Analysis of Crimes in NYC 2010 -2023

Raman K.

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Benefits and Insights

Benefits of the Dashboard and Map

The dashboard and map provide comprehensive insights that can drive decision-making, enhance public safety, and improve the quality of life in NYC. They serve as valuable tools for businesses, city authorities, and residents alike, fostering a more secure and informed community.

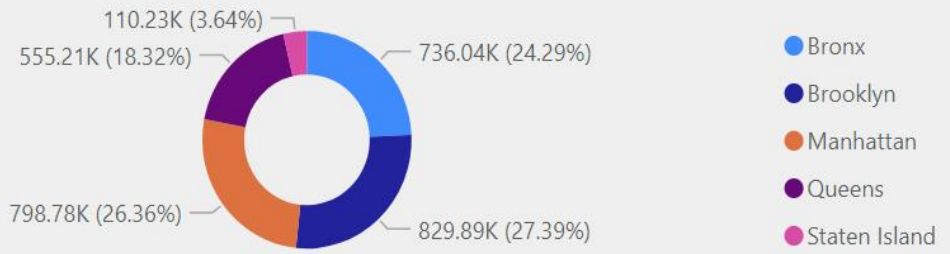
Business.

Businesses can use crime data to assess the safety of potential locations for new stores, offices, or other facilities. Low-crime areas may be more attractive for both employees and customers.

Insurance companies can adjust premiums based on crime statistics, offering lower rates in safer areas and higher rates where the risk is higher.

