NYPD Shooting Incident Data (Historic)

Christopher Chery

2025-06-12

The data being used for this report is of a list of every shooting incident that occurred in New York City going back to 2006 through the end of the previous calendar year. This data is manually extracted every quarter and reviewed by a 3rd party before being posted on the NYPD website

Table of Contents

```
library(tidyverse)
library(lubridate)
```

1. Summary of Data

```
## Rows: 29744 Columns: 21
## -- Column specification ----------------------------------------------------
## Delimiter: ","
## chr  (12): OCCUR_DATE, BORO, LOC_OF_OCCUR_DESC, LOC_CLASSFCTN_DESC, LOCATION...
## dbl   (5): INCIDENT_KEY, PRECINCT, JURISDICTION_CODE, Latitude, Longitude
## num   (2): X_COORD_CD, Y_COORD_CD
## lgl   (1): STATISTICAL_MURDER_FLAG
## time  (1): OCCUR_TIME
##
## i Use `spec()` to retrieve the full column specification for this data.
## i Specify the column types or set `show_col_types = FALSE` to quiet this message.


## # A tibble: 6 x 21
##   INCIDENT_KEY OCCUR_DATE OCCUR_TIME BORO     LOC_OF_OCCUR_DESC PRECINCT
##          <dbl> <chr>      <time>     <chr>    <chr>                <dbl>
## 1    231974218 08/09/2021 01:06      BRONX    <NA>                    40
## 2    177934247 04/07/2018 19:48      BROOKLYN <NA>                    79
## 3    255028563 12/02/2022 22:57      BRONX    OUTSIDE                 47
## 4     25384540 11/19/2006 01:50      BROOKLYN <NA>                    66
## 5     72616285 05/09/2010 01:58      BRONX    <NA>                    46
## 6     85875439 07/22/2012 21:35      BRONX    <NA>                    42
## # i 15 more variables: JURISDICTION_CODE <dbl>, LOC_CLASSFCTN_DESC <chr>,
```

```
## #   LOCATION_DESC <chr>, STATISTICAL_MURDER_FLAG <lgl>, PERP_AGE_GROUP <chr>,
## #   PERP_SEX <chr>, PERP_RACE <chr>, VIC_AGE_GROUP <chr>, VIC_SEX <chr>,
## #   VIC_RACE <chr>, X_COORD_CD <dbl>, Y_COORD_CD <dbl>, Latitude <dbl>,
## #   Longitude <dbl>, Lon_Lat <chr>


##   INCIDENT_KEY        OCCUR_DATE          OCCUR_TIME           BORO
##  Min.   :  9953245  Length:29744       Length:29744       Length:29744
##  1st Qu.: 67321140  Class :character   Class1:hms         Class :character
##  Median :109291972  Mode  :character   Class2:difftime    Mode  :character
##  Mean   :133850951                     Mode  :numeric
##  3rd Qu.:214741917
##  Max.   :299462478
##
##  LOC_OF_OCCUR_DESC    PRECINCT      JURISDICTION_CODE LOC_CLASSFCTN_DESC
##  Length:29744       Min.   :  1.00   Min.   :0.0000    Length:29744
##  Class :character   1st Qu.: 44.00   1st Qu.:0.0000    Class :character
##  Mode  :character   Median : 67.00   Median :0.0000    Mode  :character
##                     Mean   : 65.23   Mean   :0.3181
##                     3rd Qu.: 81.00   3rd Qu.:0.0000
##                     Max.   :123.00   Max.   :2.0000
##                                      NA's   :2
##  LOCATION_DESC      STATISTICAL_MURDER_FLAG PERP_AGE_GROUP
##  Length:29744       Mode :logical           Length:29744
##  Class :character   FALSE:23979             Class :character
##  Mode  :character   TRUE :5765              Mode  :character
##
##
##
##
##    PERP_SEX           PERP_RACE          VIC_AGE_GROUP        VIC_SEX
##  Length:29744       Length:29744       Length:29744       Length:29744
##  Class :character   Class :character   Class :character   Class :character
##  Mode  :character   Mode  :character   Mode  :character   Mode  :character
##
##
##
##
##    VIC_RACE           X_COORD_CD        Y_COORD_CD         Latitude
##  Length:29744       Min.   : 914928   Min.   :125757    Min.   :40.51
##  Class :character   1st Qu.:1000094   1st Qu.:183042    1st Qu.:40.67
##  Mode  :character   Median :1007826   Median :195506    Median :40.70
##                     Mean   :1009442   Mean   :208722    Mean   :40.74
##                     3rd Qu.:1016739   3rd Qu.:239980    3rd Qu.:40.83
##                     Max.   :1066815   Max.   :271128    Max.   :40.91
##                                                         NA's   :97
##    Longitude         Lon_Lat
##  Min.   :-74.25    Length:29744
##  1st Qu.:-73.94    Class :character
##  Median :-73.91    Mode  :character
##  Mean   :-73.91
##  3rd Qu.:-73.88
##  Max.   :-73.70
##  NA's   :97
```

