# Replication Code for Second Deadline

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We have replicated Tables 1-3 and Figures 1-3 from our original paper "Groceries for Votes: The Electoral Returns of Vote Buying," *The Journal of Politics*, 81(3), 790-804. The original paper can be found (here)[http://dx.doi.org/10.1086/702945]. The code and data for this replication can be found and downloaded from our group's Github repo (here)[https://github.com/frances-cayton/Replication].

This report includes all of the main findings from the paper, though excludes one more tangential simulation completed in the paper. At this time we have 4 possible routes for extension that we plan to do; these replications here provide the groundwork for each routes. Below we have listed each extension path and which tables/figures in our replication code these will build on.

These options include:

1. Re-running the regressions through simulation, and seeing if the results hold (Table 1-2, Figure 2-3).
2. The author uses robust standard errors, but does not discuss whether these match regular standard errors. We have checked this, and note that the robust standard errors in many instances are far larger (at least 2x the size) of classical SEs. See the beginnings of this portion of our analysis at the end of the section for Table 1. (Tables 1-2, Figures 2-3)
3. The author matches electoral precinct data with census precinct data. Per King, Imai, Rivera (2020), in these precincts are different geographic entities reported by different government offices. To get around this problem, these authors develop a "precinct cluster,". We will test to see if the results hold using the accurate precinct (Tables 1-2, Figures 2-3).
4. The author uses the measure of `proximity` to a Soriana store as an instrument to capture how much one may value the giftcard given. Preliminary tests suggest that the relationship does not hold if one is to use `distance` instance of `proximity` (Figures 1-3, Tables 1-3). We have begun this portion of the analysis (see under the section for Figure 1).

```
library(foreign)
library(stargazer)
library(arm)
library(rms)
library(msm)
library(systemfit)
library(xtable)
library(gtools)
library(multiwayvcov)
library(numDeriv)
library(interplot)
library(modmarg)
library(tidyverse)
library(stats)
library(haven)
library(systemfit)
```

```r
library(nnet)
library(sjmisc)
library(maptools)
library(rgeos)
library(Imap)
library(spatstat)
```

```r
load("datawork.RData")
```

