

**Title:** Chicago's 2015 Crime Analysis

**Author:** Rawan Hammad

**Client:** If-Any Client

**Date:** 01/11/2022

## Introduction

The Chicago Police Department noted an increasing trend in crimes in 2015, with a 12.5% increase in murders and 13% increase in shootings from the prior year. According to the Chicago Tribune, the city of Chicago had more homicides than any other city in 2015. This report will address some of those claims and use raw data to analyze any possible trends and patterns associated with crimes that occurred in Chicago in 2015.

## Data

The 2015 crimes dataset is available online through the Chicago Data Portal. Records begin in 1/1/2015 and continue through 12/31/2015. The dataset contains details on the type of incidents, date, time, location, and arrests. The data was preprocessed prior to handling to remove incomplete reports that may interfere with the quality of the results; out of the 264,613 crimes reported in 2015, only 257,768 crimes were considered in this analysis.

## Incidents Overview

257,768 crimes were analyzed from the 2015 Chicago crimes dataset. Based on results shown in Figure 1, battery was the most popular crime reported in 2015, with 48,821 incidents reported. It is followed by criminal damage at 28,589 incidents, narcotics at 21,607, and assault at 16,992.

**Figure 1. The Top 20 Most Frequent Crimes in Chicago by Offense**

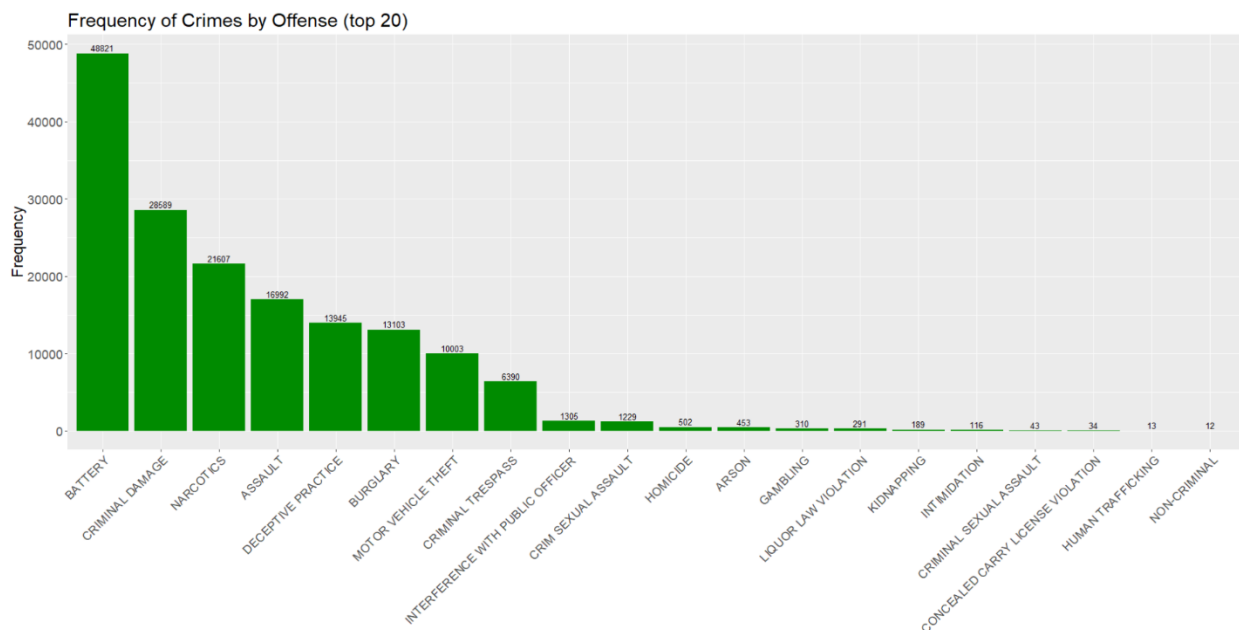


Figure 2 analyzes the frequency of all crimes by month. The summer months tended to attract the highest crime rates, with crime rates peaking at 24,259 crimes in August. However, February crime rates were astonishingly low. Based on a report from the Illinois Criminal Justice Information Authority, it is possible that certain types of crimes, such as those occurring outdoors, may vary with seasons. However, for most types of crimes, seasonal fluctuation, if it exists, may be too weak to affect practical administrative or policy decisions.