Crimes in NYC 2010 -2023

ARREST_BORO



COUNT_OF_OFNS

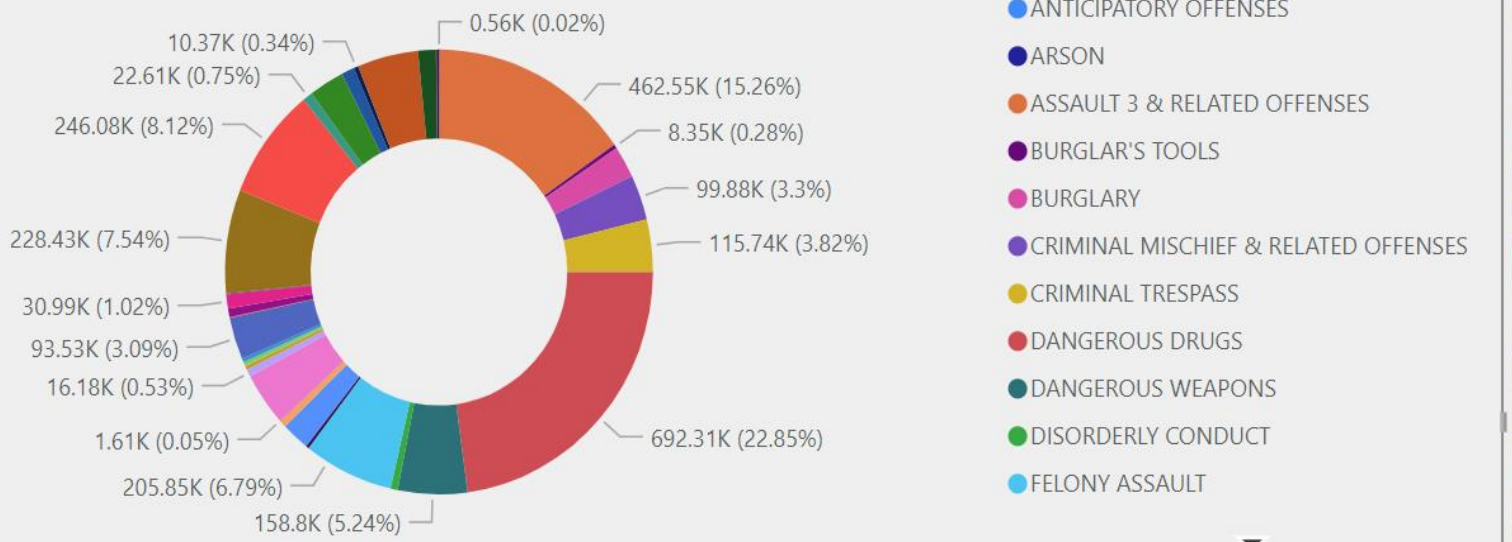
SELECT_TIME_RANGE

1/1/2010 — 12/20/2023

SELECT_AGE

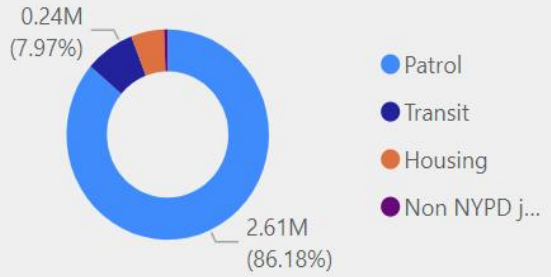
- < 18
- 18-24
- 25-44
- 45-64
- 65+

OFNS_DESC

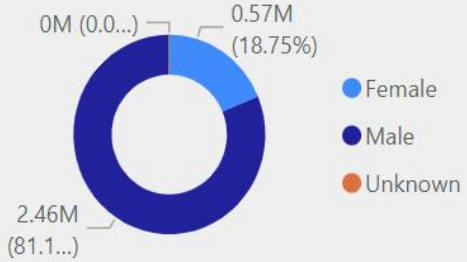


CRIME_MAP

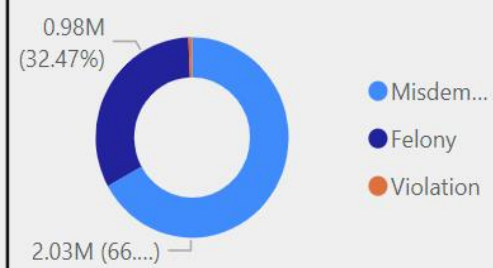
JURISDICTION_CODE



PERP_SEX



LAW_CAT



City Authorities.

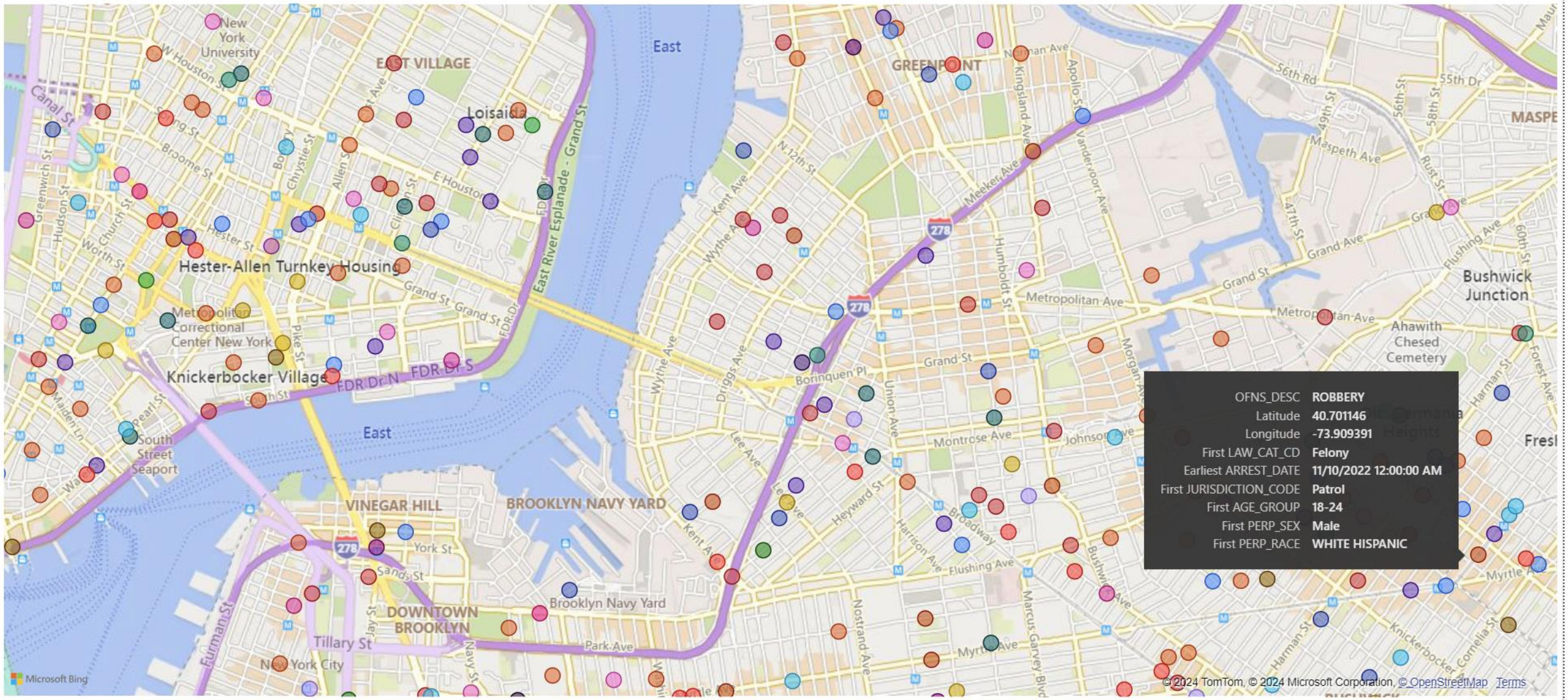
The city can use these insights to allocate police and emergency resources more effectively, focusing on high-crime areas to reduce incidents and improve public safety.

