Main Analysis

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TODO

1. Find other measures of polarization
- Cook, redistrict scores of how far learning
2. introduce more controls
- twitter followers [done]
- state under 45 population [done]

Loading Data

```
dataset <- read.csv(file = "../../python_env/data/final_dataset.csv", header = TRUE)
dataset$is_attack<- as.integer(as.logical(dataset$is_attack))
dataset$is_policy<- as.integer(as.logical(dataset$is_policy))
dataset$is_contrast<- as.integer(as.logical(dataset$is_contrast))
dataset$incumbency<- as.integer(as.logical(dataset$incumbency))
dataset$competitiveness<- as.integer(as.logical(dataset$competitiveness))

# convert party label
convert_party <- function(p) {
  if(p == "R") {
    return("R");
  } else if (p == "D") {
    return("D");
  } else {
    return("T");
  }
}

dataset$party <- as.factor(sapply(dataset$party, convert_party))
dataset <- na.omit(dataset)
#View(dataset)
```

Group Data

```
getmode <- function(v) {
   uniqv <- unique(v)
   uniqv[which.max(tabulate(match(v, uniqv)))]
}
```

```
get_viciousness <- function(att, pol, con) {
  print(att);
  if (att == 0) {
    return(0);
  }

  if (pol == 1) {
    if (con == 1) {
      return(1);
    } else {
      return(2);
    }
  }
  return(3);
}

dataset <- dataset %>% mutate(vicousness = is_attack * 3 - is_policy - is_contrast)

relevent_set <- dataset %>%
  filter(party != "T") %>%
  group_by(user) %>%
  summarise(
    # controls
    "gender" = factor(mean(gender)),
    "incumbency" = factor(mean(incumbency)),
    "competitiveness" = factor(mean(competitiveness)),
    "party" = factor(getmode(party)),
    "follower_count" = mean(follower_count),
    "young_percent" = mean(percentAge20To44),
    "total_tweet_count" = log(n() + 0.00001),
    # IVs: elite
    "s_dist" = mean(s_dist),
    "h_dist" = mean(h_dist),
    "total_dist" = mean(s_dist) + mean(h_dist),
    # IVs: mass
    "ideoConsistVariance" = mean(ideoConsistVariance),
    "ideoFirstDiff" = mean(ideoFirstDiff),
    # DVs: PTVI
    "attack_per" = mean(is_attack),
    "vicousness" = mean(vicousness),
    "total_attck_count" = log(sum(is_attack) + 0.00001),
    # DVs: affects
    "anticipation" = mean(anticipation),
    "positive" = mean(positive),
    "joy" = mean(joy),
    "trust" = mean(trust),
    "surprise" = mean(surprise),
    "anger" = mean(anger),
    "sadness" = mean(sadness),
    "negative" = mean(negative),
    "fear" = mean(fear),
    "disgust" = mean(disgust))
```