2. Tidy and Transform Data
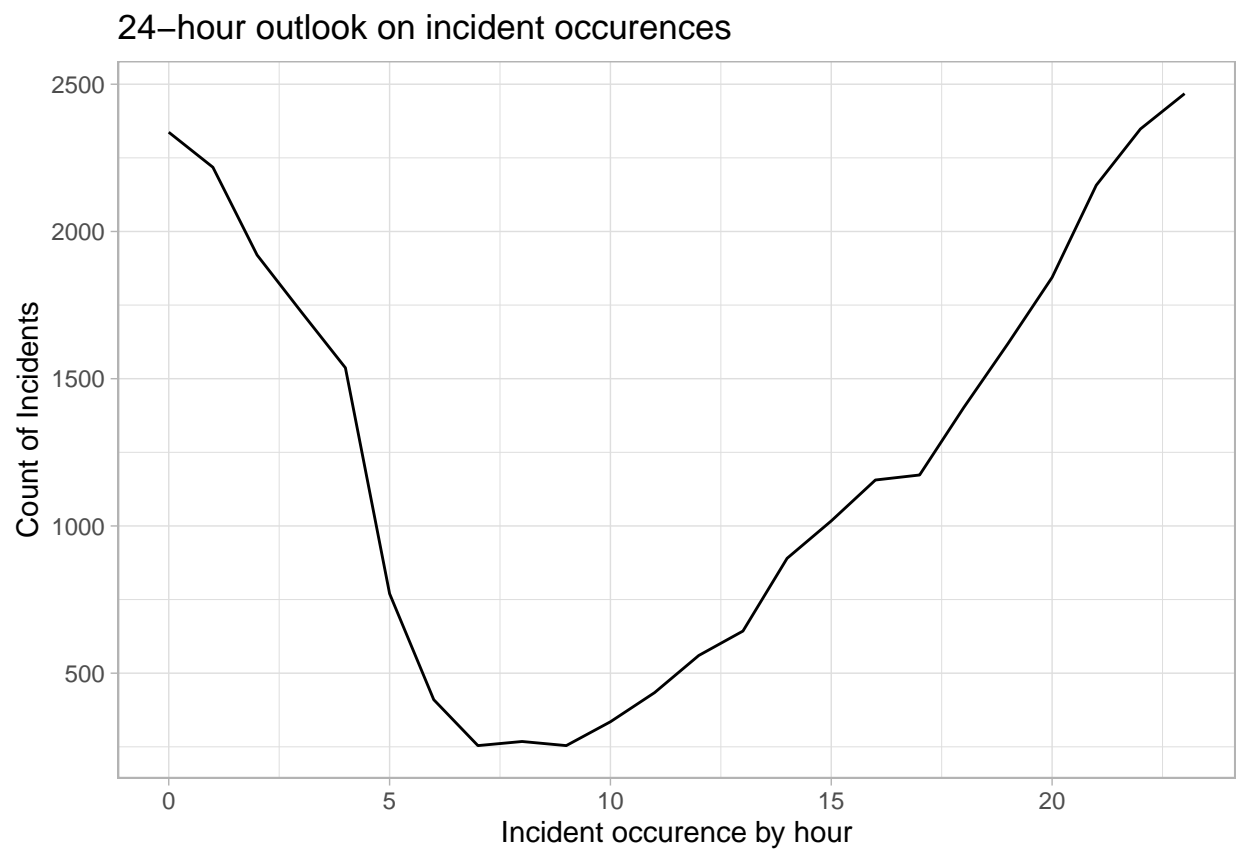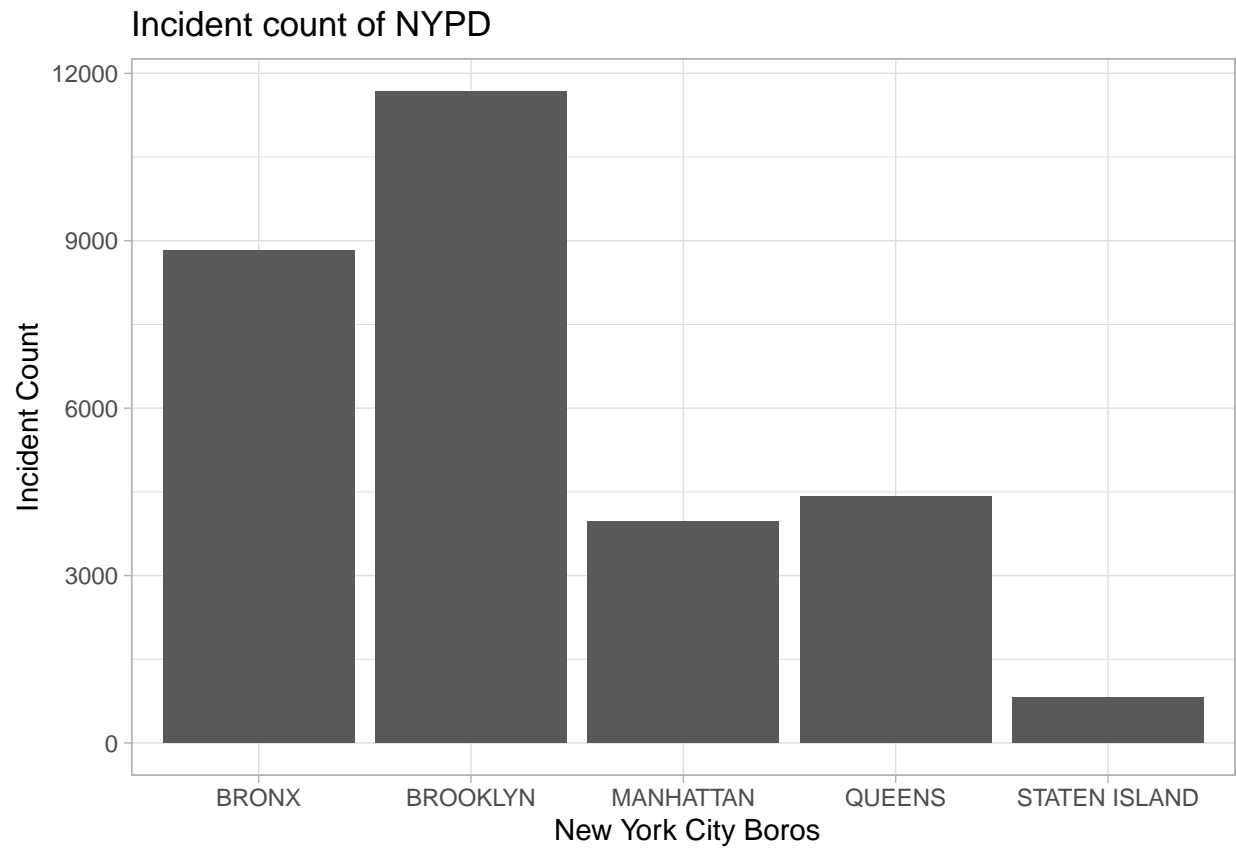
```
##    INCIDENT_KEY        OCCUR_DATE          OCCUR_TIME          BORO
##  Min.   :  9953245  Length:29744       Length:29744       Length:29744
##  1st Qu.: 67321140  Class :character   Class1:hms         Class :character
##  Median :109291972  Mode  :character   Class2:difftime    Mode  :character
##  Mean   :133850951                     Mode  :numeric
##  3rd Qu.:214741917
##  Max.   :299462478
##
##  LOC_OF_OCCUR_DESC     PRECINCT      JURISDICTION_CODE LOC_CLASSFCTN_DESC
##  Length:29744       Min.   :  1.00   Min.   :0.0000    Length:29744
##  Class :character   1st Qu.: 44.00   1st Qu.:0.0000    Class :character
##  Mode  :character   Median : 67.00   Median :0.0000    Mode  :character
##                     Mean   : 65.23   Mean   :0.3181
##                     3rd Qu.: 81.00   3rd Qu.:0.0000
##                     Max.   :123.00   Max.   :2.0000
##                                      NA's   :2
##  LOCATION_DESC      STATISTICAL_MURDER_FLAG PERP_AGE_GROUP
##  Length:29744       Mode :logical           Length:29744
##  Class :character   FALSE:23979             Class :character
##  Mode  :character   TRUE :5765              Mode  :character
##
##
##
##
##    PERP_SEX            PERP_RACE          VIC_AGE_GROUP        VIC_SEX
##  Length:29744       Length:29744       Length:29744       Length:29744
##  Class :character   Class :character   Class :character   Class :character
##  Mode  :character   Mode  :character   Mode  :character   Mode  :character
##
##
##
##
##    VIC_RACE           X_COORD_CD         Y_COORD_CD          Latitude
##  Length:29744       Min.   : 914928   Min.   :125757   Min.   :40.51
##  Class :character   1st Qu.:1000094   1st Qu.:183042   1st Qu.:40.67
##  Mode  :character   Median :1007826   Median :195506   Median :40.70
##                     Mean   :1009442   Mean   :208722   Mean   :40.74
##                     3rd Qu.:1016739   3rd Qu.:239980   3rd Qu.:40.83
##                     Max.   :1066815   Max.   :271128   Max.   :40.91
##                                                        NA's   :97
##    Longitude         Lon_Lat
##  Min.   :-74.25   Length:29744
##  1st Qu.:-73.94   Class :character
##  Median :-73.91   Mode  :character
##  Mean   :-73.91
##  3rd Qu.:-73.88
##  Max.   :-73.70
##  NA's   :97


##  INCIDENT_KEY         OCCUR_DATE          OCCUR_TIME                    BORO
##  Length:29741       Length:29741       Length:29741       BRONX     : 8832
##  Class :character   Class :character   Class1:hms         BROOKLYN  :11684
```

```
## Mode  :character  Mode  :character  Class2:difftime  MANHATTAN    : 3977
##                                      Mode  :numeric   QUEENS       : 4426
##                                                       STATEN ISLAND: 822
##
##
## STATISTICAL_MURDER_FLAG