Data 607 - Week 1 Assignment

Shri Tripathi

09/08/2024

Introduction

The dataset I chose originates from the article titled Trump's Endorsements: A Deeper Dive, which examines the influence of Trump's endorsements during the 2022 election cycle. While Trump frequently claims that his endorsements virtually guarantee victory, this analysis demonstrates that several factors, such as unopposed candidates and incumbents, artificially boost his endorsement success rate. The dataset shows that 32% of Trump-endorsed candidates ran unopposed and 44% were incumbents, inflating the reported success rate to 95%. A more realistic measure, accounting for these factors, lowers his success rate to 82%. In this analysis, I will focus specifically on Republican candidates in New York State during the 2022 election and explore the outcome of Trump's endorsements in that region.

Data Loading and Preparation

To begin, the dataset was imported from a publicly available GitHub repository.

```
# Import necessary libraries
library(readr)

# Load the dataset directly from GitHub
rep_candidates <- read.csv(url("https://raw.githubusercontent.com/fivethirtyeight/data/master/primary-p

# Display the first few rows to inspect the data
head(rep_candidates)
```

```
##              Candidate Gender         Race.1 Race.2 Race.3 Incumbent
## 1 Aditya "A.D." Atholi   Male Asian (Indian)                      No
## 2         Joe McDaniel   Male          White                      No
## 3      Nathaniel Moran   Male          White                      No
## 4           John Porro   Male          White                      No
## 5         Dan Crenshaw   Male          White                     Yes
## 6        Jameson Ellis   Male          White                      No
##   Incumbent.Challenger State Primary.Date         Office District Primary.Votes
## 1                   No Texas       3/1/22 Representative        1         6,186
## 2                   No Texas       3/1/22 Representative        1        19,708
## 3                   No Texas       3/1/22 Representative        1        51,312
## 4                   No Texas       3/1/22 Representative        1         4,238
## 5                   No Texas       3/1/22 Representative        2        45,863
## 6                  Yes Texas       3/1/22 Representative        2        10,195
##   Primary.. Primary.Outcome Runoff.Votes Runoff.. Runoff.Outcome
```

```
## 1        8%            Lost          N/A      N/A            N/A
## 2       24%            Lost          N/A      N/A            N/A
## 3       63%             Won          N/A      N/A            N/A
## 4        5%            Lost          N/A      N/A            N/A
## 5       74%             Won          N/A      N/A            N/A
## 6       17%            Lost          N/A      N/A            N/A
##        X2020.Election.Stance Trump Trump.Date Club.for.Growth Party.Committee
## 1                No comment   N/A        N/A             N/A             N/A
## 2           Raised questions   N/A        N/A             N/A             N/A
## 3           Raised questions   N/A        N/A             N/A             N/A
## 4                No comment   N/A        N/A             N/A             N/A
## 5 Accepted with reservations   N/A        N/A             N/A             N/A
## 6               Fully denied   N/A        N/A             N/A             N/A
##   Renew.America E.PAC VIEW.PAC Maggie.s.List Winning.for.Women
## 1           N/A   N/A      N/A           N/A               N/A
## 2           N/A   N/A      N/A           N/A               N/A
## 3           N/A   N/A      N/A           N/A               N/A
## 4           N/A   N/A      N/A           N/A               N/A
## 5           N/A   N/A      N/A           N/A               N/A
## 6           N/A   N/A      N/A           N/A               N/A
```

```
# Check the dimensions of the dataset
dim(rep_candidates)
```

```
## [1] 1599   27
```

```
#rep_candidates is a 1599 x 27 dataframe
```

The dataset consists of 1599 rows and 27 columns. Since I am primarily interested in candidates from New York, I will filter the data to include only rows where the state is New York.

```
# Load necessary library for data manipulation
# Filter the dataset to include only Republican candidates from New York

library(dplyr)
```

```
##
## Attaching package: 'dplyr'

## The following objects are masked from 'package:stats':
##
##     filter, lag

## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```
ny_rep_candidates = rep_candidates %>% filter(State == 'New York')
dim(ny_rep_candidates)
```

```
## [1] 43 27
```