Making Sure There is No Confounding Variables

```
correlations <- relevent_set %>% select(-c(attack_per, vicousness, total_attck_count, anticipation, posi

correlations
```

```
## # A tibble: 53 x 12
##    gender incumbency competitiveness party follower_count young_percent
##    <fct>  <fct>      <fct>           <fct>          <dbl>         <dbl>
##  1 1      0          1               R              8159          0.761
##  2 0      1          0               R           1608455.         0.788
##  3 1      0          0               R             62445.         0.799
##  4 1      1          0               R            140846.         0.807
##  5 1      0          1               R              3245          0.934
##  6 1      1          0               R             22574.         0.850
##  7 1      0          1               D              7271          0.946
##  8 1      0          1               D             32197.         0.701
##  9 1      1          1               D             41350.         0.722
## 10 1      0          0               R             68740.         0.844
## # ... with 43 more rows, and 6 more variables: total_tweet_count <dbl>,
## #   s_dist <dbl>, h_dist <dbl>, total_dist <dbl>, ideoConsistVariance <dbl>,
## #   ideoFirstDiff <dbl>
```

```
correlate(as.data.frame(correlations))
```

```
##
## CORRELATIONS
## ============
## - correlation type:  pearson
## - correlations shown only when both variables are numeric
##
##                     gender incumbency competitiveness party follower_count
## gender                   .          .               .     .              .
## incumbency               .          .               .     .              .
## competitiveness          .          .               .     .              .
## party                    .          .               .     .              .
## follower_count           .          .               .     .              .
## young_percent            .          .               .     .          0.125
## total_tweet_count        .          .               .     .         -0.122
## s_dist                   .          .               .     .          0.231
## h_dist                   .          .               .     .          0.118
## total_dist               .          .               .     .          0.174
## ideoConsistVariance      .          .               .     .         -0.054
## ideoFirstDiff            .          .               .     .         -0.057
##                     young_percent total_tweet_count s_dist h_dist total_dist
## gender                          .                .      .      .          .
## incumbency                      .                .      .      .          .
## competitiveness                 .                .      .      .          .
## party                           .                .      .      .          .
## follower_count              0.125           -0.122  0.231  0.118      0.174
## young_percent                   .            0.057  0.330  0.340      0.342
## total_tweet_count           0.057                .  0.158  0.121      0.141
## s_dist                      0.330            0.158      .  0.926      0.979
## h_dist                      0.340            0.121  0.926      .      0.984
## total_dist                  0.342            0.141  0.979  0.984          .
```

```
## ideoConsistVariance        -0.115             0.006  0.437  0.361      0.405
## ideoFirstDiff              -0.097             0.104  0.534  0.431      0.489
##                     ideoConsistVariance ideoFirstDiff
## gender                                .             .
## incumbency                            .             .
## competitiveness                       .             .
## party                                 .             .
## follower_count                   -0.054        -0.057
## young_percent                    -0.115        -0.097
## total_tweet_count                 0.006         0.104
## s_dist                            0.437         0.534
## h_dist                            0.361         0.431
## total_dist                        0.405         0.489
## ideoConsistVariance                   .         0.871
## ideoFirstDiff                     0.871             .
```

Multivariable Regression

Political Tweet Viciousness Index (PTVI)

