Areas of High Criminality in Mexico City

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The capital of Mexico represents a very important cultural and financial centre in the world.

- Mexico city is one of the most populous cities in the world. With a population of about 8 918 653 people
- One of the main problems in Mexico city is the high rates of criminality.
- Fundamental to identify areas with high rates of criminality and a huge influx of people.
- Criminal activities such as homicides, robbery or kidnapping are a major concern for people moving to these areas.
- Activities like extortion might force business owners to close or entrepreneurs to avoid these areas leading to a decrease in economic activity.

Data Description

- The dataset used in this study was obtained from the web page of Mexico City data and consists of records of crimes under investigation in Mexico city from years 1973 to 2019
- Contains information about crime category, date and time of occurrence, borough and <u>neighborhood</u> in which crimes occur and location coordinates (latitude and longitude).
- Foursquare <u>API</u> was used to collect data about the ten most common venues in each <u>neighborhood</u>.
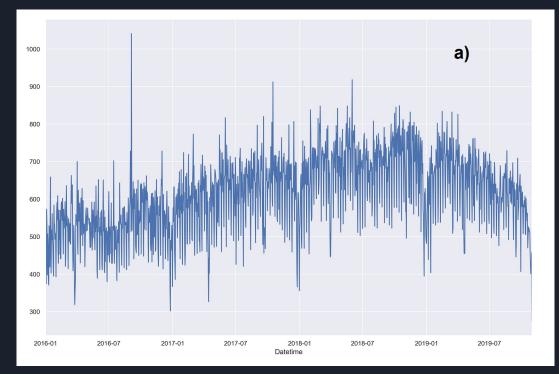
Intended Audience

- People working in dangerous boroughs and neighborhoods to avoid hours with high criminal activity.
- Investors willing to open new businesses might benefit from this information by locating the best areas for a particular type of venue.

Temporal Patterns of Criminal Activity

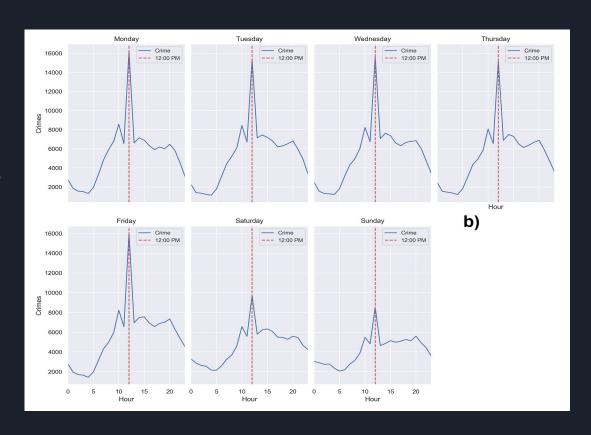Crimes per day from January 2016 to November 2019.

It is evident an increase in the number of crimes per day since the beginning of 2016 up to finals of 2018. In January 2019 a sudden decrease is observed which might be due to the change in government.
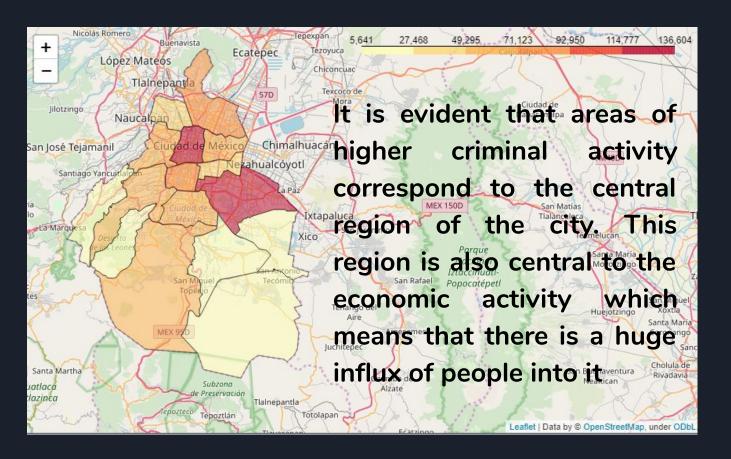
Temporal Patterns of Criminal Activity

Number of crimes for each day of the week.

A pronounced peak is observed at 12:00 AM exceeding the 15000 crimes per hour, this peak is lower on weekends which is about 8000 crimes per hour.
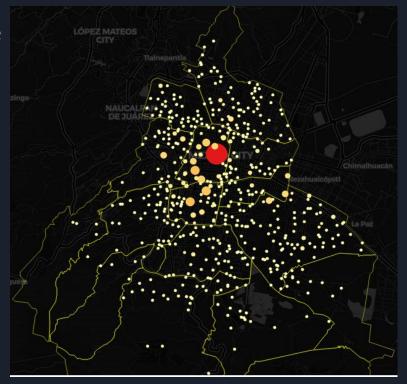
Areas with highest rates of criminality

It is evident that areas of higher criminal activity correspond to the central region of the city. This region is also central to the economic activity which means that there is a huge influx of people into it

Areas with highest rates of criminality

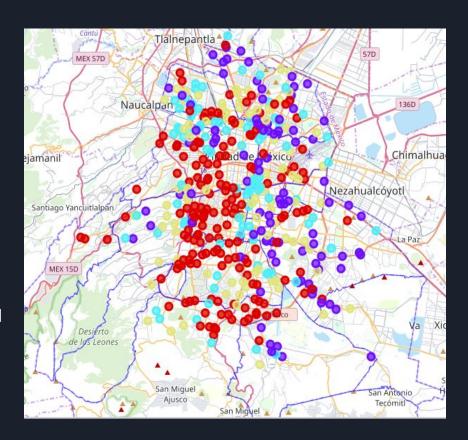Neighborhoods with more than 200 crimes over the four years.

- Boroughs in the central region of the city are the most dangerous

Clustering Algorithm

From the results we can conclude that there is no clear relationship between the most common crimes and the most common venues in a particular cluster.

Separation of neighborhoods into different clusters is based on small differences in the number of occurrences of a particular crime or venue category in each neighborhood

Conclusions

- Temporal patterns were found for the criminal activity in Mexico city, results revealed the evolution of criminal activity during this period of time and which hours and days are preferred by criminals to commit crimes. Future studies might be focused on finding the relationship between different crime categories and the hours in which they are most frequent.
- We gained visual insight into the most dangerous boroughs and neighborhoods of the city.
- Clustering algorithm did not reveal a relationship between the most common crime and venue categories.