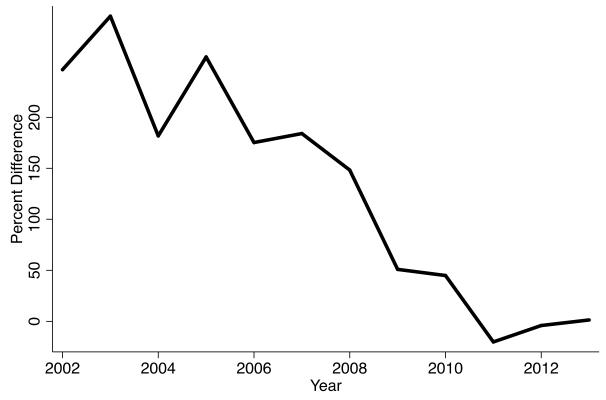
Note: See the appendix for this same table broken down for Men and Women.

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.

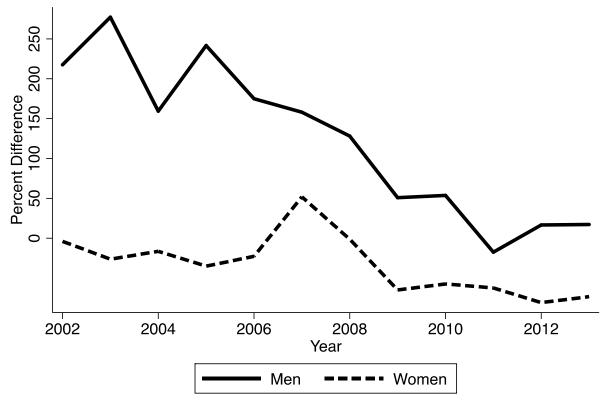
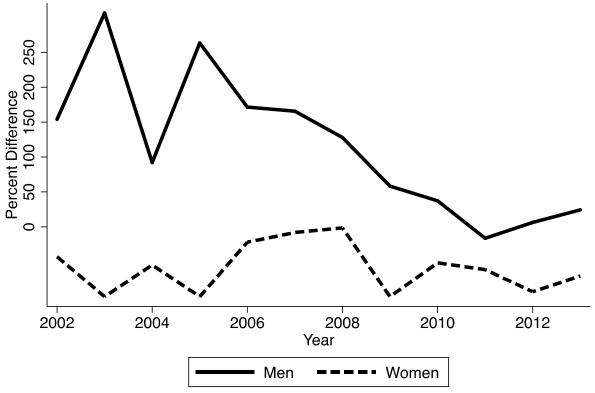


Figure 5. Ethnic Differences in the Liklihood of Search by Gender

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 Liklihood 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.

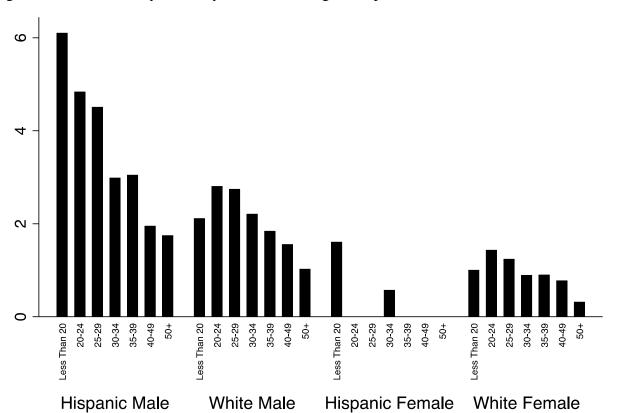
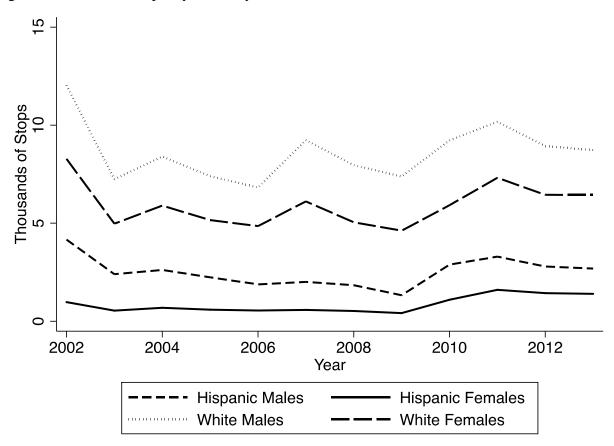


Figure 7. Search Rates by Ethnicity, Gender, and Age Group

Based on 389,285 traffic stops from 2002 through 2013, and 7,678 searches. Overall rate of search: 1.97 percent. No data are presented for categories with fewer than 10 searches.