Model 1: Mass

```
model_at_idvar <- lm(attack_per ~ ideoConsistVariance + gender + incumbency + competitiveness + party +
model_v_idvar <- lm(vicousness ~ ideoConsistVariance + gender + incumbency + competitiveness + party + i
model_at_iddist <- lm(attack_per ~ ideoFirstDiff + gender + incumbency + competitiveness + party + follo
model_v_iddist <- lm(vicousness ~ ideoFirstDiff + gender + incumbency + competitiveness + party + follou
```

```
print("Attack Percentage & Ideology Consistency Variance")
```

```
## [1] "Attack Percentage & Ideology Consistency Variance"
```

```
summary(model_at_idvar)
```

```
##
## Call:
## lm(formula = attack_per ~ ideoConsistVariance + gender + incumbency +
##     competitiveness + party + follower_count + young_percent +
##     total_tweet_count, data = relevent_set)
##
## Residuals:
##       Min        1Q    Median        3Q       Max
## -0.115410 -0.048144 -0.001426  0.043340  0.141021
##
## Coefficients:
##                       Estimate Std. Error t value Pr(>|t|)
## (Intercept)         -2.854e-03  1.168e-01  -0.024 0.980622
## ideoConsistVariance -2.573e-03  2.095e-03  -1.228 0.225963
## gender0             -3.040e-02  2.852e-02  -1.066 0.292310
## incumbency1         -3.394e-02  2.143e-02  -1.584 0.120308
## competitiveness0    -2.269e-02  2.142e-02  -1.059 0.295236
## partyD               2.200e-03  1.924e-02   0.114 0.909466
## follower_count      -9.632e-09  3.355e-08  -0.287 0.775401
## young_percent        7.625e-03  9.731e-02   0.078 0.937897
## total_tweet_count    3.176e-02  8.671e-03   3.663 0.000666 ***
## ---
```

```
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.06727 on 44 degrees of freedom
## Multiple R-squared:  0.4239, Adjusted R-squared:  0.3192
## F-statistic: 4.047 on 8 and 44 DF,  p-value: 0.00113
```

```
print("PTVI & Ideology Consistency Variance")
```

```
## [1] "PTVI & Ideology Consistency Variance"
```

```
summary(model_v_idvar)
```

```
##
## Call:
## lm(formula = vicousness ~ ideoConsistVariance + gender + incumbency +
##     competitiveness + party + follower_count + young_percent +
##     total_tweet_count, data = relevent_set)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.28587 -0.12734 -0.00053  0.08887  0.36109
##
## Coefficients:
##                       Estimate Std. Error t value Pr(>|t|)
## (Intercept)         -1.387e-02  2.952e-01  -0.047 0.962736
## ideoConsistVariance -6.054e-03  5.294e-03  -1.144 0.258958
## gender0             -8.163e-02  7.206e-02  -1.133 0.263423
## incumbency1         -9.292e-02  5.413e-02  -1.716 0.093111 .
## competitiveness0    -4.752e-02  5.413e-02  -0.878 0.384721
## partyD               6.793e-03  4.861e-02   0.140 0.889491
## follower_count      -2.705e-08  8.477e-08  -0.319 0.751192
## young_percent        6.136e-03  2.459e-01   0.025 0.980202
## total_tweet_count    8.082e-02  2.191e-02   3.689 0.000616 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.17 on 44 degrees of freedom
## Multiple R-squared:  0.4292, Adjusted R-squared:  0.3254
## F-statistic: 4.136 on 8 and 44 DF,  p-value: 0.0009531
```