## Replication of Figure 1 (Chengyu)

```r
base <- read_stata("./rawdata/Base nacional de la ENVUD para trabajar por estado.dta")

base_2 <- base[base$estado == 9 | base$estado == 15,]

base_2$sectionID <- paste(base_2$estado, base_2$seccion, sep = " _ ")

precinct <- read_stata("./rawdata/precinctdata.dta")

base_3 <- merge(base_2, precinct, by = "sectionID")

base_3$gender <- base_3$genero
base_3$age <- base_3$edad
base_3$sec <- base_3$P15

base_3[base_3$sec==0,]$sec <- 0.6

#30b.- (SI DICE SÍ) ¿A cuántos grupos u organizaciones
#de ese tipo pertenece usted? (ANOTAR EL NUMERO DIRECTO; 0=NINGUNO; 99=NS/NC)
base_3$belongparty <- base_3$'P30_4'
base_3$belongunion <- base_3$'P30_5'
base_3$belongreligiousgroup <- base_3$'P30_7'

base_3[base_3$belongparty==0,]$belongparty <- NA
base_3[base_3$belongunion==0,]$belongunion <- NA
base_3[base_3$belongreligiousgroup==0,]$belongreligiousgroup <- NA

base_3[base_3$belongparty %in% 2,]$belongparty <- 0
base_3[base_3$belongunion %in% 2,]$belongunion <- 0
base_3[base_3$belongreligiousgroup %in% 2,]$belongreligiousgroup <- 0

#44.- (TARJETA 11) En una escala del 1 al 10,
#donde 1 significa "nada" y 10 "mucho". ¿A usted...? (LEER) (0=NS/NC)
#a. Cuánto le interesa la política
base_3$interestpolitics <- base_3$P44_1
#c. Cuánto participa usted en las elecciones
base_3$interestelections <- base_3$P44_2
#e. Cuánto habla usted de asuntos políticos con otras personas
base_3$discusspolitics <- base_3$P44_5
#d. Cuánto sigue las noticias sobre política y gobierno
```

```r
base_3$follownews <- base_3$P44_4

#54.- En general, ¿usted aprueba o desaprueba la forma como está haciendo su trabajo...?
#(1= Aprueba; 2=Desaprueba; 0=NS/NC)
base_3$presidentialapp <- base_3$P54_1
base_3$govapp <- base_3$P54_2
base_3$congressapp <- base_3$P54_4

base_3[base_3$presidentialapp==0,]$presidentialapp <- NA
base_3[base_3$govapp==0,]$govapp <- NA
base_3[base_3$congressapp==0,]$congressapp <- NA

base_3[base_3$presidentialapp %in% 2,]$presidentialapp <- 0
base_3[base_3$govapp %in% 2,]$govapp <- 0
base_3[base_3$congressapp %in% 2,]$congressapp <- 0

#87.- Generalmente, ¿usted se considera priísta, panista o perredista? (INSISTIR)
#¿Muy (PRIISTA / PANISTA / PERREDISTA) o algo (PRIISTA / PANISTA /PERREDISTA)? (NS/NC=0)
base_3$partyid <- base_3$P87
base_3$pri <- ifelse(base_3$partyid == 1 | base_3$partyid == 2, 1, 0)
base_3$pan <- ifelse(base_3$partyid == 3 | base_3$partyid == 4, 1, 0)
base_3$prd <- ifelse(base_3$partyid == 5 | base_3$partyid == 6, 1, 0)

base_3$partyid <- ifelse(base_3$P87 == 1 | base_3$P87 == 2, 1,
                         ifelse(base_3$P87 == 3 | base_3$P87 == 4, 2,
                        ifelse(base_3$P87 == 5 | base_3$P87 == 6, 3, 0)))

base_3$education <-  ifelse(base_3$P104 == 1, 0,
                            ifelse(base_3$P104 == 2, 1,
                           ifelse(base_3$P104 == 3, 2,
                                ifelse(base_3$P104 == 4 | base_3$P104 == 5, 3,
                                ifelse(base_3$P104 == 6 | base_3$P104 == 7, 4,
                        ifelse(base_3$P104 == 8, 5, ifelse(base_3$P104 == 9, 6, NA)))))))

base_3$cellphone <-  ifelse(base_3$P112_2 == 3, NA, base_3$P112_2)

base_3$internet <-  ifelse(base_3$P112_3 == 3, NA, base_3$P112_3)

# Consider replicate by distance, not prox
base_3$prox <- 1/base_3$distance

base_3$munID <- as.numeric(paste(base_3$estado, base_3$municipio, sep = ""))
```

```r
# I use multinom from nnet here
# Is constant term needed?
m1_3_multinom <- multinom(partyid ~
          prox+edad+gender+education+sec+cellphone+internet+localidae, data = base_3)
```

```
## # weights:  40 (27 variable)
## initial  value 2170.936970
## iter  10 value 1635.584895
## iter  20 value 1537.040177
## iter  30 value 1531.496868
```

```
## final  value 1531.474441
## converged
```

```
summary(m1_3_multinom)
```

```
## Call:
## multinom(formula = partyid ~ prox + edad + gender + education +
##     sec + cellphone + internet + localidae, data = base_3)
##
## Coefficients:
##   (Intercept)        prox        edad      gender   education         sec
## 1   0.2998632 -0.05539609 0.005473206  0.04474489 -0.27950598 -0.20544231
## 2   0.6381894  0.01906992 0.003469838 -0.01346302 -0.03705545 -0.22514468
## 3   1.1803440 -0.10195362 0.001776703  0.16877864 -0.25523902 -0.09912913
##    cellphone   internet  localidae
## 1 -0.2421925 -0.2970226  0.3060884
## 2 -0.1324019 -0.4675031 -1.2066420
## 3 -0.2842934 -0.3941228 -1.2610259
##
## Std. Errors:
##   (Intercept)      prox        edad    gender  education        sec cellphone
## 1   0.5924618 0.1010173 0.004463639 0.1370222 0.06355137 0.06749611 0.1597728
## 2   1.0685551 0.1268105 0.006737712 0.2068412 0.08756813 0.10675813 0.2519414
## 3   0.8563228 0.1408491 0.005706178 0.1738729 0.07907583 0.08814971 0.2051093
##    internet localidae
## 1 0.1746967 0.2401334
## 2 0.2468954 0.7343190
## 3 0.2124725 0.5306038
##
## Residual Deviance: 3062.949
## AIC: 3116.949
```

```
formula_presi <- presidentialapp ~
  prox+edad+gender+education+sec+cellphone+internet+localidae
m4_presi <- glm(formula_presi, data = base_3, family = "binomial")

summary(m4_presi)
```

```
##
## Call:
## glm(formula = formula_presi, family = "binomial", data = base_3)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.4600  -1.0387  -0.9631   1.3007   1.4729
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept) -1.237202   0.460761  -2.685  0.00725 **
## prox         0.075254   0.070335   1.070  0.28465
## edad         0.002564   0.003425   0.749  0.45403
## gender       0.205493   0.105011   1.957  0.05036 .
## education   -0.051140   0.046173  -1.108  0.26805
```

```
## sec         -0.029971   0.052877  -0.567  0.57085
## cellphone   -0.110305   0.122319  -0.902  0.36717
## internet    -0.031649   0.132148  -0.239  0.81072
## localidae    0.851704   0.212724   4.004 6.23e-05 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 2081.8  on 1526  degrees of freedom
## Residual deviance: 2057.9  on 1518  degrees of freedom
##   (73 observations deleted due to missingness)
## AIC: 2075.9
##
## Number of Fisher Scoring iterations: 4
```

```r
formula_gov <- govapp ~
  prox+edad+gender+education+sec+cellphone+internet+localidae
m5_gov <- glm(formula_gov, data = base_3, family = "binomial")

summary(m5_gov)
```

```
##
## Call:
## glm(formula = formula_gov, family = "binomial", data = base_3)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.8200  -1.1987   0.7624   1.1309   1.5230
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept) -0.872024   0.467368  -1.866  0.06207 .
## prox        -0.094667   0.072256  -1.310  0.19014
## edad        -0.003993   0.003397  -1.175  0.23986
## gender       0.144931   0.104364   1.389  0.16492
## education   -0.081052   0.045597  -1.778  0.07548 .
## sec          0.089465   0.052641   1.700  0.08922 .
## cellphone   -0.079645   0.122122  -0.652  0.51429
## internet     0.069086   0.130380   0.530  0.59619
## localidae    0.843803   0.232831   3.624  0.00029 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 2115.5  on 1530  degrees of freedom
## Residual deviance: 2076.9  on 1522  degrees of freedom
##   (69 observations deleted due to missingness)
## AIC: 2094.9
##
## Number of Fisher Scoring iterations: 4
```

```r
formula_congress <- congressapp ~
  prox+edad+gender+education+sec+cellphone+internet+localidae
m6_congress <- glm(formula_congress, data = base_3, family = "binomial")

summary(m6_congress)
```

```
##
## Call:
## glm(formula = formula_congress, family = "binomial", data = base_3)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.3573  -0.9349  -0.8685   1.3960   1.6611
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept) -0.940412   0.482911  -1.947   0.0515 .
## prox         0.040988   0.071800   0.571   0.5681
## edad        -0.002821   0.003603  -0.783   0.4337
## gender       0.150138   0.110358   1.360   0.1737
## education   -0.021618   0.047894  -0.451   0.6517
## sec         -0.107547   0.056096  -1.917   0.0552 .
## cellphone   -0.155581   0.129115  -1.205   0.2282
## internet     0.035819   0.137660   0.260   0.7947
## localidae    0.732081   0.222509   3.290   0.0010 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 1916.1  on 1473  degrees of freedom
## Residual deviance: 1897.7  on 1465  degrees of freedom
##   (126 observations deleted due to missingness)
## AIC: 1915.7
##
## Number of Fisher Scoring iterations: 4
```

```r
# Seemingly Unrelated Regression by systemfit
# which result to trust, single regress or SUR?

sur_part1 <- systemfit(list(presi =
                              formula_presi, gov = formula_gov,
                            congress = formula_congress), method = "SUR", data = base_3)
```

```
## Warning in systemfit(list(presi = formula_presi, gov = formula_gov, congress =
## formula_congress), : the estimation of systems of equations with unequal numbers
## of observations has not been thoroughly tested yet
```

```r
summary(sur_part1)
```

```
##
## systemfit results
```

```
## method: SUR
##
##           N   DF     SSR  detRCov   OLS-R2 McElroy-R2
## system 4532 4505 1071.79 0.007508 0.017758    0.00598
##
##             N   DF     SSR      MSE     RMSE       R2   Adj R2
## presi    1527 1518 367.142 0.241859 0.491791 0.015742 0.010555
## gov      1531 1522 371.764 0.244260 0.494227 0.024286 0.019157
## congress 1474 1465 332.889 0.227228 0.476684 0.012610 0.007218
##
## The covariance matrix of the residuals used for estimation
##             presi       gov  congress
## presi    0.241453 0.1184349 0.1120504
## gov      0.118435 0.2461653 0.0993743
## congress 0.112050 0.0993743 0.2278318
##
## The covariance matrix of the residuals
##             presi       gov  congress
## presi    0.241470 0.1184595 0.1120809
## gov      0.118460 0.2461992 0.0994201
## congress 0.112081 0.0994201 0.2278435
##
## The correlations of the residuals
##             presi      gov congress
## presi    1.000000 0.485805 0.477821
## gov      0.485805 1.000000 0.419763
## congress 0.477821 0.419763 1.000000
##
##
## SUR estimates for 'presi' (equation 1)
## Model Formula: presidentialapp ~ prox + edad + gender + education + sec + cellphone +
##     internet + localidae
##
##                 Estimate   Std. Error  t value   Pr(>|t|)
## (Intercept)  0.200767038  0.109236512  1.83791   0.066271 .
## prox         0.017991090  0.017141074  1.04959   0.294074
## edad         0.000614462  0.000816874  0.75221   0.452041
## gender       0.049774968  0.025042147  1.98765   0.047030 *
## education   -0.012930816  0.011021973 -1.17319   0.240906
## sec         -0.007689793  0.012527318 -0.61384   0.539412
## cellphone   -0.026426278  0.029168983 -0.90597   0.365095
## internet    -0.007830249  0.031607334 -0.24774   0.804373
## localidae    0.208903528  0.049378647  4.23065 2.4696e-05 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.491791 on 1518 degrees of freedom
## Number of observations: 1527 Degrees of Freedom: 1518
## SSR: 367.141585 MSE: 0.241859 Root MSE: 0.491791
## Multiple R-Squared: 0.015742 Adjusted R-Squared: 0.010555
##
##
## SUR estimates for 'gov' (equation 2)
## Model Formula: govapp ~ prox + edad + gender + education + sec + cellphone +
```

```
##     internet + localidae
##
##                 Estimate   Std. Error  t value   Pr(>|t|)
## (Intercept)  0.312555466  0.110316922  2.83325 0.00466848 **
## prox        -0.023534946  0.017300331 -1.36038 0.17391256
## edad        -0.000993582  0.000824910 -1.20447 0.22859421
## gender       0.035319205  0.025309990  1.39547 0.16307922
## education   -0.020810315  0.011118184 -1.87174 0.06143470 .
## sec          0.020877607  0.012659016  1.64923 0.09930724 .
## cellphone   -0.018250877  0.029588679 -0.61682 0.53744598
## internet     0.017401223  0.031929962  0.54498 0.58584641
## localidae    0.186631639  0.049677671  3.75685 0.00017856 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.494227 on 1522 degrees of freedom
## Number of observations: 1531 Degrees of Freedom: 1522
## SSR: 371.764257 MSE: 0.24426 Root MSE: 0.494227
## Multiple R-Squared: 0.024286 Adjusted R-Squared: 0.019157
##
##
## SUR estimates for 'congress' (equation 3)
## Model Formula: congressapp ~ prox + edad + gender + education + sec + cellphone +
##     internet + localidae
##
##                 Estimate   Std. Error  t value   Pr(>|t|)
## (Intercept)  0.272332979  0.109009936  2.49824 0.01259005 *
## prox         0.008084252  0.016666294  0.48507 0.62770205
## edad        -0.000583841  0.000805245 -0.72505 0.46853842
## gender       0.037838588  0.024767191  1.52777 0.12678536
## education   -0.006337487  0.010754929 -0.58926 0.55577537
## sec         -0.024586223  0.012490522 -1.96839 0.04921145 *
## cellphone   -0.034713763  0.028932800 -1.19981 0.23040848
## internet     0.006834273  0.031027766  0.22026 0.82569691
## localidae    0.173837920  0.050849136  3.41870 0.00064647 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.476684 on 1465 degrees of freedom
## Number of observations: 1474 Degrees of Freedom: 1465
## SSR: 332.888518 MSE: 0.227228 Root MSE: 0.476684
## Multiple R-Squared: 0.01261 Adjusted R-Squared: 0.007218
```

```
formula_party <- belongparty ~
  prox+edad+gender+education+sec+cellphone+internet+localidae
m7_party <- glm(formula_party, data = base_3, family = "binomial")

summary(m7_party)
```

```
##
## Call:
## glm(formula = formula_party, family = "binomial", data = base_3)
##
## Deviance Residuals:
```

```
