
Case Study: An Examination of NYPD Arrests in 2021



By Kenny Jeong

Objective

- Analyze the NYPD 2021 arrest data by visualizing patterns
- Contextualize findings
- Recommended actions based on insights



Data Structure

154,012 Rows of Data

Relevant Columns:

ARREST_KEY

Unique key for each
arrest

ARREST_DATE

Date of arrest

OFNS_DESC

Type of crime

OFNS_LEVEL

Level of offense

BORO

Borough where arrest
occurred

PRECINCT

Precinct where
arrest occurred

AGE_GROUP

Perpetrator's age
within category

SEX

Perpetrator's
sex
description

RACE

Perpetrator's
race
description

Important to note: in the data, there is a white-hispanic label and black-hispanic label for race demographics. There is no hispanic demographic on its own.

Preparing the Data

(Dataset from NYC Open Data)

Data cleaned directly in Excel

- Removing unneeded columns
- Renaming certain columns for clarity
- Removing null offense descriptions
- Renaming values across dataset for clarity
- Grouping/correcting values for offense descriptions
- Correcting precinct numbers to match corresponding borough



Once data cleansing is completed, imported to Tableau for further transformation & visualization

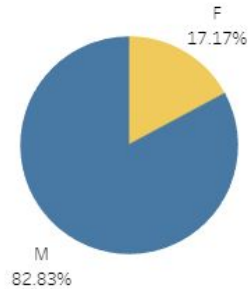
Key Insights

Tableau Dashboard:

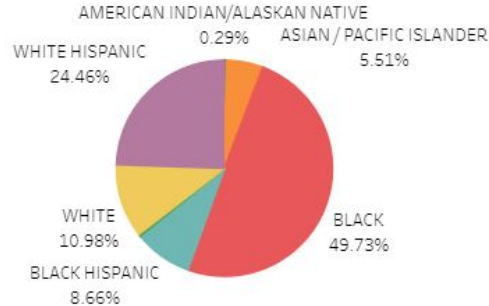
https://public.tableau.com/app/profile/kenny.jeong/viz/NYPD_Arrest_Dashboard/NYPDArrests2021Dashboard

