Lab 2: Impact of Stay at Home Orders on Individual Mobility

w203: Statistics for Data Science

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1. Introduction

2. Model Building

EDA

We will begin our analysis by first exploring the Google Mobility dataset. While there are many mobility measures within this dataset, we will focus on the change in mobility for retail and recreation. Unlike the other features that focus on grocery or parks, we beleive that retail and recreation captures the type of activity that stay at home policies intended to reduce.
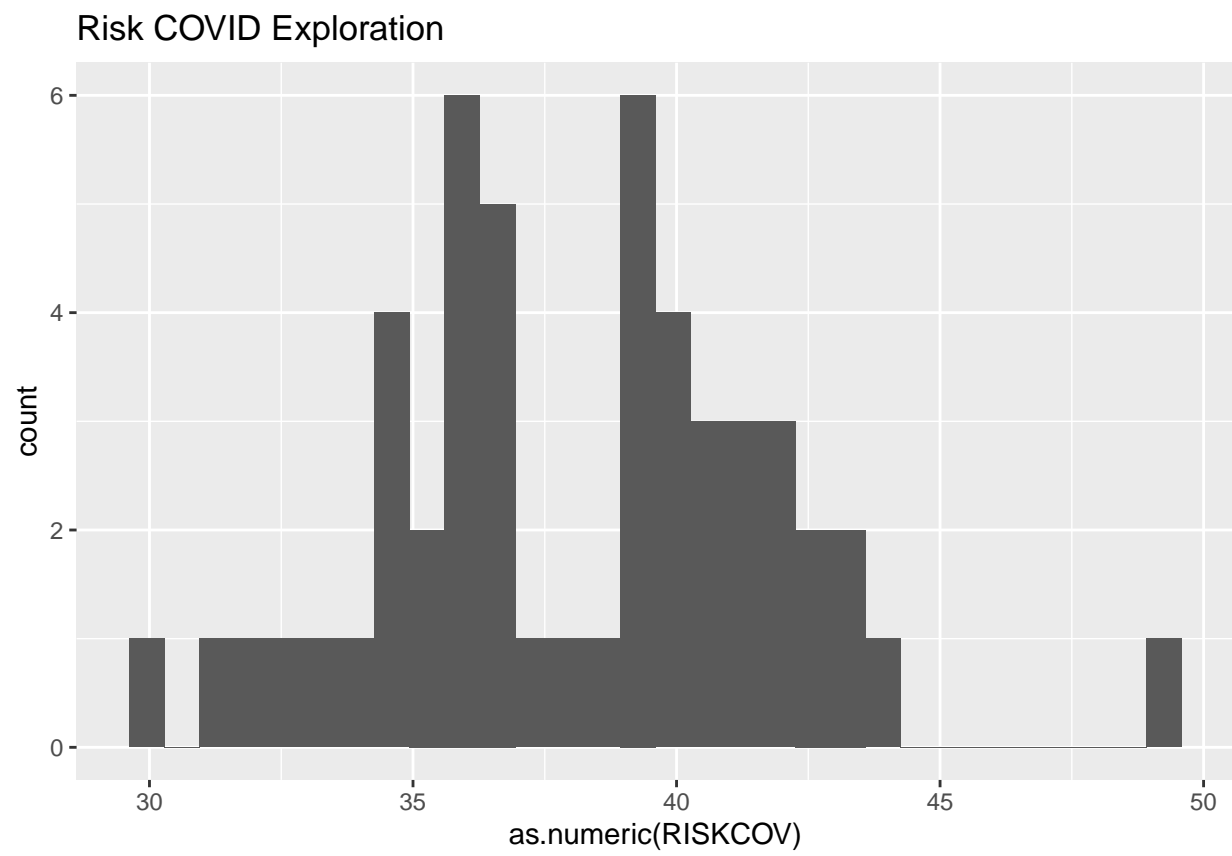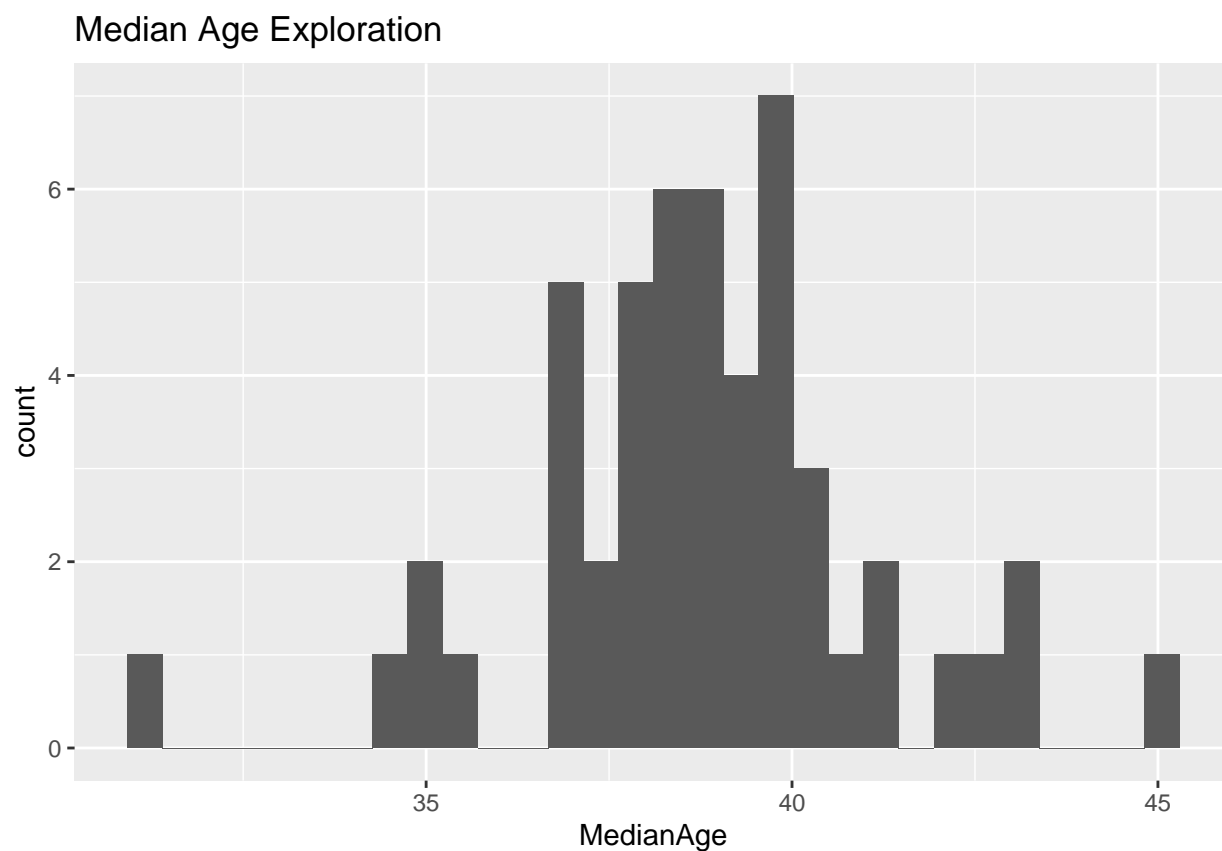
U.S. Aggregate Mobility Impact