##     Min       1Q   Median       3Q      Max
## -0.4031  -0.2067  -0.1763  -0.1463   3.1866
##
## Coefficients:
##             Estimate Std. Error z value Pr(>|z|)
## (Intercept) -3.17688    1.87648  -1.693   0.0905 .
## prox        -0.54096    0.64357  -0.841   0.4006
## edad         0.02288    0.01256   1.822   0.0685 .
## gender      -0.28839    0.39845  -0.724   0.4692
## education    0.05066    0.16230   0.312   0.7549
## sec          0.20696    0.20443   1.012   0.3114
## cellphone   -0.53125    0.47621  -1.116   0.2646
## internet    -0.26089    0.47315  -0.551   0.5814
## localidae   -0.83953    1.06675  -0.787   0.4313
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 272.73  on 1563  degrees of freedom
## Residual deviance: 265.38  on 1555  degrees of freedom
##   (36 observations deleted due to missingness)
## AIC: 283.38
##
## Number of Fisher Scoring iterations: 8
```

```
formula_union <- belongunion ~
  prox+edad+gender+education+sec+cellphone+internet+localidae
m8_union <- glm(formula_union, data = base_3, family = "binomial")

summary(m8_union)
```

```
##
## Call:
## glm(formula = formula_union, family = "binomial", data = base_3)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.5913  -0.2087  -0.1457  -0.0996   3.3653
##
## Coefficients:
##             Estimate Std. Error z value Pr(>|z|)
## (Intercept) -3.15544    1.77111  -1.782  0.07481 .
## prox        -0.08062    0.31917  -0.253  0.80059
## edad         0.01962    0.01238   1.585  0.11301
## gender      -0.87261    0.42538  -2.051  0.04023 *
## education    0.40018    0.15301   2.615  0.00891 **
## sec         -0.02247    0.20565  -0.109  0.91299
## cellphone   -0.02575    0.52757  -0.049  0.96107
## internet    -0.99011    0.47767  -2.073  0.03819 *
## localidae    0.04041    1.06076   0.038  0.96961
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
```

```
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 288.75  on 1563  degrees of freedom
## Residual deviance: 260.38  on 1555  degrees of freedom
##   (36 observations deleted due to missingness)
## AIC: 278.38
##
## Number of Fisher Scoring iterations: 7
```

```
formula_reli <- belongreligiousgroup ~
  prox+edad+gender+education+sec+cellphone+internet+localidae
m9_reli <- glm(formula_reli, data = base_3, family = "binomial")

summary(m9_reli)
```

```
##
## Call:
## glm(formula = formula_reli, family = "binomial", data = base_3)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.6758  -0.3505  -0.3092  -0.2693   2.7478
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept) -2.612816   0.963706  -2.711   0.0067 **
## prox         0.039858   0.147279   0.271   0.7867
## edad         0.002608   0.007548   0.345   0.7297
## gender       0.315979   0.232825   1.357   0.1747
## education   -0.093923   0.102140  -0.920   0.3578
## sec         -0.219284   0.111566  -1.966   0.0494 *
## cellphone   -0.081484   0.275733  -0.296   0.7676
## internet    -0.427650   0.285818  -1.496   0.1346
## localidae    0.783482   0.380922   2.057   0.0397 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 637.45  on 1564  degrees of freedom
## Residual deviance: 625.56  on 1556  degrees of freedom
##   (35 observations deleted due to missingness)
## AIC: 643.56
##
## Number of Fisher Scoring iterations: 6
```

```
# Seemingly Unrelated Regression by systemfit
# which result to trust, single regress or SUR?

sur_part2 <- systemfit(list(party =
            formula_party, union = formula_union, reli = formula_reli), data = base_3)
```

```
## Warning in systemfit(list(party = formula_party, union = formula_union, : the
```

```
## estimation of systems of equations with unequal numbers of observations has not
## been thoroughly tested yet
```

```
summary(sur_part2)
```

```
##
## systemfit results
## method: OLS
##
##           N   DF     SSR detRCov   OLS-R2 McElroy-R2
## system 4693 4666 130.523 1.5e-05 0.009715   0.007036
##
##          N   DF     SSR      MSE     RMSE       R2    Adj R2
## party 1564 1555 26.4216 0.016991 0.130351 0.004233 -0.000890
## union 1564 1555 27.9016 0.017943 0.133952 0.019698  0.014654
## reli  1565 1556 76.2002 0.048972 0.221296 0.007909  0.002808
##
## The covariance matrix of the residuals
##             party       union        reli
## party 0.016991360 0.000238771 0.002381169
## union 0.000238771 0.017943171 0.000969971
## reli  0.002381169 0.000969971 0.048452418
##
## The correlations of the residuals
##           party     union      reli
## party 1.0000000 0.0136747 0.0829889
## union 0.0136747 1.0000000 0.0328968
## reli  0.0829889 0.0328968 1.0000000
##
##
## OLS estimates for 'party' (equation 1)
## Model Formula: belongparty ~ prox + edad + gender + education + sec + cellphone +
##     internet + localidae
##
##                 Estimate   Std. Error  t value Pr(>|t|)
## (Intercept)  0.025696256  0.028981414  0.88665 0.375407
## prox        -0.003755706  0.004544695 -0.82639 0.408708
## edad         0.000381488  0.000216265  1.76398 0.077931 .
## gender      -0.005034495  0.006632230 -0.75910 0.447911
## education    0.000802285  0.002900956  0.27656 0.782156
## sec          0.003171853  0.003309569  0.95839 0.338016
## cellphone   -0.008269596  0.007724563 -1.07056 0.284534
## internet    -0.003754023  0.008335098 -0.45039 0.652494
## localidae   -0.008916255  0.013115703 -0.67982 0.496723
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.130351 on 1555 degrees of freedom
## Number of observations: 1564 Degrees of Freedom: 1555
## SSR: 26.421565 MSE: 0.016991 Root MSE: 0.130351
## Multiple R-Squared: 0.004233 Adjusted R-Squared: -0.00089
##
##
## OLS estimates for 'union' (equation 2)
```

```
## Model Formula: belongunion ~ prox + edad + gender + education + sec + cellphone +
##     internet + localidae
##
##                 Estimate   Std. Error  t value  Pr(>|t|)
## (Intercept)  0.032055169  0.029782084  1.07632 0.2819494
## prox        -0.001045369  0.004670252 -0.22384 0.8229146
## edad         0.000416760  0.000222239  1.87528 0.0609420 .
## gender      -0.014031455  0.006815459 -2.05877 0.0396826 *
## education    0.008682606  0.002981101  2.91255 0.0036361 **
## sec         -0.000339698  0.003401002 -0.09988 0.9204512
## cellphone   -0.000825959  0.007937969 -0.10405 0.9171417
## internet    -0.019639691  0.008565372 -2.29292 0.0219857 *
## localidae    0.004455785  0.013478051  0.33060 0.7409944
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.133952 on 1555 degrees of freedom
## Number of observations: 1564 Degrees of Freedom: 1555
## SSR: 27.901631 MSE: 0.017943 Root MSE: 0.133952
## Multiple R-Squared: 0.019698 Adjusted R-Squared: 0.014654
##
##
## OLS estimates for 'reli' (equation 3)
## Model Formula: belongreligiousgroup ~ prox + edad + gender + education + sec +
##     cellphone + internet + localidae
##
##                 Estimate   Std. Error  t value Pr(>|t|)
## (Intercept)  0.062596244  0.048939802  1.27905 0.201072
## prox         0.001891072  0.007674463  0.24641 0.805397
## edad         0.000125153  0.000365197  0.34270 0.731871
## gender       0.015402088  0.011195344  1.37576 0.169094
## education   -0.004641461  0.004896596 -0.94790 0.343330
## sec         -0.011152392  0.005587892 -1.99581 0.046128 *
## cellphone   -0.003465234  0.013044203 -0.26565 0.790541
## internet    -0.020811423  0.014072965 -1.47882 0.139390
## localidae    0.045504970  0.022147637  2.05462 0.040082 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.221296 on 1556 degrees of freedom
## Number of observations: 1565 Degrees of Freedom: 1556
## SSR: 76.200188 MSE: 0.048972 Root MSE: 0.221296
## Multiple R-Squared: 0.007909 Adjusted R-Squared: 0.002808
```

```r
# The last four formula are purely estimated by SUR
# Maybe replicate by regressing all formula separately?

formula_interestpoli <- interestpolitics ~
  prox+edad+gender+education+sec+cellphone+internet+localidae

formula_interestelec <- interestelections ~ prox+edad+gender+education+sec+cellphone+internet+localidae

formula_discuss <- discusspolitics ~
  prox+edad+gender+education+sec+cellphone+internet+localidae
```

```r
formula_follow <- followneWs ~
  prox+edad+gender+education+sec+cellphone+internet+localidae

sur_part3 <- systemfit(list(interestpoli =
              formula_interestpoli, interestelec = formula_interestelec,
              discuss = formula_discuss, follow = formula_follow), data = base_3)
```

```
## Warning in systemfit(list(interestpoli = formula_interestpoli, interestelec
## = formula_interestelec, : the estimation of systems of equations with unequal
## numbers of observations has not been thoroughly tested yet
```

```r
summary(sur_part3)
```

```
##
## systemfit results
## method: OLS
##
##           N   DF     SSR detRCov   OLS-R2 McElroy-R2
## system 6229 6193 34927.3 206.058 0.081075   0.036584
##
##                  N   DF     SSR     MSE    RMSE       R2   Adj R2
## interestpoli  1559 1550 9417.25 6.07564 2.46488 0.067252 0.062438
## interestelec  1558 1549 7905.80 5.10381 2.25916 0.090260 0.085562
## discuss       1553 1544 8296.62 5.37346 2.31807 0.094302 0.089610
## follow        1559 1550 9307.64 6.00493 2.45050 0.074970 0.070195
##
## The covariance matrix of the residuals
##              interestpoli interestelec discuss  follow
## interestpoli      6.07888      2.74492 3.37241 3.45475
## interestelec      2.74492      5.11949 2.59981 2.67575
## discuss           3.37241      2.59981 5.35618 3.95518
## follow            3.45475      2.67575 3.95518 5.96419
##
## The correlations of the residuals
##              interestpoli interestelec  discuss   follow
## interestpoli     1.000000     0.492038 0.591026 0.573747
## interestelec     0.492038     1.000000 0.496481 0.484228
## discuss          0.591026     0.496481 1.000000 0.699793
## follow           0.573747     0.484228 0.699793 1.000000
##
##
## OLS estimates for 'interestpoli' (equation 1)
## Model Formula: interestpolitics ~ prox + edad + gender + education + sec + cellphone +
##     internet + localidae
##
##                Estimate  Std. Error  t value   Pr(>|t|)
## (Intercept)  5.14528191  0.55045209  9.34737 < 2.22e-16 ***
## prox        -0.01490704  0.08598171 -0.17337  0.8623797
## edad         0.00245636  0.00410568  0.59828  0.5497383
## gender      -0.35356952  0.12565228 -2.81387  0.0049567 **
## education    0.37372288  0.05508529  6.78444 1.6531e-11 ***
## sec         -0.07748922  0.06271090 -1.23566  0.2167729
```

```
## cellphone   -0.18960966  0.14620390 -1.29689  0.1948637
## internet    -0.10971909  0.15793622 -0.69471  0.4873443
## localidae   -0.41168662  0.24983319 -1.64785  0.0995869 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 2.464882 on 1550 degrees of freedom
## Number of observations: 1559 Degrees of Freedom: 1550
## SSR: 9417.249266 MSE: 6.075645 Root MSE: 2.464882
## Multiple R-Squared: 0.067252 Adjusted R-Squared: 0.062438
##
##
## OLS estimates for 'interestelec' (equation 2)
## Model Formula: interestelections ~ prox + edad + gender + education + sec +
##     cellphone + internet + localidae
##
##                Estimate  Std. Error  t value   Pr(>|t|)
## (Intercept)  4.58051294  0.50540952  9.06297 < 2.22e-16 ***
## prox        -0.08114725  0.07889800 -1.02851  0.3038714
## edad         0.00382774  0.00376442  1.01682  0.3093982
## gender      -0.33143672  0.11533713 -2.87363  0.0041131 **
## education    0.44511597  0.05040023  8.83163 < 2.22e-16 ***
## sec         -0.06105860  0.05752566 -1.06142  0.2886668
## cellphone   -0.33954174  0.13441458 -2.52608  0.0116333 *
## internet    -0.03899709  0.14491090 -0.26911  0.7878803
## localidae    0.70220918  0.23262126  3.01868  0.0025802 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 2.259162 on 1549 degrees of freedom
## Number of observations: 1558 Degrees of Freedom: 1549
## SSR: 7905.804874 MSE: 5.103812 Root MSE: 2.259162
## Multiple R-Squared: 0.09026 Adjusted R-Squared: 0.085562
##
##
## OLS estimates for 'discuss' (equation 3)
## Model Formula: discusspolitics ~ prox + edad + gender + education + sec + cellphone +
##     internet + localidae
##
##                Estimate  Std. Error  t value   Pr(>|t|)
## (Intercept)  4.81277572  0.51806069  9.28998 < 2.22e-16 ***
## prox         0.10854734  0.08074909  1.34425  0.1790636
## edad         0.00991633  0.00386383  2.56645  0.0103681 *
## gender      -0.20521275  0.11821230 -1.73597  0.0827690 .
## education    0.39847576  0.05166712  7.71237 2.1982e-14 ***
## sec         -0.06986973  0.05913938 -1.18144  0.2376092
## cellphone   -0.11557024  0.13739606 -0.84115  0.4003960
## internet    -0.32303847  0.14842593 -2.17643  0.0296743 *
## localidae   -0.76548391  0.23764625 -3.22111  0.0013036 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 2.318072 on 1544 degrees of freedom
## Number of observations: 1553 Degrees of Freedom: 1544
```

```
## SSR: 8296.619389 MSE: 5.373458 Root MSE: 2.318072
## Multiple R-Squared: 0.094302 Adjusted R-Squared: 0.08961
##
##
## OLS estimates for 'follow' (equation 4)
## Model Formula: followmews ~ prox + edad + gender + education + sec + cellphone +
##     internet + localidae
##
##                Estimate  Std. Error  t value   Pr(>|t|)
## (Intercept)  5.70716323  0.54603602 10.45199 < 2.22e-16 ***
## prox         0.01464297  0.08514897  0.17197  0.8634845
## edad         0.00934364  0.00407093  2.29521  0.0218543 *
## gender      -0.23866503  0.12445772 -1.91764  0.0553403 .
## education    0.35439374  0.05437098  6.51807 9.6068e-11 ***
## sec         -0.04991123  0.06221222 -0.80227  0.4225176
## cellphone   -0.19075333  0.14483305 -1.31706  0.1880143
## internet    -0.41856027  0.15620957 -2.67948  0.0074517 **
## localidae   -0.55023766  0.24992402 -2.20162  0.0278391 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 2.450496 on 1550 degrees of freedom
## Number of observations: 1559 Degrees of Freedom: 1550
## SSR: 9307.642661 MSE: 6.004931 Root MSE: 2.450496
## Multiple R-Squared: 0.07497 Adjusted R-Squared: 0.070195
```