Now, our updated data frame `ny_rep_candidates` contains 43 rows and 27 columns, representing the 43 Republican candidates who ran in New York in 2020. Since not all of the columns are relevant to our analysis, I will now remove the unnecessary ones to focus on the key variables.

```
#There are 43 Republican Candidates running in new york
#Getting rid of columns that we dont need

ny_rep_candidates$Race.2=NULL
ny_rep_candidates$Race.3=NULL
ny_rep_candidates$Primary.Date=NULL
ny_rep_candidates$Club.for.Growth=NULL
ny_rep_candidates$Party.Committee=NULL
ny_rep_candidates$Renew.America=NULL
ny_rep_candidates$VIEW.PAC=NULL
ny_rep_candidates$Maggie.s.List=NULL
ny_rep_candidates$Winning.for.Women=NULL
ny_rep_candidates$E.PAC=NULL
ny_rep_candidates$Candidate=NULL
ny_rep_candidates$Trump.Date=NULL
ny_rep_candidates
```

```
##    Gender                    Race.1 Incumbent Incumbent.Challenger    State
## 1    Male                     Black        No                   No New York
## 2    Male                     White        No                   No New York
## 3    Male                     White        No                   No New York
## 4    Male                     White        No                   No New York
## 5    Male                     White        No                   No New York
## 6    Male                     White        No                   No New York
## 7    Male                     White        No                   No New York
## 8  Female                     White        No                   No New York
## 9    Male                     White       Yes                   No New York
## 10   Male                     White        No                  Yes New York
## 11   Male                     White        No                  Yes New York
## 12   Male                     White        No                   No New York
## 13   Male                     White        No                   No New York
## 14   Male                     White        No                   No New York
## 15   Male                     White        No                   No New York
## 16   Male                    Latino        No                   No New York
## 17   Male                     White        No                   No New York
## 18 Female Middle Eastern (Lebanese)        No                   No New York
## 19 Female                     White       Yes                   No New York
## 20   Male                     White        No                  Yes New York
## 21   Male                     White        No                   No New York
## 22 Female                     White        No                   No New York
## 23   Male            Latino (Cuban)        No                   No New York
## 24   Male                     White        No                   No New York
## 25 Female                     White        No                   No New York
## 26   Male                     White        No                   No New York
## 27   Male                     White        No                   No New York
## 28   Male                     White        No                   No New York
## 29 Female                   Unknown        No                   No New York
## 30   Male                     White        No                   No New York
## 31   Male                     White        No                   No New York
## 32   Male                     White        No                   No New York
```

```
## 33 Female                    White        No                   No New York
## 34 Female                    White       Yes                   No New York
## 35   Male                    White        No                   No New York
## 36   Male                    White        No                   No New York
## 37   Male                    White        No                   No New York
## 38   Male                    White        No                   No New York
## 39 Female                    White       Yes                   No New York
## 40   Male                    White        No                  Yes New York
## 41   Male                    White        No                  Yes New York
## 42   Male                    Black        No                   No New York
## 43   Male                    White        No                   No New York
##            Office District Primary.Votes Primary.. Primary.Outcome Runoff.Votes
## 1         Senator      N/A             1      100%             Won          N/A
## 2        Governor      N/A       103,267       23%            Lost          N/A
## 3        Governor      N/A        66,736       15%            Lost          N/A
## 4        Governor      N/A        84,464       19%            Lost          N/A
## 5        Governor      N/A       196,874       43%             Won          N/A
## 6  Representative        1         6,391       25%            Lost          N/A
## 7  Representative        1        12,015       47%             Won          N/A
## 8  Representative        1         7,015       28%            Lost          N/A
## 9  Representative        2         9,902       53%             Won          N/A
## 10 Representative        2         7,250       38%            Lost          N/A
## 11 Representative        2         1,622        9%            Lost          N/A
## 12 Representative        3             1      100%             Won          N/A
## 13 Representative        4             1      100%             Won          N/A
## 14 Representative        5             1      100%             Won          N/A
## 15 Representative        6             1      100%             Won          N/A
## 16 Representative        7             1      100%             Won          N/A
## 17 Representative        8             1      100%             Won          N/A
## 18 Representative       10             1      100%             Won          N/A
## 19 Representative       11        12,431       78%             Won          N/A
## 20 Representative       11         3,407       21%            Lost          N/A
## 21 Representative       12             1      100%             Won          N/A
## 22 Representative       14         1,608       67%             Won          N/A
## 23 Representative       14           761       32%            Lost          N/A
## 24 Representative       15             1      100%             Won          N/A
## 25 Representative       16             1      100%             Won          N/A
## 26 Representative       17         1,392        8%            Lost          N/A
## 27 Representative       17        12,317       75%             Won          N/A
## 28 Representative       17           188        1%            Lost          N/A
## 29 Representative       17           491        3%            Lost          N/A
## 30 Representative       17         1,958       12%            Lost          N/A
## 31 Representative       18             1      100%             Won          N/A
## 32 Representative       19             1      100%             Won          N/A
## 33 Representative       20             1      100%             Won          N/A
## 34 Representative       21             1      100%             Won          N/A
## 35 Representative       22        14,351       57%             Won          N/A
## 36 Representative       22        10,501       42%            Lost          N/A
## 37 Representative       23        22,603       47%            Lost          N/A
## 38 Representative       23        24,450       51%             Won          N/A
## 39 Representative       24        17,630       54%             Won          N/A
## 40 Representative       24        13,150       40%            Lost          N/A
## 41 Representative       24         1,967        6%            Lost          N/A
## 42 Representative       25             1      100%             Won          N/A
```

```
## 43 Representative       26             1      100%             Won           N/A
##    Runoff.. Runoff.Outcome      X2020.Election.Stance Trump
## 1       N/A            N/A              Fully accepted   N/A
## 2       N/A            N/A                Fully denied   N/A
## 3       N/A            N/A              Fully accepted   N/A
## 4       N/A            N/A                  No comment   N/A
## 5       N/A            N/A Accepted with reservations   N/A
## 6       N/A            N/A              Fully accepted   N/A
## 7       N/A            N/A            Raised questions   N/A
## 8       N/A            N/A            Raised questions   N/A
## 9       N/A            N/A              Fully accepted   N/A
## 10      N/A            N/A                Fully denied   N/A
## 11      N/A            N/A                Fully denied   N/A
## 12      N/A            N/A                Fully denied   N/A
## 13      N/A            N/A              Fully accepted   N/A
## 14      N/A            N/A Accepted with reservations   N/A
## 15      N/A            N/A            Raised questions   N/A
## 16      N/A            N/A              Fully accepted   N/A
## 17      N/A            N/A                  No comment   N/A
## 18      N/A            N/A            Raised questions   N/A
## 19      N/A            N/A                Fully denied   Yes
## 20      N/A            N/A            Raised questions    No
## 21      N/A            N/A Accepted with reservations   N/A
## 22      N/A            N/A                Fully denied   N/A
## 23      N/A            N/A                  No comment   N/A
## 24      N/A            N/A                  No comment   N/A
## 25      N/A            N/A           Avoided answering   N/A
## 26      N/A            N/A                  No comment   N/A
## 27      N/A            N/A              Fully accepted   N/A
## 28      N/A            N/A                  No comment   N/A
## 29      N/A            N/A                  No comment   N/A
## 30      N/A            N/A                  No comment   N/A
## 31      N/A            N/A           Avoided answering   N/A
## 32      N/A            N/A                  No comment   N/A
## 33      N/A            N/A                Fully denied   N/A
## 34      N/A            N/A                Fully denied   Yes
## 35      N/A            N/A Accepted with reservations   N/A
## 36      N/A            N/A                  No comment   N/A
## 37      N/A            N/A                  No comment   N/A
## 38      N/A            N/A                  No comment   N/A
## 39      N/A            N/A            Raised questions   Yes
## 40      N/A            N/A                Fully denied    No
## 41      N/A            N/A                  No comment    No
## 42      N/A            N/A                  No comment   N/A
## 43      N/A            N/A                  No comment   N/A
```

```
dim(ny_rep_candidates)
```

```
## [1] 43 15
```

```
#Now we have 43 rows and 17 columns
```