```
print("Attack Percentage & Ideology Consistency First Difference")
```

```
## [1] "Attack Percentage & Ideology Consistency First Difference"
```

```
summary(model_at_iddist)
```

```
##
## Call:
## lm(formula = attack_per ~ ideoFirstDiff + gender + incumbency +
##     competitiveness + party + follower_count + young_percent +
##     total_tweet_count, data = relevent_set)
##
## Residuals:
##       Min        1Q    Median        3Q       Max
## -0.114153 -0.050330 -0.007159  0.043934  0.157643
##
## Coefficients:
```

```
##                     Estimate Std. Error t value Pr(>|t|)
## (Intercept)       -6.733e-02  1.095e-01  -0.615  0.54179
## ideoFirstDiff     -4.021e-03  9.799e-03  -0.410  0.68357
## gender0           -3.368e-02  2.894e-02  -1.164  0.25088
## incumbency1       -3.251e-02  2.178e-02  -1.493  0.14260
## competitiveness0  -1.776e-02  2.132e-02  -0.833  0.40923
## partyD             2.161e-03  1.953e-02   0.111  0.91241
## follower_count    -9.671e-09  3.406e-08  -0.284  0.77781
## young_percent      1.482e-02  9.874e-02   0.150  0.88133
## total_tweet_count  3.268e-02  8.825e-03   3.703  0.00059 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.06829 on 44 degrees of freedom
## Multiple R-squared:  0.4064, Adjusted R-squared:  0.2985
## F-statistic: 3.766 on 8 and 44 DF,  p-value: 0.001948
```

```
print("PTVI & Ideology Consistency First Difference")
```

```
## [1] "PTVI & Ideology Consistency First Difference"
```

```
summary(model_v_iddist)
```

```
##
## Call:
## lm(formula = vicousness ~ ideoFirstDiff + gender + incumbency +
##     competitiveness + party + follower_count + young_percent +
##     total_tweet_count, data = relevent_set)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.28318 -0.13485 -0.02111  0.10256  0.39134
##
## Coefficients:
##                     Estimate Std. Error t value Pr(>|t|)
## (Intercept)       -1.713e-01  2.762e-01  -0.620 0.538372
## ideoFirstDiff     -8.468e-03  2.472e-02  -0.343 0.733558
## gender0           -8.915e-02  7.301e-02  -1.221 0.228571
## incumbency1       -8.968e-02  5.493e-02  -1.633 0.109684
## competitiveness0  -3.570e-02  5.377e-02  -0.664 0.510220
## partyD             6.708e-03  4.926e-02   0.136 0.892305
## follower_count    -2.707e-08  8.592e-08  -0.315 0.754237
## young_percent      2.392e-02  2.491e-01   0.096 0.923934
## total_tweet_count  8.291e-02  2.226e-02   3.724 0.000554 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1722 on 44 degrees of freedom
## Multiple R-squared:  0.4138, Adjusted R-squared:  0.3072
## F-statistic: 3.883 on 8 and 44 DF,  p-value: 0.001553
```