I rewrote the Stata code to R here, and compared the results in R, Stata, and in the paper.

First, for the binomial and multinomial models (i.e., models starting with "m"), the R and Stata replication results are generally the same.

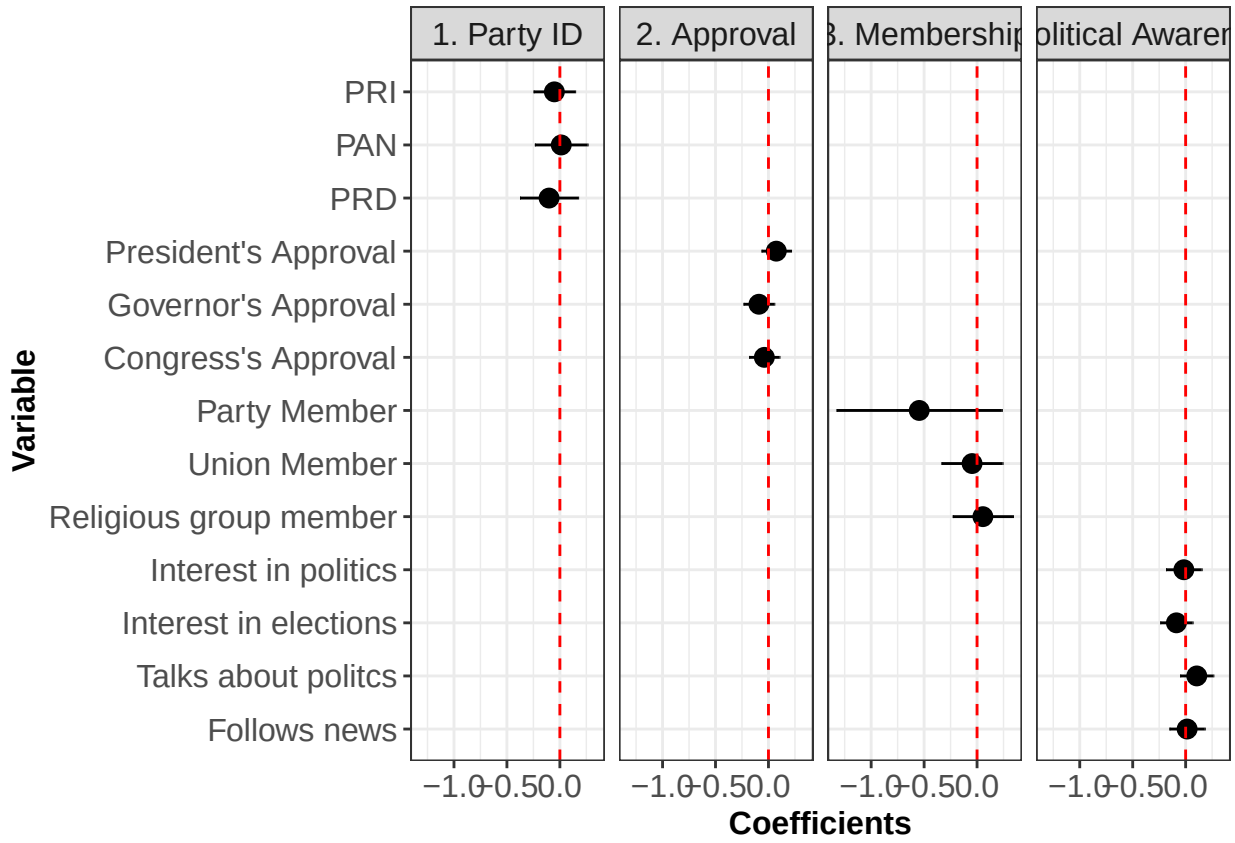
Second, the coefficients for "prox" in the replications' binomial and multinomial models are slightly different from those in the original paper. For instance, the coefficients for party IDs (i.e., the first three lines) are -0.053, 0.013, and -0.102 in Table B.2 in the paper's appendix. However, R and Stata replication generates -0.055, 0.019, and -0.102 separately.

Third, the significance of the Figure 1's results generally remain the same in replications.

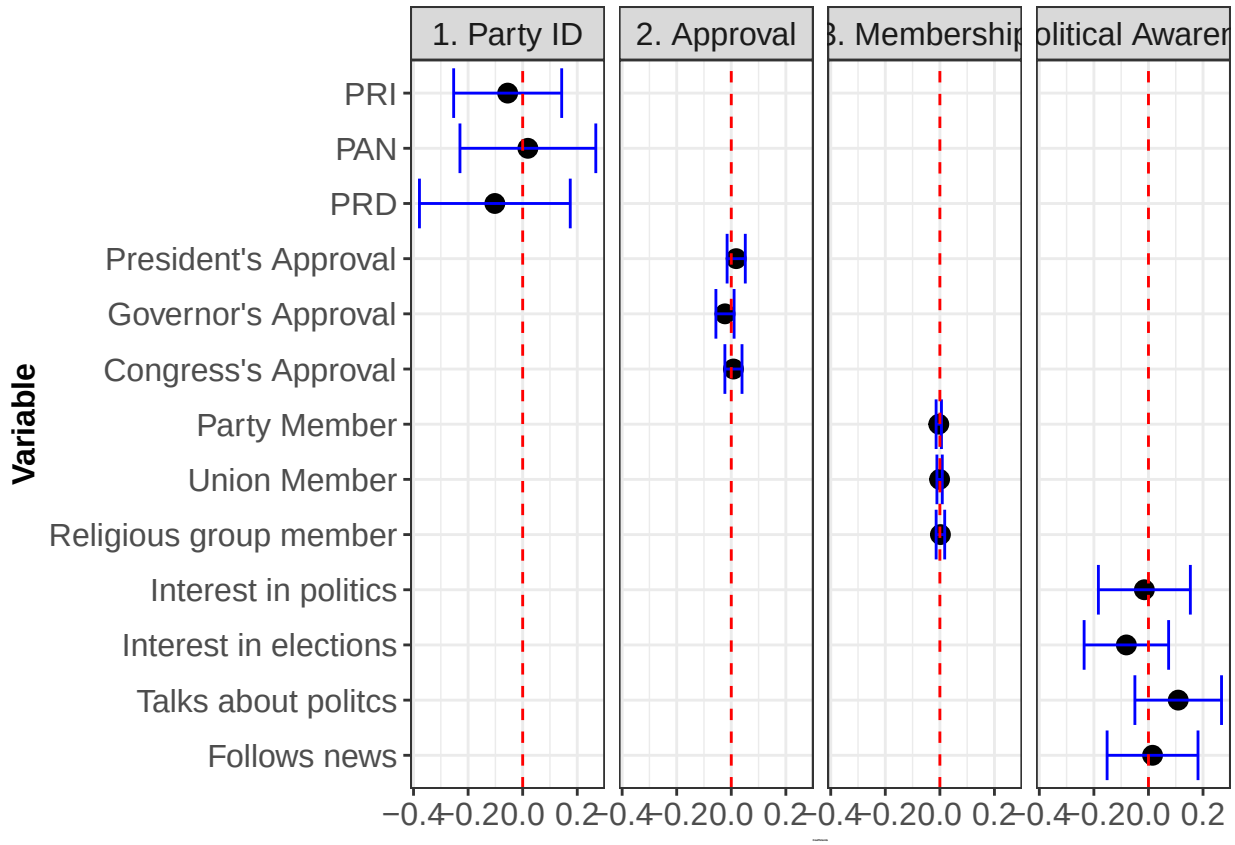
Fourth, the Seemingly Unrelated Regression (SUR) results are quite different in R and Stata. Although still non-significant, the coefficients differ a lot. I attach all coefficients (in the paper and in the R replication) below.

```
results <- read.table(header=T, con <- textConnection('

IV  Coefficient StdError Coef_repli SE_repli    Model   Included    Variable Order
Proximity   -0.052  0.100   -0.055 0.101 1  1   PRI 13
Proximity  0.013    0.127   0.019 0.127 1   1   PAN 12
Proximity  -0.102  0.140    -0.102 0.141 1  1   PRD 11
Proximity  0.074    0.071   0.018 0.017 2   1   "President\'s Approval" 10
Proximity  -0.090   0.074   -0.023 0.017 2  1   "Governor\'s Approval" 9
Proximity  -0.039  0.073    0.008 0.016 2   1   "Congress\'s Approval" 8
Proximity  -0.546  0.398    -0.004 0.005 3  1   "Party Member" 7
Proximity  -0.047   0.147   -0.001 0.005 3  1   "Union Member" 6
Proximity  0.055  0.145 0.002 0.008 3   1   "Religious group member" 5
Proximity  -0.017  0.086  -0.015 0.086 4    1   "Interest in politics" 4
Proximity  -0.087   0.078   -0.081 0.079 4  1   "Interest in elections" 3
```

```
Proximity  0.105 0.080  0.109 0.081 4   1   "Talks about politcs" 2
Proximity  0.014  0.085  0.015 0.085 4  1   "Follows news" 1
'))
close(con)

results$min<-results$Coefficient-(1.96*results$StdError)
results$max<-results$Coefficient+(1.96*results$StdError)
results$Color[results$Included==1]<-"black"
results$Color[results$Included==0]<-"white"

results$Model[results$Model==1]<-"1. Party ID"
results$Model[results$Model==2]<-"2. Approval"
results$Model[results$Model==3]<-"3. Membership"
results$Model[results$Model==4]<-"4. Political Awareness"

results$Variable <- factor(results$Variable, levels=results$Variable[order(results$Order)])

results$min_repli<-results$Coef_repli-(1.96*results$SE_repli)
results$max_repli<-results$Coef_repli+(1.96*results$SE_repli)

# a is the figure 1 with original data; I am still trying to combine them into one # so that comparison
a<-ggplot(results, aes(y=reorder(Variable, Order), x = Coefficient)) +
#  scale_colour_gradient(low="white", high="black")+
  geom_point(size=3) +
  facet_grid( ~ Model)+
  geom_errorbarh(aes(xmin=min, xmax=max),  height = 0) +
  geom_vline(xintercept = 0, linetype=2, color="red") +
  labs( x = "Coefficients", y = "Variable") +
  theme_bw()+
  theme(
    axis.title.x = element_text(face="bold", size=12),
    axis.title.y = element_text(face="bold", size=12, angle=90),
    axis.text.x  = element_text( size=12),
    strip.text.x = element_text(size=12),
    axis.text.y  = element_text( size=12))

a
```




```
# b is the figure 1 with replicated data
b<-ggplot(results, aes(y=reorder(Variable, Order), x = Coef_repli)) +
#  scale_colour_gradient(low="white", high="black")+
  geom_point(size=3) +
  facet_grid( ~ Model)+
  geom_errorbarh(aes(xmin=min_repli, xmax=max_repli), color = "blue")+
  geom_vline(xintercept = 0, linetype=2, color="red") +
  labs( x = "Coefficients", y = "Variable") +
  theme_bw()+
  theme(
    axis.title.x = element_text(face="bold", size=1),
    axis.title.y = element_text(face="bold", size=12, angle=90),
    axis.text.x  = element_text( size=12),
    strip.text.x = element_text(size=12),
    axis.text.y  = element_text( size=12))

b
```