**Figure 2. Frequency of 2015's Crimes in Chicago by Month**

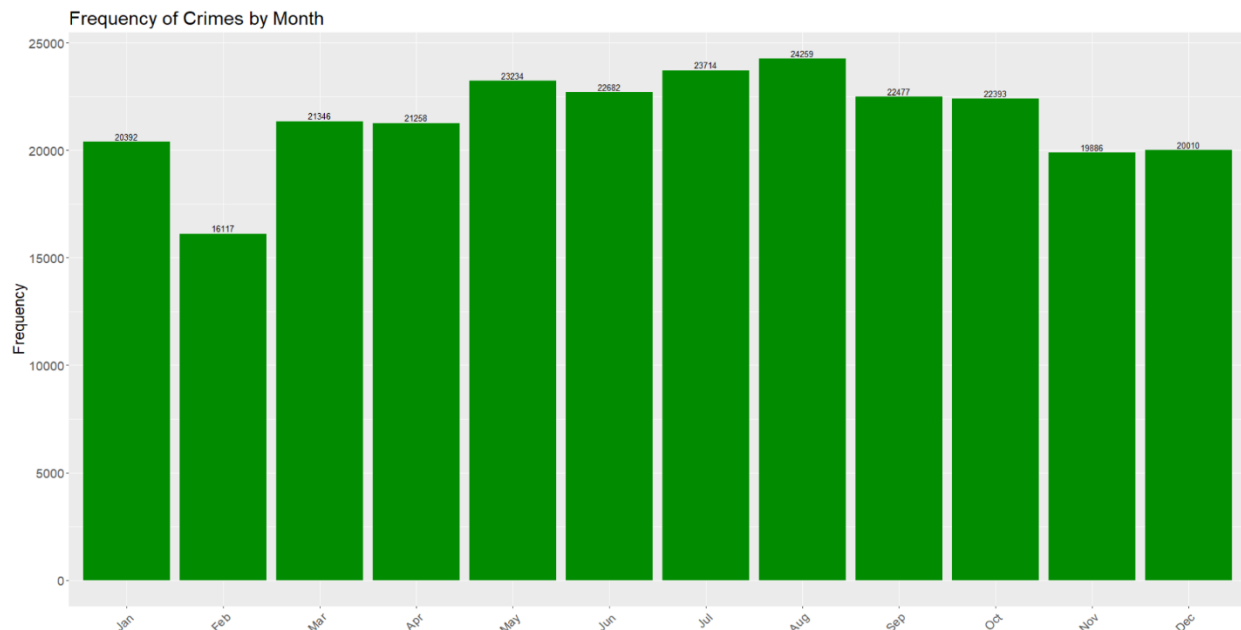


Figure 3 highlights crimes by geolocation (latitude, longitude). The density of crimes seems to increase in the Streeterville and New East Side Neighborhoods. Further west, the crime rates increase again near and across the North Austin neighborhood. In Figure 4, we can see a clearer breakdown of where most crimes occur, which includes 001XX N State Street, 0000X W Terminal Street, then 008XX N Michigan Avenue. It's also important to note that the first listed 7 blocks show a sharp decrease in crime rates, while the rest of the neighborhoods show a mostly steady crime rate all across.

Finally, Figure 5 focuses on arrests made per ward, as well as the crime rate at each ward. The most noticeable insight from this figure is that while the 28<sup>th</sup> and 42<sup>nd</sup> wards both have very high crime rates, yet, almost double the number of arrests were made in the 28<sup>th</sup> ward than the 42<sup>nd</sup>. You can see this pattern in the 24<sup>th</sup> and 2<sup>nd</sup> wards too, where the 24<sup>th</sup> ward crimes led to noticeably more arrests than the 2<sup>nd</sup> ward. The 24<sup>th</sup> and 28<sup>th</sup> wards are both located further west of Chicago's downtown, while the 2<sup>nd</sup> and 42<sup>nd</sup> wards are in the heart of the city.

