Testing differences in contribution style on voting behavior

Linear Probability Model without Fixed Effects

all votes, without changes

```
df_no_change_1 <- df_no_change %>% select(-c(state, seniority_114, seniority_1151, seniority

no_change_ols_minus <- lm(all_votes_minus ~ . - all_votes_plus, data = df_no_change_1)
summary(no_change_ols_minus)
```

```
Call:
lm(formula = all_votes_minus ~ . - all_votes_plus, data = df_no_change_1)

Residuals:
     Min       1Q   Median       3Q      Max
-0.34452 -0.05879 -0.00604  0.01942  0.99266

Coefficients:
                       Estimate Std. Error t value Pr(>|t|)
(Intercept)           0.0182012  0.0455195   0.400   0.6899
district             -0.0008384  0.0019589  -0.428   0.6694
partyR                0.0071686  0.0423221   0.169   0.8658
Contribution_3_minus -0.0009390  0.0012440  -0.755   0.4518
Contribution_3_plus  -0.0135539  0.0108086  -1.254   0.2122
Contribution_4_minus -0.0015772  0.0015305  -1.030   0.3048
Contribution_4_plus  -0.0191799  0.0104970  -1.827   0.0700 .
Contribution_51_minus 0.0067951  0.0037885   1.794   0.0753 .
Contribution_51_plus  0.0212615  0.0187484   1.134   0.2589
```

```
Contribution_52_minus -0.0008208  0.0033247  -0.247   0.8054
Contribution_52_plus  -0.0142888  0.0169977  -0.841   0.4021
Contribution_6_minus   0.0018674  0.0014233   1.312   0.1919
Contribution_6_plus   -0.0021982  0.0187971  -0.117   0.9071
Contribution_7_minus  -0.0018801  0.0012248  -1.535   0.1273
Contribution_7_plus    0.0070265  0.0154419   0.455   0.6499
GeographicalNE        -0.0218435  0.0562621  -0.388   0.6985
GeographicalSO        -0.0381839  0.0451769  -0.845   0.3996
GeographicalWE        -0.0140430  0.0516060  -0.272   0.7860
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.1918 on 126 degrees of freedom
  (386 observations deleted due to missingness)
Multiple R-squared:  0.3038,     Adjusted R-squared:  0.2098
F-statistic: 3.234 on 17 and 126 DF,  p-value: 7.933e-05
```