<<<<<<< HEAD
=======

Below is a replication part (replacing proximity with distance) of Figure 1, testing the assumption that distance to the supermarket does not correlate with political attitudes and political behaviors.

```
rep_m1_3_multinom <- multinom(partyid ~ distance+edad+gender+education+sec+cellphone+internet+localidae
```

```
## # weights:  40 (27 variable)
## initial  value 2170.936970
## iter  10 value 1611.555520
## iter  20 value 1538.925451
## iter  30 value 1530.339983
## final  value 1530.326134
## converged
```

```
summary(rep_m1_3_multinom)
```

```
## Call:
## multinom(formula = partyid ~ distance + edad + gender + education +
##     sec + cellphone + internet + localidae, data = base_3)
##
## Coefficients:
##   (Intercept)     distance        edad      gender   education        sec
## 1   0.5284141  0.015317567 0.005898493  0.04846744 -0.27584566 -0.2113889
## 2   0.2498357 -0.026594614 0.002924409 -0.01883015 -0.04005697 -0.2176269
## 3   1.1625284  0.004233159 0.001618003  0.16741056 -0.25663329 -0.0977741
```

```
##    cellphone   internet     localidae
## 1 -0.2359282 -0.3170626  0.0007330051
## 2 -0.1328065 -0.4410206 -0.7446425158
## 3 -0.2833608 -0.3935745 -1.3074309763
##
## Std. Errors:
##   (Intercept)   distance        edad    gender  education        sec cellphone
## 1   0.6234181 0.01121510 0.004475565 0.1370962 0.06361012 0.06776067 0.1598818
## 2   1.1276632 0.02811711 0.006759861 0.2070302 0.08761381 0.10689906 0.2522212
## 3   0.9124718 0.01796760 0.005721228 0.1738436 0.07914896 0.08830688 0.2050028
##    internet localidae
## 1 0.1756480 0.3413421
## 2 0.2479200 0.8609261
## 3 0.2136644 0.6519070
##
## Residual Deviance: 3060.652
## AIC: 3114.652
```

```r
rep_formula_presi <- presidentialapp ~
  distance+edad+gender+education+sec+cellphone+internet+localidae
rep_m4_presi <- glm(rep_formula_presi, data = base_3, family = "binomial")

summary(rep_m4_presi)
```

```
##
## Call:
## glm(formula = rep_formula_presi, family = "binomial", data = base_3)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.5959  -1.0386  -0.9602   1.3014   1.5153
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept) -0.900076   0.484233  -1.859   0.0631 .
## distance     0.015205   0.009613   1.582   0.1137
## edad         0.003297   0.003435   0.960   0.3371
## gender       0.209793   0.105085   1.996   0.0459 *
## education   -0.045062   0.046194  -0.976   0.3293
## sec         -0.038874   0.052997  -0.734   0.4632
## cellphone   -0.104966   0.122460  -0.857   0.3914
## internet    -0.057872   0.132714  -0.436   0.6628
## localidae    0.512195   0.285761   1.792   0.0731 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 2081.8  on 1526  degrees of freedom
## Residual deviance: 2056.5  on 1518  degrees of freedom
##   (73 observations deleted due to missingness)
## AIC: 2074.5
##
## Number of Fisher Scoring iterations: 4
```

```r
rep_formula_gov <- govapp ~
  distance+edad+gender+education+sec+cellphone+internet+localidae
rep_m5_gov <- glm(rep_formula_gov, data = base_3, family = "binomial")

summary(rep_m5_gov)
```

```
##
## Call:
## glm(formula = rep_formula_gov, family = "binomial", data = base_3)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.9980  -1.1894   0.7815   1.1351   1.4265
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept) -0.642239   0.491300  -1.307   0.1911
## distance     0.019145   0.010262   1.866   0.0621 .
## edad        -0.003693   0.003405  -1.084   0.2782
## gender       0.146893   0.104430   1.407   0.1595
## education   -0.078260   0.045638  -1.715   0.0864 .
## sec          0.084594   0.052768   1.603   0.1089
## cellphone   -0.075767   0.122263  -0.620   0.5355
## internet     0.051222   0.130892   0.391   0.6956
## localidae    0.509151   0.302142   1.685   0.0920 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 2115.5  on 1530  degrees of freedom
## Residual deviance: 2075.1  on 1522  degrees of freedom
##   (69 observations deleted due to missingness)
## AIC: 2093.1
##
## Number of Fisher Scoring iterations: 4
```

```r
rep_formula_congress <- congressapp ~
  distance+edad+gender+education+sec+cellphone+internet+localidae
rep_m6_congress <- glm(rep_formula_congress, data = base_3, family = "binomial")

summary(rep_m6_congress)
```

```
##
## Call:
## glm(formula = rep_formula_congress, family = "binomial", data = base_3)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.3836  -0.9366  -0.8703   1.3953   1.6566
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
```

```
## (Intercept) -0.963327   0.511496  -1.883  0.05965 .
## distance    -0.003477   0.010001  -0.348  0.72806
## edad        -0.002803   0.003610  -0.777  0.43736
## gender       0.150039   0.110366   1.359  0.17400
## education   -0.021757   0.047942  -0.454  0.64995
## sec         -0.107335   0.056226  -1.909  0.05626 .
## cellphone   -0.156386   0.129156  -1.211  0.22596
## internet     0.037583   0.138192   0.272  0.78565
## localidae    0.787927   0.305227   2.581  0.00984 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 1916.1  on 1473  degrees of freedom
## Residual deviance: 1897.9  on 1465  degrees of freedom
##   (126 observations deleted due to missingness)
## AIC: 1915.9
##
## Number of Fisher Scoring iterations: 4
```

```
# Seemingly Unrelated Regression by systemfit
# which result to trust, single regress or SUR?

rep_sur_part1 <- systemfit(list(presi =
                rep_formula_presi, gov = rep_formula_gov, congress = rep_formula_congress),
                method = "SUR", data = base_3)
```

```
## Warning in systemfit(list(presi = rep_formula_presi, gov = rep_formula_gov, :
## the estimation of systems of equations with unequal numbers of observations has
## not been thoroughly tested yet
```

```
summary(rep_sur_part1)
```

```
##
## systemfit results
## method: SUR
##
##           N   DF     SSR  detRCov   OLS-R2 McElroy-R2
## system 4532 4505 1071.21 0.007509 0.018291   0.006153
##
##             N   DF     SSR      MSE     RMSE       R2   Adj R2
## presi    1527 1518 366.826 0.241651 0.491580 0.016589 0.011406
## gov      1531 1522 371.453 0.244056 0.494020 0.025104 0.019980
## congress 1474 1465 332.934 0.227259 0.476717 0.012473 0.007081
##
## The covariance matrix of the residuals used for estimation
##             presi       gov  congress
## presi    0.241316 0.1178335 0.1122727
## gov      0.117834 0.2460283 0.0993869
## congress 0.112273 0.0993869 0.2278484
##
## The covariance matrix of the residuals
```

```
##             presi       gov  congress
## presi    0.241336 0.1178650 0.1123078
## gov      0.117865 0.2460705 0.0994396
## congress 0.112308 0.0994396 0.2278672
##
## The correlations of the residuals
##             presi      gov congress
## presi    1.000000 0.483629 0.478896
## gov      0.483629 1.000000 0.419934
## congress 0.478896 0.419934 1.000000
##
##
## SUR estimates for 'presi' (equation 1)
## Model Formula: presidentialapp ~ distance + edad + gender + education + sec +
##     cellphone + internet + localidae
##
##                 Estimate   Std. Error  t value Pr(>|t|)
## (Intercept)  0.287391195  0.115053420  2.49789 0.012598 *
## distance     0.003973838  0.002281434  1.74182 0.081743 .
## edad         0.000803062  0.000818816  0.98076 0.326868
## gender       0.050770287  0.025036810  2.02783 0.042752 *
## education   -0.011315757  0.011032816 -1.02565 0.305222
## sec         -0.010004381  0.012546640 -0.79738 0.425358
## cellphone   -0.024947389  0.029169762 -0.85525 0.392549
## internet    -0.014495187  0.031726877 -0.45687 0.647827
## localidae    0.120517451  0.067627986  1.78206 0.074939 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.49158 on 1518 degrees of freedom
## Number of observations: 1527 Degrees of Freedom: 1518
## SSR: 366.825826 MSE: 0.241651 Root MSE: 0.49158
## Multiple R-Squared: 0.016589 Adjusted R-Squared: 0.011406
##
##
## SUR estimates for 'gov' (equation 2)
## Model Formula: govapp ~ distance + edad + gender + education + sec + cellphone +
##     internet + localidae
##
##                 Estimate   Std. Error  t value  Pr(>|t|)
## (Intercept)  0.364781047  0.116334809  3.13561 0.0017477 **
## distance     0.004304353  0.002303950  1.86825 0.0619194 .
## edad        -0.000921763  0.000826464 -1.11531 0.2648937
## gender       0.035661394  0.025304184  1.40931 0.1589483
## education   -0.020015771  0.011130651 -1.79826 0.0723344 .
## sec          0.019664034  0.012690895  1.54946 0.1214791
## cellphone   -0.017010377  0.029591705 -0.57484 0.5654872
## internet     0.013457812  0.032040533  0.42002 0.6745268
## localidae    0.108746854  0.068073315  1.59750 0.1103627
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.49402 on 1522 degrees of freedom
## Number of observations: 1531 Degrees of Freedom: 1522
```

```
## SSR: 371.452529 MSE: 0.244056 Root MSE: 0.49402
## Multiple R-Squared: 0.025104 Adjusted R-Squared: 0.01998
##
##
## SUR estimates for 'congress' (equation 3)
## Model Formula: congressapp ~ distance + edad + gender + education + sec + cellphone +
##     internet + localidae
##
##                 Estimate   Std. Error  t value  Pr(>|t|)
## (Intercept)  0.268196482  0.115355767  2.32495 0.0202106 *
## distance    -0.000543726  0.002261100 -0.24047 0.8099999
## edad        -0.000566731  0.000806958 -0.70231 0.4826003
## gender       0.037790433  0.024768452  1.52575 0.1272883
## education   -0.006193253  0.010767697 -0.57517 0.5652649
## sec         -0.024613140  0.012516480 -1.96646 0.0494342 *
## cellphone   -0.034832357  0.028940953 -1.20357 0.2289517
## internet     0.007026839  0.031153979  0.22555 0.8215814
## localidae    0.183311995  0.069177250  2.64989 0.0081385 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.476717 on 1465 degrees of freedom
## Number of observations: 1474 Degrees of Freedom: 1465
## SSR: 332.934473 MSE: 0.227259 Root MSE: 0.476717
## Multiple R-Squared: 0.012473 Adjusted R-Squared: 0.007081
```

```
rep_formula_party <- belongparty ~
  distance+edad+gender+education+sec+cellphone+internet+localidae
rep_m7_party <- glm(rep_formula_party, data = base_3, family = "binomial")

summary(rep_m7_party)
```

```
##
## Call:
## glm(formula = rep_formula_party, family = "binomial", data = base_3)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.4059  -0.2067  -0.1776  -0.1481   3.1271
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept) -3.803607   1.954390  -1.946   0.0516 .
## distance    -0.009831   0.042978  -0.229   0.8191
## edad         0.021408   0.012531   1.708   0.0876 .
## gender      -0.300034   0.398059  -0.754   0.4510
## education    0.038259   0.162712   0.235   0.8141
## sec          0.219811   0.203357   1.081   0.2797
## cellphone   -0.536122   0.476155  -1.126   0.2602
## internet    -0.203865   0.474097  -0.430   0.6672
## localidae   -0.450838   1.347212  -0.335   0.7379
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
```

```
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 272.73  on 1563  degrees of freedom
## Residual deviance: 266.49  on 1555  degrees of freedom
##   (36 observations deleted due to missingness)
## AIC: 284.49
##
## Number of Fisher Scoring iterations: 7
```

```
rep_formula_union <- belongunion ~ distance+edad+gender+
  education+sec+cellphone+internet+localidae
rep_m8_union <- glm(rep_formula_union, data = base_3, family = "binomial")

summary(rep_m8_union)
```

```
##
## Call:
## glm(formula = rep_formula_union, family = "binomial", data = base_3)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.6420  -0.2084  -0.1462  -0.0997   3.3695
##
## Coefficients:
##               Estimate Std. Error z value Pr(>|z|)
## (Intercept) -4.0675145  1.8377740  -2.213   0.0269 *
## distance    -0.0711031  0.0669941  -1.061   0.2885
## edad         0.0183548  0.0124096   1.479   0.1391
## gender      -0.8782621  0.4256693  -2.063   0.0391 *
## education    0.3853845  0.1531459   2.516   0.0119 *
## sec          0.0002438  0.2045361   0.001   0.9990
## cellphone   -0.0412950  0.5283548  -0.078   0.9377
## internet    -0.9130941  0.4796163  -1.904   0.0569 .
## localidae    1.0677992  1.2769481   0.836   0.4030
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 288.75  on 1563  degrees of freedom
## Residual deviance: 258.96  on 1555  degrees of freedom
##   (36 observations deleted due to missingness)
## AIC: 276.96
##
## Number of Fisher Scoring iterations: 8
```

```
rep_formula_reli <- belongreligiousgroup ~
  distance+edad+gender+education+sec+cellphone+internet+localidae
rep_m9_reli <- glm(rep_formula_reli, data = base_3, family = "binomial")

summary(rep_m9_reli)
```

```
##
```

```
## Call:
## glm(formula = rep_formula_reli, family = "binomial", data = base_3)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.6513  -0.3514  -0.3100  -0.2667   2.7627
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept) -2.349345   1.014941  -2.315   0.0206 *
## distance     0.012568   0.018388   0.683   0.4943
## edad         0.003156   0.007558   0.418   0.6762
## gender       0.321346   0.232867   1.380   0.1676
## education   -0.088367   0.102167  -0.865   0.3871
## sec         -0.228299   0.112243  -2.034   0.0420 *
## cellphone   -0.073384   0.275689  -0.266   0.7901
## internet    -0.448796   0.287477  -1.561   0.1185
## localidae    0.501852   0.548791   0.914   0.3605
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 637.45  on 1564  degrees of freedom
## Residual deviance: 625.18  on 1556  degrees of freedom
##   (35 observations deleted due to missingness)
## AIC: 643.18
##
## Number of Fisher Scoring iterations: 6
```

```
# Seemingly Unrelated Regression by systemfit
# which result to trust, single regress or SUR?

rep_sur_part2 <- systemfit(list(party = rep_formula_party,
                union = rep_formula_union, reli = rep_formula_reli), data = base_3)
```

```
## Warning in systemfit(list(party = rep_formula_party, union =
## rep_formula_union, : the estimation of systems of equations with unequal numbers
## of observations has not been thoroughly tested yet
```

```
summary(rep_sur_part2)
```

```
##
## systemfit results
## method: OLS
##
##           N   DF     SSR detRCov   OLS-R2 McElroy-R2
## system 4693 4666 130.507 1.5e-05 0.009843    0.00709
##
##          N   DF     SSR      MSE     RMSE       R2    Adj R2
## party 1564 1555 26.4324 0.016998 0.130378 0.003826 -0.001299
## union 1564 1555 27.8932 0.017938 0.133932 0.019994  0.014953
## reli  1565 1556 76.1810 0.048959 0.221268 0.008159  0.003060
```

```
##
## The covariance matrix of the residuals
##             party       union        reli
## party 0.016998301 0.000239078 0.002380069
## union 0.000239078 0.017937744 0.000978223
## reli  0.002380069 0.000978223 0.048439929
##
## The correlations of the residuals
##           party     union      reli
## party 1.0000000 0.0136916 0.0829443
## union 0.0136916 1.0000000 0.0331859
## reli  0.0829443 0.0331859 1.0000000
##
##
## OLS estimates for 'party' (equation 1)
## Model Formula: belongparty ~ distance + edad + gender + education + sec + cellphone +
##     internet + localidae
##
##                 Estimate   Std. Error  t value Pr(>|t|)
## (Intercept)  0.019673226  0.030599745  0.64292 0.520370
## distance    -0.000131725  0.000602983 -0.21846 0.827102
## edad         0.000366107  0.000216805  1.68865 0.091488 .
## gender      -0.005116767  0.006634246 -0.77127 0.440667
## education    0.000682631  0.002905599  0.23494 0.814289
## sec          0.003352852  0.003316626  1.01092 0.312211
## cellphone   -0.008339470  0.007728092 -1.07911 0.280706
## internet    -0.003316359  0.008368158 -0.39631 0.691933
## localidae   -0.004611347  0.018058694 -0.25535 0.798484
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.130378 on 1555 degrees of freedom
## Number of observations: 1564 Degrees of Freedom: 1555
## SSR: 26.432358 MSE: 0.016998 Root MSE: 0.130378
## Multiple R-Squared: 0.003826 Adjusted R-Squared: -0.001299
##
##
## OLS estimates for 'union' (equation 2)
## Model Formula: belongunion ~ distance + edad + gender + education + sec + cellphone +
##     internet + localidae
##
##                 Estimate   Std. Error  t value  Pr(>|t|)
## (Intercept)  0.023056120  0.031433950  0.73348 0.4633773
## distance    -0.000446925  0.000619421 -0.72152 0.4706982
## edad         0.000398978  0.000222716  1.79142 0.0734197 .
## gender      -0.014133464  0.006815108 -2.07384 0.0382582 *
## education    0.008525886  0.002984811  2.85642 0.0043414 **
## sec         -0.000115520  0.003407043 -0.03391 0.9729564
## cellphone   -0.000966309  0.007938774 -0.12172 0.9031364
## internet    -0.018979331  0.008596289 -2.20785 0.0274001 *
## localidae    0.014195501  0.018551007  0.76521 0.4442599
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
```

```
## Residual standard error: 0.133932 on 1555 degrees of freedom
## Number of observations: 1564 Degrees of Freedom: 1555
## SSR: 27.893191 MSE: 0.017938 Root MSE: 0.133932
## Multiple R-Squared: 0.019994 Adjusted R-Squared: 0.014953
##
##
## OLS estimates for 'reli' (equation 3)
## Model Formula: belongreligiousgroup ~ distance + edad + gender + education +
##     sec + cellphone + internet + localidae
##
##                 Estimate   Std. Error  t value Pr(>|t|)
## (Intercept)  0.076735718  0.051655343  1.48553 0.137605
## distance     0.000688603  0.001017896  0.67650 0.498826
## edad         0.000153375  0.000365988  0.41907 0.675222
## gender       0.015563652  0.011195030  1.39023 0.164658
## education   -0.004393948  0.004902823 -0.89621 0.370280
## sec         -0.011507190  0.005597962 -2.05560 0.039987 *
## cellphone   -0.003246671  0.013045816 -0.24887 0.803497
## internet    -0.021848766  0.014124137 -1.54691 0.122088
## localidae    0.030381815  0.030484502  0.99663 0.319098
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.221268 on 1556 degrees of freedom
## Number of observations: 1565 Degrees of Freedom: 1556
## SSR: 76.180962 MSE: 0.048959 Root MSE: 0.221268
## Multiple R-Squared: 0.008159 Adjusted R-Squared: 0.00306
```

```
# The last four formula are purely estimated by SUR
# Maybe replicate by regressing all formula separately?

rep_formula_interestpoli <- interestpolitics ~
  distance+edad+gender+education+sec+cellphone+internet+localidae

rep_formula_interestelec <- interestelections ~
  distance+edad+gender+education+sec+cellphone+internet+localidae

rep_formula_discuss <- discusspolitics ~
  distance+edad+gender+education+sec+cellphone+internet+localidae

rep_formula_follow <- followmews ~
  distance+edad+gender+education+sec+cellphone+internet+localidae

rep_sur_part3 <- systemfit(list(interestpoli = rep_formula_interestpoli,
                        interestelec = rep_formula_interestelec, discuss =
                        rep_formula_discuss, follow = rep_formula_follow), data = base_3)
```

```
## Warning in systemfit(list(interestpoli = rep_formula_interestpoli, interestelec
## = rep_formula_interestelec, : the estimation of systems of equations with
## unequal numbers of observations has not been thoroughly tested yet
```

```
summary(rep_sur_part3)
```

```
##
```