Figure 3. 2015's Crimes in Chicago by Geolocation

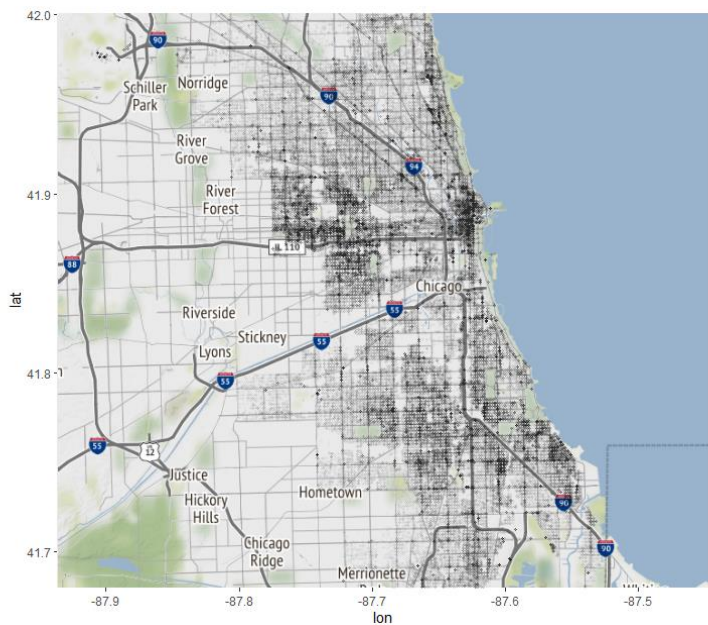
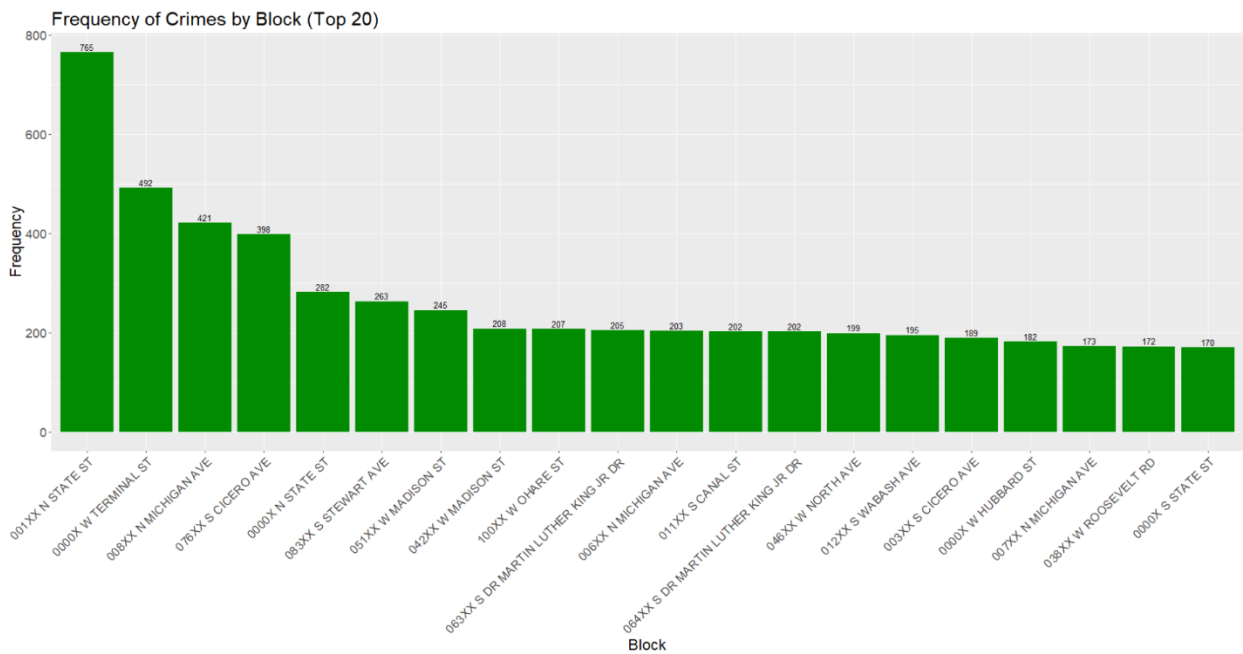
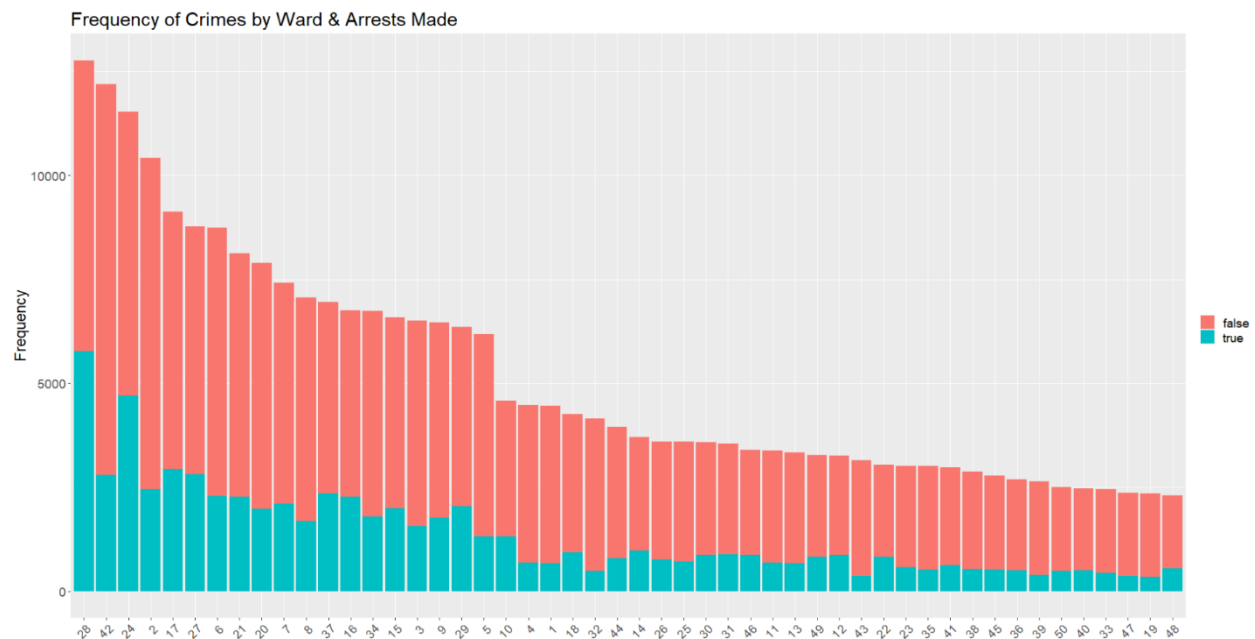