Model 2: Elite

```
model_at_hdist <- lm(attack_per ~ h_dist + gender + incumbency + competitiveness + party + follower_cou
model_v_hdist <- lm(vicousness ~ h_dist + gender + incumbency + competitiveness + party + follower_coun
```

```r
model_at_sdist <- lm(attack_per ~ s_dist + gender + incumbency + competitiveness + party + follower_cou
model_v_sdist <- lm(vicousness ~ s_dist + gender + incumbency + competitiveness + party + follower_coun
model_at_tdist <- lm(attack_per ~ total_dist + gender + incumbency + competitiveness + party + follower
model_v_tdist <- lm(vicousness ~ total_dist + gender + incumbency + competitiveness + party + follower_
```

```r
print("Attack Percentage & House Ideology Distance")
```

```
## [1] "Attack Percentage & House Ideology Distance"
```

```r
summary(model_at_hdist)
```

```
##
## Call:
## lm(formula = attack_per ~ h_dist + gender + incumbency + competitiveness +
##     party + follower_count + young_percent + total_tweet_count,
##     data = relevent_set)
##
## Residuals:
##       Min        1Q    Median        3Q       Max
## -0.115590 -0.057152 -0.003737  0.045405  0.166838
##
## Coefficients:
##                      Estimate Std. Error t value Pr(>|t|)
## (Intercept)       -8.692e-02  9.366e-02  -0.928 0.358424
## h_dist             2.000e-02  2.732e-02   0.732 0.468034
## gender0           -2.967e-02  2.909e-02  -1.020 0.313302
## incumbency1       -3.314e-02  2.165e-02  -1.531 0.132927
## competitiveness0  -1.578e-02  2.117e-02  -0.745 0.460091
## partyD             1.017e-03  1.951e-02   0.052 0.958686
## follower_count    -1.262e-08  3.420e-08  -0.369 0.714000
## young_percent     -7.083e-03  1.039e-01  -0.068 0.945958
## total_tweet_count  3.179e-02  8.786e-03   3.618 0.000761 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.068 on 44 degrees of freedom
## Multiple R-squared:  0.4113, Adjusted R-squared:  0.3043
## F-statistic: 3.843 on 8 and 44 DF,  p-value: 0.001676
```

```r
print("PTVI & House Ideology Distance")
```

```
## [1] "PTVI & House Ideology Distance"
```

```r
summary(model_v_hdist)
```

```
##
## Call:
## lm(formula = vicousness ~ h_dist + gender + incumbency + competitiveness +
##     party + follower_count + young_percent + total_tweet_count,
##     data = relevent_set)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.28645 -0.14127 -0.01258  0.09816  0.41493
##
## Coefficients:
```

```
##                     Estimate Std. Error t value Pr(>|t|)
## (Intercept)       -2.100e-01  2.357e-01  -0.891 0.377847
## h_dist             5.655e-02  6.875e-02   0.823 0.415225
## gender0           -7.840e-02  7.322e-02  -1.071 0.290138
## incumbency1       -9.108e-02  5.448e-02  -1.672 0.101706
## competitiveness0  -3.073e-02  5.329e-02  -0.577 0.567126
## partyD             3.449e-03  4.912e-02   0.070 0.944336
## follower_count    -3.560e-08  8.609e-08  -0.414 0.681191
## young_percent     -4.050e-02  2.615e-01  -0.155 0.877641
## total_tweet_count  8.062e-02  2.211e-02   3.646 0.000701 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1712 on 44 degrees of freedom
## Multiple R-squared:  0.4211, Adjusted R-squared:  0.3159
## F-statistic: 4.001 on 8 and 44 DF,  p-value: 0.001234
```

```
print("Attack Percentage & Senate Ideology Distance")
```

```
## [1] "Attack Percentage & Senate Ideology Distance"
```

```
summary(model_at_sdist)
```

```
##
## Call:
## lm(formula = attack_per ~ s_dist + gender + incumbency + competitiveness +
##     party + follower_count + young_percent + total_tweet_count,
##     data = relevent_set)
##
## Residuals:
##       Min        1Q    Median        3Q       Max
## -0.115882 -0.051002 -0.001499  0.046396  0.167301
##
## Coefficients:
##                     Estimate Std. Error t value Pr(>|t|)
## (Intercept)       -8.747e-02  9.309e-02  -0.940  0.35252
## s_dist             3.174e-02  3.159e-02   1.005  0.32045
## gender0           -2.731e-02  2.914e-02  -0.937  0.35376
## incumbency1       -3.308e-02  2.153e-02  -1.536  0.13164
## competitiveness0  -1.688e-02  2.101e-02  -0.804  0.42593
## partyD             9.855e-04  1.938e-02   0.051  0.95968
## follower_count    -1.806e-08  3.482e-08  -0.519  0.60660
## young_percent     -1.320e-02  1.024e-01  -0.129  0.89796
## total_tweet_count  3.092e-02  8.821e-03   3.505  0.00106 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.06764 on 44 degrees of freedom
## Multiple R-squared:  0.4175, Adjusted R-squared:  0.3116
## F-statistic: 3.943 on 8 and 44 DF,  p-value: 0.001382
```