PERP_AGE_GROUP      PERP_SEX              PERP_RACE
## Mode :logical           Unknown:12492  (null) : 1628   BLACK          :12322
## FALSE:23976             18-24  : 6630  F      :  461   Unknown        :11148
## TRUE :5765              25-44  : 6342  M      :16842   WHITE HISPANIC: 2665
##                         <18    : 1805  Unknown:10810   (null)         : 1628
##                         (null) : 1628                  BLACK HISPANIC: 1487
##                         45-64  :  775                  WHITE         :  305
##                         (Other):   69                  (Other)       :  186
## VIC_AGE_GROUP     VIC_SEX                            VIC_RACE
## <18    : 3081   F      : 2891   AMERICAN INDIAN/ALASKAN NATIVE:    13
## 1022   :    1   M      :26838   ASIAN / PACIFIC ISLANDER      :   478
## 18-24  :10676   Unknown:   12   BLACK                         :20998
## 25-44  :13561                   BLACK HISPANIC                : 2930
## 45-64  : 2118                   Unknown                       :   72
## 65+    :  236                   WHITE                         :  741
## UNKNOWN:   68                   WHITE HISPANIC                : 4509
##    Latitude        Longitude
## Min.   :40.51   Min.   :-74.25
## 1st Qu.:40.67   1st Qu.:-73.94
## Median :40.70   Median :-73.91
## Mean   :40.74   Mean   :-73.91
## 3rd Qu.:40.83   3rd Qu.:-73.88
## Max.   :40.91   Max.   :-73.70
## NA's   :97      NA's   :97
```

