

# **Analysis of Hispanic-White Differences in Traffic Stops and Searches in Charlotte, NC, 2002-2013**

Frank R. Baumgartner, Derek Epp, and Kelsey Shoub<sup>1</sup>  
University of North Carolina at Chapel Hill  
Department of Political Science  
<http://www.unc.edu/~fbaum/traffic.htm>

Contact: [Frankb@unc.edu](mailto:Frankb@unc.edu)

April 8, 2015

---

<sup>1</sup> 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        | 1,416,174    |
| -2014              | 53,009       |
| -Passengers        | 47,224       |
| -Checkpoint stops  | 2,677        |
| Stops for analysis | 1,314,787    |
| Searches           | 70,231       |

Search Rate = 5.34

Figure 1. Number of Traffic Stops per Year

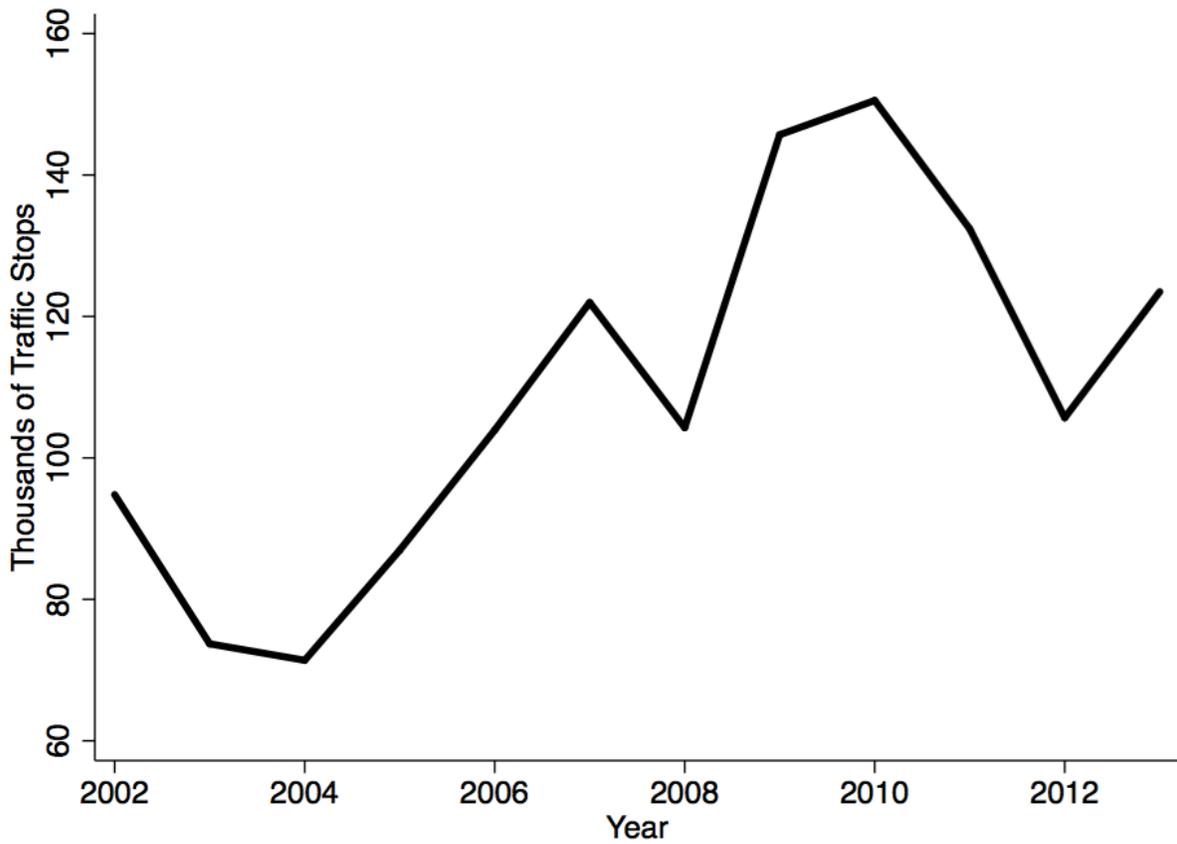


Figure 2. Racial Composition of Traffic Stops by Year

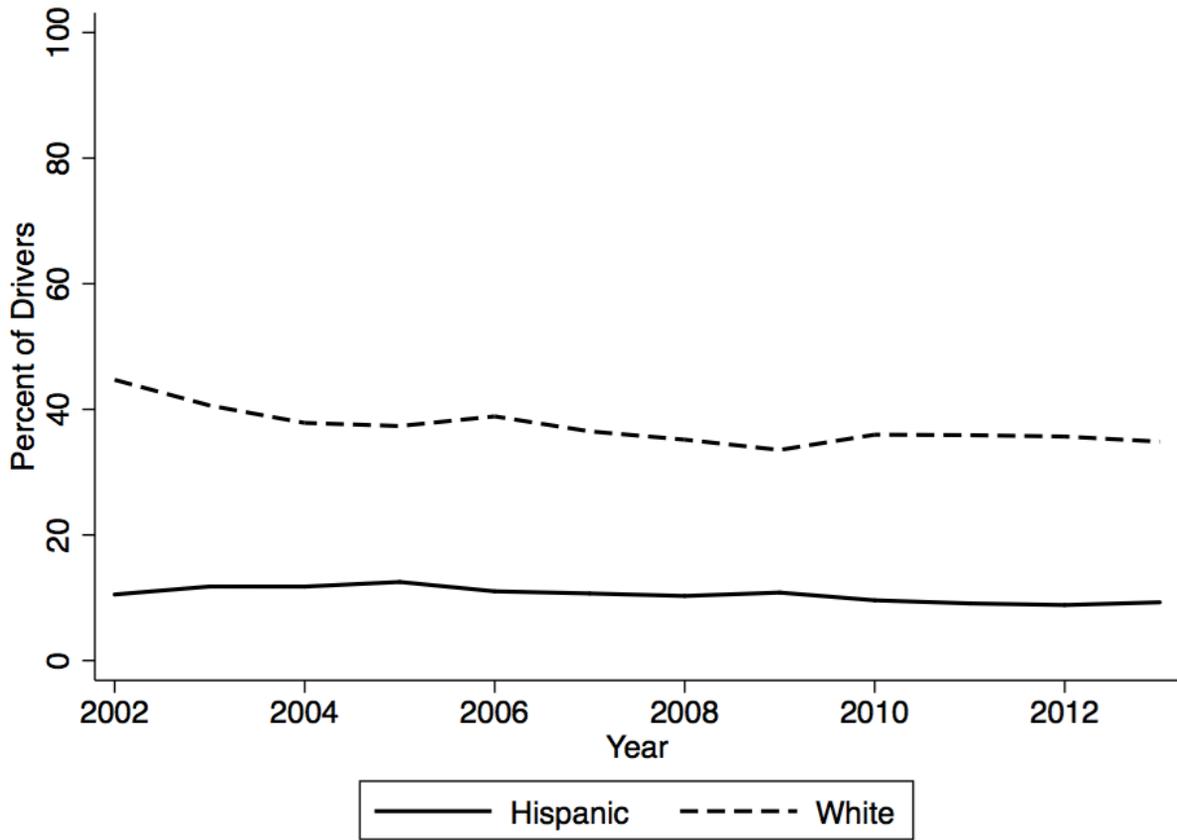


Table 2. Racial Composition of Traffic Stops by Purpose, Drivers

| Purpose            | Number    | Percent |          |
|--------------------|-----------|---------|----------|
|                    |           | White   | Hispanic |
| Total Stops        | 1,314,787 | 41.12   | 10.36    |
| Speed Limit        | 400,656   | 52.82   | 8.23     |
| Stop Light/Sign    | 98,992    | 47.03   | 10.71    |
| Driving Impaired   | 7,618     | 64.28   | 28.01    |
| Safe Movement      | 73,861    | 43.39   | 13.25    |
| Vehicle Equipment  | 124,243   | 28.68   | 12.89    |
| Vehicle Regulatory | 441,032   | 34.05   | 8.50     |
| Seat Belt          | 51,966    | 35.21   | 9.21     |
| Investigation      | 49,565    | 28.76   | 22.13    |
| Other Vehicle      | 66,854    | 38.53   | 17.06    |