y_var Exploration

Model 1

stay Exploration
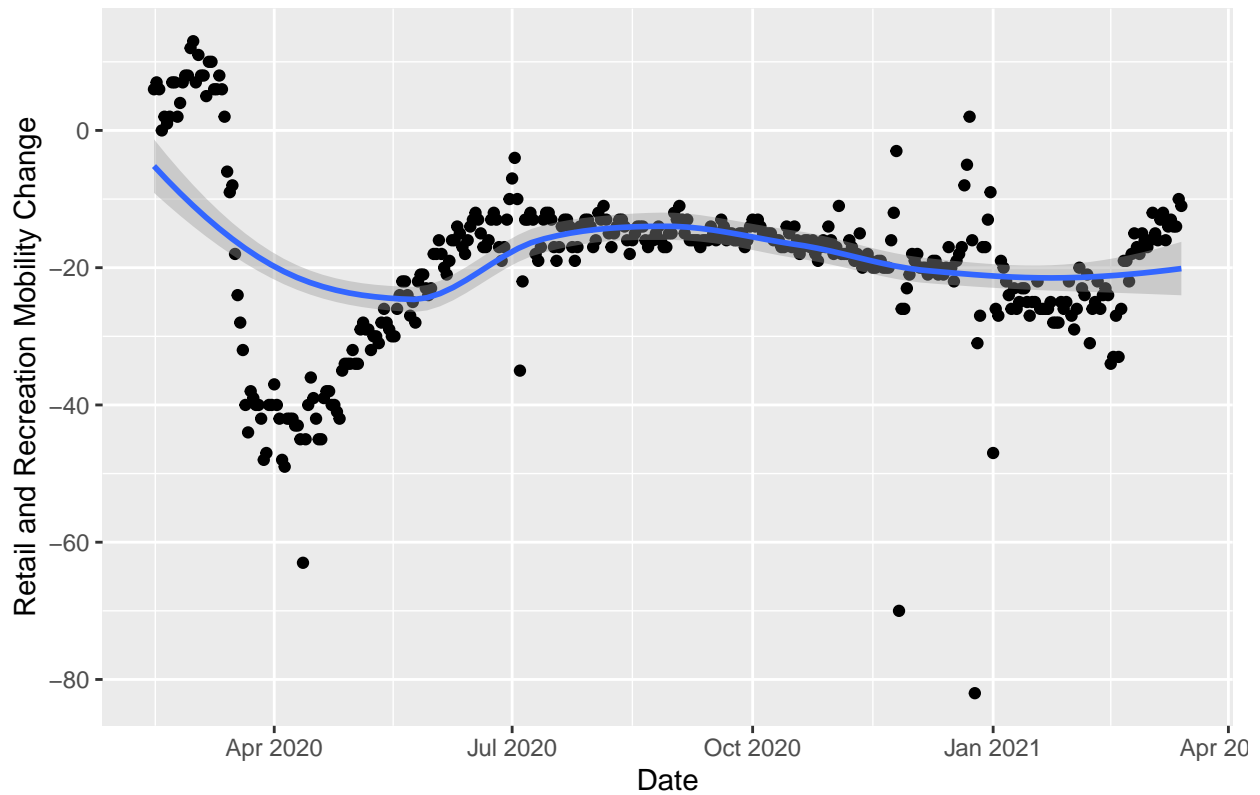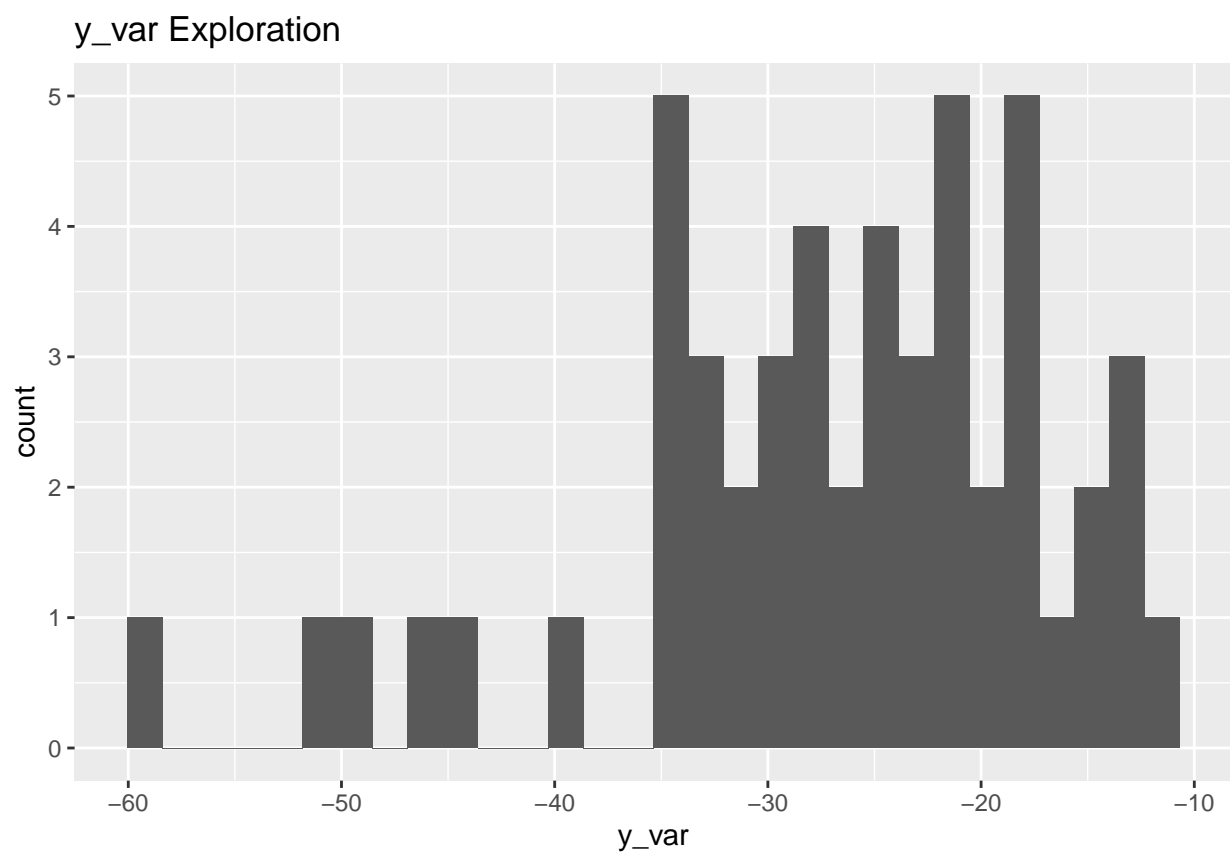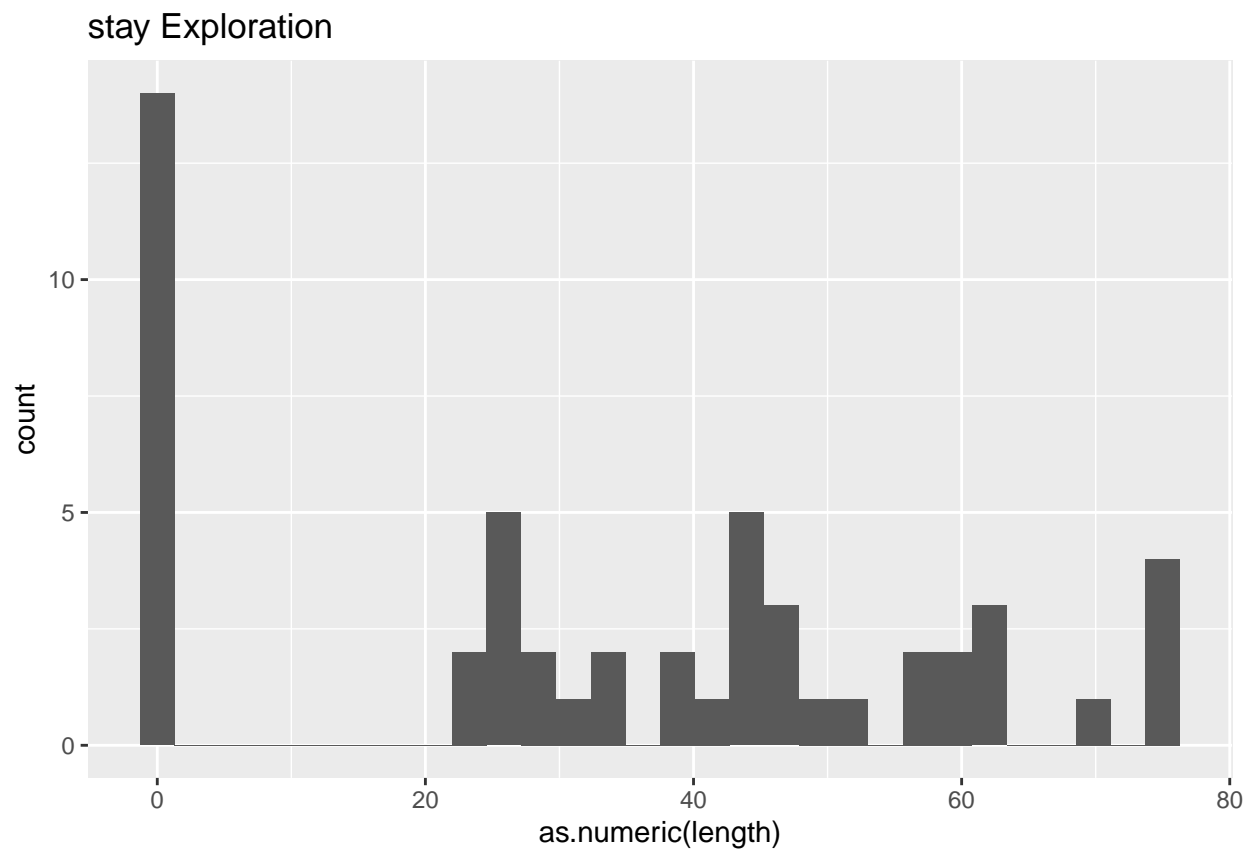

```
## 
## t test of coefficients:
## 
##               Estimate Std. Error t value  Pr(>|t|)
## (Intercept) -20.979886   2.846145 -7.3713 1.768e-09 ***
## length       -0.185008   0.065546 -2.8226  0.006866 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Model 2

Risk COVID Exploration

Median Age Exploration