each vote separately

```r
# Vote 3 comparison
ols_3_1 <- lm(Vote3_minus ~ . - BioID - Vote3_plus - Vote3 - Vote_change_dummy - seniority_1
summary(ols_3_1)
```

```
Call:
lm(formula = Vote3_minus ~ . - BioID - Vote3_plus - Vote3 - Vote_change_dummy -
    seniority_113, data = df_vote_3)

Residuals:
    Min       1Q   Median       3Q      Max
-0.08307 -0.02849 -0.01307  0.00197  0.96453

Coefficients:
                      Estimate Std. Error t value Pr(>|t|)
(Intercept)          0.0350785  0.0168264   2.085   0.0379 *
partyR               0.9502127  0.0148005  64.201   <2e-16 ***
Contribution_3_minus 0.0004863  0.0002507   1.940   0.0533 .
Contribution_3_plus -0.0025718  0.0031170  -0.825   0.4099
GeographicalNE      -0.0221334  0.0214124  -1.034   0.3020
GeographicalSO       0.0115208  0.0179089   0.643   0.5205
```

```
GeographicalWE       -0.0113311  0.0194766  -0.582    0.5611
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.1194 on 332 degrees of freedom
  (20 observations deleted due to missingness)
Multiple R-squared:  0.9439,    Adjusted R-squared:  0.9429
F-statistic: 930.5 on 6 and 332 DF,  p-value: < 2.2e-16
```

```
# Vote 4 comparison
ols_4_1 <- lm(Vote4_minus ~ . - BioID - Vote4_plus - Vote4 - Vote_change_dummy - seniority_1
summary(ols_4_1)
```

```
Call:
lm(formula = Vote4_minus ~ . - BioID - Vote4_plus - Vote4 - Vote_change_dummy -
    seniority_114, data = df_vote_4)

Residuals:
     Min       1Q   Median       3Q      Max
-0.98909 -0.02161  0.01124  0.02036  0.94581

Coefficients:
                     Estimate Std. Error t value Pr(>|t|)
(Intercept)          0.0510759  0.0198565   2.572  0.01048 *
partyR               0.9314753  0.0171990  54.159  < 2e-16 ***
Contribution_4_minus 0.0004019  0.0002842   1.414  0.15816
Contribution_4_plus  -0.0027013 0.0037333  -0.724  0.46977
GeographicalNE       -0.0724508 0.0246174  -2.943  0.00345 **
GeographicalSO       -0.0039147 0.0209656  -0.187  0.85198
GeographicalWE       -0.0318755 0.0231920  -1.374  0.17012
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.1494 on 380 degrees of freedom
  (28 observations deleted due to missingness)
Multiple R-squared:  0.9114,    Adjusted R-squared:   0.91
F-statistic: 651.3 on 6 and 380 DF,  p-value: < 2.2e-16
```

```
# Vote 51 comparison
ols_51_1 <- lm(Vote51_minus ~ . - BioID - Vote51_plus - Vote51 - Vote_change_dummy - seniorit
summary(ols_51_1)
```

```
Call:
lm(formula = Vote51_minus ~ . - BioID - Vote51_plus - Vote51 -
    Vote_change_dummy - seniority_1151, data = df_vote_51)

Residuals:
     Min       1Q   Median       3Q      Max
-0.95446 -0.01809  0.02543  0.05785  0.95182

Coefficients:
                        Estimate Std. Error t value Pr(>|t|)
(Intercept)            0.0767926  0.0237611   3.232  0.00134 **
partyR                 0.8936476  0.0207767  43.012  < 2e-16 ***
Contribution_51_minus  0.0007455  0.0003866   1.928  0.05456 .
Contribution_51_plus  -0.0056539  0.0030749  -1.839  0.06673 .
GeographicalNE        -0.1383695  0.0294178  -4.704 3.59e-06 ***
GeographicalSO        -0.0156415  0.0254040  -0.616  0.53846
GeographicalWE        -0.0662247  0.0277692  -2.385  0.01758 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.1802 on 379 degrees of freedom
  (25 observations deleted due to missingness)
Multiple R-squared:  0.8724,    Adjusted R-squared:  0.8704
F-statistic: 431.9 on 6 and 379 DF,  p-value: < 2.2e-16
```

```r
# Vote 52 comparison
ols_52_1 <- lm(Vote52_minus ~ . - BioID - Vote52_plus - Vote52 - Vote_change_dummy - seniorit
summary(ols_52_1)
```

```
Call:
lm(formula = Vote52_minus ~ . - BioID - Vote52_plus - Vote52 -
    Vote_change_dummy - seniority_1152, data = df_vote_52)

Residuals:
     Min       1Q   Median       3Q      Max
-1.00960 -0.03810  0.03824  0.05694  0.93527

Coefficients:
                        Estimate Std. Error t value Pr(>|t|)
(Intercept)            0.0591289  0.0250836   2.357 0.018926 *
```

```
partyR                     0.8988127  0.0222127   40.464  < 2e-16 ***
Contribution_52_minus   0.0005452  0.0003232    1.687 0.092455 .
Contribution_52_plus   -0.0104975  0.0021379   -4.910 1.36e-06 ***
GeographicalNE         -0.1168639  0.0317123   -3.685 0.000262 ***
GeographicalSO         -0.0042079  0.0263534   -0.160 0.873225
GeographicalWE         -0.0237738  0.0297190   -0.800 0.424249
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.1898 on 373 degrees of freedom
  (25 observations deleted due to missingness)
Multiple R-squared:  0.8585,    Adjusted R-squared:  0.8562
F-statistic: 377.2 on 6 and 373 DF,  p-value: < 2.2e-16
```

```
# Vote 6 comparison
ols_6_1 <- lm(Vote6_minus ~ . - BioID - Vote6_plus - Vote6 - Vote_change_dummy - seniority_1
summary(ols_6_1)
```

```
Call:
lm(formula = Vote6_minus ~ . - BioID - Vote6_plus - Vote6 - Vote_change_dummy -
    seniority_116, data = df_vote_6)

Residuals:
     Min       1Q   Median       3Q      Max
-0.96664 -0.02620  0.03885  0.04917  0.96582

Coefficients:
                       Estimate Std. Error t value Pr(>|t|)
(Intercept)           0.0253127  0.0196820   1.286    0.199
partyR                0.9280403  0.0178350  52.035   <2e-16 ***
Contribution_6_minus  0.0002566  0.0002943   0.872    0.384
Contribution_6_plus  -0.0024238  0.0075428  -0.321    0.748
GeographicalNE       -0.0788543  0.0253412  -3.112    0.002 **
GeographicalSO       -0.0048503  0.0212698  -0.228    0.820
GeographicalWE        0.0018077  0.0242840   0.074    0.941
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.1552 on 381 degrees of freedom
  (15 observations deleted due to missingness)
Multiple R-squared:  0.9042,    Adjusted R-squared:  0.9027
```

```
F-statistic: 599.6 on 6 and 381 DF,  p-value: < 2.2e-16
```

```
# Vote 7 comparison
ols_7_1 <- lm(Vote7_minus ~ . - BioID - Vote7_plus - Vote7 - Vote_change_dummy - seniority_1
summary(ols_7_1)
```

```
Call:
lm(formula = Vote7_minus ~ . - BioID - Vote7_plus - Vote7 - Vote_change_dummy -
    seniority_117, data = df_vote_7)

Residuals:
     Min       1Q   Median       3Q      Max
-0.96421 -0.01143  0.03479  0.03735  0.08459

Coefficients:
                        Estimate Std. Error t value Pr(>|t|)
(Intercept)            0.0140781  0.0177911   0.791   0.4293
partyR                 0.9510358  0.0156509  60.766   <2e-16 ***
Contribution_7_minus  -0.0000271  0.0002849  -0.095   0.9243
Contribution_7_plus    0.0031835  0.0061579   0.517   0.6055
GeographicalNE        -0.0488698  0.0226389  -2.159   0.0316 *
GeographicalSO        -0.0024498  0.0193573  -0.127   0.8994
GeographicalWE        -0.0040991  0.0218368  -0.188   0.8512
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.1307 on 330 degrees of freedom
  (13 observations deleted due to missingness)
Multiple R-squared:  0.931, Adjusted R-squared:  0.9297
F-statistic: 741.9 on 6 and 330 DF,  p-value: < 2.2e-16
```