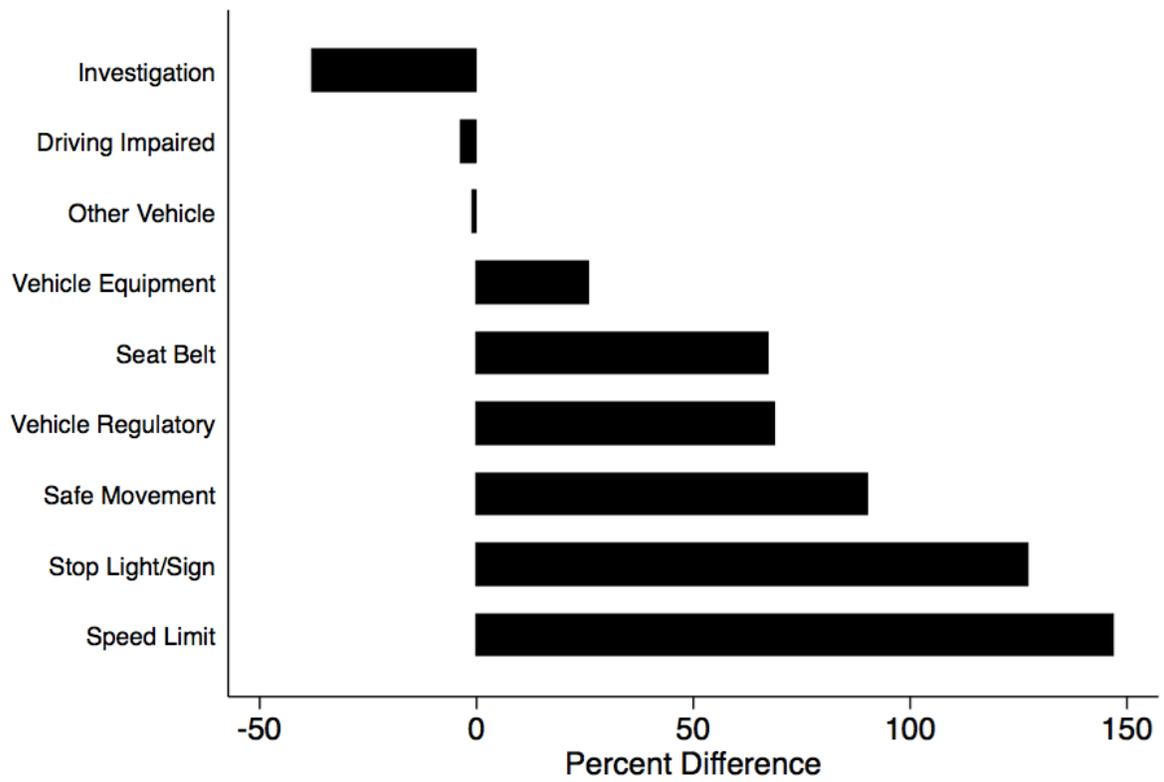
Note: Includes only drivers. Excludes 2,677 checkpoint stops. Excludes 47,224 passengers.

Table 3. Percent Searched by Race and Purpose of Stop

| Purpose            | Number    | % Total | % White | % Hispanic | Ratio          |
|--------------------|-----------|---------|---------|------------|----------------|
|                    |           |         |         |            | Hispanic:White |
| Total Stops        | 1,314,787 | -       | 41.12   | 10.36      | -              |
| Total Searches     | 70,231    | 5.34    | 3.00    | 5.72       | 1.91           |
| Speed Limit        | 400,656   | 2.15    | 1.40    | 3.46       | 2.47           |
| Stop Light/Sign    | 98,992    | 3.68    | 1.88    | 4.27       | 2.27           |
| Driving Impaired   | 7,618     | 41.65   | 44.03   | 42.46      | 0.96           |
| Safe Movement      | 73,861    | 6.47    | 4.32    | 8.22       | 1.90           |
| Vehicle Equipment  | 124,243   | 8.94    | 5.05    | 6.36       | 1.26           |
| Vehicle Regulatory | 441,032   | 4.70    | 2.38    | 4.02       | 1.69           |
| Seat Belt          | 51,966    | 7.36    | 3.09    | 5.18       | 1.68           |
| Investigation      | 49,565    | 17.24   | 15.09   | 9.36       | 0.62           |
| Other Vehicle      | 66,854    | 8.73    | 5.98    | 5.93       | 0.99           |

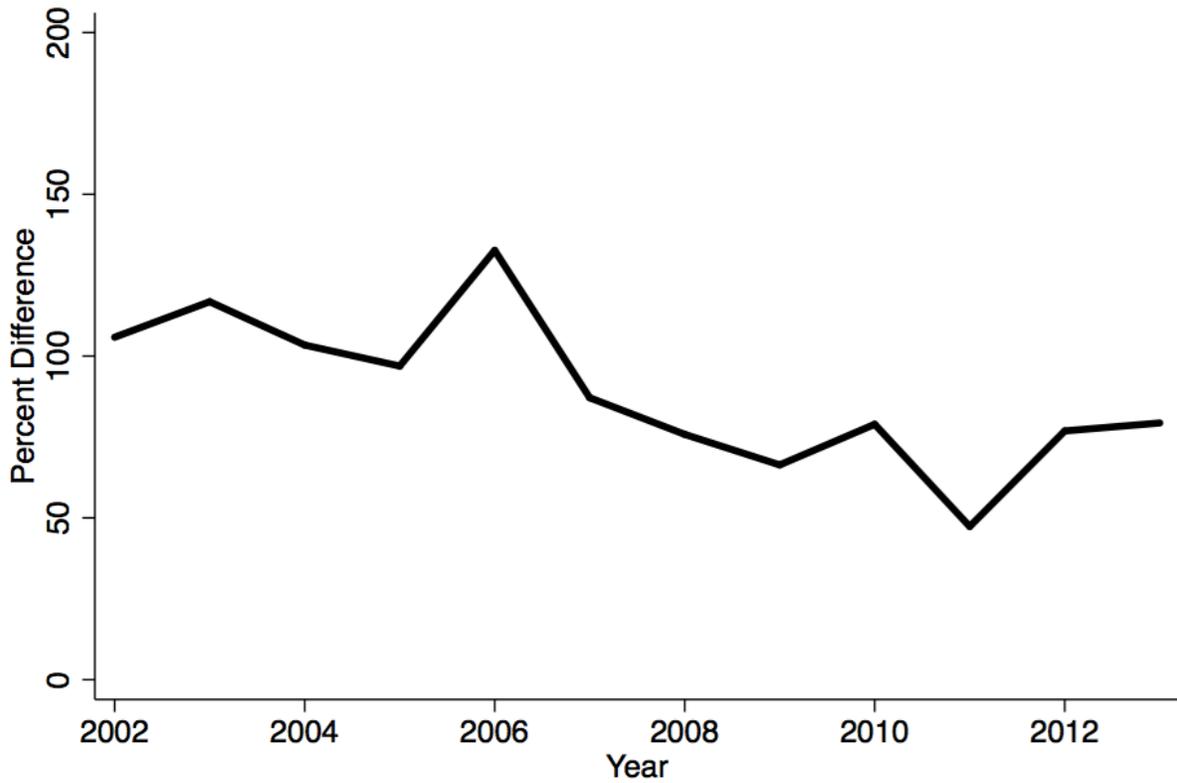
Note: See the appendix for this same table broken down for Men and Women.