```
print("PTVI & Senate Ideology Distance")
```

```
## [1] "PTVI & Senate Ideology Distance"
```

```r
summary(model_v_sdist)
```

```
##
## Call:
## lm(formula = vicousness ~ s_dist + gender + incumbency + competitiveness +
##     party + follower_count + young_percent + total_tweet_count,
##     data = relevent_set)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.28724 -0.13714 -0.01346  0.10373  0.41583
##
## Coefficients:
##                     Estimate Std. Error t value Pr(>|t|)
## (Intercept)       -2.118e-01  2.341e-01  -0.904 0.370701
## s_dist             8.773e-02  7.945e-02   1.104 0.275485
## gender0           -7.207e-02  7.329e-02  -0.983 0.330770
## incumbency1       -9.090e-02  5.416e-02  -1.678 0.100354
## competitiveness0  -3.385e-02  5.284e-02  -0.641 0.525053
## partyD             3.439e-03  4.875e-02   0.071 0.944086
## follower_count    -5.045e-08  8.759e-08  -0.576 0.567566
## young_percent     -5.579e-02  2.574e-01  -0.217 0.829453
## total_tweet_count  7.826e-02  2.219e-02   3.527 0.000996 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1701 on 44 degrees of freedom
## Multiple R-squared:  0.4281, Adjusted R-squared:  0.3241
## F-statistic: 4.117 on 8 and 44 DF,  p-value: 0.0009881
```

```r
print("PTVI & Total Ideology Distance")
```

```
## [1] "PTVI & Total Ideology Distance"
```

```r
summary(model_at_tdist)
```

```
##
## Call:
## lm(formula = attack_per ~ total_dist + gender + incumbency +
##     competitiveness + party + follower_count + young_percent +
##     total_tweet_count, data = relevent_set)
##
## Residuals:
##       Min        1Q    Median        3Q       Max
## -0.115732 -0.055537 -0.002525  0.045785  0.167409
##
## Coefficients:
##                     Estimate Std. Error t value Pr(>|t|)
## (Intercept)       -8.692e-02  9.338e-02  -0.931 0.357032
## total_dist         1.307e-02  1.494e-02   0.875 0.386388
## gender0           -2.849e-02  2.912e-02  -0.978 0.333231
## incumbency1       -3.312e-02  2.159e-02  -1.534 0.132177
## competitiveness0  -1.616e-02  2.108e-02  -0.767 0.447387
## partyD             9.271e-04  1.945e-02   0.048 0.962199
## follower_count    -1.507e-08  3.445e-08  -0.437 0.663932
```

```
## young_percent     -1.125e-02  1.034e-01  -0.109 0.913823
## total_tweet_count  3.140e-02  8.798e-03   3.569 0.000882 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.06783 on 44 degrees of freedom
## Multiple R-squared:  0.4143, Adjusted R-squared:  0.3079
## F-statistic: 3.891 on 8 and 44 DF,  p-value: 0.001527
```

```
print("PTVI & Total Ideology Distance")
```

```
## [1] "PTVI & Total Ideology Distance"
```

```
summary(model_v_tdist)
```

```
##
## Call:
## lm(formula = vicousness ~ total_dist + gender + incumbency +
##     competitiveness + party + follower_count + young_percent +
##     total_tweet_count, data = relevent_set)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.28684 -0.14003 -0.01372  0.10095  0.41632
##
## Coefficients:
##                     Estimate Std. Error t value Pr(>|t|)
## (Intercept)       -2.101e-01  2.350e-01  -0.894 0.376000
## total_dist         3.650e-02  3.758e-02   0.971 0.336680
## gender0           -7.521e-02  7.326e-02  -1.027 0.310255
## incumbency1       -9.102e-02  5.432e-02  -1.676 0.100928
## competitiveness0  -3.184e-02  5.304e-02  -0.600 0.551408
## partyD             3.240e-03  4.894e-02   0.066 0.947517
## follower_count    -4.234e-08  8.667e-08  -0.489 0.627576
## young_percent     -5.127e-02  2.601e-01  -0.197 0.844653
## total_tweet_count  7.954e-02  2.214e-02   3.593 0.000819 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1707 on 44 degrees of freedom
## Multiple R-squared:  0.4246, Adjusted R-squared:   0.32
## F-statistic: 4.058 on 8 and 44 DF,  p-value: 0.001106
```

