

Tableau Application

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Introduction

The Tableau Application Assignment involving the Crime Incident Reports in Boston (August 2015 to September 2020) dataset communicates a story that is told through Tableau visualizations and interpretations. In the Initial Analysis, I found that crime in Boston seemed to be focused in certain areas. Total crime seemed to be concentrated in Downtown, whereas more serious crime were mostly found in areas with lower per capita income, as shown by 2018 Per Capita Income by zip code courtesy of the U.S. Census.

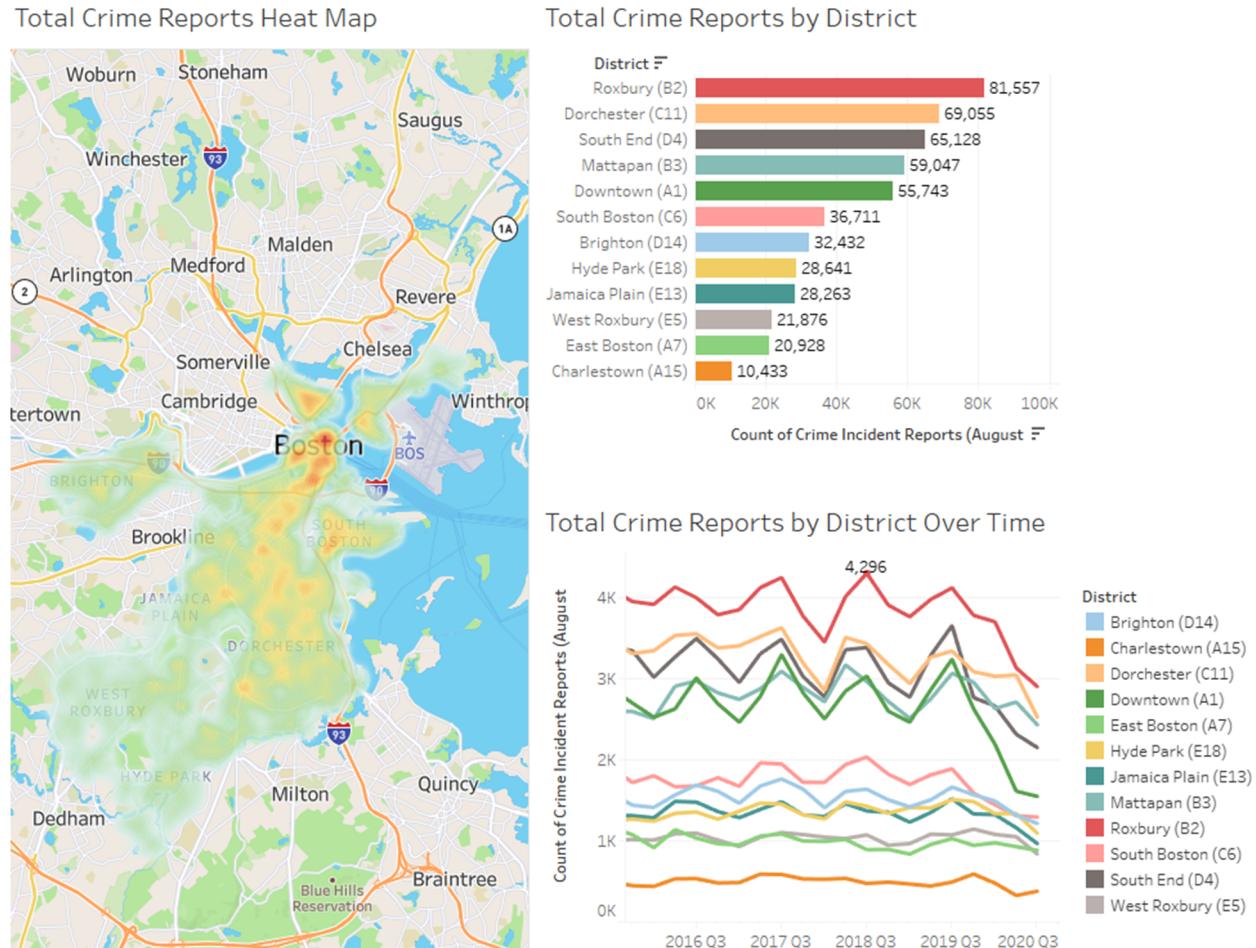
In the following analysis, I will focus on answering my research question: where are the most dangerous places in Boston and what factor may influence this? In this analysis, I will be using different data visualization techniques than the Initial Analysis to better answer this question.

After the analysis of my Tableau Application, I will provide a conclusion, in which I will share my overall interpretations of the data visualizations, observations, and significant takeaways from the analysis.

Dashboards and Analysis

Figure 1

Total Crime Reports Dashboard



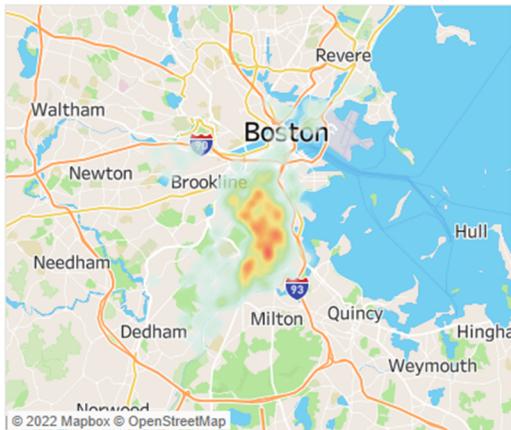
On the left, I have presented my heat map which demonstrates the density of the total crime reports in Boston. On the top right, I have created a labeled horizontal bar plot demonstrating the count of crime incident reports by district, which I have named. On the bottom right, I have created a line graph which demonstrated the total crime of districts over time.