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



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

Figure 4. Racial 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. Racial Differences in the Likelihood of Search by Gender



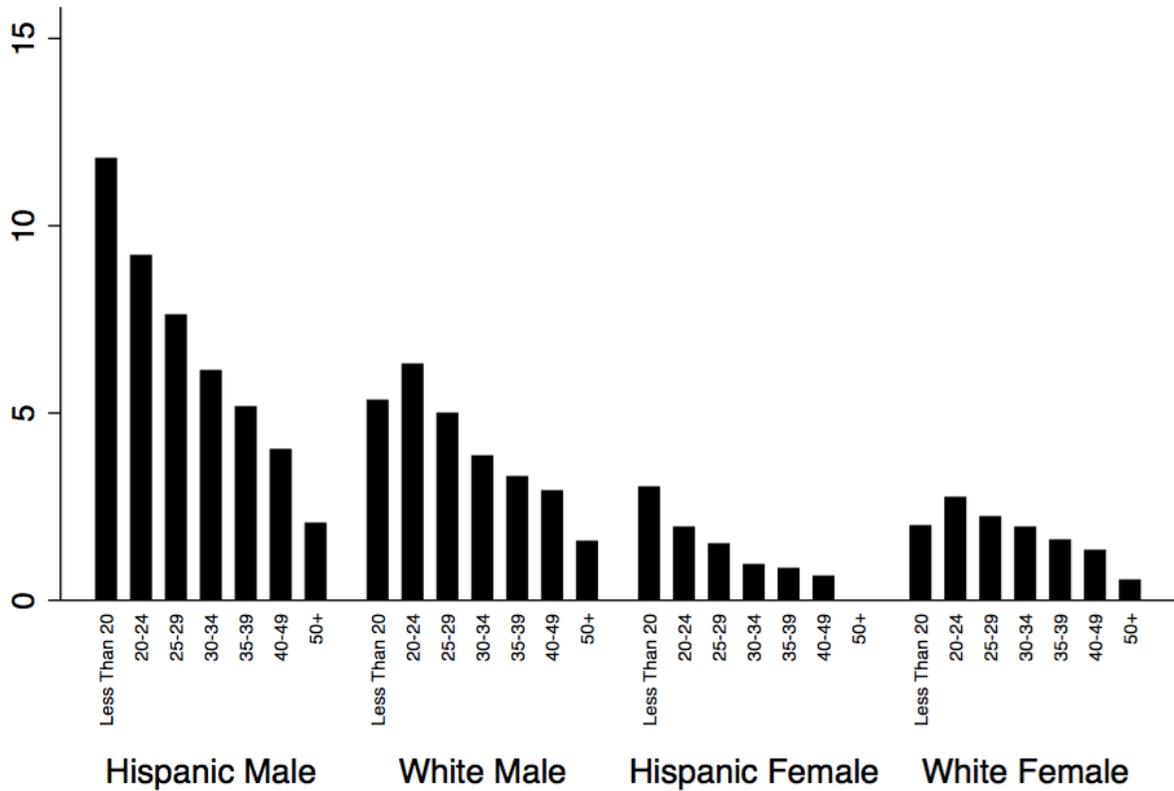
The figure shows the percentage difference in the likelihood of Hispanics being searched as compared to Whites by gender.

Figure 6. Racial 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 Race, Gender, and Age Group



Based on 1,314,787 traffic stops from 2002 through 2013, and 70,231 searches. Overall rate of search: 5.34 percent. No data are presented for categories with fewer than 10 searches.