Crime trends and demographic data help city authorities develop targeted policies and intervention programs aimed at crime prevention and social support.

Understanding crime distribution assists in urban planning efforts, ensuring that new developments are designed with safety in mind and existing areas are improved.

Detailed_Crime_Map

OFNS_DESC ANTICIP... ARSON ASSAUL... BURGLA... BURGLA... CRIMIN... CRIMIN... DANGE... DANGE... DISORD... FELONY ... FORGERY FRAUDS FRAUD... GRAND ... GRAND ...



Select_Time_Range

1/1/2010 12/31/2023

People of NYC.

Residents can use the dashboard to stay informed about crime trends in their neighborhoods, helping them make safer daily decisions.

Individuals can use the map to choose safer routes for commuting, avoid high-crime areas during certain times, and take preventive measures for personal and property security.

Informed citizens can advocate for changes and improvements in their communities, participate in local governance, and support initiatives aimed at reducing crime.

Insights

Crime Trends Over Time:

- There is a noticeable decline in the number of crimes from 2010 to 2023.
- The year **2020** shows a significant drop in crimes, likely due to the COVID-19 pandemic, which affected all aspects of daily life and possibly led to reduced crime rates due to lockdowns and restricted movement.

Offense Types:

- **Dangerous Drugs** offenses are the most common, accounting for **22.83%** of all offenses with **692,576** reports.
- **Assault 3 & Related Offenses** are also significant, with **463,511** reports making up **15.28%**.
- **Petit Larceny** and **Criminal Trespass** are also prevalent, with **246,645** and **115,785** offenses respectively.

Crime Distribution by Borough:

- **Brooklyn** has the highest number of offenses with **830,968** reported crimes, followed by **Manhattan** (**799,654**) and **Bronx** (**736,901**).
- **Staten Island** has the least number of offenses with **110,391** reported crimes.

Crime Classification:

- **Misdemeanors** are the most common type of crime, accounting for **2,030,090** offenses, making up about **66.91%** of all crimes.
- **Felonies** are the second most common, with **985,584** offenses, making up about **32.45%**.
- **Violations** are the least common with only **18,281** offenses.

Perpetrator Demographics:

- The majority of crimes are committed by **Males**, accounting for **2,462,902** offenses, which is **81%** of the total.
- **Females** are responsible for **568,976** offenses, making up about **18.75%**.

Jurisdiction Code:

- Most offenses fall under the **Patrol** jurisdiction, with **2,624,320** offenses, accounting for **66.19%**.
- **Transit** and **Housing** jurisdictions account for **24.49%** and **8.36%** respectively.

Non-NYPD jurisdictions have the least, with **0.96%**.

Data Source

https://data.cityofnewyork.us/Public-Safety/NYPD-Arrests-Data-Historic-/8h9b-rp9u/about_data

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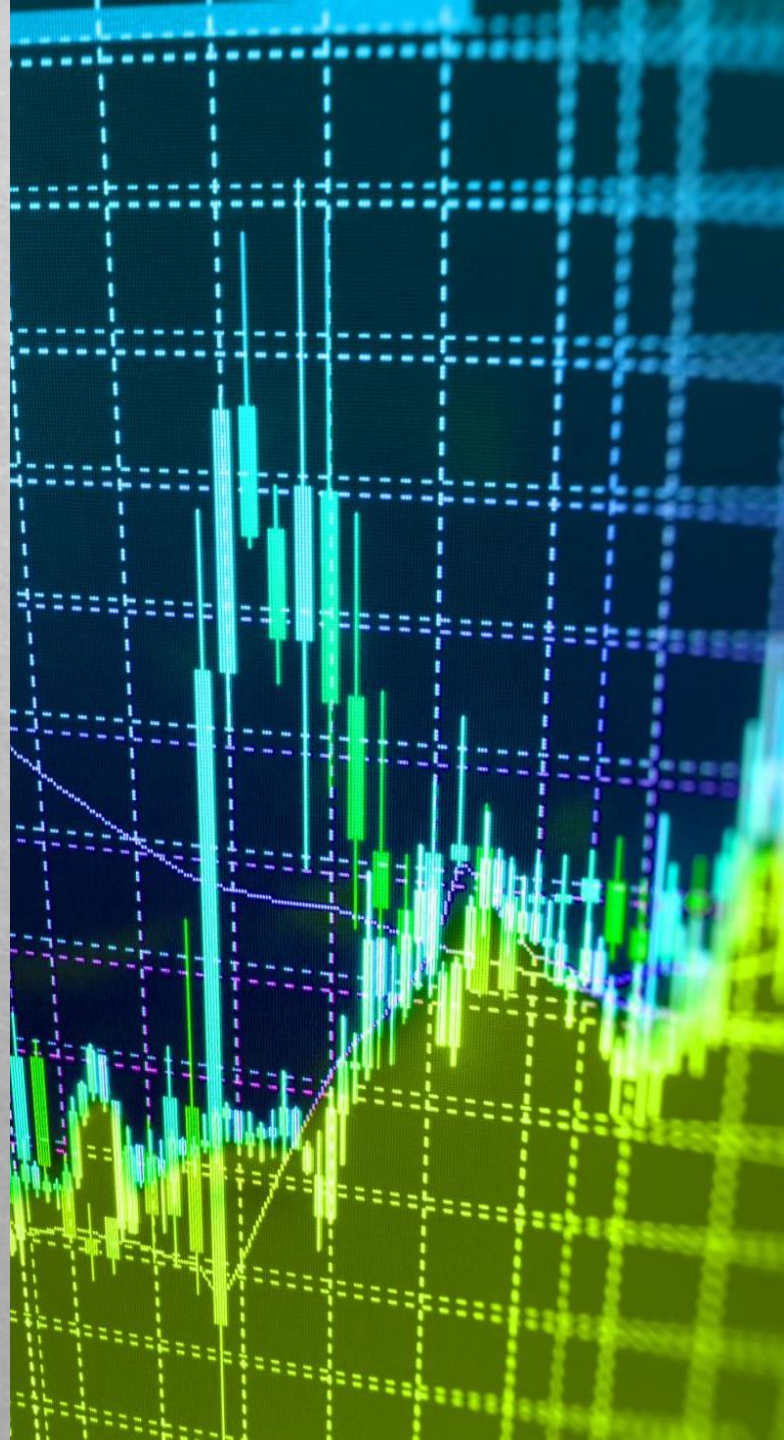
Project Overview