Figure 4. 2015's 20 Most Frequent Crimes in Chicago by Block



**Figure 5. Frequency of Crimes in 2015 by Ward and Arrests Made**



## Final Thoughts

The data analyzed and results discussed in this report could be summarized into a few key insights:

1. The most reported offense type in 2015 in Chicago is battery, which makes up 18.94% of all crimes reported.
2. The month of February reported a much lower crime rate (16,117 crimes) versus the monthly average of 21,480.67 crimes/month. One hypothesis is that crime rates change seasonally, although we'll need to verify this by making a similar comparison to preceding years to find patterns.
3. Based on criminal reports from 2015, most criminal activity is reported on 001XX N State St, 0000X W Terminal St, and 008XX N Michigan Ave.
4. While crime rates are slightly higher in the 28<sup>th</sup> and 24<sup>th</sup> wards versus the 42<sup>nd</sup> and 2<sup>nd</sup> wards, noticeably more arrests were made in the 28<sup>th</sup> and 24<sup>th</sup> wards than the 42<sup>nd</sup> and 2<sup>nd</sup> wards. A few possible hypotheses as to why this occurred may be offense types or other social factors.

## Additional Resources

<https://time.com/4165576/chicago-murders-shootings-rise-2015/>

<https://bjs.ojp.gov/content/pub/pdf/ics.pdf>