Figure 8. Number of Stops, by Race and Gender

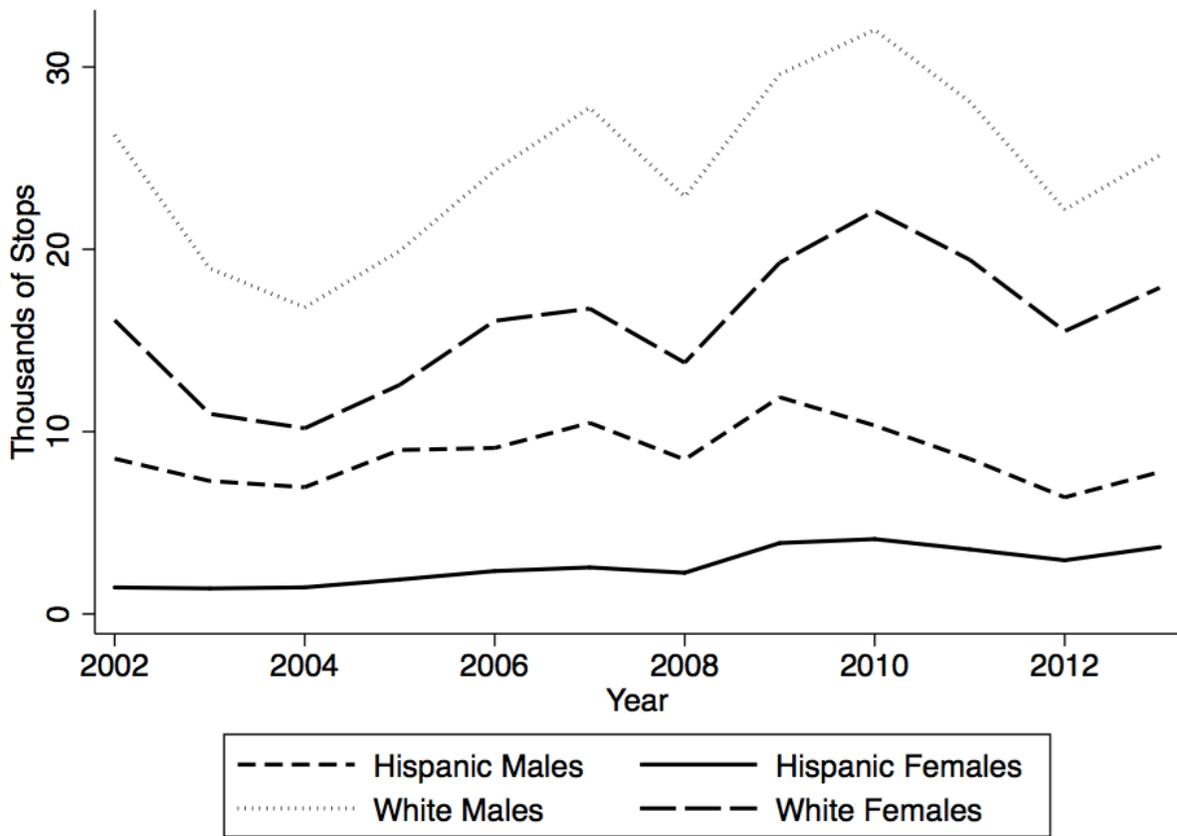


Figure 9. Percent of Stops Resulting in a Search, by Race and Gender

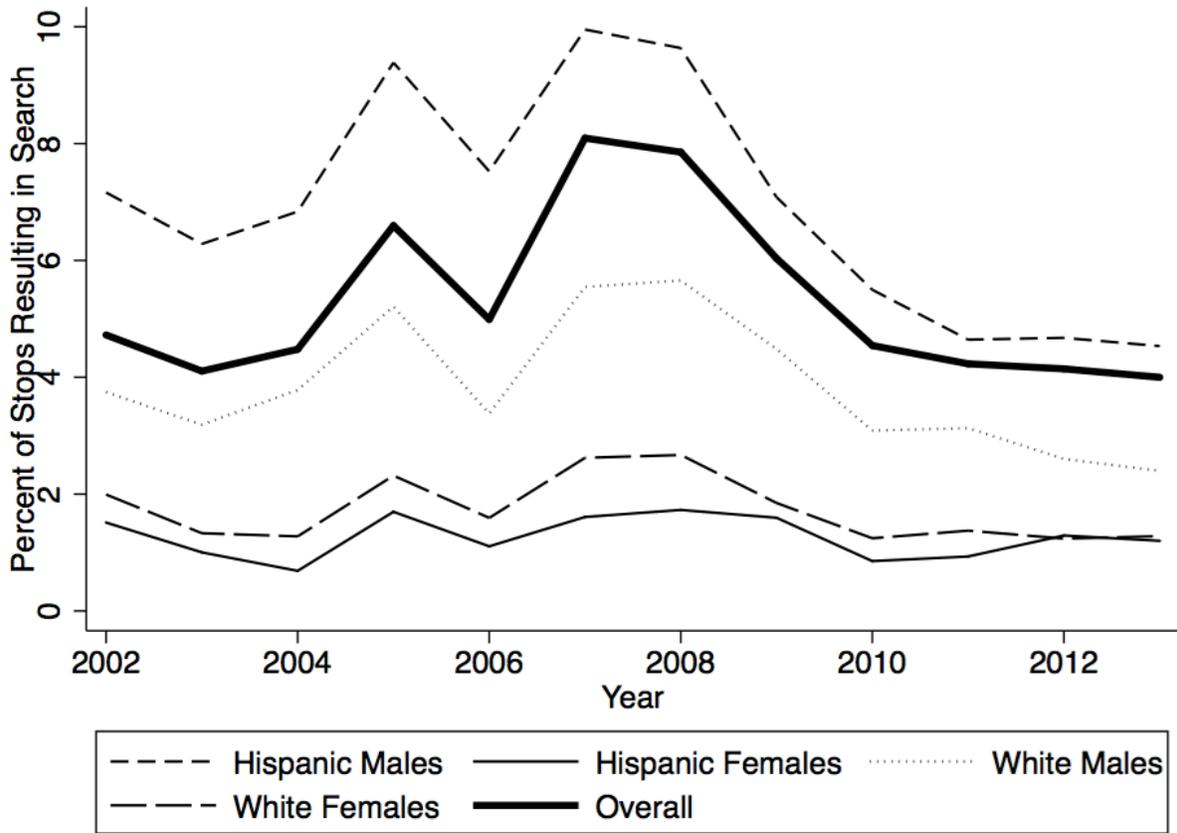


Table 4. Type of Search by Race

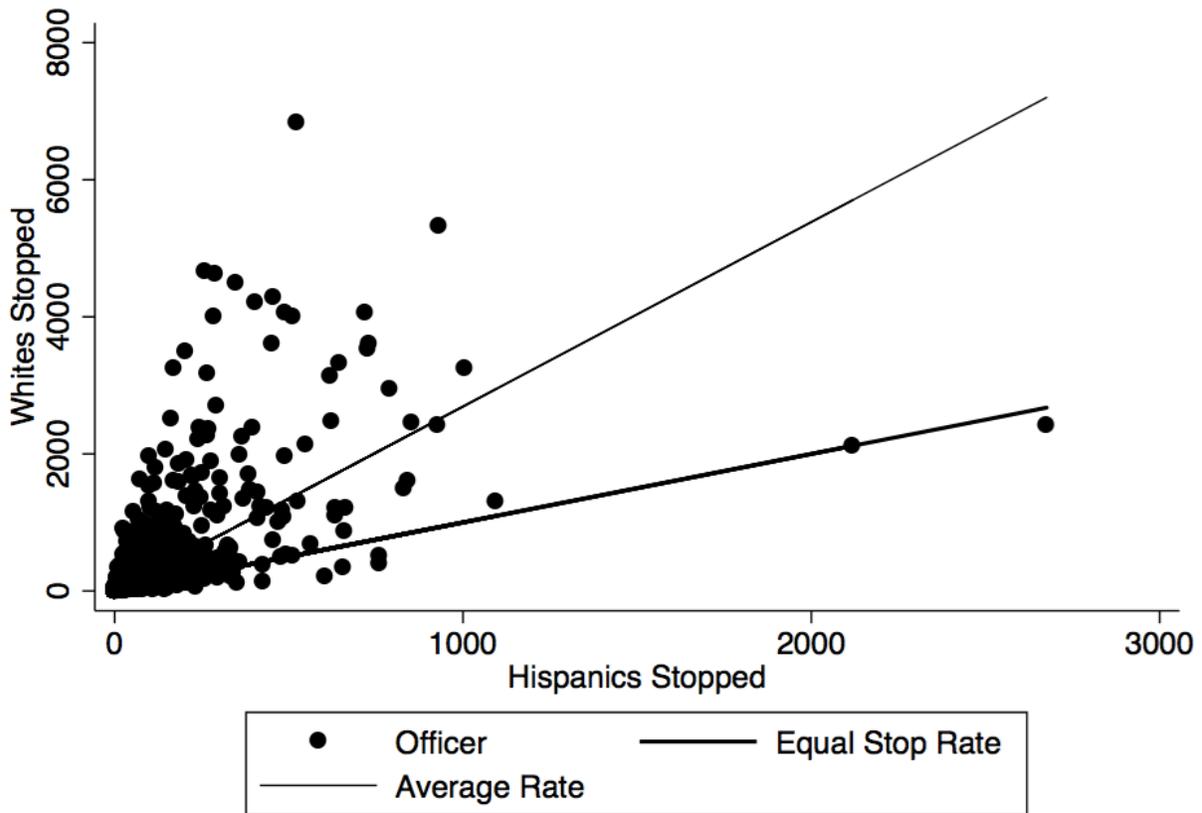
| Search Type        | Number    | % Total | % White | Ratio      |                |
|--------------------|-----------|---------|---------|------------|----------------|
|                    |           |         |         | % Hispanic | Hispanic:White |
| Total Stops        | 1,314,787 | -       | 41.12   | 10.36      | -              |
| Total Searches     | 70,231    | 5.34    | 3.00    | 5.72       | 1.91           |
| Consent            | 34,412    | 2.62    | 1.30    | 2.17       | 1.67           |
| Search Warrant     | 119       | 0.01    | 0.01    | 0.01       | 1.00           |
| Probable Cause     | 10,462    | 0.80    | 0.30    | 0.42       | 1.40           |
| Incident to Arrest | 23,969    | 1.82    | 1.37    | 3.01       | 2.20           |
| Protective Frisk   | 1,220     | 0.09    | 0.04    | 0.10       | 2.50           |

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               | 55                          | 2.49                | 2.49               | 0.00             | 0.00               |
| 2 – 10          | 145                         | 6.56                | 9.04               | 0.05             | 0.06               |
| 11 - 100        | 445                         | 20.12               | 29.16              | 1.58             | 1.64               |
| 101 – 1,000     | 1,218                       | 55.06               | 84.22              | 39.96            | 41.60              |
| 1,001 +         | 349                         | 15.78               | 100.00             | 58.40            | 100.00             |
| Total           | 495                         | 100                 | -                  | 100              | -                  |

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



On average, officers stop 2.69 Whites for each Hispanic stopped.