subsample analysis, only those who changed votes

```
# df_subsample_1 <- df_subsample %>% select(party, vote_change_to_anti, year, Contribution_3_

# ols_subsample_2 <- lm(vote_change_to_anti ~ . - year, data = df_subsample_1)
# summary(ols_subsample_2)
```

tables in stargazer

```
stargazer(no_change_ols_minus,
    type = "html", out = "ols_no_change_minus.html",
    covariate.labels = c("District", "Party", "Anti-Env. Contribution (113th congress Vote)"
    dep.var.labels = "All Anti-Env. Votes"
)
```

```
<table style="text-align:center"><tr><td colspan="2" style="border-bottom: 1px solid black">
<tr><td></td><td colspan="1" style="border-bottom: 1px solid black"></td></tr>
<tr><td style="text-align:left"></td><td>All Anti-Env. Votes</td></tr>
<tr><td colspan="2" style="border-bottom: 1px solid black"></td></tr><tr><td style="text-ali
<tr><td style="text-align:left"></td><td>(0.002)</td></tr>
<tr><td style="text-align:left"></td><td></td></tr>
<tr><td style="text-align:left">Party</td><td>0.007</td></tr>
<tr><td style="text-align:left"></td><td>(0.042)</td></tr>
<tr><td style="text-align:left"></td><td></td></tr>
<tr><td style="text-align:left">Anti-Env. Contribution (113th congress Vote)</td><td>-0.001</
<tr><td style="text-align:left"></td><td>(0.001)</td></tr>
<tr><td style="text-align:left"></td><td></td></tr>
<tr><td style="text-align:left">Pro-Env. Contribution (113th congress Vote)</td><td>-0.014</t
<tr><td style="text-align:left"></td><td>(0.011)</td></tr>
<tr><td style="text-align:left"></td><td></td></tr>
<tr><td style="text-align:left">Anti-Env. Contribution (114th congress Vote)</td><td>-0.002</
<tr><td style="text-align:left"></td><td>(0.002)</td></tr>
<tr><td style="text-align:left"></td><td></td></tr>
<tr><td style="text-align:left">Pro-Env. Contribution (114th congress Vote)</td><td>-0.019<su
<tr><td style="text-align:left"></td><td>(0.010)</td></tr>
<tr><td style="text-align:left"></td><td></td></tr>
<tr><td style="text-align:left">Anti-Env. Contribution (115th congress 1st Vote)</td><td>0.00
<tr><td style="text-align:left"></td><td>(0.004)</td></tr>
<tr><td style="text-align:left"></td><td></td></tr>
<tr><td style="text-align:left">Pro-Env. Contribution (115th congress 1st Vote)</td><td>0.02
<tr><td style="text-align:left"></td><td>(0.019)</td></tr>
<tr><td style="text-align:left"></td><td></td></tr>
<tr><td style="text-align:left">Anti-Env. Contribution (115th congress 2nd Vote)</td><td>-0.0
<tr><td style="text-align:left"></td><td>(0.003)</td></tr>
<tr><td style="text-align:left"></td><td></td></tr>
<tr><td style="text-align:left">Pro-Env. Contribution (115th congress 2nd Vote)</td><td>-0.0
<tr><td style="text-align:left"></td><td>(0.017)</td></tr>
```