Now, the data frame has been reduced to 17 columns. I will rename these columns to make them shorter and more intuitive for easier reference and analysis.

```r
#Now lets rename all of the column into more useful names
head(ny_rep_candidates)
```

```
##   Gender Race.1 Incumbent Incumbent.Challenger    State         Office District
## 1   Male  Black        No                   No New York        Senator      N/A
## 2   Male  White        No                   No New York       Governor      N/A
## 3   Male  White        No                   No New York       Governor      N/A
## 4   Male  White        No                   No New York       Governor      N/A
## 5   Male  White        No                   No New York       Governor      N/A
## 6   Male  White        No                   No New York Representative        1
##   Primary.Votes Primary.. Primary.Outcome Runoff.Votes Runoff.. Runoff.Outcome
## 1             1      100%             Won          N/A      N/A            N/A
## 2       103,267       23%            Lost          N/A      N/A            N/A
## 3        66,736       15%            Lost          N/A      N/A            N/A
## 4        84,464       19%            Lost          N/A      N/A            N/A
## 5       196,874       43%             Won          N/A      N/A            N/A
## 6         6,391       25%            Lost          N/A      N/A            N/A
##        X2020.Election.Stance Trump
## 1             Fully accepted   N/A
## 2               Fully denied   N/A
## 3             Fully accepted   N/A
## 4                 No comment   N/A
## 5 Accepted with reservations   N/A
## 6             Fully accepted   N/A
```

```r
colnames(ny_rep_candidates) <- c("gender", "race", "inc", "inc chal", "st", "pos","dist", "n_prim","rat_
                                 "n_run","rat_run","out_run","insurrectionist","trump_endorse")
head(ny_rep_candidates)
```

```
##   gender  race inc inc chal       st            pos dist  n_prim rat_prim
## 1   Male Black  No       No New York        Senator  N/A       1     100%
## 2   Male White  No       No New York       Governor  N/A 103,267      23%
## 3   Male White  No       No New York       Governor  N/A  66,736      15%
## 4   Male White  No       No New York       Governor  N/A  84,464      19%
## 5   Male White  No       No New York       Governor  N/A 196,874      43%
## 6   Male White  No       No New York Representative    1   6,391      25%
##   out_prim n_run rat_run out_run            insurrectionist trump_endorse
## 1      Won   N/A     N/A     N/A             Fully accepted           N/A
## 2     Lost   N/A     N/A     N/A               Fully denied           N/A
## 3     Lost   N/A     N/A     N/A             Fully accepted           N/A
## 4     Lost   N/A     N/A     N/A                 No comment           N/A
## 5      Won   N/A     N/A     N/A Accepted with reservations           N/A
## 6     Lost   N/A     N/A     N/A             Fully accepted           N/A
```

