1. Burglary vs Non-Burglary Crime Number Analysis - April 2018, 2019, 2020

DataSet: "Crimes April 2018 2019 2020.csv"

Png: ‘primaryCrimeApril\_2018\_2019\_2020.png’

Chart: Stacked bar chart

Question to answer: Does the crime rate drop in 2020 due to Covid19?

Answer:

Based on the year over year analysis for the same April month from 2018 to 2020. (April 2020 is the beginning of Chicago ‘Stay-At\_Home’ order due to COVID19)

The number of burglary crime number in April 2020 is 60% of year 2018 and 2019 for the same month.

1. Number of Burglary reported in Chicago Area by Zip Code for the year of 2019 and 2020 April month

DataSet: "CrimePropertyApril2019\_2020.csv"

Png: 'CrimeNum\_byZip.png'

Chart: Bar chart

Question to answer: In which zipcode there is the most (the least) burglary crimes reported in Chicago?

Answer: (print on the png)

1. Crime Number by Property Value Ranges for the year of 2019 and 2020 April month

DataSet: "CrimePropertyApril2019\_2020.csv"

DataFrame: crime\_byPropRange\_df(use bins/pd.cut to group by property range)

Png: 'April 2019 vs 2020 crimenum vs property ranges.png'

Chart: Multiple bar charts by year by range

Question to answer: Does the majority of burglary crimes happen within a certain range of property values?

Answers:

With the dataset we use, the answer seems to be ‘yes’ initially. Majority of crime reported are in the range of 100000-200000

However, most zip codes fall within that range as well. It implies there are more houses and population within that range which could contribute to more crime numbers as well.

* No definite conclusion

1. Correlation between Average Property Value and Crime Count by zip code

DataSet: "CrimePropertyApril2019\_2020.csv"

DataFrame: zip\_crime\_byAvgProp\_df (Average property by zip)

Png: 'CrimeNumber\_AvgProperty\_byZip2019.png', 'CrimeNumber\_AvgProperty\_byZip2020.png'

Chart: Scatter plot with correlation and line regression

Question to answer: Is there strong correlation between crime number and property value?

Answer: No

The correlation value is too weak to support the relationship

For Year 2019 – The correlation is -0.21

For Year 2020 – The correlation is -0.39

1. Chicago Property Value by latitude and longitude

DataSet: "CrimePropertyApril2019\_2020.csv"

Png: "Lat\_Lng\_Property.png"

Chart: Scatter with ColorBar

Question to answer: None. Just for reference or visual supplement to heat map

1. 2018-2020 April Top 5 Crime Types

DataSet: "CrimePropertyApril2019\_2020.csv"

Png: 2018-2020 Top 5 Primary Type

Chart: Bar with 3 columns

Question to answer: Did COVID-19 affect crime rates?

-We used the data from the COVID 19 peak month, April, compared to 2018 and 2019 data. Though the top 5 crime types remained the same for all these years, we can notice significant decline in 2020 compared to 2018 and 2019. We believe this is caused by quarantine and with the decline in population in the public caused the crime rate to decrease. Therefore, COVID-19 decreased crime rates in Chicago by looking at the number of crime occurrences in April.

1. At what time does the most property crime occur?

DataSet: "CrimePropertyApril2019\_2020.csv"

Png: 'time\_chart1.png'

Question: At what time of day do property crime occur the most?

Based on the data set midnight has the most reported crimes of any hour of the day.

8. At what phase of day do most property crime occur?

DataSet: "CrimePropertyApril2019\_2020.csv"

Png: 'time\_breakdown1.png''

Question: At what phase of the day are property crimes most likely to occur?

Based on the data, breaking down the day into six hour phases, property crimes are most likely to occur in the afternoon between the hours of noon and 5pm. Speculating that this is the result that most break in takes place when residents are not at home.

9.