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```
<tr><td style="text-align:left"></td><td></td></tr>
<tr><td style="text-align:left">Anti-Env. Contribution (116th congress)</td><td>0.002</td></t
<tr><td style="text-align:left"></td><td>(0.001)</td></tr>
<tr><td style="text-align:left"></td><td></td></tr>
<tr><td style="text-align:left">Pro-Env. Contribution (116th congress)</td><td>-0.002</td></t
<tr><td style="text-align:left"></td><td>(0.019)</td></tr>
<tr><td style="text-align:left"></td><td></td></tr>
<tr><td style="text-align:left">Anti-Env. Contribution (117th congress)</td><td>-0.002</td></
<tr><td style="text-align:left"></td><td>(0.001)</td></tr>
<tr><td style="text-align:left"></td><td></td></tr>
<tr><td style="text-align:left">Pro-Env. Contribution (117th congress)</td><td>0.007</td></t
<tr><td style="text-align:left"></td><td>(0.015)</td></tr>
<tr><td style="text-align:left"></td><td></td></tr>
<tr><td style="text-align:left">GeographicalNE</td><td>-0.022</td></tr>
<tr><td style="text-align:left"></td><td>(0.056)</td></tr>
<tr><td style="text-align:left"></td><td></td></tr>
<tr><td style="text-align:left">GeographicalSO</td><td>-0.038</td></tr>
<tr><td style="text-align:left"></td><td>(0.045)</td></tr>
<tr><td style="text-align:left"></td><td></td></tr>
<tr><td style="text-align:left">GeographicalWE</td><td>-0.014</td></tr>
<tr><td style="text-align:left"></td><td>(0.052)</td></tr>
<tr><td style="text-align:left"></td><td></td></tr>
<tr><td style="text-align:left">Constant</td><td>0.018</td></tr>
<tr><td style="text-align:left"></td><td>(0.046)</td></tr>
<tr><td style="text-align:left"></td><td></td></tr>
<tr><td colspan="2" style="border-bottom: 1px solid black"></td></tr><tr><td style="text-alig
<tr><td style="text-align:left">R<sup>2</sup></td><td>0.304</td></tr>
<tr><td style="text-align:left">Adjusted R<sup>2</sup></td><td>0.210</td></tr>
<tr><td style="text-align:left">Residual Std. Error</td><td>0.192 (df = 126)</td></tr>
<tr><td style="text-align:left">F Statistic</td><td>3.234<sup>***</sup> (df = 17; 126)</td></
<tr><td colspan="2" style="border-bottom: 1px solid black"></td></tr><tr><td style="text-alig
</table>
```

```r
stargazer(ols_3_1, ols_4_1, ols_51_1, ols_52_1, ols_6_1, ols_7_1,
    type = "html",
    covariate.labels = c("Party", "Anti-Env. Contribution (113th congress Vote)", "Pro-Env. (
    dep.var.labels = c("Anti-Env Vote in 113th", "Anti-Env Vote in 114th", "Anti-Env 1st Vot
    out = "ols_per_vote.html"
)
```

```
<table style="text-align:center"><tr><td colspan="7" style="border-bottom: 1px solid black">
```

	Anti-Env Vote in 113th	Anti-Env Vote in 114t...
	(1)	(2)	(3)	(4)	(5)...
	(0.015)	(0.017)	(0.021)	(0.0...
Anti-Env. Contribution (113th congress Vote)	0.0005...
	(0.0003)				
Pro-Env. Contribution (113th congress Vote)	-0.003
	(0.003)				
Anti-Env. Contribution (114th congress Vote)		
		(0.0003)			
Pro-Env. Contribution (114th congress Vote)		
		(0.004)			
Anti-Env. Contribution (115th congress 1st Vote)	
			(0.0004)		
Pro-Env. Contribution (115th congress 1st Vote)	
			(0.003)		
Anti-Env. Contribution (115th congress 2nd Vote)	
				(0.0003)	
Pro-Env. Contribution (115th congress 2nd Vote)	
				(0.002)	
Anti-Env. Contribution (116th congress)		
					(0.0003)
Pro-Env. Contribution (116th congress)		
					(0.008)
Anti-Env. Contribution (117th congress)		
						(0.0003
Pro-Env. Contribution (117th congress)		
						(0.006
GeographicalNE	-0.022	-0.072***

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	(0.021)	(0.025)	(0.029)	(0.0...
GeographicalSO	0.012	-0.004	-0.016	
	(0.018)	(0.021)	(0.025)	(0.0...
GeographicalWE	-0.011	-0.032	-0.066[s...	
	(0.019)	(0.023)	(0.028)	(0.0...
Constant	0.035[**]	0.051[**]		
	(0.017)	(0.020)	(0.024)	(0.0...
R[2]	0.944	0.911	0.872	
Adjusted R[2]	0.943	0.910	0	
Residual Std. Error	0.119 (df = 332)	0.149 (...		
F Statistic	930.524[***] (df = 6; 332)			