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

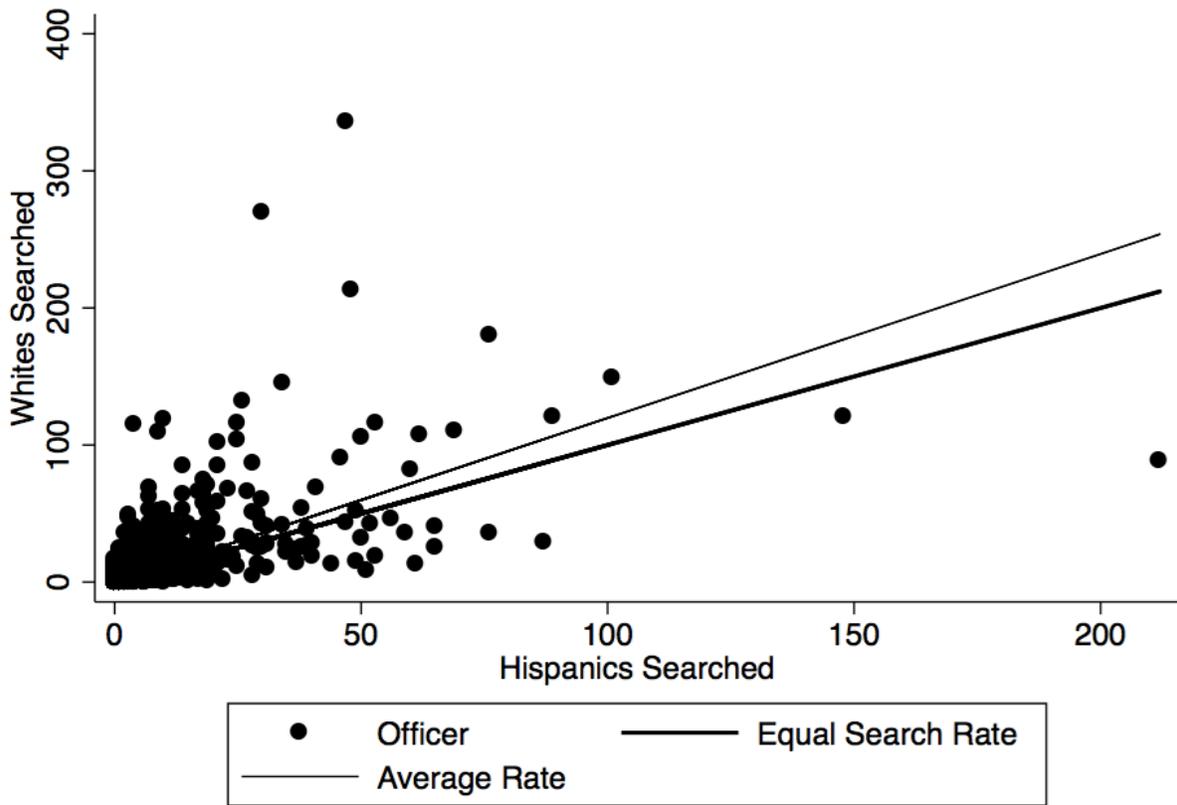
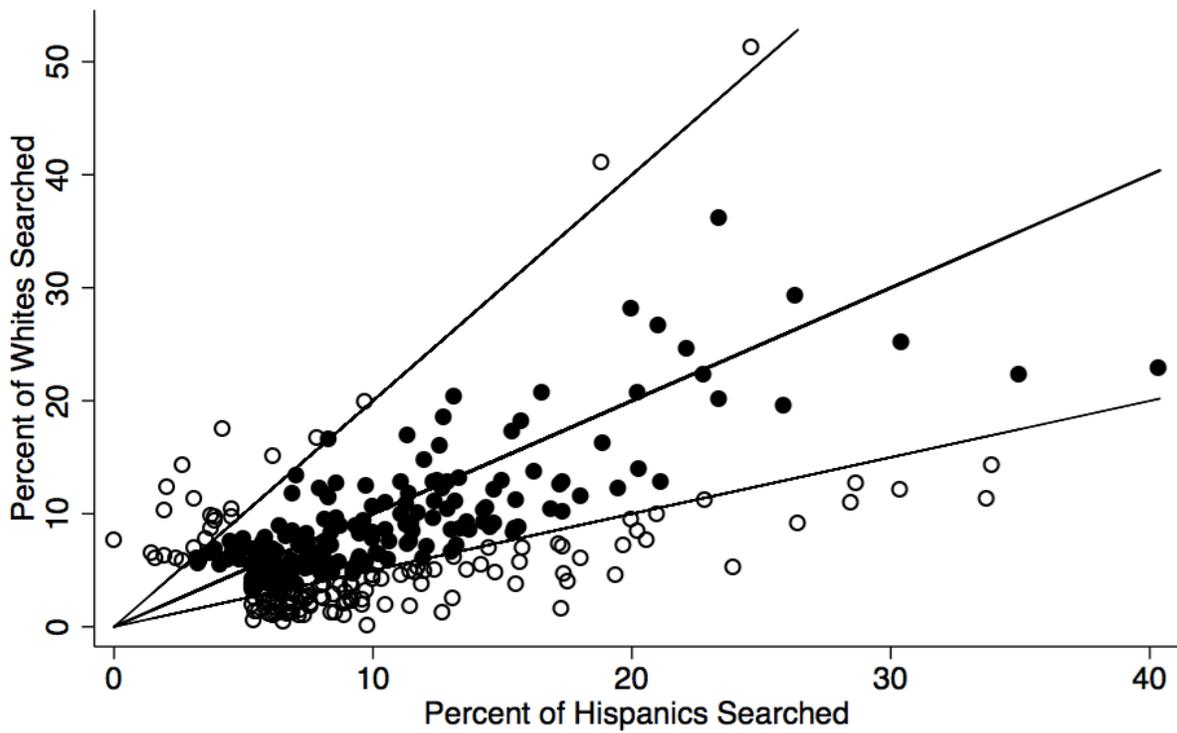


Figure 12. Percent of White and Hispanic Drivers Searched, by Officer



Includes 299 officers with a minimum of 50 White stops, 50 Hispanic stops, and a search rate above the department average of 5.34 for either ethnicity. The hollow circles indicate high disparity officers. 24 officers search Whites at more than twice the rate that they search Hispanics. 102 officers search Hispanics at more than twice the rate that they search Whites.