Figure 8. Number of Stops, by Ethnicity and Gender



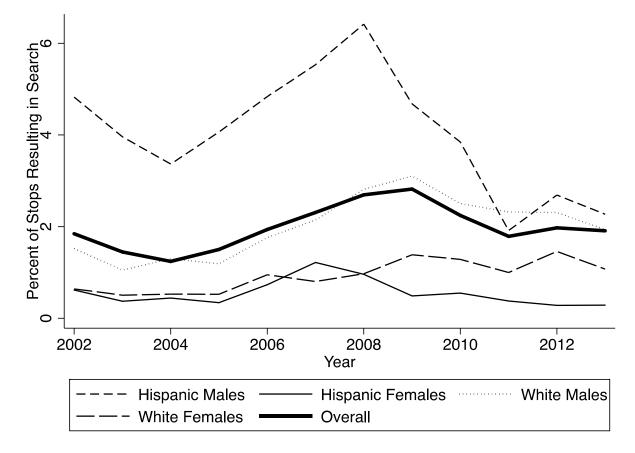


Figure 9. Percent of Stops Resulting in a Search, by Ethnicity and Gender

Table 4. Type of Search by Ethnicity

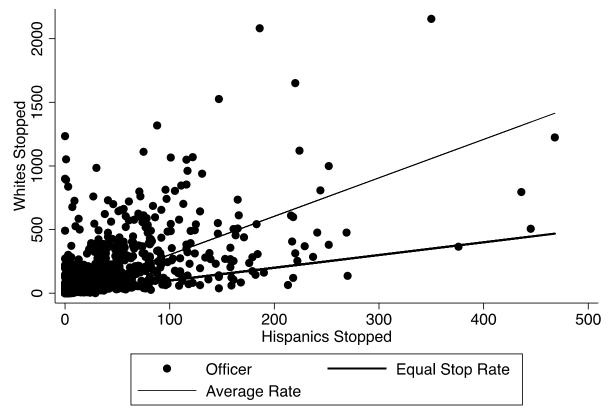
					Ratio
Search Type	Number	% Total	% White	% Hispanic	Hispanic:White
Total Stops	389,285	_	50.05	10.40	-
Total Searches	7,678	1.97	1.56	3.01	1.39
Consent	2,081	0.53	0.42	0.62	1.48
Search Warrant	3	_	-	-	-
Probable Cause	1,509	0.39	0.23	0.29	1.26
Incident to Arrest	4,015	1.03	0.90	2.08	2.31
Protective Frisk	70	0.02	0.02	0.01	0.50

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

Table 5. Distribution of Officer IDs by Stop

14010 0.2104110	estion of officer is	ej zvep			
Number of	Officers w/ this	Percent of	Cumulative	Percent of	Cumulative
Stops	many Stops	Officers	Percent	Stops	Percent
1	2,424	51.77	51.77	0.62	0.62
2 - 10	1,020	21.79	73.56	0.94	1.56
11 - 100	473	10.10	83.66	4.72	6.28
101 - 1,000	689	14.72	98.38	64.94	71.22
1,001 +	76	1.62	100.00	28.77	100.00
Total	4,682	100	-	100	_

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



On average, officers stop 3.02 Whites for each Hispanic stopped.

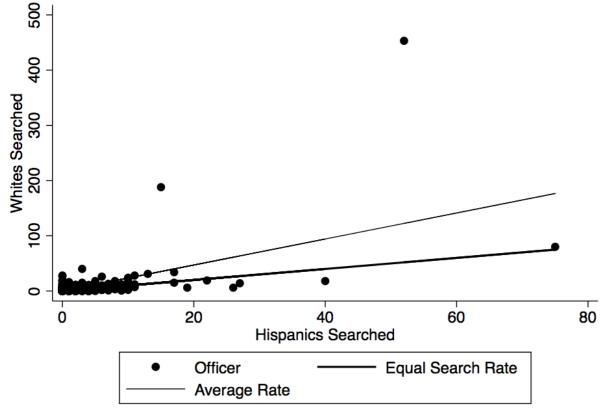


Figure 11. Number of Hispanic and White Motorists Searched, by Officer

On average, officers search 2.35 Whites for each Hispanic searched.