Incident count of NYPD

24–hour outlook on incident occurences

4. Bias Identification & Data Analysis

With this data report on NYPD shootings, there can be a bias towards a certain age and race group when it comes to the incident count and where the incident took place. Being a young black man myself and seeing the news coverage across the US over the last decade of other young black men being mistreated by law enforcement can put the bias in me that the "protect and serve" only applies to people of certian race or socioeconomical backgrounds. In my case to mitigate this bias I need create a hypohthesis and must stricly adhere to the data and scientific process that I have been provided to draw any conclusions from. With this report, I have been able to draw a few conclusions free of bias: Staten Island is the safest of all boros, the boro with most incident count on record is Brooklyn, most crimes are committed by males and the victims of these crimes tends to be females, most incidents take place during the late night hours of 8pm - 4am.

5. Session Info

```
## R version 4.3.3 (2024-02-29)
## Platform: aarch64-apple-darwin20 (64-bit)
## Running under: macOS 15.5
##
## Matrix products: default
## BLAS:   /Library/Frameworks/R.framework/Versions/4.3-arm64/Resources/lib/libRblas.0.dylib
## LAPACK: /Library/Frameworks/R.framework/Versions/4.3-arm64/Resources/lib/libRlapack.dylib;  LAPACK v
##
## locale:
## [1] en_US.UTF-8/en_US.UTF-8/en_US.UTF-8/C/en_US.UTF-8/en_US.UTF-8
##
## time zone: America/New_York
## tzcode source: internal
##
## attached base packages:
## [1] stats     graphics  grDevices utils     datasets  methods   base
##
## other attached packages:
##  [1] lubridate_1.9.4 forcats_1.0.0   stringr_1.5.1   dplyr_1.1.4
##  [5] purrr_1.0.2     readr_2.1.5     tidyr_1.3.1     tibble_3.2.1
##  [9] ggplot2_3.5.1   tidyverse_2.0.0
##
## loaded via a namespace (and not attached):
##  [1] bit_4.6.0        gtable_0.3.5     highr_0.10       crayon_1.5.2
##  [5] compiler_4.3.3   tidyselect_1.2.1 parallel_4.3.3   scales_1.3.0
##  [9] yaml_2.3.8       fastmap_1.2.0    R6_2.5.1         labeling_0.4.3
## [13] generics_0.1.4   curl_6.3.0       knitr_1.45       munsell_0.5.1
## [17] pillar_1.9.0     tzdb_0.5.0       rlang_1.1.3      utf8_1.2.4
## [21] stringi_1.8.3    xfun_0.52        bit64_4.6.0-1    timechange_0.3.0
## [25] cli_3.6.2        withr_3.0.0      magrittr_2.0.3   digest_0.6.35
## [29] grid_4.3.3       vroom_1.6.5      rstudioapi_0.16.0 hms_1.1.3
## [33] lifecycle_1.0.4  vctrs_0.6.5      evaluate_0.23    glue_1.7.0
## [37] farver_2.1.1     fansi_1.0.6      colorspace_2.1-0 rmarkdown_2.29
## [41] tools_4.3.3      pkgconfig_2.0.3  htmltools_0.5.8.1
```