## Appendix

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

| Purpose            | Number | Percent |          |
|--------------------|--------|---------|----------|
|                    |        | White   | Hispanic |
| Total Stops        | 47,131 | 17.57   | 9.68     |
| Speed Limit        | 3,605  | 25.13   | 12.45    |
| Stop Light/Sign    | 2,115  | 16.95   | 10.45    |
| Driving Impaired   | 765    | 61.68   | 30.07    |
| Safe Movement      | 2,957  | 22.41   | 11.73    |
| Vehicle Equipment  | 8,182  | 14.09   | 9.44     |
| Vehicle Regulatory | 14,063 | 14.61   | 7.26     |
| Seat Belt          | 3,013  | 12.57   | 6.80     |
| Investigation      | 8,261  | 19.06   | 11.00    |
| Other Vehicle      | 4,170  | 19.84   | 9.83     |

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

| Purpose            | Number  | % Total | % White | Ratio      |                |
|--------------------|---------|---------|---------|------------|----------------|
|                    |         |         |         | % Hispanic | Hispanic:White |
| Total Stops        | 822,238 | -       | 40.97   | 12.73      | 0.31           |
| Total Searches     | 60,851  | 7.40    | 3.84    | 7.06       | 1.84           |
| Speed Limit        | 235,971 | 3.12    | 1.89    | 4.52       | 2.39           |
| Stop Light/Sign    | 61,571  | 5.17    | 2.49    | 5.42       | 2.18           |
| Driving Impaired   | 5,902   | 43.63   | 45.92   | 43.65      | 0.95           |
| Safe Movement      | 49,710  | 8.39    | 5.14    | 9.92       | 1.93           |
| Vehicle Equipment  | 84,043  | 11.72   | 6.14    | 7.62       | 1.24           |
| Vehicle Regulatory | 263,007 | 6.71    | 3.09    | 5.01       | 1.62           |
| Seat Belt          | 38,689  | 9.13    | 3.65    | 6.14       | 1.68           |
| Investigation      | 37,256  | 20.06   | 17.32   | 10.71      | 0.62           |
| Other Vehicle      | 46,089  | 11.01   | 6.99    | 7.01       | 1.00           |

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

| Purpose            | Number  | % Total | % White | Ratio      |                |
|--------------------|---------|---------|---------|------------|----------------|
|                    |         |         |         | % Hispanic | Hispanic:White |
| Total Stops        | 492,549 | -       | 41.35   | 6.39       | 0.15           |
| Total Searches     | 9,380   | 1.90    | 1.72    | 1.26       | 0.73           |
| Speed Limit        | 164,685 | 0.75    | 0.71    | 0.65       | 0.92           |
| Stop Light/Sign    | 37,421  | 1.23    | 0.96    | 0.86       | 0.90           |
| Driving Impaired   | 1,716   | 34.85   | 40.00   | 25.53      | 0.64           |
| Safe Movement      | 24,151  | 2.52    | 2.74    | 1.73       | 0.63           |
| Vehicle Equipment  | 40,200  | 3.13    | 3.13    | 1.37       | 0.44           |
| Vehicle Regulatory | 178,025 | 1.74    | 1.37    | 1.06       | 0.77           |
| Seat Belt          | 13,277  | 2.22    | 1.76    | 0.71       | 0.40           |
| Investigation      | 12,309  | 8.70    | 9.81    | 3.09       | 0.31           |

|               |        |      |      |      |      |
|---------------|--------|------|------|------|------|
| Other Vehicle | 20,765 | 3.65 | 4.09 | 1.52 | 0.37 |
|---------------|--------|------|------|------|------|

Table A4. Type of Search by Race: Men

| Search Type        | Number  | % Total | % White | %<br>Hispanic | Ratio<br>Hispanic:White |
|--------------------|---------|---------|---------|---------------|-------------------------|
| Total Stops        | 822,238 | -       | 40.97   | 12.73         | 0.31                    |
| Total Searches     | 60,851  | 7.40    | 3.84    | 7.06          | 1.84                    |
| Consent            | 30,554  | 3.72    | 1.72    | 2.68          | 1.56                    |
| Search Warrant     | 99      | 0.01    | 0.01    | 0.01          | 1.00                    |
| Probable Cause     | 8,972   | 1.09    | 0.38    | 0.50          | 1.32                    |
| Incident to Arrest | 20,095  | 2.44    | 1.68    | 3.74          | 2.23                    |
| Protective Frisk   | 1,131   | 0.14    | 0.05    | 0.12          | 2.40                    |

Table A5. Type of Search by Race: Women

| Search Type        | Number  | % Total | % White | %<br>Hispanic | Ratio<br>Hispanic:White |
|--------------------|---------|---------|---------|---------------|-------------------------|
| Total Stops        | 492,549 | -       | 41.35   | 6.39          | 0.15                    |
| Total Searches     | 9,380   | 1.90    | 1.72    | 1.26          | 0.73                    |
| Consent            | 3,907   | 0.79    | 0.65    | 0.47          | 0.72                    |
| Search Warrant     | 20      | 0.00    | 0.00    | 0.00          | -                       |
| Probable Cause     | 1,490   | 0.30    | 0.17    | 0.17          | 1.00                    |
| Incident to Arrest | 3,874   | 0.79    | 0.88    | 0.60          | 0.68                    |
| Protective Frisk   | 89      | 0.02    | 0.01    | 0.02          | 2.00                    |