Percent of Hispanics Searched
Includes 78 officers with a minimum of 50 White stops, 50 Hispanic stops, and a search rate

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

Includes 78 officers with a minimum of 50 White stops, 50 Hispanic stops, and a search rate above the department average of 1.97. The hollow circles indicate high disparity officers. 11 officer searches Whites at more than twice the rate that they search Hispanics. 43 officers search Blacks at more than twice the rate that they search Whites.

Appendix

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

		Percent	
Purpose	Number	White	Hispanic
Total Stops	3,099	31.98	13.23
Speed Limit	392	34.75	9.69
Stop Light/Sign	129	29.17	6.98
Driving Impaired	146	57.58	32.19
Safe Movement	334	41.06	21.26
Vehicle Equipment	549	29.52	12.39
Vehicle Regulatory	687	29.89	8.44
Seat Belt	164	31.21	14.02
Investigation	370	27.44	14.32
Other Vehicle	328	26.67	13.11

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

					Ratio
Purpose	Number	% Total	% White	% Hispanic	Hispanic.:White
Total Stops	232,053	-	51.27	12.98	-
Total Searches	6,384	2.75	2.00	3.87	1.94
Speed Limit	75,633	1.19	0.75	2.19	1.66
Stop Light/Sign	17,018	1.96	1.34	2.58	1.93
Driving Impaired	2,320	42.20	46.52	43.40	0.93
Safe Movement	12,497	6.39	5.57	8.98	1.61
Vehicle Equipment	29,681	3.05	2.45	3.26	1.33
Vehicle Regulatory	61,005	1.85	1.17	2.08	1.78
Seat Belt	9,302	2.46	1.48	3.04	2.05
Investigation	7,238	7.23	6.52	4.81	0.74
Other Vehicle	17,359	3.39	2.80	2.75	0.98

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

				_	Ratio
Purpose	Number	% Total	% White	% Hispanic	Hispanic:White
Total Stops	157,232	-	48.38	6.59	-
Total Searches	1,294	0.82	0.92	0.49	0.53
Speed Limit	55,138	0.32	0.33	0.20	0.61
Stop Light/Sign	11,634	0.58	0.56	0.36	0.64
Driving Impaired	707	26.87	32.93	26.92	0.82
Safe Movement	6,732	2.54	3.71	0.81	0.22
Vehicle Equipment	17,230	1.11	1.25	0.55	0.44
Vehicle Regulatory	48,394	0.52	0.51	0.21	0.41
Seat Belt	4,039	0.72	0.78	0.71	0.91
Investigation	3,871	2.97	3.94	1.08	0.27
Other Vehicle	9,487	1.05	1.23	0.27	0.22

Table A4. Type of Search by Ethnicity: Men

					Ratio
Search Type	Number	% Total	% White	% Hispanic	Hispanic:White
Total Stops	232,053	-	51.27	12.98	-
Total Searches	6,384	2.75	2.00	3.87	1.94
Consent	1,747	0.75	0.55	0.80	1.45
Search Warrant	3	0.00	0.00	0.00	-
Probable Cause	1,250	0.54	0.29	0.38	1.31
Incident to Arrest	3,323	1.43	1.13	2.67	2.36
Protective Frisk	61	0.03	0.02	0.02	-

Table A5. Type of Search by Ethnicity: Women

	-				Ratio
Search Type	Number	% Total	% White	% Hispanic	Hispanic:White
Total Stops	157,232	-	48.38	6.59	-
Total Searches	1,294	0.82	0.92	0.49	0.53
Consent	334	0.21	0.23	0.10	0.43
Search Warrant	0	0.00	0.00	0.00	-
Probable Cause	259	0.16	0.12	0.04	0.33
Incident to Arrest	692	0.44	0.56	0.36	0.64
Protective Frisk	9	0.01	0.01	0.00	-