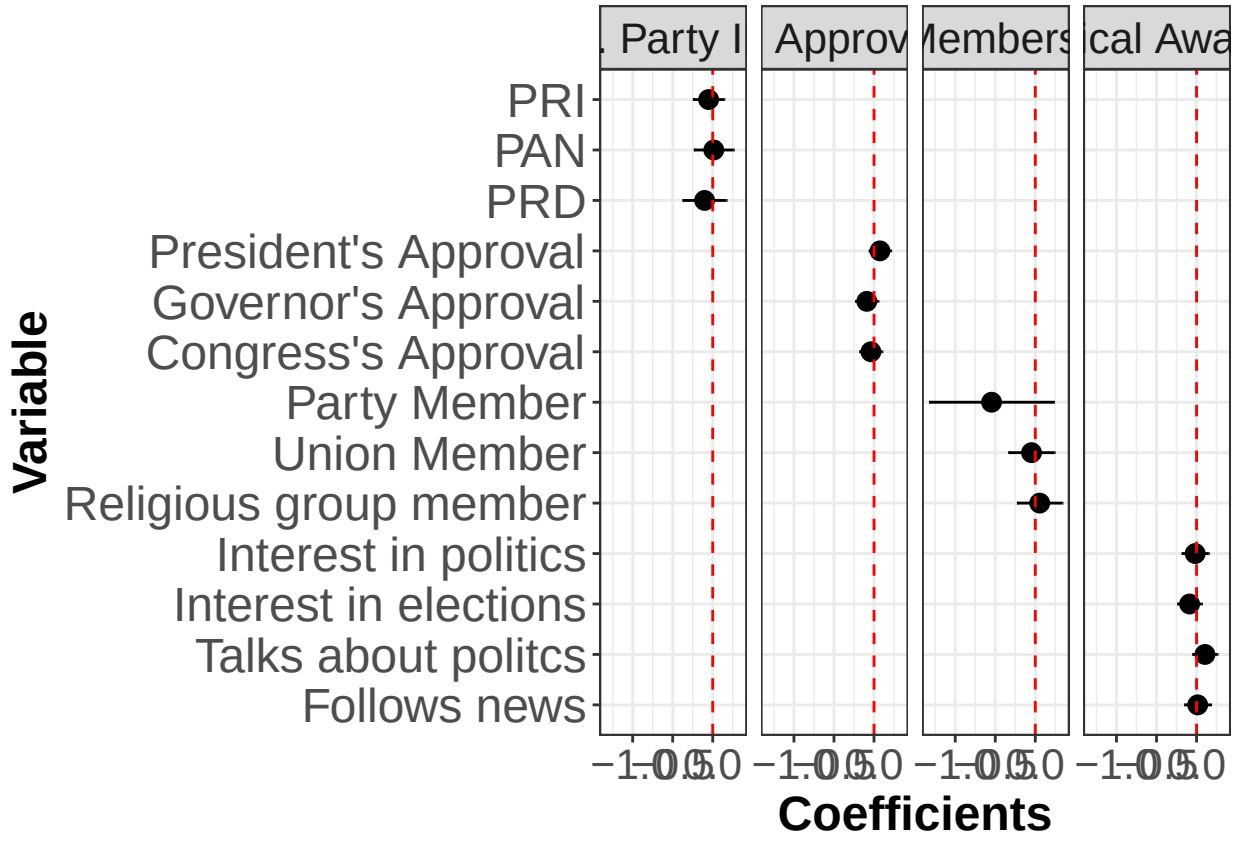
```
## systemfit results
## method: OLS
##
##           N   DF     SSR detRCov   OLS-R2 McElroy-R2
## system 6229 6193 34831.7  202.57 0.083591   0.040168
##
##                  N   DF     SSR     MSE    RMSE       R2   Adj R2
## interestpoli  1559 1550 9386.11 6.05556 2.46080 0.070336 0.065538
## interestelec  1558 1549 7896.91 5.09807 2.25789 0.091284 0.086591
## discuss       1553 1544 8246.03 5.34069 2.31099 0.099825 0.095161
## follow        1559 1550 9302.65 6.00171 2.44984 0.075466 0.070694
##
## The covariance matrix of the residuals
##              interestpoli interestelec discuss  follow
## interestpoli      6.05051      2.76210 3.33526 3.43812
## interestelec      2.76210      5.11409 2.61546 2.68534
## discuss           3.33526      2.61546 5.31692 3.93424
## follow            3.43812      2.68534 3.93424 5.95560
##
## The correlations of the residuals
##              interestpoli interestelec  discuss   follow
## interestpoli     1.000000     0.496538 0.588042 0.572734
## interestelec     0.496538     1.000000 0.501573 0.486570
## discuss          0.588042     0.501573 1.000000 0.699154
## follow           0.572734     0.486570 0.699154 1.000000
##
##
## OLS estimates for 'interestpoli' (equation 1)
## Model Formula: interestpolitics ~ distance + edad + gender + education + sec +
##     cellphone + internet + localidae
##
##                Estimate  Std. Error  t value   Pr(>|t|)
## (Intercept)  4.66240648  0.58049455  8.03178 1.7764e-15 ***
## distance    -0.02597960  0.01141866 -2.27519  0.0230307 *
## edad         0.00158679  0.00410430  0.38662  0.6990926
## gender      -0.35906593  0.12537447 -2.86395  0.0042403 **
## education    0.36533815  0.05503815  6.63791 4.3868e-11 ***
## sec         -0.06557634  0.06269867 -1.04590  0.2957718
## cellphone   -0.19716643  0.14589730 -1.35141  0.1767627
## internet    -0.07526522  0.15814403 -0.47593  0.6341925
## localidae    0.13931398  0.34378650  0.40523  0.6853614
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 2.460804 on 1550 degrees of freedom
## Number of observations: 1559 Degrees of Freedom: 1550
## SSR: 9386.111641 MSE: 6.055556 Root MSE: 2.460804
## Multiple R-Squared: 0.070336 Adjusted R-Squared: 0.065538
##
##
## OLS estimates for 'interestelec' (equation 2)
## Model Formula: interestelections ~ distance + edad + gender + education + sec +
##     cellphone + internet + localidae
##
```

```
##                Estimate  Std. Error  t value   Pr(>|t|)
## (Intercept)  4.81313889  0.53291950  9.03164 < 2.22e-16 ***
## distance     0.01785625  0.01067481  1.67275  0.0945792 .
## edad         0.00416210  0.00377088  1.10375  0.2698739
## gender      -0.32801299  0.11530373 -2.84477  0.0045027 **
## education    0.44834430  0.05043276  8.88994 < 2.22e-16 ***
## sec         -0.06633537  0.05763314 -1.15099  0.2499126
## cellphone   -0.33600568  0.13436616 -2.50067  0.0124984 *
## internet    -0.05652606  0.14539493 -0.38878  0.6974953
## localidae    0.37336189  0.31614152  1.18100  0.2377856
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 2.257891 on 1549 degrees of freedom
## Number of observations: 1558 Degrees of Freedom: 1549
## SSR: 7896.910777 MSE: 5.09807 Root MSE: 2.257891
## Multiple R-Squared: 0.091284 Adjusted R-Squared: 0.086591
##
##
## OLS estimates for 'discuss' (equation 3)
## Model Formula: discusspolitics ~ distance + edad + gender + education + sec +
##     cellphone + internet + localidae
##
##                Estimate  Std. Error  t value   Pr(>|t|)
## (Intercept)  4.27329899  0.54497874  7.84122 8.2157e-15 ***
## distance    -0.03636968  0.01080229 -3.36685   0.000779 ***
## edad         0.00906379  0.00385821  2.34922   0.018938 *
## gender      -0.20947287  0.11778594 -1.77842   0.075532 .
## education    0.38990745  0.05155027  7.56363 6.7057e-14 ***
## sec         -0.05822699  0.05903566 -0.98630   0.324139
## cellphone   -0.12636543  0.13693446 -0.92282   0.356247
## internet    -0.28264113  0.14845953 -1.90383   0.057119 .
## localidae   -0.05847091  0.32383474 -0.18056   0.856738
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 2.310994 on 1544 degrees of freedom
## Number of observations: 1553 Degrees of Freedom: 1544
## SSR: 8246.027213 MSE: 5.340691 Root MSE: 2.310994
## Multiple R-Squared: 0.099825 Adjusted R-Squared: 0.095161
##
##
## OLS estimates for 'follow' (equation 4)
## Model Formula: followneWs ~ distance + edad + gender + education + sec + cellphone +
##     internet + localidae
##
##                Estimate  Std. Error  t value   Pr(>|t|)
## (Intercept)  5.53066921  0.57684347  9.58782 < 2.22e-16 ***
## distance    -0.01055680  0.01133058 -0.93171  0.3516318
## edad         0.00904833  0.00407651  2.21962  0.0265885 *
## gender      -0.24071352  0.12438537 -1.93522  0.0531445 .
## education    0.35143698  0.05441439  6.45853 1.4113e-10 ***
## sec         -0.04575333  0.06230208 -0.73438  0.4628290
## cellphone   -0.19369239  0.14476422 -1.33799  0.1810975
```

```
## internet    -0.40592811  0.15667069 -2.59096  0.0096606 **
## localidae   -0.33425472  0.34341154 -0.97334  0.3305383
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 2.449839 on 1550 degrees of freedom
## Number of observations: 1559 Degrees of Freedom: 1550
## SSR: 9302.649093 MSE: 6.001709 Root MSE: 2.449839
## Multiple R-Squared: 0.075466 Adjusted R-Squared: 0.070694
```

```
results <- read.table(header=T, con <- textConnection('
IV  Coefficient StdError Coef_repli SE_repli    Model   Included    Variable Order
Proximity   -0.052  0.100   -0.055 0.101 1  1   PRI 13
Proximity  0.013    0.127   0.019 0.127 1   1   PAN 12
Proximity  -0.102  0.140    -0.102 0.141 1  1   PRD 11
Proximity  0.074    0.071   0.018 0.017 2   1   "President\'s Approval" 10
Proximity  -0.090   0.074   -0.023 0.017 2  1   "Governor\'s Approval" 9
Proximity  -0.039  0.073    0.008 0.016 2   1   "Congress\'s Approval" 8
Proximity  -0.546  0.398    -0.004 0.005 3  1   "Party Member" 7
Proximity  -0.047   0.147   -0.001 0.005 3  1   "Union Member" 6
Proximity  0.055  0.145 0.002 0.008 3   1   "Religious group member" 5
Proximity  -0.017  0.086  -0.015 0.086 4    1   "Interest in politics" 4
Proximity  -0.087   0.078   -0.081 0.079 4  1   "Interest in elections" 3
Proximity  0.105 0.080  0.109 0.081 4   1   "Talks about politcs" 2
Proximity  0.014  0.085  0.015 0.085 4  1   "Follows news" 1
'))
close(con)

results$min<-results$Coefficient-(1.96*results$StdError)
results$max<-results$Coefficient+(1.96*results$StdError)
results$Color[results$Included==1]<-"black"
results$Color[results$Included==0]<-"white"

results$Model[results$Model==1]<-"1. Party ID"
results$Model[results$Model==2]<-"2. Approval"
results$Model[results$Model==3]<-"3. Membership"
results$Model[results$Model==4]<-"4. Political Awareness"

results$Variable <- factor(results$Variable, levels=results$Variable[order(results$Order)])

results$min_repli<-results$Coef_repli-(1.96*results$SE_repli)
results$max_repli<-results$Coef_repli+(1.96*results$SE_repli)

# c is the figure 1 with replicated data (distance rather than proximity)
a<-ggplot(results, aes(y=reorder(Variable, Order), x = Coefficient)) +
#  scale_colour_gradient(low="white", high="black")+
  geom_point(size=3) +
  facet_grid( ~ Model)+
  geom_errorbarh(aes(xmin=min, xmax=max),  height = 0) +
  geom_vline(xintercept = 0, linetype=2, color="red") +
  labs( x = "Coefficients", y = "Variable") +
  theme_bw()+
  theme(
    axis.title.x = element_text(face="bold", size=18),
```

```
    axis.title.y = element_text(face="bold", size=18, angle=90),
    axis.text.x  = element_text( size=16),
    strip.text.x = element_text(size=16),
    axis.text.y  = element_text( size=18))

a
```




## Replication of Table 1 (Frances)

```
data <- table
head(table)
```

```
## # A tibble: 6 x 338
##   seccionID jvm2012 epn2012 amlo2012 total2012 ln2012 PRI2009 PAN2009 PRD2009
##   <chr>       <dbl>   <dbl>    <dbl>     <dbl>  <dbl>   <dbl>   <dbl>   <dbl>
## 1 15  _  1      250     572      178      1056   1552     469     384      35
## 2 15  _  10     334     312      128       817   1338     312     285      50
## 3 15  _  1~     173     885      268      1392   1968     430     112     636
## 4 15  _  1~     159     645      606      1481   2508     535      35     456
## 5 15  _  1~     123     537      637      1363   2479     425      60     391
## 6 15  _  1~     150     553      612      1386   2534     472      56     453
## # ... with 329 more variables: total2009 <dbl>, ln2009 <dbl>, PAN2006 <dbl>,
```

```
## #   PRI2006 <dbl>, PRD2006 <dbl>, PANAL2006 <dbl>, PASC2006 <dbl>,
## #   noreg2006 <dbl>, nulos2006 <dbl>, total2006 <dbl>, ln2006 <dbl>,
## #   PAN2003 <dbl>, PRI2003 <dbl>, PRD2003 <dbl>, total2003 <dbl>, ln2003 <dbl>,
## #   CLAVEGEO_x <dbl+lbl>, SECCION_x <dbl+lbl>, ENTIDAD_x <dbl+lbl>,
## #   DISTRITO_x <dbl+lbl>, MUNICIPIO <dbl+lbl>, NOM_MPIO <dbl+lbl>,
## #   CASILLAS <dbl+lbl>, CLAVEGEO_y <dbl+lbl>, ENTIDAD_y <chr>,
## #   DISTRITO_y <dbl>, SECCION_y <chr>, GRAPROES <dbl>, GRAPROES_F <dbl>,
## #   GRAPROES_M <dbl>, HOGJEF_F <dbl>, HOGJEF_M <dbl>, OCUPVIVPAR <dbl>,
## #   P12YM_CASA <dbl>, PCON_LIM <dbl>, PCLIM_MEN2 <dbl>, PCLIM_MOT <dbl>,
## #   PCLIM_AUD <dbl>, PCLIM_LENG <dbl>, PCLIM_MEN <dbl>, PCLIM_VIS <dbl>,
## #   PCLIM_MOT2 <dbl>, POTRAS_REL <dbl>, PCATOLICA <dbl>, P_3YMAS <dbl>,
## #   P_5YMAS <dbl>, P_0A2 <dbl>, P_12A14 <dbl>, P12A14NOA <dbl>, P_12YMAS <dbl>,
## #   P_15A17 <dbl>, P15A17A <dbl>, POB15_64 <dbl>, P_15YMAS <dbl>,
## #   P15YM_AN <dbl>, P15PRI_CO <dbl>, P15PRI_IN <dbl>, P15SEC_CO <dbl>,
## #   P15SEC_IN <dbl>, P15YM_SE <dbl>, P_18A24 <dbl>, P18A24A <dbl>,
## #   P_18YMAS <dbl>, P18YM_PB <dbl>, P_3A5 <dbl>, P3A5_NOA <dbl>,
## #   P3YM_HLI <dbl>, P3HLI_HE <dbl>, P3HLINHE <dbl>, P5_HLI <dbl>,
## #   P5_HLI_HE <dbl>, P5_HLI_NHE <dbl>, PRES2005 <dbl>, PRESOE05 <dbl>,
## #   P_6A11 <dbl>, P6A11_NOA <dbl>, P_60YMAS <dbl>, POB65_MAS <dbl>,
## #   P_8A14 <dbl>, P8A14AN <dbl>, POB0_14 <dbl>, PDER_SS <dbl>, PDER_IMSS <dbl>,
## #   PDER_ISTE <dbl>, PDER_ISTEE <dbl>, PDER_SEGP <dbl>, PDESOCUP <dbl>,
## #   PEA <dbl>, POBHOG <dbl>, PHOGJEF_F <dbl>, PHOGJEF_M <dbl>, PHOG_IND <dbl>,
## #   POBFEM <dbl>, P8A14AN_F <dbl>, P_0A2_F <dbl>, P_12A14_F <dbl>,
## #   P12A14NOAF <dbl>, P_12YMAS_F <dbl>, P_15A17_F <dbl>, P15A17A_F <dbl>, ...
```

```
#this is a function to round to the hundreds place of a decimal
specify_decimal <- function(x, k) {format(round(x, k), nsmall = k)}
```