Affects

Disgust: - strong positive association with h_dist & s_dist - slight positive association with ideoConsistVariance - slight negative associartion with competitiveness0

Anger: - strong positive association with h_dist & s_dist

Negative: - slight positive association with h_dist & s_dist

Fear: - slight positive association with s_dist

Anticipation: - slight negative association with h_dist & s_dist

Positive: - strong positive association with incumbency1

Surprise: - slight positive association with incumbency1

Joy: - none

Trust: - none

Sadness: - none

```
summary(lm(anger ~ h_dist + gender + incumbency + competitiveness + party + follower_count + total_twee
```

```
##
## Call:
## lm(formula = anger ~ h_dist + gender + incumbency + competitiveness +
##     party + follower_count + total_tweet_count, data = relevent_set)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.16040 -0.04804 -0.01002  0.04739  0.25104
##
## Coefficients:
##                      Estimate Std. Error t value Pr(>|t|)
## (Intercept)         4.450e-02  7.964e-02   0.559   0.5791
## h_dist              7.982e-02  3.438e-02   2.322   0.0248 *
## gender0             4.122e-03  3.881e-02   0.106   0.9159
## incumbency1         9.123e-03  2.882e-02   0.317   0.7530
## competitiveness0   -8.498e-04  2.808e-02  -0.030   0.9760
## partyD              2.102e-02  2.599e-02   0.809   0.4230
## follower_count      7.475e-08  4.549e-08   1.643   0.1073
## total_tweet_count   1.559e-02  1.172e-02   1.331   0.1900
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.09076 on 45 degrees of freedom
## Multiple R-squared:  0.2348, Adjusted R-squared:  0.1157
## F-statistic: 1.972 on 7 and 45 DF,  p-value: 0.0802
```

```
summary(lm(anger ~ s_dist + gender + incumbency + competitiveness + party + follower_count + total_twee
```

```
##
## Call:
## lm(formula = anger ~ s_dist + gender + incumbency + competitiveness +
##     party + follower_count + total_tweet_count, data = relevent_set)
##
## Residuals:
##       Min        1Q    Median        3Q       Max
## -0.154586 -0.050210 -0.009989  0.041249  0.262747
##
## Coefficients:
##                      Estimate Std. Error t value Pr(>|t|)
## (Intercept)         3.975e-02  7.855e-02   0.506   0.6153
## s_dist              1.024e-01  3.988e-02   2.568   0.0136 *
## gender0             9.296e-03  3.862e-02   0.241   0.8109
## incumbency1         9.402e-03  2.848e-02   0.330   0.7429
## competitiveness0   -5.260e-03  2.775e-02  -0.190   0.8505
## partyD              2.182e-02  2.566e-02   0.850   0.3996
## follower_count      5.964e-08  4.612e-08   1.293   0.2026
## total_tweet_count   1.322e-02  1.170e-02   1.131   0.2642
## ---
```

```
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.0897 on 45 degrees of freedom
## Multiple R-squared:  0.2526, Adjusted R-squared:  0.1364
## F-statistic: 2.173 on 7 and 45 DF,  p-value: 0.0548
```

```
summary(lm(anger ~ ideoConsistVariance + gender + incumbency + competitiveness + party + follower_count
```

```
##
## Call:
## lm(formula = anger ~ ideoConsistVariance + gender + incumbency +
##     competitiveness + party + follower_count + total_tweet_count,
##     data = relevent_set)
##
## Residuals:
##       Min        1Q    Median        3Q       Max
## -0.162049 -0.064164 -0.006017  0.052976  0.233144
##
## Coefficients:
##                       Estimate Std. Error t value Pr(>|t|)
## (Intercept)          4.464e-02  1.208e-01   0.370   0.7134
## ideoConsistVariance  2.042e-03  2.964e-03   0.689   0.4944
## gender0             -1.151e-02  4.050e-02  -0.284   0.7776
## incumbency1          8.463e-03  3.034e-02   0.279   0.7816
## competitiveness0     1.598e-03  3.035e-02   0.053   0.9582
## partyD               2.492e-02  2.730e-02   0.913   0.3663
## follower_count       9.298e-08  4.722e-08   1.969   0.0551 .
## total_tweet_count    1.902e-02  1.229e-02   1.548   0.1285
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.09554 on 45 degrees of freedom
## Multiple R-squared:  0.152,  Adjusted R-squared:  0.02014
## F-statistic: 1.153 on 7 and 45 DF,  p-value: 0.3486
```

```
summary(lm(anger ~ ideoFirstDiff + gender + incumbency + competitiveness + party + follower_count + tota
```

```
##
## Call:
## lm(formula = anger ~ ideoFirstDiff + gender + incumbency + competitiveness +
##     party + follower_count + total_tweet_count, data = relevent_set)
##
## Residuals:
##       Min        1Q    Median        3Q       Max
## -0.163401 -0.059608 -0.007662  0.052258  0.235541
##
## Coefficients:
##                     Estimate Std. Error t value Pr(>|t|)
## (Intercept)        8.566e-02  1.056e-01   0.811   0.4215
## ideoFirstDiff      4.326e-03  1.372e-02   0.315   0.7540
## gender0           -8.644e-03  4.064e-02  -0.213   0.8325
## incumbency1        7.248e-03  3.053e-02   0.237   0.8134
## competitiveness0  -2.163e-03  2.984e-02  -0.072   0.9425
## partyD             2.499e-02  2.742e-02   0.912   0.3668
## follower_count     9.287e-08  4.743e-08   1.958   0.0565 .
```

```
## total_tweet_count  1.817e-02  1.236e-02   1.470   0.1485
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.09594 on 45 degrees of freedom
## Multiple R-squared:  0.145,  Adjusted R-squared:  0.01199
## F-statistic:  1.09 on 7 and 45 DF,  p-value: 0.3856
```