Figure A1. Stops by Day of the Week

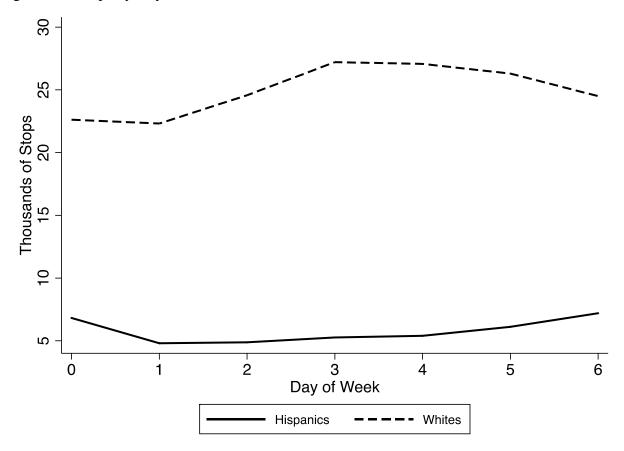


Figure A2. Searches by Day of the Week

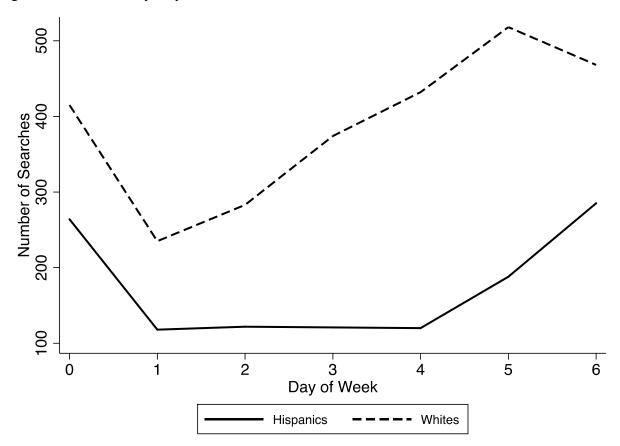


Figure A3. Stops by Hour of the Day

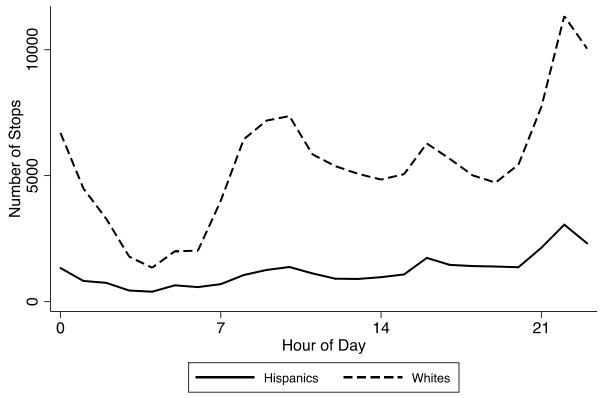
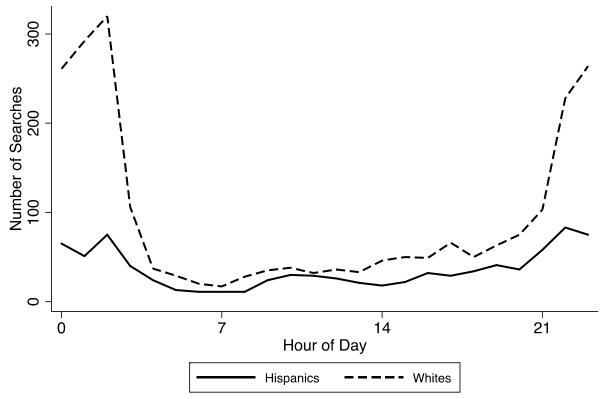


Figure A4. Searches by Hour of the Day



Decent Difference 2002 2004 2006 2008 2010 2012 Year

Figure A5. 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 Ethnicity

	$\boldsymbol{\mathcal{U}}$,	3	
Contraband	Number	% Total	% White	% Hispanic
Yes	2,130	27.74	27.60	15.68
No	5,548	72.26	72.40	84.32
Total	7,678	100.00	100.00	100.00

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

Daga	Search	N	No	Verbal	Written	Citation		
Race	Occur		Action	Warning	Warning	Issued	Arrest	Total
White	No	171,856	1.69	19.62	6.07	72.16	0.45	100.0
Hispanic	No	39,271	1.95	12.81	4.25	79.98	1.01	100.0
Total	No	381,607	2.03	20.28	5.44	71.72	0.54	100.0
XX71- : 4 -	3 7	2.725	0.02	5 1 4	2.07	22.55	50 1 3	100.0
White	Yes	2,725	0.92	5.14	2.97	32.55	58.42	100.0
Hispanic	Yes	1,218	0.41	2.87	4.52	28.65	63.55	100.0
Total	Yes	7,678	1.00	5.11	3.27	38.85	51.77	100.0