Highest Arrest Demographics

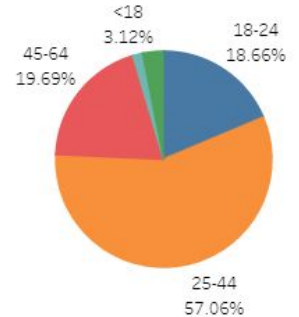
Arrests by Sex



Arrests by Race

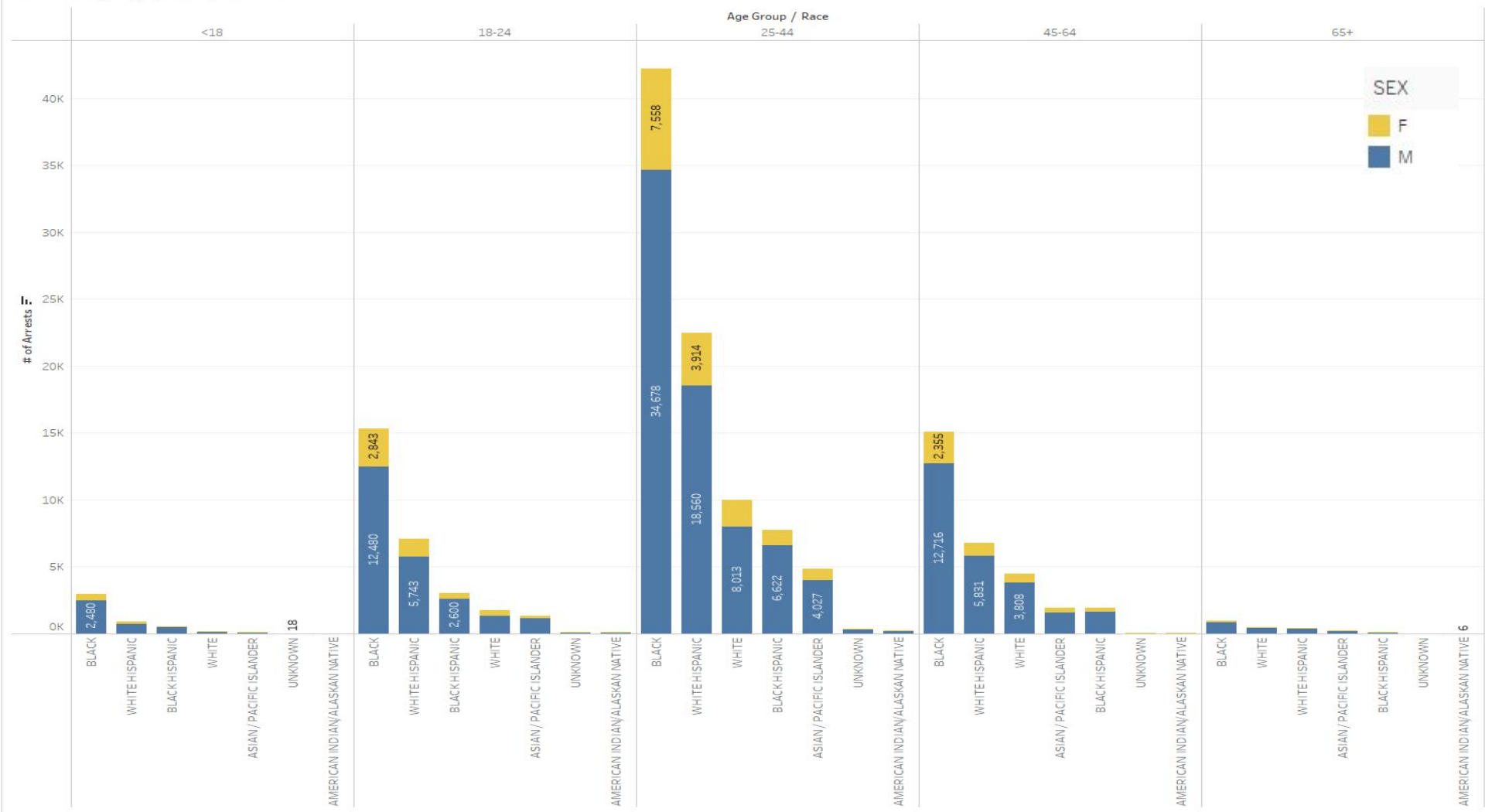


Arrests by Age Group



- Males make up 82% of arrests
- Blacks make up nearly 50% of arrests
- Even when combining White-Hispanics and Black-Hispanics, considering them both as Hispanic, they would account for ~33% of arrests
- Age range 25-44 make up 57% of arrests