```
## 
## t test of coefficients:
## 
##                      Estimate Std. Error t value Pr(>|t|)
## (Intercept)        -7.5414729 20.3282886 -0.3710 0.712390
## length             -0.1853210  0.0532558 -3.4798 0.001126 **
## as.numeric(RISKCOV)  0.9459351  0.3497032  2.7050 0.009611 **
## MedianAge          -1.0867430  0.6781983 -1.6024 0.116065
## as.numeric(POPDEN18) -0.0035520  0.0090171 -0.3939 0.695502
## as.numeric(UIMAXAMT) -0.0124249  0.0080934 -1.5352 0.131742
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Model 3

Length of Stay at Home by Party
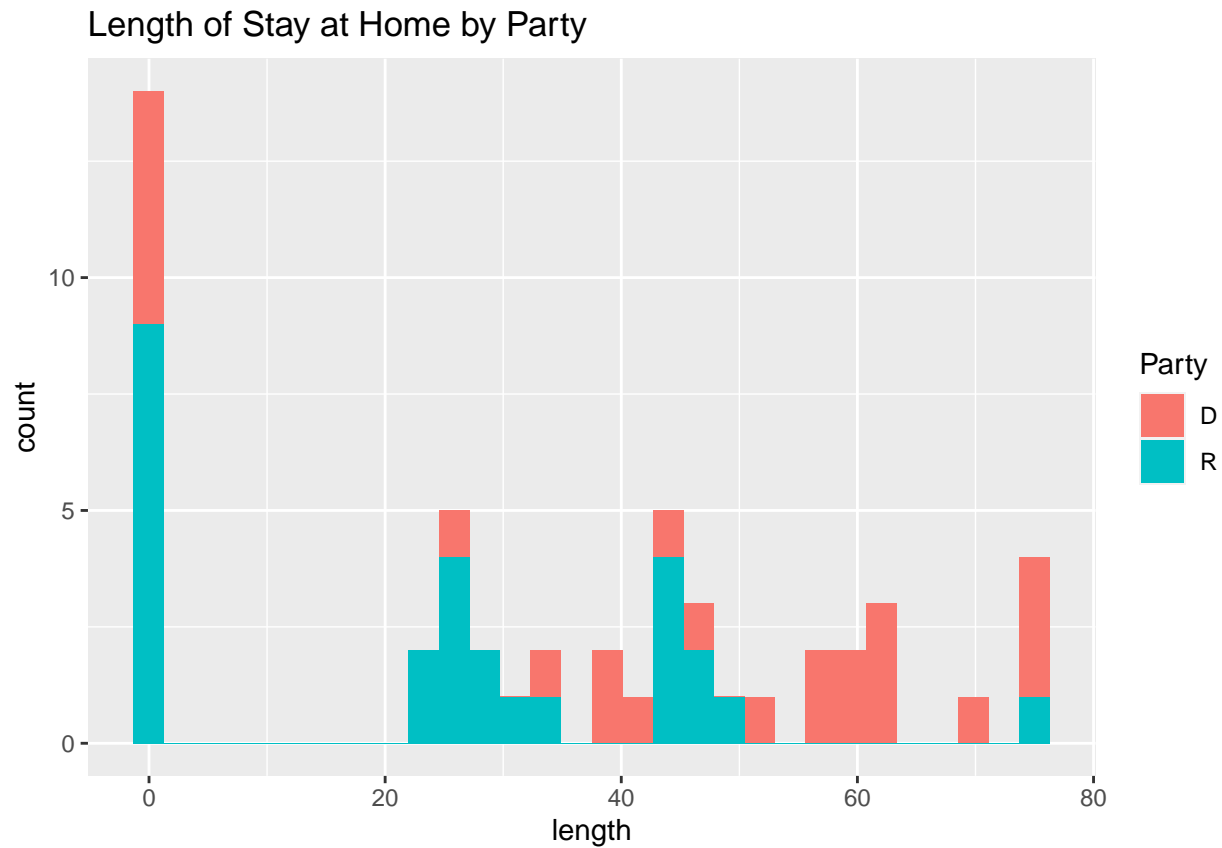

```
##
## t test of coefficients:
##
##                    Estimate Std. Error t value  Pr(>|t|)
## (Intercept)       -32.449346  20.328289 -1.5963  0.117132
## length             -0.152386   0.053256 -2.8614  0.006277 **
## as.numeric(RISKCOV)  1.620594   0.349703  4.6342 2.863e-05 ***
## MedianAge          -1.325845   0.678198 -1.9550  0.056551 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Regression Table and Interpretation

4. Limitations

5. Discussion of Omitted Variables

6. Conclusion