Uncovering Racial Disparities in New York City's Stop-Question-and-Frisk Program

Introduction

On August 12, 2013, the people of New York City were greeted with a long-awaited ruling from the US District Court -- that the stop-and-frisk practices of its police department were unconstitutional. This decision was a culmination of years of public outcry against the perceived racial profiling and discrimination by the New York Police Department.

Stop-and-frisk policies in New York City were an effort to reduce crime rates, under the philosophy that preventing smaller crimes will prevent them from escalating into more violent ones (Associated Press, 2009). However, in recent years, the NYPD had been accused of being racially discriminating in their stops. The NYPD had defended their practices, saying that since crimes mostly happen in black neighborhoods, it is natural that more black people would be found suspicious of crimes (New York City Bar Association, 2013, page 10).

In this lab, you will be exploring the validities of these claims through an interactive choropleth map (also called a heat map) of New York City. The dataset for this map is based upon the Stop, Question and Frisk data released by the NYPD, which can be found at the New York Police Department's website (https://www1.nyc.gov/site/nypd/stats/reports-analysis/stopfrisk.page) during 2006. The stop, question and frisk data is combined with 2010 census data to collect population information for each precinct.[1]

Familiarizing yourself with the NYPD app

Go to the NYPD Precinct app (https://shiny.grinnell.edu/NYPD_Maps), which is an interactive choropleth map of arrests directly related to the stop-and-frisk policy in New York City. Instead of data being calculated over the whole city, it is broken into individual police precincts. The main page of the app consists of three panels:

- The **Map of Police Precincts** panel shows the chloropleth map of New York City, broken down into individual police precincts.
- When you hover over a particular precinct, the **Precinct Information** panel shows more detailed information about the precinct which is being hovered over on the map. The information consists of:
  - The *racial breakdown of the population* living in the precinct.
  - The *racial breakdown of the arrests* in the precinct.
  - A bar chart, where the height of a bar corresponding to the *number of arrests divided by the population* for each race living in the precinct.

- The **Options** panel below the map lets you play around with the colors of the map:
  - From the "Color by" dropdown menu, you can pick from five variables:
    - *Total number of arrests, weighted by population*: number of people arrested in each precinct divided by the number of people living in that precinct and multiplied by 1000 (shows where are people most likely to be arrested overall).
    - *Total number of arrests*: number of people arrested in each precinct (shows the distribution of arrests in the city).
    - *Number of arrests by race*: number of people of a certain race which were arrested (shows how arrests of a certain race are distributed in the city).
    - *Number of arrests by race, weighted by population*: number of people of a certain race which were arrested, divided by the number of people of that race living in the precinct and multiplied by 1000 (shows where people of a certain race are most likely to be arrested).
    - *Racial distribution*: number of people of a certain race living in each precinct (shows where people of a certain race lives in the city).
  - **Remove precincts**: Enter the number of a precinct you want removed from calculations into the box to remove it from the map.
  - **Filter precincts**: If you want to only focus on a few precincts on the map, enter the numbers of those precincts into this box to only show those precincts on the map. *Keep in mind that the whole map will recolor based on the visible precincts.*
  - **Scale**: Allows a *Linear* or *Logarithmic* color scale of the map. Since this data is highly skewed, the logarithmic scale is often more useful in viewing patterns within the precincts.

Part A: Interpreting Patterns in Arrest Data

Start question 1 with the following options selected:

- **Color by**: *Total number of arrests*
- **Remove precincts**: *22*, *50*
- **Filter precincts**: *Show all*
- **Scale**: *Logarithmic*

1. Use your mouse to hover over Precinct 114, this precinct has one of the highest number of arrests. Using the data in the **Precinct Information** panel, determine how many people were arrested in this precinct.

2. Divide the total number of white arrests by the white population. What percentage of the white population was arrested in Precinct 114? Repeat the same process for African Americans. Compare these percentages to the bar chart.