Arrests by Age, Race, and Sex

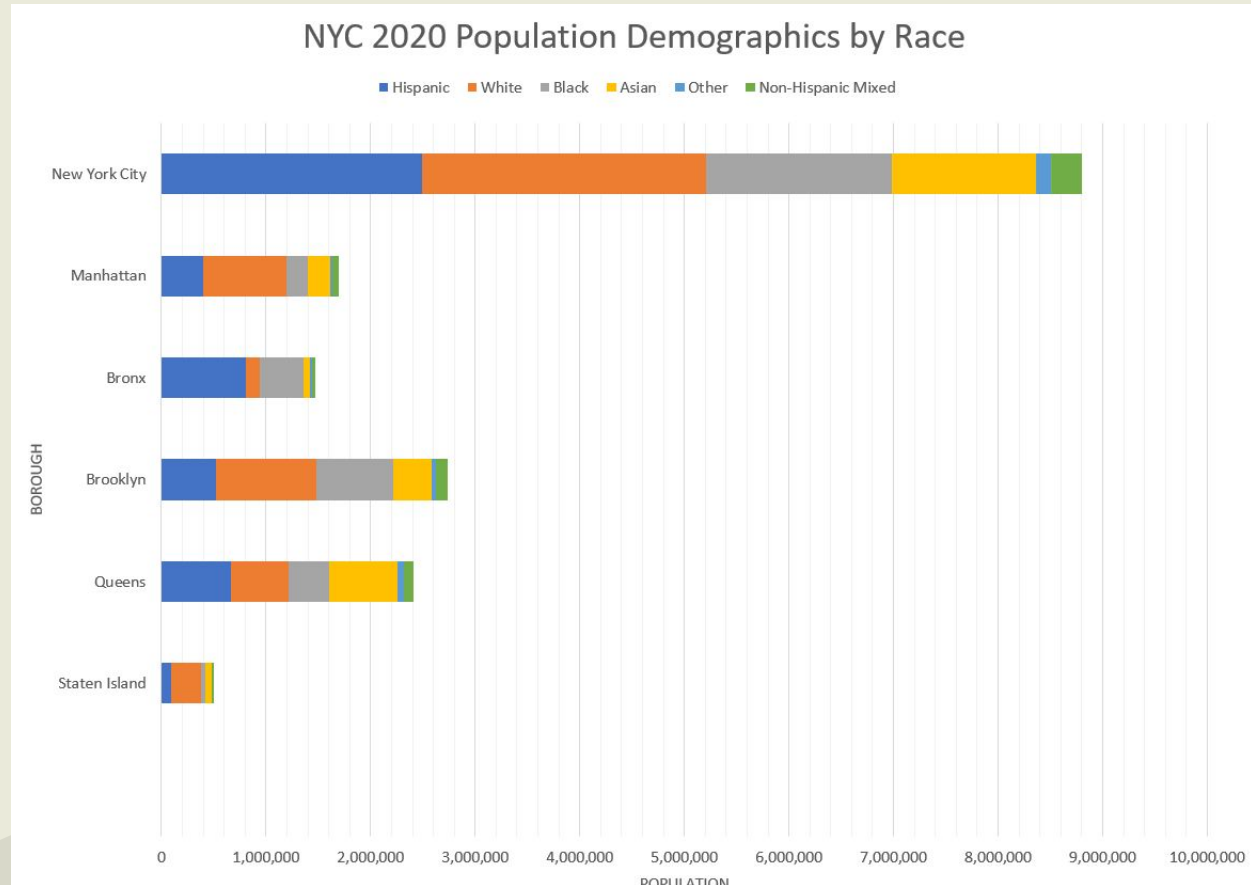


NYC 2020 Census

Highest population by race:

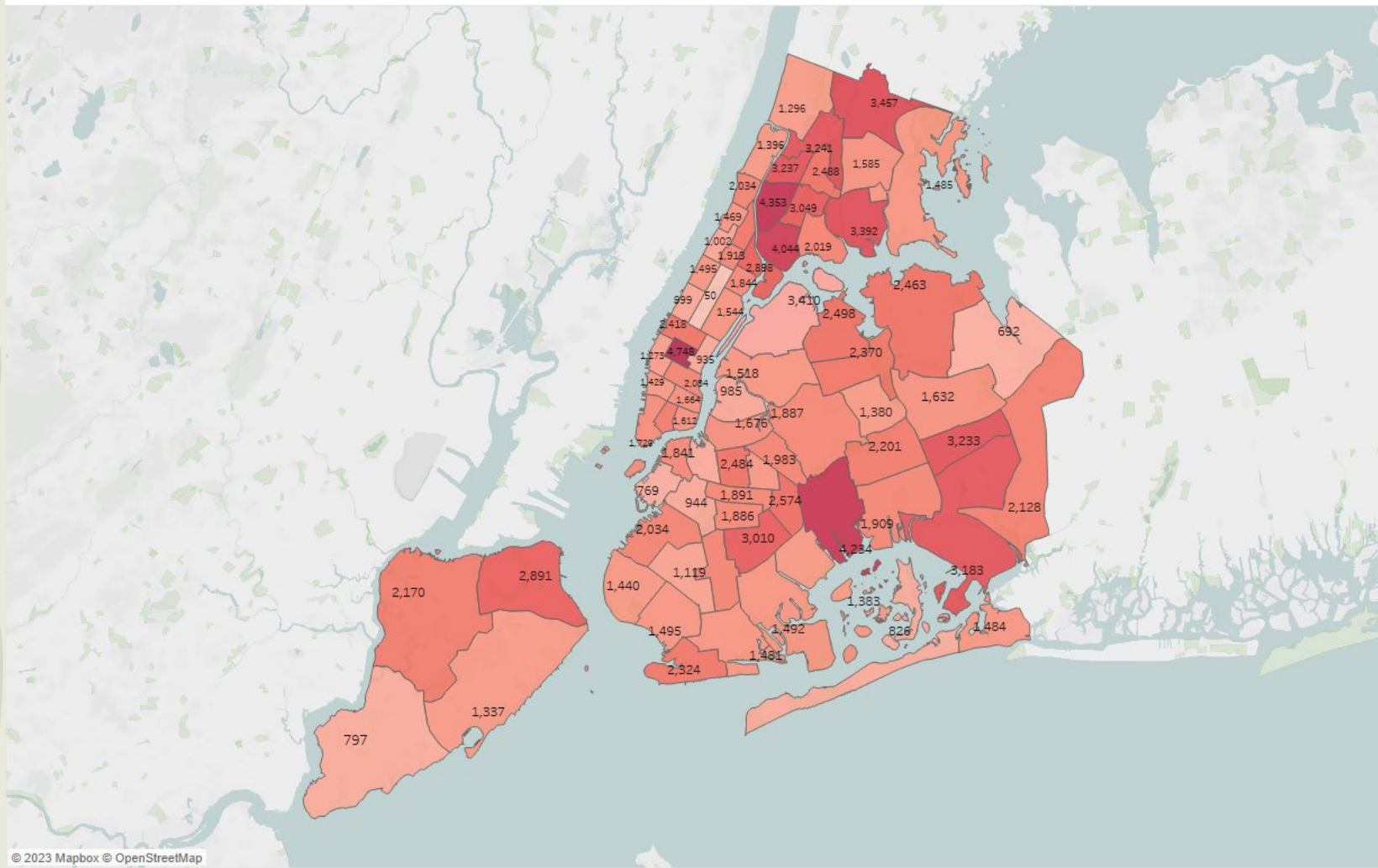
1. Hispanics
2. Whites
3. Blacks

Despite being the 3rd largest demographic in NYC, black people make up half of total arrests



Highest Arrest Locations

Arrests per NYC Precinct



Arrests per NYC Borough

Ordered by number of arrests:

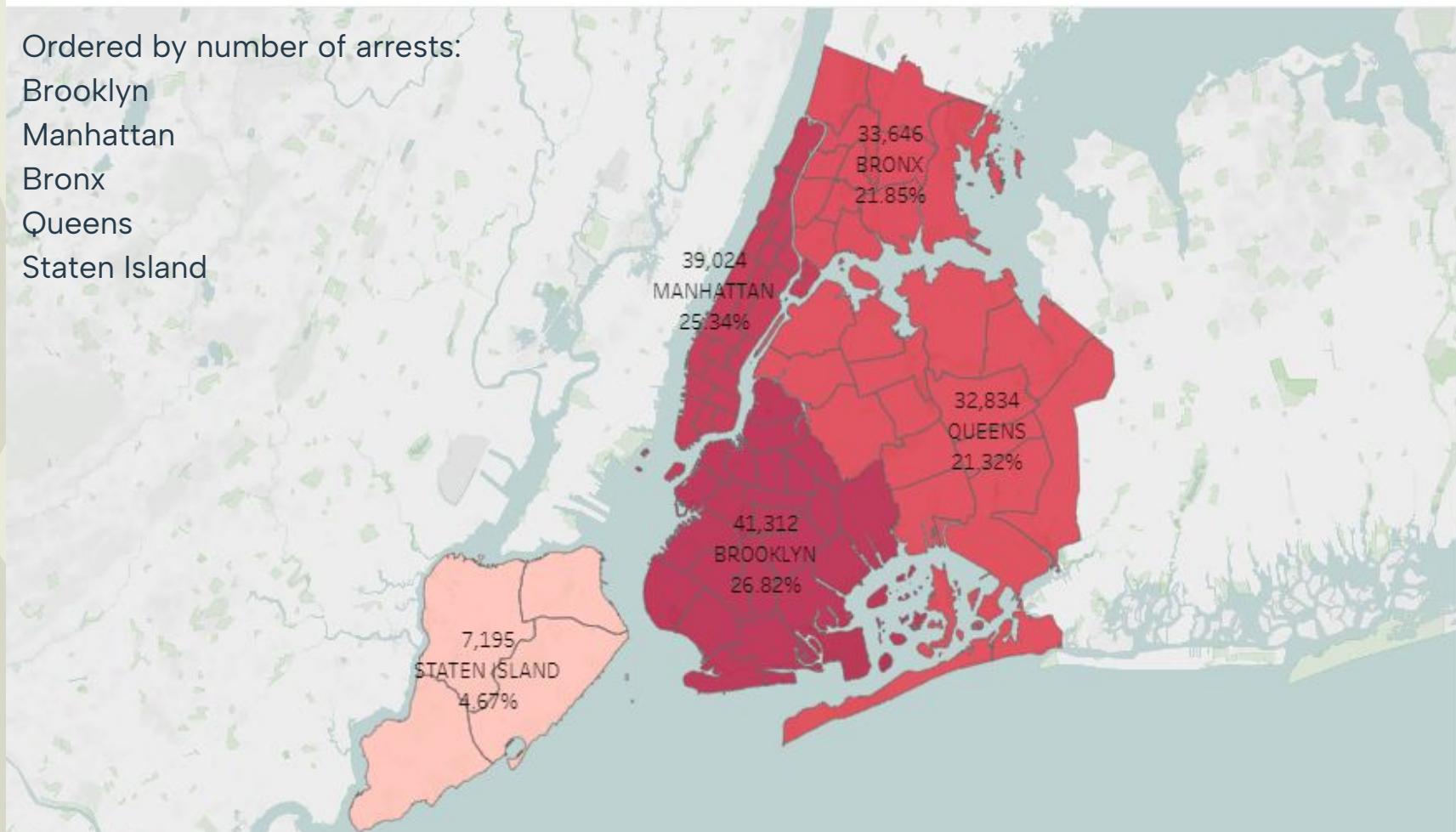
Brooklyn

Manhattan

Bronx

Queens

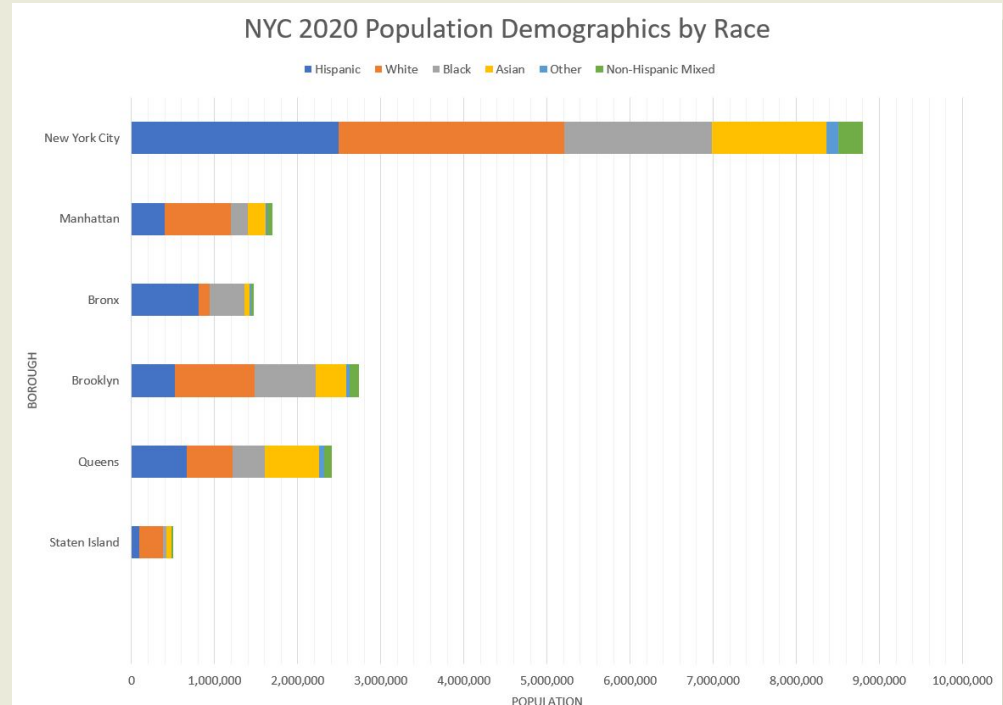
Staten Island



Looking back at the Census

Boroughs ordered by population size

- Brooklyn – White dominant, then black
- Queens – Hispanic dominant, then white
- Manhattan – White dominant, then hispanic
- Bronx – Hispanic dominant, then black
- Staten Island – lowest total population by far, mostly white



Differences in Boroughs

- Despite its reputation for high crime, The Bronx came in 3rd for number of arrests
- All boroughs had relatively similar arrest rates (30–40k) except Staten Island
- Staten Island has a significantly smaller population and number of arrests