Now, I will modify the `insurrectionist` column to represent a Boolean value (True or False). If a candidate denied the results of the 2020 Presidential election, the value will be set to True. To achieve this, I first reviewed all the unique values in this column, and then used an `if` statement to replace each value accordingly.

```r
unique(ny_rep_candidates$insurrectionist)
```

```
## [1] "Fully accepted"             "Fully denied"
## [3] "No comment"                 "Accepted with reservations"
## [5] "Raised questions"           "Avoided answering"
```

```r
if (any(ny_rep_candidates$insurrectionist == "Fully accepted")) {
  ny_rep_candidates$insurrectionist=FALSE
} else {
  ny_rep_candidates$insurrectionist = TRUE
}

ny_rep_candidates
```

```
##    gender                     race inc inc chal       st            pos dist
## 1    Male                    Black  No       No New York        Senator  N/A
## 2    Male                    White  No       No New York       Governor  N/A
## 3    Male                    White  No       No New York       Governor  N/A
## 4    Male                    White  No       No New York       Governor  N/A
## 5    Male                    White  No       No New York       Governor  N/A
## 6    Male                    White  No       No New York Representative    1
## 7    Male                    White  No       No New York Representative    1
## 8  Female                    White  No       No New York Representative    1
## 9    Male                    White Yes       No New York Representative    2
## 10   Male                    White  No      Yes New York Representative    2
## 11   Male                    White  No      Yes New York Representative    2
## 12   Male                    White  No       No New York Representative    3
## 13   Male                    White  No       No New York Representative    4
## 14   Male                    White  No       No New York Representative    5
## 15   Male                    White  No       No New York Representative    6
## 16   Male                   Latino  No       No New York Representative    7
## 17   Male                    White  No       No New York Representative    8
## 18 Female Middle Eastern (Lebanese)  No       No New York Representative   10
## 19 Female                    White Yes       No New York Representative   11
## 20   Male                    White  No      Yes New York Representative   11
## 21   Male                    White  No       No New York Representative   12
## 22 Female                    White  No       No New York Representative   14
## 23   Male           Latino (Cuban)  No       No New York Representative   14
## 24   Male                    White  No       No New York Representative   15
## 25 Female                    White  No       No New York Representative   16
## 26   Male                    White  No       No New York Representative   17
## 27   Male                    White  No       No New York Representative   17
## 28   Male                    White  No       No New York Representative   17
## 29 Female                  Unknown  No       No New York Representative   17
## 30   Male                    White  No       No New York Representative   17
## 31   Male                    White  No       No New York Representative   18
## 32   Male                    White  No       No New York Representative   19
## 33 Female                    White  No       No New York Representative   20
## 34 Female                    White Yes       No New York Representative   21
## 35   Male                    White  No       No New York Representative   22
## 36   Male                    White  No       No New York Representative   22
## 37   Male                    White  No       No New York Representative   23
## 38   Male                    White  No       No New York Representative   23
## 39 Female                    White Yes       No New York Representative   24
## 40   Male                    White  No      Yes New York Representative   24
## 41   Male                    White  No      Yes New York Representative   24
## 42   Male                    Black  No       No New York Representative   25
## 43   Male                    White  No       No New York Representative   26
##     n_prim rat_prim out_prim n_run rat_run out_run insurrectionist
```

```
## 1        1      100%      Won   N/A     N/A     N/A           FALSE
## 2  103,267       23%     Lost   N/A     N/A     N/A           FALSE
## 3   66,736       15%     Lost   N/A     N/A     N/A           FALSE
## 4   84,464       19%     Lost   N/A     N/A     N/A           FALSE
## 5  196,874       43%      Won   N/A     N/A     N/A           FALSE
## 6    6,391       25%     Lost   N/A     N/A     N/A           FALSE
## 7   12,015       47%      Won   N/A     N/A     N/A           FALSE
## 8    7,015       28%     Lost   N/A     N/A     N/A           FALSE
## 9    9,902       53%      Won   N/A     N/A     N/A           FALSE
## 10   7,250       38%     Lost   N/A     N/A     N/A           FALSE
## 11   1,622        9%     Lost   N/A     N/A     N/A           FALSE
## 12       1      100%      Won   N/A     N/A     N/A           FALSE
## 13       1      100%      Won   N/A     N/A     N/A           FALSE
## 14       1      100%      Won   N/A     N/A     N/A           FALSE
## 15       1      100%      Won   N/A     N/A     N/A           FALSE
## 16       1      100%      Won   N/A     N/A     N/A           FALSE
## 17       1      100%      Won   N/A     N/A     N/A           FALSE
## 18       1      100%      Won   N/A     N/A     N/A           FALSE
## 19  12,431       78%      Won   N/A     N/A     N/A           FALSE
## 20   3,407       21%     Lost   N/A     N/A     N/A           FALSE
## 21       1      100%      Won   N/A     N/A     N/A           FALSE
## 22   1,608       67%      Won   N/A     N/A     N/A           FALSE
## 23     761       32%     Lost   N/A     N/A     N/A           FALSE
## 24       1      100%      Won   N/A     N/A     N/A           FALSE
## 25       1      100%      Won   N/A     N/A     N/A           FALSE
## 26   1,392        8%     Lost   N/A     N/A     N/A           FALSE
## 27  12,317       75%      Won   N/A     N/A     N/A           FALSE
## 28     188        1%     Lost   N/A     N/A     N/A           FALSE
## 29     491        3%     Lost   N/A     N/A     N/A           FALSE
## 30   1,958       12%     Lost   N/A     N/A     N/A           FALSE
## 31       1      100%      Won   N/A     N/A     N/A           FALSE
## 32       1      100%      Won   N/A     N/A     N/A           FALSE
## 33       1      100%      Won   N/A     N/A     N/A           FALSE
## 34       1      100%      Won   N/A     N/A     N/A           FALSE
## 35  14,351       57%      Won   N/A     N/A     N/A           FALSE
## 36  10,501       42%     Lost   N/A     N/A     N/A           FALSE
## 37  22,603       47%     Lost   N/A     N/A     N/A           FALSE
## 38  24,450       51%      Won   N/A     N/A     N/A           FALSE
## 39  17,630       54%      Won   N/A     N/A     N/A           FALSE
## 40  13,150       40%     Lost   N/A     N/A     N/A           FALSE
## 41   1,967        6%     Lost   N/A     N/A     N/A           FALSE
## 42       1      100%      Won   N/A     N/A     N/A           FALSE
## 43       1      100%      Won   N/A     N/A     N/A           FALSE
##    trump_endorse
## 1            N/A
## 2            N/A
## 3            N/A
## 4            N/A
## 5            N/A
## 6            N/A
## 7            N/A
## 8            N/A
## 9            N/A
## 10           N/A
```

```
## 11           N/A
## 12           N/A
## 13           N/A
## 14           N/A
## 15           N/A
## 16           N/A
## 17           N/A
## 18           N/A
## 19           Yes
## 20            No
## 21           N/A
## 22           N/A
## 23           N/A
## 24           N/A
## 25           N/A
## 26           N/A
## 27           N/A
## 28           N/A
## 29           N/A
## 30           N/A
## 31           N/A
## 32           N/A
## 33           N/A
## 34           Yes
## 35           N/A
## 36           N/A
## 37           N/A
## 38           N/A
## 39           Yes
## 40            No
## 41            No
## 42           N/A
## 43           N/A
```