3. Now, select **Color by**: *Total number of arrests, weighted by population* and delete 22 and 50 in the **Remove precincts** option. What precinct stands out as a clear outlier? Zoom

into the map and explain why this precinct has different population dynamics than other precincts in New York City. Why would this precinct have the largest percentage of arrests?

4. Add 22 and 50 back into the **Remove precincts** option. Notice that the precinct with the highest number of arrests relative of population seems to be Precinct 14. Zoom into the map. What major New York intersection happens to be in that precinct? By hovering over the precinct, we can again see more information about that precinct. How many people were arrested in this precinct? What is the total population in the precinct? Divide the number of people arrested by the total population and multiply by 1000. This is the number of arrests per 1000 people in the precinct. Does this number correspond to the color of the precinct? Zoom into the map. What major New York intersection happens to be in that precinct?

5. Select **Color by**: *Racial distribution* and **Race**: *African-American*. Hover over Precinct 103, located in the neighborhood of Jamaica, Queens (those familiar with the city may know that this area has a high African-American population). Out of the 105803 people living there, how many are African-American? Which race has the highest percentage of arrests by population (the highest value in the bar chart) in this precinct?

6. On the other end of the spectrum, hover over Precincts 14 and 6, areas located in lower Manhattan. What percentage of the population is African-American in these precincts? Which is the percentage of arrests by population for African Americans in Precinct 14. (the highest value in the bar chart)? It is important to recognize that these percentages are not always representative. For example, it is likely that many people may be committing crimes in Precinct 14 who do not actually live there. People may be arrested outside of their home precinct, and some may be arrested more than once.

One of the key claims in the arguments against the stop-and-frisk policy was that black people were much more likely to be arrested than white people (New York City Bar Association, 2013). By compared the racial breakdown of various precinct populations with their corresponding arrests we have seen that in many precincts we can confirm that it appears Blacks are more likely to be arrested than Whites. While the lengths of the bars change, their relative positions largely stay the same.

Part B: Influence of precinct populations

The NYPD had defended this policy. They claimed that location was a key factor that had to be taken into account, stating "most stops are conducted in high-crime neighborhoods with high concentrations of people of color." (New York City Bar Association, 2013, page 10). In other words, more crimes occurred in certain precincts, so there were more arrests in those precincts. To evaluate this claim, we will narrow our focus in order find out what is happening within African-American neighborhoods in specific precincts.

7. In this question you will be asked to compare two maps. In both maps precincts 14, 22 and 50 should be in the **Remove precincts** option. In the first map select **Color by**: *Racial distribution* with **Race**: *African-American.* In the second map select **Color by**: *Number of arrests by race, weighted by population* with **Race**: *African-American.* When a precinct is dark red in the first map, what color does it tend to be in the second map? When a precinct is light in the first map, what color does it tend to be in the second map? Give an interpretation for this phenomenon. When evaluating these two maps, do you agree with the NYPD claim that most arrests occur in precincts with high concentrations of people of color?

We have seen in this lab that despite the NYPD's claims that they are not being racially biased, the data suggest that African-Americans are much more likely to be arrested, even after adjusting for population and the precinct location. This analysis supports what Jeffrey Fagan found in his statistical report used in the Floyd vs. The City of New York case, saying that "NYPD stops are significantly more frequent for Black and Hispanics citizens than for White citizens, after adjusting stop rates for [...] the racial composition" (Fagan, 2010).

Part C: Your turn

Explore the plots and graphs within this app. Use various options to generate different maps and statistics for various precincts. What other interesting trends can you find? Once you find an interesting pattern, take a screenshot of the app and submit a brief report on what the map and corresponding statistics represent.

Endnotes

[1] In collecting data and creating this dataset, police officers are required to fill out a form after every stop. As a result, all the information is self-reported by the police officers themselves. For this reason, there may be some inaccuracies in the data. Keep in mind that this may not be a complete log of every arrest made.

[2] This activity was created by Ying Long, Zachary Segall, Krit Petrachaianan and Shonda Kuiper. Date: 7/25/2015

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