Each election cycle in NYC, we encounter politicians who promise to reduce crime and accuse previous authorities of increasing crime levels. But is this true? What are the actual trends in crime? Has it been increasing or decreasing over the past few years? Additionally, what are the most common felonies and misdemeanors in the city? Where are the most dangerous places in NYC? How can residents easily check if their neighborhood is safe or find out what crimes have recently been committed there?

This project provides a comprehensive analysis of crime trends in New York City (NYC) from 2010 to 2023. Utilizing data sourced from NYC's official crime records, the analysis offers insights into the distribution and patterns of crime across the city.

The findings are presented through a Power BI dashboard, facilitating data-driven decision-making for businesses, city authorities, and NYC residents.

The dashboard and detailed map include a robust filtering system that allows users to make specific requests for more detailed information. This feature makes it easy for anyone to explore crime data relevant to their needs, enhancing the utility of the analysis for various stakeholders.



Tools

PostgreSQL for data querying, aggregation and data manipulation

Power BI for dynamic and illustrative data visualizations

Techniques

Data Cleaning. The collected data was cleaned to remove any inconsistencies, duplicates, incomplete, or missing values to ensure accuracy and reliability.

Data Summarization. The dashboard includes summaries of the number of offenses by borough, offense description, jurisdiction code, perpetrator sex, law category, and over time.

Filtering and Drill-Down Analysis. The dashboard was equipped with filters to allow users to drill down into specific aspects of the data, such as crime types, locations, time periods, and demographic groups.

Comparative Analysis. Comparisons were made between different boroughs, demographic groups, and time periods to identify significant differences and trends.

Data Visualization.

- **Pie Charts and Donut Charts.** These charts are used to show the proportion of different categories (e.g., offenses by borough, offense description, law category), making it easier to compare the relative sizes of these categories.
- **Line Charts.** Used for displaying trends over time, providing a clear view of how crime rates have changed.
- **Heat Map and Detailed Crime Map.** Provide a visual representation of crime density, showing areas with higher concentrations of crime. Detailed crime map with dots representing different types of crimes helps in identifying geographic patterns and hotspots of criminal activity

Personal Reflection

This project provides valuable information and a helpful tool for anyone looking to delve deeply into the topic of crime in NYC. However, there is room for further development. For example, it is possible to:

- 🗺️ **Expand the Data Scope.** Add data from cities in New Jersey, such as Jersey City, Hoboken, Union City, etc., to provide a clearer picture of crime in the broader region.
- 🏙️ **Create a Safety Index.** Develop a safety index for neighborhoods based on crime data, offering a quick reference for residents and authorities.

- 🗓️ **Update Current Year Data.** Incorporate data from the current year, 2024, to ensure the analysis remains up-to-date.
- 🔄 **Automate Updates.** Implement automatic updates for the dashboard to maintain its relevance and accuracy over time.
- 📈 **Forecast Crime Trends.** Use the data to forecast crime levels for the next few years, either generally or for specific locations, age groups, genders, etc.

These enhancements would significantly improve the utility and comprehensiveness of the project, providing deeper insights and more actionable information for various stakeholders.

THANK YOU!

Raman K.