Now, I will filter the data to include only candidates who won their races. Additionally, I will remove a few more columns that are no longer needed for our analysis to streamline the dataset.

```
#Filtering out only winners.

ny_rep_candidates = ny_rep_candidates %>% filter(out_prim == 'Won')

#removing other columns
ny_rep_candidates$st=NULL
ny_rep_candidates$out_prim=NULL
ny_rep_candidates$n_run=NULL
ny_rep_candidates$rat_run=NULL
ny_rep_candidates$out_run=NULL
ny_rep_candidates
```

```
##    gender                    race inc inc chal            pos dist  n_prim
## 1    Male                   Black  No       No        Senator  N/A       1
## 2    Male                   White  No       No       Governor  N/A 196,874
## 3    Male                   White  No       No Representative    1  12,015
```

```
## 4    Male                     White Yes       No Representative    2   9,902
## 5    Male                     White  No       No Representative    3       1
## 6    Male                     White  No       No Representative    4       1
## 7    Male                     White  No       No Representative    5       1
## 8    Male                     White  No       No Representative    6       1
## 9    Male                    Latino  No       No Representative    7       1
## 10   Male                     White  No       No Representative    8       1
## 11 Female Middle Eastern (Lebanese)  No       No Representative   10       1
## 12 Female                     White Yes       No Representative   11  12,431
## 13   Male                     White  No       No Representative   12       1
## 14 Female                     White  No       No Representative   14   1,608
## 15   Male                     White  No       No Representative   15       1
## 16 Female                     White  No       No Representative   16       1
## 17   Male                     White  No       No Representative   17  12,317
## 18   Male                     White  No       No Representative   18       1
## 19   Male                     White  No       No Representative   19       1
## 20 Female                     White  No       No Representative   20       1
## 21 Female                     White Yes       No Representative   21       1
## 22   Male                     White  No       No Representative   22  14,351
## 23   Male                     White  No       No Representative   23  24,450
## 24 Female                     White Yes       No Representative   24  17,630
## 25   Male                     Black  No       No Representative   25       1
## 26   Male                     White  No       No Representative   26       1
##    rat_prim insurrectionist trump_endorse
## 1      100%           FALSE           N/A
## 2       43%           FALSE           N/A
## 3       47%           FALSE           N/A
## 4       53%           FALSE           N/A
## 5      100%           FALSE           N/A
## 6      100%           FALSE           N/A
## 7      100%           FALSE           N/A
## 8      100%           FALSE           N/A
## 9      100%           FALSE           N/A
## 10     100%           FALSE           N/A
## 11     100%           FALSE           N/A
## 12      78%           FALSE           Yes
## 13     100%           FALSE           N/A
## 14      67%           FALSE           N/A
## 15     100%           FALSE           N/A
## 16     100%           FALSE           N/A
## 17      75%           FALSE           N/A
## 18     100%           FALSE           N/A
## 19     100%           FALSE           N/A
## 20     100%           FALSE           N/A
## 21     100%           FALSE           Yes
## 22      57%           FALSE           N/A
## 23      51%           FALSE           N/A
## 24      54%           FALSE           Yes
## 25     100%           FALSE           N/A
## 26     100%           FALSE           N/A
```