Figure A6. Stops by Day of the Week

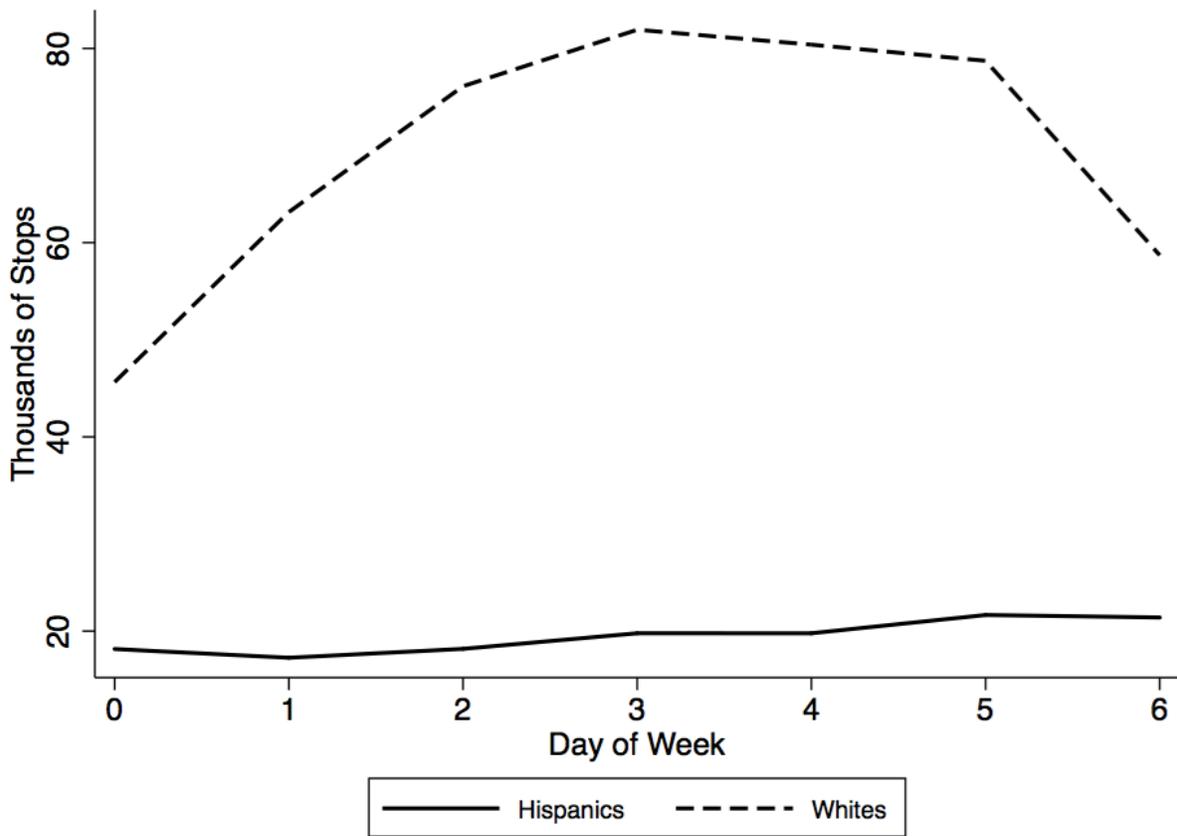


Figure A7. Searches by Day of the Week

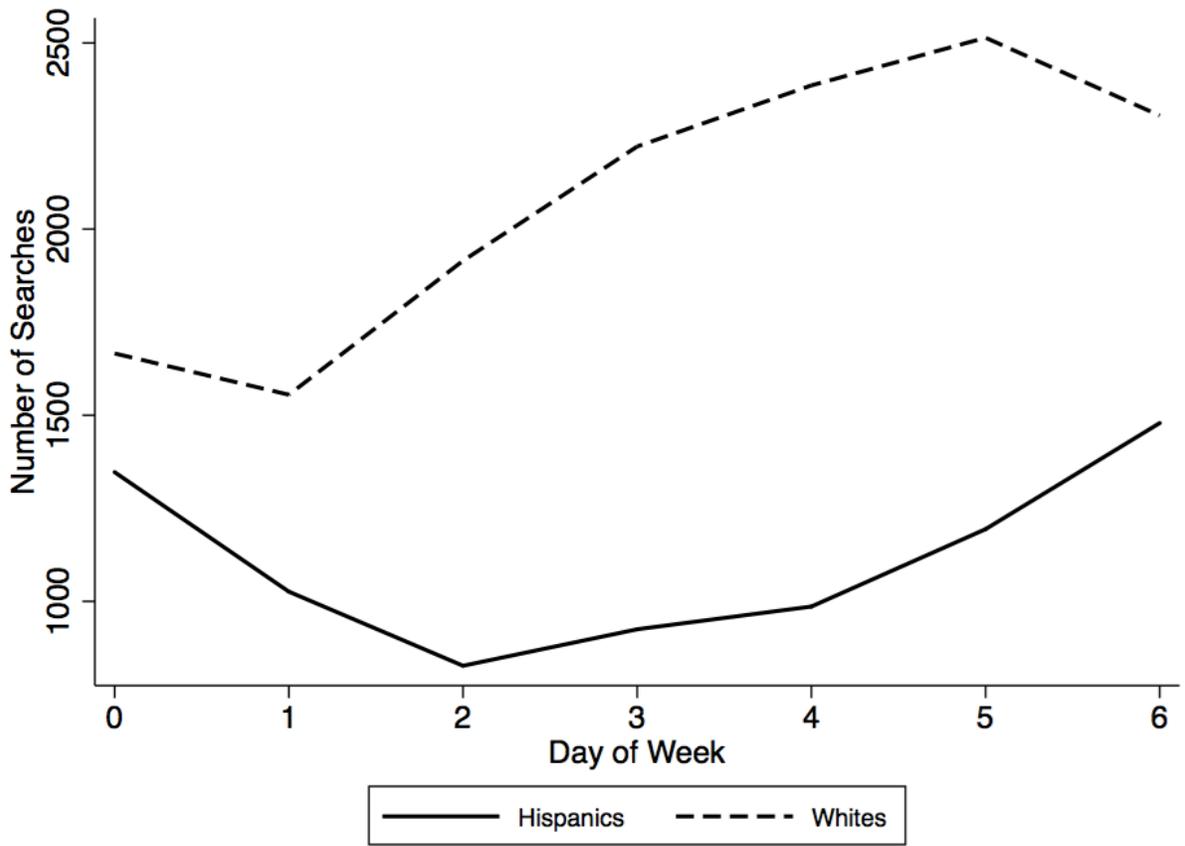
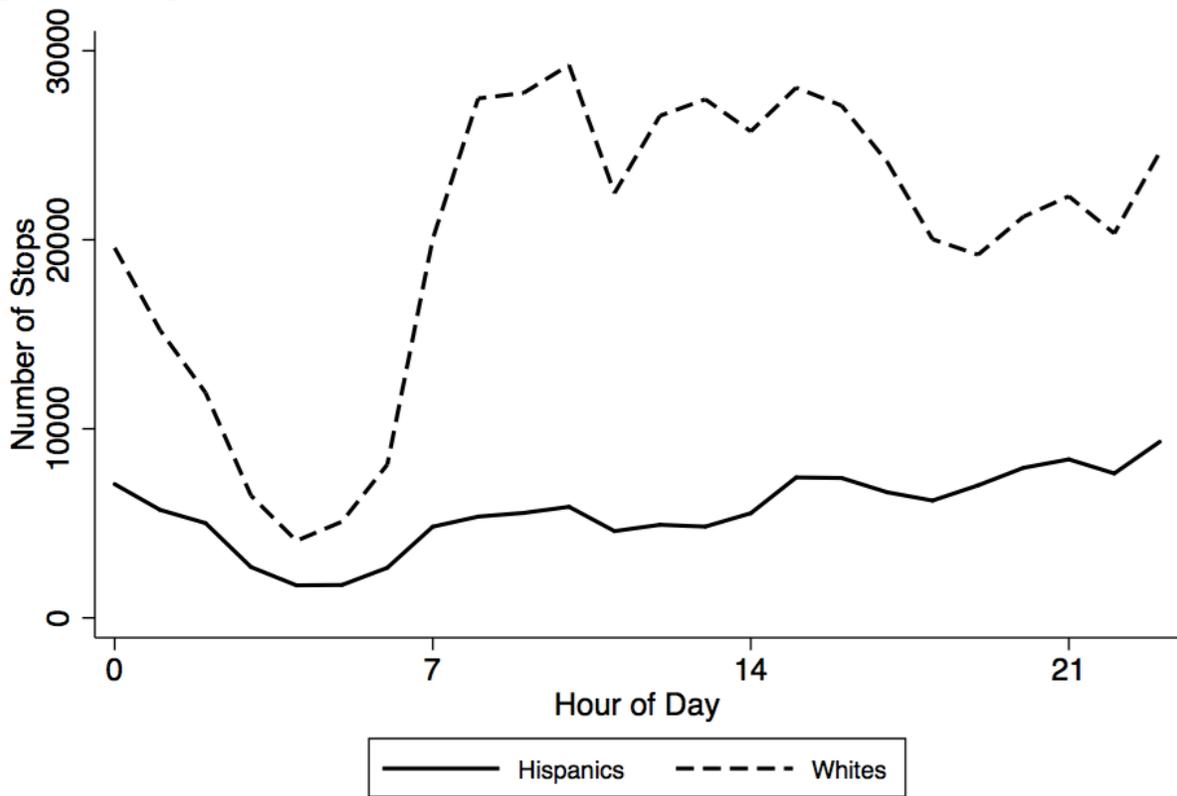
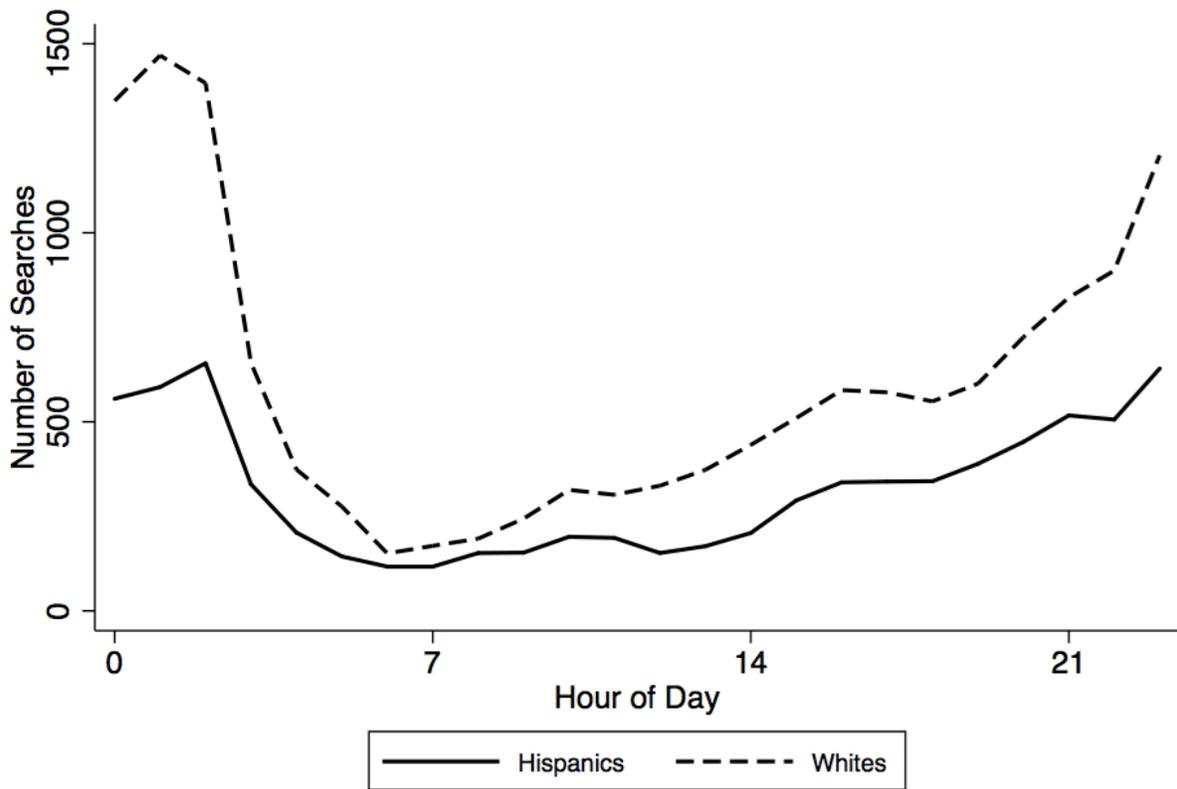