These are models creating benchmark OLS estimates for proximity to Soriana stores on vote share:

```
#regressing different parties on proximity to soriana store
robustness1 <- ols(proximity ~ PRI06 +PRD06+PAN06+PART06, data= data, x= TRUE, y= TRUE)

#this is the same as the first but incorporating the municipal districts.
robustness2 <- ols( proximity ~ PRI06+PRD06+PAN06+PART06+
                      id_mun, data=data, x=TRUE, y=TRUE)

#this is the larger model
robustness3 <- ols( proximity ~ PRI06+PRD06+PAN06+PART06+
                      lnpop+P18+P65+area+density+INDIGENOUS+CATHOLIC+NONRELIGIOUS+
                      EDUCATION+POSTEDUC+ILLITERACY+PROM_HNV+
                      PEAprop+PEAfemale+NOINSURANCE+FEMALEJEFA+
                      PERROOM+DIRTFLOOR+SERVICES+NO_SERVICES+
                      CAR+CELULAR+INTERNET+
                     id_mun, data=data, x=TRUE, y=TRUE)

robustness4 <- ols( proximity ~
                      lnpop+P18+P65+area+density+INDIGENOUS+CATHOLIC+NONRELIGIOUS+
                      EDUCATION+POSTEDUC+ILLITERACY+PROM_HNV+
                      PEAprop+PEAfemale+NOINSURANCE+FEMALEJEFA+
                      PERROOM+DIRTFLOOR+SERVICES+NO_SERVICES+
                      CAR+CELULAR+INTERNET+
                      id_mun, data=data, x=TRUE, y=TRUE)
```

A table from the appendix essentially showing that this pattern was not present in the 2006 election (in which vote buying did not occur). This is not central to our results, but is part of the code. As such, I will not have the full table populate (because it takes up a lot of space), but will include this code chunk here and in the .Rmd for anyone to check through.

```
stargazer(robustness1, robustness2, robustness3, robustness4, star.cutoffs = c(0.05, 0.01, 0.001), style
          covariate.labels = c("PRI 2006", "PRD2006", "PAN2006", "Turnout 2006","Population Log", "Popul
                               "Population over 65", "Area", "Density", "Indigenous","Catholic","Nonreli
                               "Female population in the labor market", "No insurance","Female head of
                               "ALMOLOYA DEL RIO" , "AMANALCO" , "AMECAMECA" , "APAXCO" , "ATENCO" , "A
                               "CHIAUTLA" , "CHICOLOAPAN" , "CHICONCUAC" , "CHIMALHUACAN" , "COACALCO D
                               "HUEYPOXTLA" , "HUIXQUILUCAN" , "ISIDRO FABELA" , "IXTAPALUCA" , "IXTLAH
                               "LERMA" , "MELCHOR OCAMPO" , "METEPEC" , "MEXICALTZINGO" , "MORELOS" , "
                               "OTZOLOTEPEC" , "PAPALOTLA" , "POLOTITLAN" , "RAYON" , "SAN ANTONIO LA I
                               "TEMAMATLA" , "TEMASCALAPA" , "TEMOAYA" , "TENANGO DEL AIRE" , "TENANGO
                               "TIANGUISTENCO" , "TLALMANALCO" , "TLALNEPANTLA DE BAZ" , "TOLUCA" , "TO
                               "XALATLACO" , "XONACATLAN" , "ZINACANTEPEC" , "ZUMPANGO" , "ALVARO OBREG
                               "IZTAPALAPA" , "MAGDALENA CONTRERAS" , "MIGUEL HIDALGO" , "MILPA ALTA" ,
```

This creates the central model, which is at the basis of Table 1. It has not been re-done using distance instead of proximity yet (per extension idea #4 listed at the outset of our discussion).

This model is abbreviated in the text of the paper (they use a check box saying each of these controls and dummies were used, but all are printed here). The full model is in the appendix.

```
#reclassifying municipality and district as factor variables
data$id_mun<-factor(data$id_mun)
data$id_dist<-factor(data$id_dist)
```

```
#empty matrices to take the slopes and standard errors of this benchmark model
slopesBM<-matrix(NA,3,4)
seBM<-matrix(NA,3,4)


benchmarkPRI.1 <- lm( EPNa ~ proximity*PRIstr*highTURNOUT+
                        proximity*PRDstr*highTURNOUT+proximity*PANstr*highTURNOUT+
                         PRI09a+PRD09a+PAN09a+PART09+
                         lnpop+P18+P65+area+density+INDIGENOUS+CATHOLIC+NONRELIGIOUS+
                         EDUCATION+POSTEDUC+ILLITERACY+PROM_HNV+
                         PEAprop+PEAfemale+NOINSURANCE+FEMALEJEFA+
                         PERROOM+DIRTFLOOR+SERVICES+NO_SERVICES+
                         CAR+CELULAR+INTERNET+
                         id_mun, data=data, x=TRUE, y=TRUE)
```