I will now update the relevant column to indicate whether Trump endorsed each candidate. If a candidate was endorsed by Trump, the value will be set to **True**; otherwise, it will be set to **False**. This will help in analyzing the impact of Trump's endorsements.

```r
if (any(ny_rep_candidates$trump_endorse == "Yes")) {
  ny_rep_candidates$trump_endorse=TRUE
} else {
  ny_rep_candidates$trump_endorse = FALSE
}
```

Data Exploration and Visualization

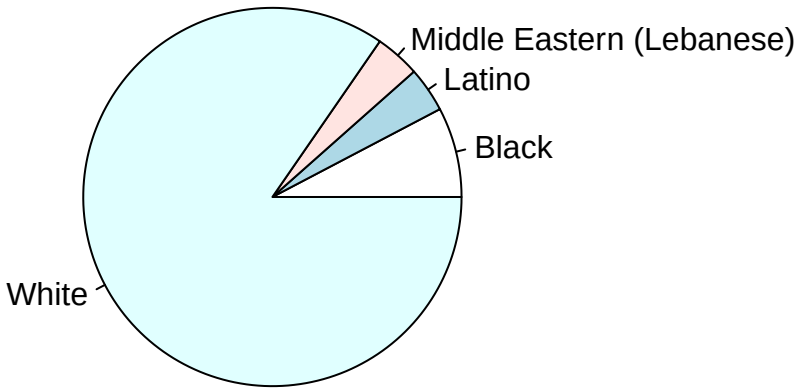
Now, I will perform some exploratory data analysis, starting with a pie chart to visualize the racial distribution of Republican candidates in New York who won their races. This will give us a better understanding of the diversity within the winning candidates.

```r
ny_rep_candidates
```

```
##    gender                      race inc inc chal            pos dist  n_prim
## 1    Male                     Black  No       No        Senator  N/A       1
## 2    Male                     White  No       No       Governor  N/A 196,874
## 3    Male                     White  No       No Representative    1  12,015
## 4    Male                     White Yes       No Representative    2   9,902
## 5    Male                     White  No       No Representative    3       1
## 6    Male                     White  No       No Representative    4       1
## 7    Male                     White  No       No Representative    5       1
## 8    Male                     White  No       No Representative    6       1
## 9    Male                    Latino  No       No Representative    7       1
## 10   Male                     White  No       No Representative    8       1
## 11 Female Middle Eastern (Lebanese)  No       No Representative   10       1
## 12 Female                     White Yes       No Representative   11  12,431
## 13   Male                     White  No       No Representative   12       1
## 14 Female                     White  No       No Representative   14   1,608
## 15   Male                     White  No       No Representative   15       1
## 16 Female                     White  No       No Representative   16       1
## 17   Male                     White  No       No Representative   17  12,317
## 18   Male                     White  No       No Representative   18       1
## 19   Male                     White  No       No Representative   19       1
## 20 Female                     White  No       No Representative   20       1
## 21 Female                     White Yes       No Representative   21       1
## 22   Male                     White  No       No Representative   22  14,351
## 23   Male                     White  No       No Representative   23  24,450
## 24 Female                     White Yes       No Representative   24  17,630
## 25   Male                     Black  No       No Representative   25       1
## 26   Male                     White  No       No Representative   26       1
##    rat_prim insurrectionist trump_endorse
## 1      100%           FALSE          TRUE
## 2       43%           FALSE          TRUE
## 3       47%           FALSE          TRUE
## 4       53%           FALSE          TRUE
## 5      100%           FALSE          TRUE
## 6      100%           FALSE          TRUE
## 7      100%           FALSE          TRUE
## 8      100%           FALSE          TRUE
## 9      100%           FALSE          TRUE
## 10     100%           FALSE          TRUE
```