Figure A8. Stops by Hour of the Day



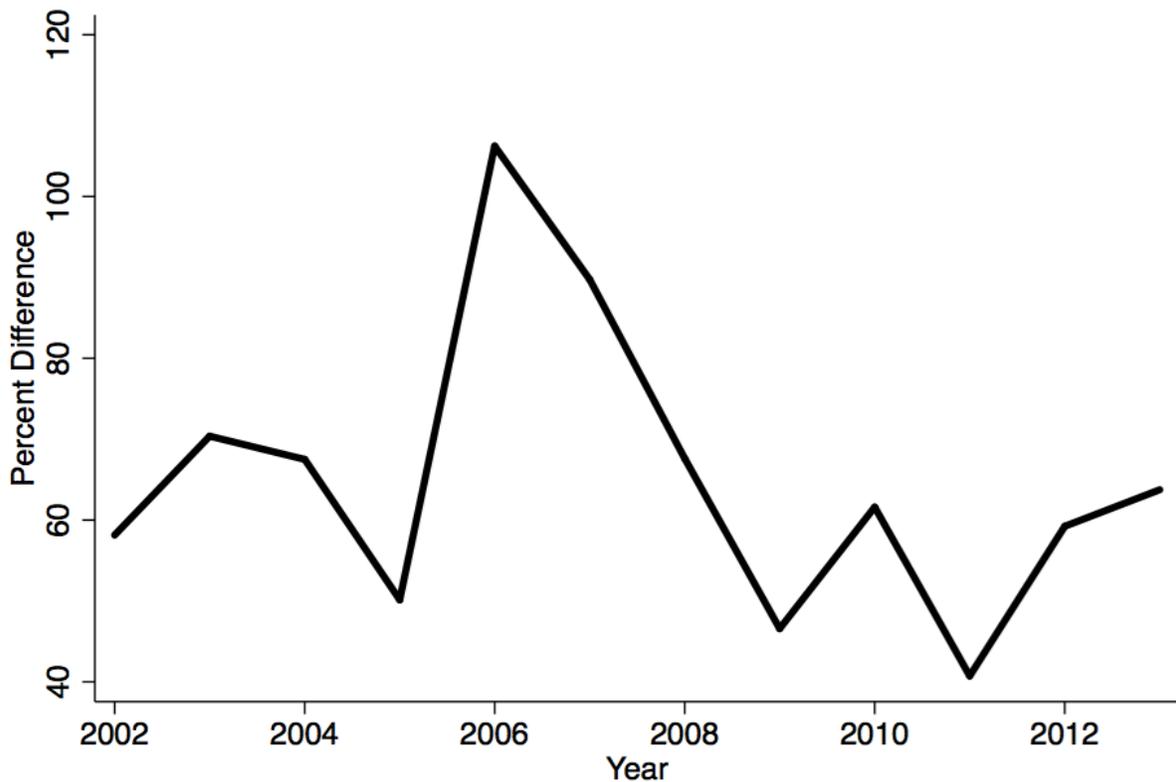
The figure excludes cases where the hour and minute was exactly 0:00. These cases were presumed to be missing data.

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 A12. Racial 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 | % Hispanic |
|------------|--------|---------|---------|------------|
| Yes        | 16,327 | 23.25   | 24.21   | 15.35      |
| No         | 53,904 | 76.75   | 75.79   | 74.65      |
| Total      | 70,231 | 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           | 470,077   | 4.20      | 26.48          | 6.78            | 61.64           | 0.90   | 100.00 |
| Hispanic | No           | 128,417   | 5.31      | 22.03          | 3.69            | 66.18           | 2.79   | 100.00 |
| Total    | No           | 1,244,556 | 4.92      | 28.56          | 5.82            | 59.28           | 1.42   | 100.00 |
| White    | Yes          | 14,563    | 3.61      | 14.37          | 2.14            | 26.78           | 53.11  | 100.00 |
| Hispanic | Yes          | 7,784     | 3.47      | 11.04          | 1.61            | 24.94           | 58.95  | 100.00 |
| Total    | Yes          | 70,231    | 4.29      | 19.35          | 2.16            | 30.23           | 43.97  | 100.00 |