The heat map tells that the density of total crime is highest in Downtown and the surrounding areas. On the other hand, the bar graph tells that Downtown has the 5th highest total crime incident reports (of the twelve districts). Roxbury, Dorchester, South End, and Mattapan have all recorded higher total crime reports. South Boston, which is ranked 6th is far less than Downtown ranked just one above. The line graph better explains the total crime reports by district. Roxbury has consistently had the most total crime reports by quarter. Dorchester, South End, Mattapan, and Downtown seem to be changing order in the final quarters of the dataset. The last quarter recorded (2020 Q3) has the first five in descending order being Roxbury, Dorchester, Mattapan, South End, and then Downtown.

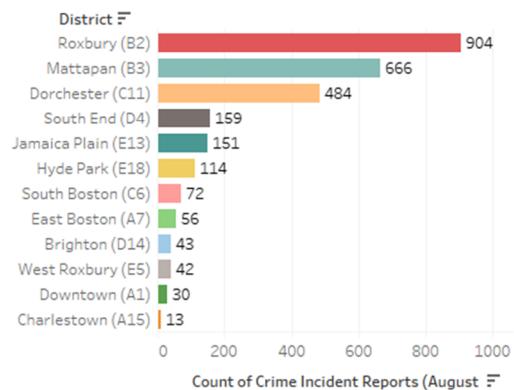
Figure 2

Shootings Dashboard

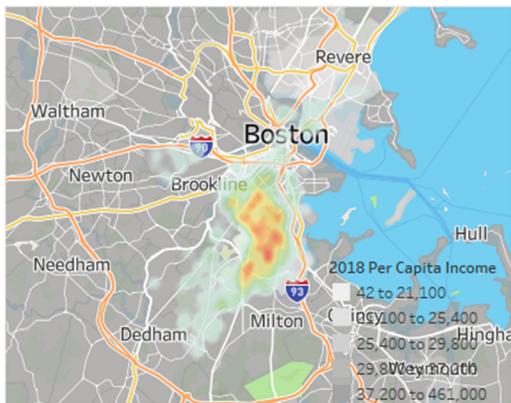
Shootings Heat Map



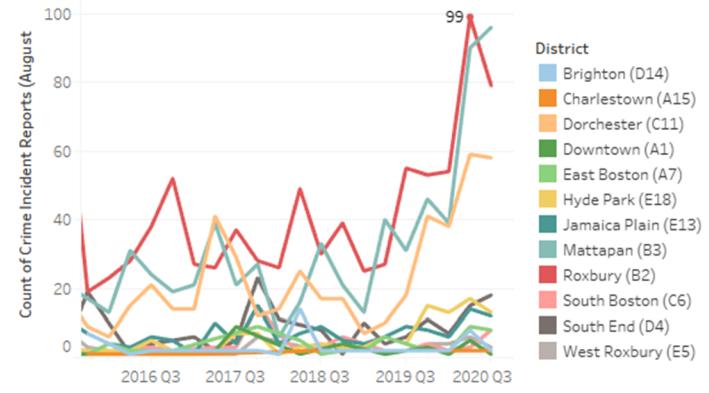
Total Shootings by District



Shootings & Per Capita Income Heat Map



Shooting Reports by District Over Time



On the top left, I have presented a heat map which demonstrates the density of crime reports involving shootings. On the bottom left, is a similar heat map, but with a map layer showing the 2018 per capita income by zip code. On the top right, we have another horizontal bar graph this time displaying the total shootings by district. On the bottom right, we have a line graph demonstrating shootings by district over time by quarter.

The heat maps tell us that shootings happen mostly in the Southern Boston neighborhoods with lower 2018 per capita income as compared to wealthier neighborhoods in the north. The bar graph confirms this, as we can see that Roxbury, Mattapan, and Dorchester have had the most shootings by far. It appears that shootings involved in the three districts just mentioned are increasing, according to the line graph. In 2020 Q2 (91 days) there were a total of 99 reported shootings in Roxbury, more than 1 per day. Although, that number declined in the following quarter, we can see that Mattapan recorded 96 shootings in the following quarter. Roxbury, Mattapan, and Dorchester have all reached their highest number of shootings recorded in the dataset in the last two quarters of the dataset.

Conclusion

Although the heat map from the first dashboard demonstrated that total crime incident reports tend to be focused in and around Downtown Boston, after further analysis it appears that this area is far from the most dangerous.

Shootings are significantly more frequent in Roxbury, Mattapan, and Dorchester located in southern Boston, suggesting that they are the most dangerous areas. These areas also have lesser median per capita income compared to other districts (<29,800) suggesting a correlation between dangerous crimes and per capita income. Roxbury, Mattapan, and Dorchester have all seen a significant rise in shootings starting in 2020 Q1 suggesting that crimes involving shootings in these districts will continue to rise.

By analyzing the most recent crime data, I would be able to provide more substantial reporting on recent Boston crime data and could determine if these areas have improved or not. However, this analysis could still provide significant insight to an audience consisting of Boston residents, law enforcement, and government officials.