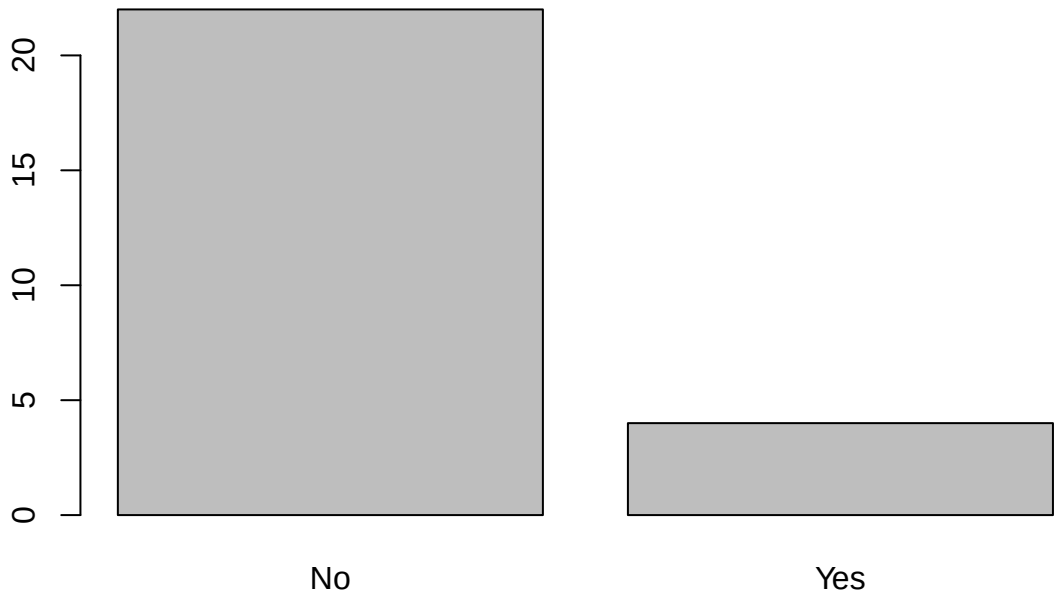
```
## 11      100%           FALSE          TRUE
## 12       78%           FALSE          TRUE
## 13      100%           FALSE          TRUE
## 14       67%           FALSE          TRUE
## 15      100%           FALSE          TRUE
## 16      100%           FALSE          TRUE
## 17       75%           FALSE          TRUE
## 18      100%           FALSE          TRUE
## 19      100%           FALSE          TRUE
## 20      100%           FALSE          TRUE
## 21      100%           FALSE          TRUE
## 22       57%           FALSE          TRUE
## 23       51%           FALSE          TRUE
## 24       54%           FALSE          TRUE
## 25      100%           FALSE          TRUE
## 26      100%           FALSE          TRUE
```

```
#race distribution of NY Republican candidates that won in 2020

pie(table(ny_rep_candidates$race))
```



Barplot showing candidate incumbent count

```
#Was Candidate incumbent?

barplot(table(ny_rep_candidates$inc))
```