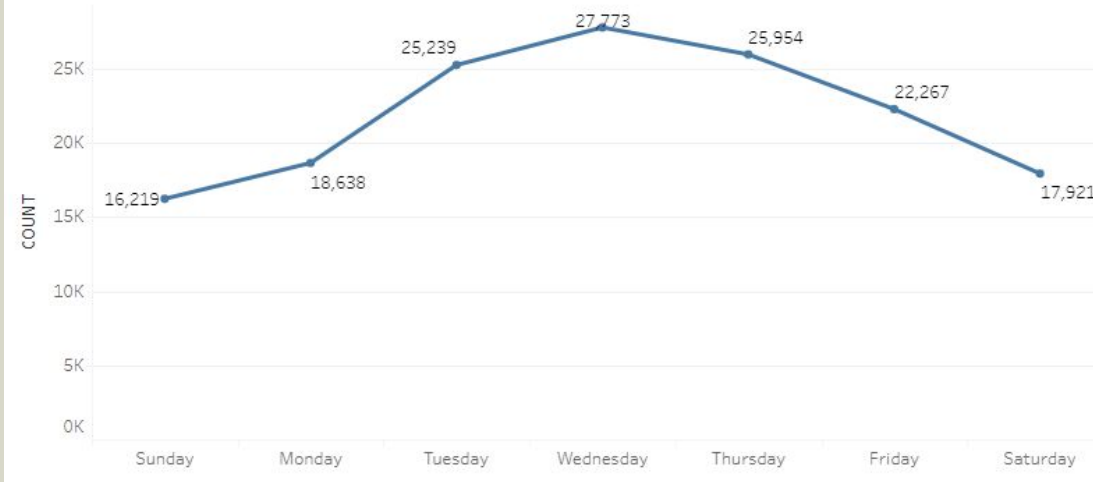


It would be wise to do further research into several economic factors in each borough:

- Income/Poverty
- Housing/Homelessness

Highest Arrest Days

Arrests by Day of the Week



Tues, Wed, Thurs

Interestingly, the weekends have the lowest arrest rates

Highest Arrest Months

March is a notable peak in an otherwise declining arrest rate for the first half of the year (winter and spring)

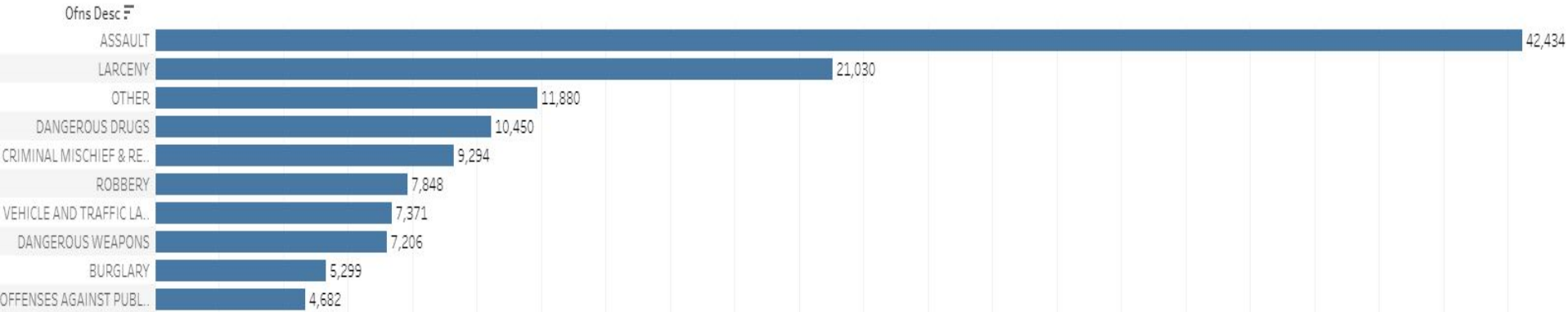
Gradually through the summer the rates rise toward the fall, peaking in October, then declining in winter again.