To measure the mean ratio of votes, I will first need to remove the % symbol from the values in the vote ratio column, as these values are currently stored as characters rather than numeric data. Once the % sign is removed, I can convert the values to a numeric format to perform calculations like the mean.

```
without_percent=c()

for(i in ny_rep_candidates$rat_prim){
  i=substr(i, start=1, stop=nchar(i)-1)
  without_percent=append(without_percent,i)
}
without_percent
```

```
##  [1] "100" "43"  "47"  "53"  "100" "100" "100" "100" "100" "100" "100" "78"
## [13] "100" "67"  "100" "100" "75"  "100" "100" "100" "100" "57"  "51"  "54"
## [25] "100" "100"
```

Now that the % sign has been successfully removed from the vote ratio column, we can convert the values to numeric format. After this conversion, I'll adjust the values to represent actual ratios by dividing them by 100, making them ready for further analysis.

```
ny_rep_candidates$rat_prim=as.numeric(without_percent)

#Now lets make this an actual ratio

ny_rep_candidates$rat_prim=(ny_rep_candidates$rat_prim)/100
ny_rep_candidates
```

```
##    gender                      race inc inc chal            pos dist  n_prim
## 1    Male                     Black  No       No        Senator  N/A       1
## 2    Male                     White  No       No       Governor  N/A 196,874
## 3    Male                     White  No       No Representative    1  12,015
## 4    Male                     White Yes       No Representative    2   9,902
## 5    Male                     White  No       No Representative    3       1
## 6    Male                     White  No       No Representative    4       1
## 7    Male                     White  No       No Representative    5       1
## 8    Male                     White  No       No Representative    6       1
## 9    Male                    Latino  No       No Representative    7       1
## 10   Male                     White  No       No Representative    8       1
## 11 Female Middle Eastern (Lebanese)  No       No Representative   10       1
## 12 Female                     White Yes       No Representative   11  12,431
## 13   Male                     White  No       No Representative   12       1
## 14 Female                     White  No       No Representative   14   1,608
## 15   Male                     White  No       No Representative   15       1
## 16 Female                     White  No       No Representative   16       1
## 17   Male                     White  No       No Representative   17  12,317
## 18   Male                     White  No       No Representative   18       1
## 19   Male                     White  No       No Representative   19       1
## 20 Female                     White  No       No Representative   20       1
## 21 Female                     White Yes       No Representative   21       1
## 22   Male                     White  No       No Representative   22  14,351
## 23   Male                     White  No       No Representative   23  24,450
## 24 Female                     White Yes       No Representative   24  17,630
## 25   Male                     Black  No       No Representative   25       1
## 26   Male                     White  No       No Representative   26       1
##    rat_prim insurrectionist trump_endorse
## 1      1.00           FALSE          TRUE
## 2      0.43           FALSE          TRUE
## 3      0.47           FALSE          TRUE
## 4      0.53           FALSE          TRUE
## 5      1.00           FALSE          TRUE
## 6      1.00           FALSE          TRUE
## 7      1.00           FALSE          TRUE
## 8      1.00           FALSE          TRUE
## 9      1.00           FALSE          TRUE
## 10     1.00           FALSE          TRUE
## 11     1.00           FALSE          TRUE
## 12     0.78           FALSE          TRUE
## 13     1.00           FALSE          TRUE
## 14     0.67           FALSE          TRUE
## 15     1.00           FALSE          TRUE
## 16     1.00           FALSE          TRUE
## 17     0.75           FALSE          TRUE
## 18     1.00           FALSE          TRUE
## 19     1.00           FALSE          TRUE
## 20     1.00           FALSE          TRUE
## 21     1.00           FALSE          TRUE
## 22     0.57           FALSE          TRUE
## 23     0.51           FALSE          TRUE
## 24     0.54           FALSE          TRUE
## 25     1.00           FALSE          TRUE
## 26     1.00           FALSE          TRUE
```

```r
#finally, lets measure the mean ratio of votes one during the primary
mean(ny_rep_candidates$rat_prim)
```

```
## [1] 0.8557692
```

85%

Findings and Recommendations

NY Republican candidates won 85% of the primary vote in 2022.

This is a really robust data set. The 2022 election cycle was an interesting one. Right wing media and polls boasted about a red wave that was supposed to take over the house and senate that season. In reality, the results were complete opposite of what was expected.

There was an unexpected red wave in New York State, where a lot of republicans won seats in districts that weren't expected to be republican. This is likely an effect of the change in electoral map from the previous season to the current. The current electoral map is gerrymandered to favor republicans. It would be interesting in the future to compare these results with the results of the previous election.

It would also be interesting to compare NY results vs results from other states to see if there were any differences.