Arrests per Month



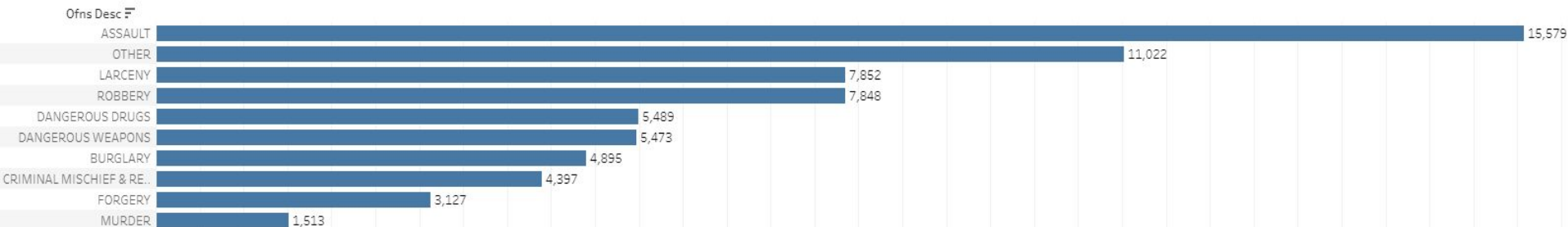
Top 10 Types of Crime

Types of Crimes Committed



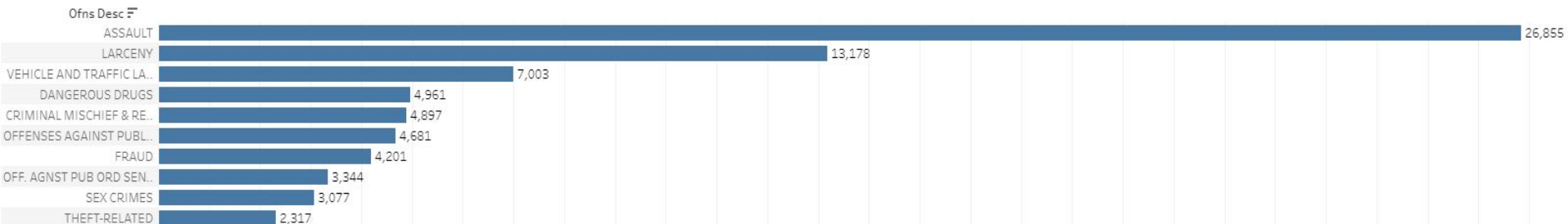
Felonies

Types of Crimes Committed



Misdemeanors

Types of Crimes Committed



Assault is by far the most common type of crime

Under New York penal law, the definition of assault is intentionally striking another person, and causing injury to that person.

In the state of New York, assault means that an individual hit, slapped, kicked, pushed or verbally threatened someone else.

Misdemeanor assault charges are the most common in NYC, this is also termed assault in the third degree.

The definition of assault casts a wide net that captures any event of physical harm or threat of physical harm.

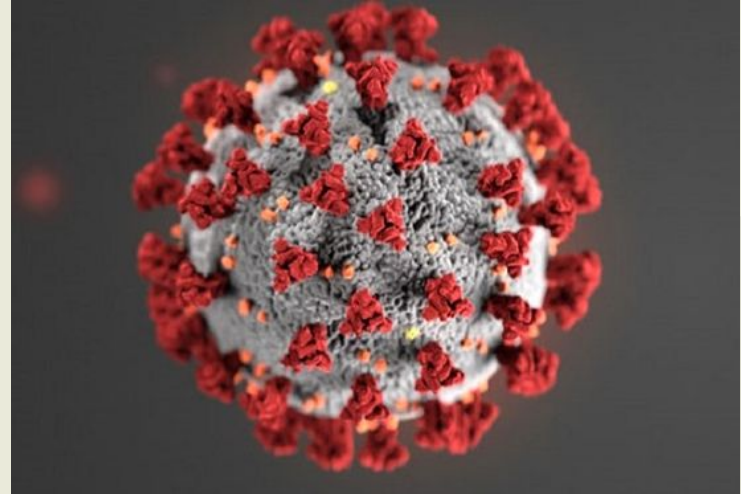
Perhaps this definition is stretched, allowing for more arrests to happen.

Preventative measures should be taken to deter violent crime. The best way to

A Post-Covid World

It's important to note that as this data is from 2021, the societal context of the COVID-19 pandemic may have been a factor in crime, particularly violent crime

The pandemic lockdowns also caused severe economic distress, which is an intersecting variable with crime



Recommendations

Racial Bias	The black demographic accounted for half of all arrests despite being 3rd in population size. Perhaps this is indicative of racial bias and should be investigated.
Locations	Police reinforcement is not as necessary in Staten Island. Despite The Bronx's reputation for high crime rates, it didn't have the highest arrest rates. Perhaps rather than police reinforcement, NYC should be focusing efforts in reducing poverty in these areas.
Economic Factors	More research should be done in income levels, poverty rates, housing, and homelessness.
Time	Criminal activity seems to rise during the middle of the week and during the summer season. Perhaps more police activity is required during these times.
Assault	Proactive Policing. Look into how to prevent violence, not prevent the arrests of crimes that have already occurred. More research into crime deterrents.
COVID-19	To understand the pandemic's effect on crime, arrest trends from the past several years, and future several years need to be monitored.

Thanks!

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