This function returns a multi-way cluster-robust variance-covariance matrix for the benchmark model:

```
covBMpri <- cluster.vcov(benchmarkPRI.1, data$id_dist)

#t test
coeftest(benchmarkPRI.1, covBMpri)
```

```
##
## t test of coefficients:
```

```
##
##                                          Estimate  Std. Error t value
## (Intercept)                             1.3134e+01  4.4715e+00  2.9372
## proximity                               9.4176e-04  1.6998e-02  0.0554
## PRIstr                                 -9.0309e-01  3.0002e-01 -3.0101
## highTURNOUT                            -2.1078e-02  3.8758e-01 -0.0544
## PRDstr                                 -1.1508e+00  2.7691e-01 -4.1558
## PANstr                                  2.0376e+00  5.6048e-01  3.6356
## PRI09a                                  6.2643e-01  3.7102e-02 16.8837
## PRD09a                                 -4.3002e-02  3.5755e-02 -1.2027
## PAN09a                                  6.4195e-02  3.9871e-02  1.6100
## PART09                                 -8.9244e-03  3.1317e-02 -0.2850
## lnpop                                  -2.3869e-01  1.3362e-01 -1.7863
## P18                                     2.5319e+00  2.4887e+00  1.0173
## P65                                     1.2219e+01  2.7365e+00  4.4654
## area                                    4.6376e-02  1.8291e-02  2.5355
## density                                -1.0584e-06  7.1507e-06 -0.1480
## INDIGENOUS                             -2.3084e+00  1.1382e+00 -2.0281
## CATHOLIC                               -1.5597e+00  2.1284e+00 -0.7328
## NONRELIGIOUS                           -1.0357e+01  4.0496e+00 -2.5576
## EDUCATION                               4.7945e-01  2.0144e-01  2.3801
## POSTEDUC                               -1.0532e+01  1.9743e+00 -5.3345
## ILLITERACY                             -6.9583e+00  3.9854e+00 -1.7460
## PROM_HNV                                3.4065e-01  5.0245e-01  0.6780
## PEAprop                                 5.2442e+00  2.3722e+00  2.2107
## PEAfemale                              -2.1019e+00  2.5564e+00 -0.8222
## NOINSURANCE                             8.6090e-01  1.0010e+00  0.8600
## FEMALEJEFA                              2.8302e+00  1.1090e+00  2.5521
## PERROOM                                -2.9277e-01  9.5630e-01 -0.3061
## DIRTFLOOR                              -2.3907e+00  2.3620e+00 -1.0122
## SERVICES                               -4.2358e-01  6.4987e-01 -0.6518
## NO_SERVICES                            -7.5458e-01  2.3721e+00 -0.3181
## CAR                                     2.4219e-01  1.0388e+00  0.2331
## CELULAR                                 5.8128e-01  1.6047e+00  0.3622
## INTERNET                                2.0307e+00  1.1344e+00  1.7901
## id_mun15  _  ACOLMAN                   -5.2443e-01  1.0437e+00 -0.5025
## id_mun15  _  ACULCO                     3.1224e+00  6.4627e-01  4.8314
## id_mun15  _  ALMOLOYA DE ALQUISIRAS     3.5411e+00  5.4170e-01  6.5370
## id_mun15  _  ALMOLOYA DE JUAREZ         9.0760e+00  7.9099e-01 11.4742
## id_mun15  _  ALMOLOYA DEL RIO           1.0665e+01  9.3566e-01 11.3986
## id_mun15  _  AMANALCO                  -1.2017e+00  5.7478e-01 -2.0908
## id_mun15  _  AMATEPEC                   4.5379e-02  1.1735e+00  0.0387
## id_mun15  _  AMECAMECA                 -1.6093e+00  1.0313e+00 -1.5605
## id_mun15  _  APAXCO                     2.4870e+00  6.4699e-01  3.8439
## id_mun15  _  ATENCO                    -3.4694e+00  1.1095e+00 -3.1270
## id_mun15  _  ATIZAPAN                   6.7641e+00  8.3344e-01  8.1158
## id_mun15  _  ATIZAPAN DE ZARAGOZA      -5.3236e+00  8.3460e-01 -6.3786
## id_mun15  _  ATLACOMULCO                7.1542e+00  4.7743e-01 14.9848
## id_mun15  _  ATLAUTLA                  -3.6665e+00  8.8619e-01 -4.1373
## id_mun15  _  AXAPUSCO                   8.8978e+00  8.8209e-01 10.0872
## id_mun15  _  AYAPANGO                   3.2706e+00  9.7640e-01  3.3496
## id_mun15  _  CALIMAYA                   5.8488e+00  7.3275e-01  7.9820
## id_mun15  _  CAPULHUAC                  3.2480e+00  8.8946e-01  3.6517
## id_mun15  _  CHALCO                    -2.4814e+00  1.0681e+00 -2.3233
```

```
## id_mun15  _  CHAPA DE MOTA              -8.7340e-01  5.4364e-01 -1.6066
## id_mun15  _  CHAPULTEPEC                1.3843e+00  7.4348e-01  1.8619
## id_mun15  _  CHIAUTLA                   2.6555e+00  1.1385e+00  2.3324
## id_mun15  _  CHICOLOAPAN               -1.5770e+00  1.0540e+00 -1.4962
## id_mun15  _  CHICONCUAC                -6.6577e+00  1.0392e+00 -6.4066
## id_mun15  _  CHIMALHUACAN              -3.4612e+00  1.0210e+00 -3.3899
## id_mun15  _  COACALCO DE BERRIOZABAL    -4.4293e+00  9.1452e-01 -4.8433
## id_mun15  _  COATEPEC HARINAS           1.3681e+00  6.4284e-01  2.1282
## id_mun15  _  COCOTITLAN                -9.1085e-01  9.2052e-01 -0.9895
## id_mun15  _  COYOTEPEC                 -4.8546e+00  8.6069e-01 -5.6403
## id_mun15  _  CUAUTITLAN                -4.0479e+00  8.5457e-01 -4.7368
## id_mun15  _  CUAUTITLAN IZCALLI        -7.1845e+00  8.3247e-01 -8.6303
## id_mun15  _  DONATO GUERRA              6.4446e+00  8.7639e-01  7.3535
## id_mun15  _  ECATEPEC DE MORELOS       -3.3943e+00  9.0383e-01 -3.7555
## id_mun15  _  ECATZINGO                  5.7183e+00  1.0290e+00  5.5573
## id_mun15  _  EL ORO                     1.8857e+00  2.7895e-01  6.7602
## id_mun15  _  HUEHUETOCA                -1.2379e-01  7.6980e-01 -0.1608
## id_mun15  _  HUEYPOXTLA                 6.9330e+00  9.0339e-01  7.6745
## id_mun15  _  HUIXQUILUCAN              -3.9740e+00  8.3451e-01 -4.7621
## id_mun15  _  ISIDRO FABELA              9.5325e+00  9.6007e-01  9.9289
## id_mun15  _  IXTAPALUCA                -4.6943e+00  9.7357e-01 -4.8218
## id_mun15  _  IXTAPAN DE LA SAL         -4.8554e+00  7.0906e-01 -6.8477
## id_mun15  _  IXTAPAN DEL ORO            6.1464e-01  7.5319e-01  0.8161
## id_mun15  _  IXTLAHUACA                 1.1509e+01  5.8663e-01 19.6191
## id_mun15  _  JALTENCO                   2.0450e+00  8.1788e-01  2.5003
## id_mun15  _  JILOTEPEC                  1.3124e+00  8.4637e-01  1.5506
## id_mun15  _  JILOTZINGO                 4.2917e+00  9.7299e-01  4.4109
## id_mun15  _  JIQUIPILCO                 8.0095e+00  6.9262e-01 11.5640
## id_mun15  _  JOCOTITLAN                 6.3436e+00  5.0541e-01 12.5513
## id_mun15  _  JOQUICINGO                 6.5998e+00  7.8800e-01  8.3753
## id_mun15  _  JUCHITEPEC                -2.0260e-01  9.3242e-01 -0.2173
## id_mun15  _  LA PAZ                    -4.5107e+00  9.2353e-01 -4.8841
## id_mun15  _  LERMA                      2.4688e+00  7.5037e-01  3.2901
## id_mun15  _  LUVIANOS                  -4.8174e+00  1.1384e+00 -4.2317
## id_mun15  _  MALINALCO                  1.5432e+00  4.3403e-01  3.5555
## id_mun15  _  MELCHOR OCAMPO             3.6476e-02  8.8676e-01  0.0411
## id_mun15  _  METEPEC                   -4.1800e-01  7.9562e-01 -0.5254
## id_mun15  _  MEXICALTZINGO              4.2112e-01  8.4013e-01  0.5013
## id_mun15  _  MORELOS                    5.6193e+00  6.1078e-01  9.2002
## id_mun15  _  NAUCALPAN DE JUAREZ       -5.0096e+00  9.1243e-01 -5.4904
## id_mun15  _  NEXTLALPAN                 6.8075e+00  9.6754e-01  7.0359
## id_mun15  _  NEZAHUALCOYOTL            -3.5514e+00  9.9779e-01 -3.5592
## id_mun15  _  NICOLAS ROMERO            -4.2233e+00  8.0794e-01 -5.2272
## id_mun15  _  NOPALTEPEC                 1.5220e+00  7.7630e-01  1.9606
## id_mun15  _  OCOYOACAC                  7.5449e+00  9.0288e-01  8.3564
## id_mun15  _  OCUILAN                   -3.7917e+00  7.6187e-01 -4.9768
## id_mun15  _  OTUMBA                     1.3698e+00  9.5628e-01  1.4324
## id_mun15  _  OTZOLOAPAN                 2.5419e+00  9.1280e-01  2.7847
## id_mun15  _  OTZOLOTEPEC                3.1849e+00  8.3132e-01  3.8312
## id_mun15  _  OZUMBA                    -3.6999e-01  8.4260e-01 -0.4391
## id_mun15  _  PAPALOTLA                 -3.2044e-01  8.7253e-01 -0.3673
## id_mun15  _  POLOTITLAN                 1.1667e+01  7.4299e-01 15.7024
## id_mun15  _  RAYON                      1.0045e+01  8.4001e-01 11.9585
## id_mun15  _  SAN ANTONIO LA ISLA        1.8411e+00  9.6933e-01  1.8994
```

```
## id_mun15  _  SAN FELIPE DEL PROGRESO      7.1679e+00  3.1066e-01 23.0729
## id_mun15  _  SAN JOSE DEL RINCON          4.6838e+00  3.7404e-01 12.5220
## id_mun15  _  SAN MARTIN DE LAS PIRAMIDES -3.3308e+00  9.5655e-01 -3.4821
## id_mun15  _  SAN MATEO ATENCO             6.4041e+00  7.2477e-01  8.8360
## id_mun15  _  SAN SIMON DE GUERRERO        9.4061e+00  1.3238e+00  7.1051
## id_mun15  _  SANTO TOMAS                 -7.3341e-01  6.9606e-01 -1.0537
## id_mun15  _  SOYANIQUILPAN DE JUAREZ     -1.8879e-01  6.4300e-01 -0.2936
## id_mun15  _  SULTEPEC                    -1.3825e+00  7.7064e-01 -1.7939
## id_mun15  _  TECAMAC                     -2.8542e+00  7.2477e-01 -3.9381
## id_mun15  _  TEJUPILCO                   -1.2107e+00  9.7503e-01 -1.2417
## id_mun15  _  TEMAMATLA                   -2.3476e+00  1.0913e+00 -2.1512
## id_mun15  _  TEMASCALAPA                 -1.6083e+00  7.6141e-01 -2.1123
## id_mun15  _  TEMASCALCINGO                4.7699e+00  3.6769e-01 12.9726
## id_mun15  _  TEMASCALTEPEC                3.2536e-01  5.7890e-01  0.5620
## id_mun15  _  TEMOAYA                      1.1807e+00  5.5589e-01  2.1240
## id_mun15  _  TENANCINGO                  -4.0905e+00  6.6719e-01 -6.1309
## id_mun15  _  TENANGO DEL AIRE             5.0509e-01  1.0192e+00  0.4956
## id_mun15  _  TENANGO DEL VALLE            4.3073e-01  7.5959e-01  0.5671
## id_mun15  _  TEOLOYUCAN                  -4.0387e+00  9.3013e-01 -4.3421
## id_mun15  _  TEOTIHUACAN                 -2.4278e+00  9.2298e-01 -2.6304
## id_mun15  _  TEPETLAOXTOC                 1.8558e+00  9.9843e-01  1.8587
## id_mun15  _  TEPETLIXPA                  -3.9905e+00  8.5780e-01 -4.6520
## id_mun15  _  TEPOTZOTLAN                 -5.5060e+00  6.8900e-01 -7.9912
## id_mun15  _  TEQUIXQUIAC                 -2.7201e+00  6.7089e-01 -4.0545
## id_mun15  _  TEXCALTITLAN                 4.5138e+00  5.7849e-01  7.8026
## id_mun15  _  TEXCALYACAC                  7.4626e+00  8.6249e-01  8.6524
## id_mun15  _  TEXCOCO                     -9.5769e+00  9.8865e-01 -9.6868
## id_mun15  _  TEZOYUCA                    -1.0406e+00  1.1352e+00 -0.9167
## id_mun15  _  TIANGUISTENCO                2.0409e+00  6.5616e-01  3.1103
## id_mun15  _  TIMILPAN                     5.5144e+00  3.5871e-01 15.3730
## id_mun15  _  TLALMANALCO                  1.4119e+00  9.0885e-01  1.5535
## id_mun15  _  TLALNEPANTLA DE BAZ         -4.2022e+00  8.7948e-01 -4.7780
## id_mun15  _  TLATLAYA                    -1.6178e+00  1.1593e+00 -1.3956
## id_mun15  _  TOLUCA                      -1.9209e+00  7.5541e-01 -2.5429
## id_mun15  _  TONANITLA                    2.3540e+00  1.1742e+00  2.0048
## id_mun15  _  TONATICO                     2.6969e+00  7.3922e-01  3.6484
## id_mun15  _  TULTEPEC                     3.7376e-01  9.4150e-01  0.3970
## id_mun15  _  TULTITLAN                   -2.1599e+00  9.9920e-01 -2.1617
## id_mun15  _  VALLE DE BRAVO              -3.9400e+00  9.2152e-01 -4.2755
## id_mun15  _  VALLE DE CHALCO SOLIDARIDAD -2.8119e+00  1.0221e+00 -2.7512
## id_mun15  _  VILLA DE ALLENDE             7.6890e+00  7.6405e-01 10.0635
## id_mun15  _  VILLA DEL CARBON             1.8399e+00  6.4700e-01  2.8437
## id_mun15  _  VILLA GUERRERO               9.4579e+00  6.5568e-01 14.4245
## id_mun15  _  VILLA VICTORIA               3.2731e+00  4.0364e-01  8.1089
## id_mun15  _  XALATLACO                    2.7679e-01  6.5172e-01  0.4247
## id_mun15  _  XONACATLAN                  -3.7968e+00  7.8354e-01 -4.8457
## id_mun15  _  ZACAZONAPAN                  2.2078e+00  1.1376e+00  1.9408
## id_mun15  _  ZACUALPAN                    2.5119e-01  9.2453e-01  0.2717
## id_mun15  _  ZINACANTEPEC                 1.1445e+01  6.1417e-01 18.6350
## id_mun15  _  ZUMPAHUACAN                  3.0709e+00  5.6117e-01  5.4724
## id_mun15  _  ZUMPANGO                     9.2105e-01  7.0664e-01  1.3034
## id_mun9   _  ALVARO OBREGON              -5.8420e+00  1.0889e+00 -5.3652
## id_mun9   _  AZCAPOTZALCO                -5.2080e+00  1.0389e+00 -5.0130
## id_mun9   _  BENITO JUAREZ               -4.5423e+00  1.0639e+00 -4.2693
```

```
## id_mun9  _  COYOACAN                    -5.2506e+00  1.2524e+00 -4.1922
## id_mun9  _  CUAJIMALPA DE MORELOS       -6.1514e-01  9.7801e-01 -0.6290
## id_mun9  _  CUAUHTEMOC                  -3.8937e+00  1.0980e+00 -3.5461
## id_mun9  _  GUSTAVO A. MADERO           -4.9534e+00  1.0718e+00 -4.6217
## id_mun9  _  IZTACALCO                   -5.0930e+00  1.0821e+00 -4.7064
## id_mun9  _  IZTAPALAPA                  -5.1138e+00  1.1002e+00 -4.6480
## id_mun9  _  LA MAGDALENA CONTRERAS      -4.7599e+00  1.0617e+00 -4.4834
## id_mun9  _  MIGUEL HIDALGO              -2.9583e+00  1.0519e+00 -2.8123
## id_mun9  _  MILPA ALTA                  -5.7881e+00  9.9155e-01 -5.8374
## id_mun9  _  TLAHUAC                     -4.2270e+00  1.0292e+00 -4.1070
## id_mun9  _  TLALPAN                     -5.7900e+00  1.1012e+00 -5.2580
## id_mun9  _  VENUSTIANO CARRANZA         -3.1031e+00  1.1577e+00 -2.6804
## id_mun9  _  XOCHIMILCO                  -4.4510e+00  1.0963e+00 -4.0601
## proximity:PRIstr                         1.7747e-01  1.8029e-01  0.9844
## proximity:highTURNOUT                   -2.1396e-01  2.7227e-01 -0.7858
## PRIstr:highTURNOUT                       1.3938e-02  4.3311e-01  0.0322
## proximity:PRDstr                         4.0520e-01  2.0376e-01  1.9886
## highTURNOUT:PRDstr                       1.7647e+00  1.0069e+00  1.7526
## proximity:PANstr                        -8.7189e-01  2.5639e-01 -3.4006
## highTURNOUT:PANstr                      -4.9886e-01  9.1342e-01 -0.5461
## proximity:PRIstr:highTURNOUT            -1.3012e-01  3.6131e-01 -0.3601
## proximity:highTURNOUT:PRDstr             1.7259e+01  8.2427e+00  2.0939
## proximity:highTURNOUT:PANstr            -2.5928e+00  1.6109e+00 -1.6095
##                                          Pr(>|t|)
## (Intercept)                             0.0033185 **
## proximity                               0.9558162
## PRIstr                                  0.0026174 **
## highTURNOUT                             0.9566305
## PRDstr                                  3.264e-05 ***
## PANstr                                  0.0002786 ***
## PRI09a                                  < 2.2e-16 ***
## PRD09a                                  0.2291166
## PAN09a                                  0.1074149
## PART09                                  0.7756713
## lnpop                                   0.0740769 .
## P18                                     0.3090113
## P65                                     8.068e-06 ***
## area                                    0.0112411 *
## density                                 0.8823354
## INDIGENOUS                              0.0425734 *
## CATHOLIC                                0.4637025
## NONRELIGIOUS                            0.0105530 *
## EDUCATION                               0.0173220 *
## POSTEDUC                                9.764e-08 ***
## ILLITERACY                              0.0808459 .
## PROM_HNV                                0.4978022
## PEAprop                                 0.0270739 *
## PEAfemale                               0.4109934
## NOINSURANCE                             0.3897845
## FEMALEJEFA                              0.0107214 *
## PERROOM                                 0.7594982
## DIRTFLOOR                               0.3114847
## SERVICES                                0.5145471
## NO_SERVICES                             0.7504070
```

```
## CAR                                    0.8156497
## CELULAR                                0.7171724
## INTERNET                               0.0734662 .
## id_mun15  _  ACOLMAN                   0.6153319
## id_mun15  _  ACULCO                    1.373e-06 ***
## id_mun15  _  ALMOLOYA DE ALQUISIRAS    6.542e-11 ***
## id_mun15  _  ALMOLOYA DE JUAREZ        < 2.2e-16 ***
## id_mun15  _  ALMOLOYA DEL RIO          < 2.2e-16 ***
## id_mun15  _  AMANALCO                  0.0365692 *
## id_mun15  _  AMATEPEC                  0.9691552
## id_mun15  _  AMECAMECA                 0.1186624
## id_mun15  _  APAXCO                    0.0001218 ***
## id_mun15  _  ATENCO                    0.0017703 **
## id_mun15  _  ATIZAPAN                  5.316e-16 ***
## id_mun15  _  ATIZAPAN DE ZARAGOZA      1.856e-10 ***
## id_mun15  _  ATLACOMULCO               < 2.2e-16 ***
## id_mun15  _  ATLAUTLA                  3.539e-05 ***
## id_mun15  _  AXAPUSCO                  < 2.2e-16 ***
## id_mun15  _  AYAPANGO                  0.0008119 ***
## id_mun15  _  CALIMAYA                  1.577e-15 ***
## id_mun15  _  CAPULHUAC                 0.0002617 ***
## id_mun15  _  CHALCO                    0.0201790 *
## id_mun15  _  CHAPA DE MOTA             0.1081752
## id_mun15  _  CHAPULTEPEC               0.0626369 .
## id_mun15  _  CHIAUTLA                  0.0196966 *
## id_mun15  _  CHICOLOAPAN               0.1346273
## id_mun15  _  CHICONCUAC                1.546e-10 ***
## id_mun15  _  CHIMALHUACAN              0.0007016 ***
## id_mun15  _  COACALCO DE BERRIOZABAL   1.294e-06 ***
## id_mun15  _  COATEPEC HARINAS          0.0333395 *
## id_mun15  _  COCOTITLAN                0.3224437
## id_mun15  _  COYOTEPEC                 1.737e-08 ***
## id_mun15  _  CUAUTITLAN                2.197e-06 ***
## id_mun15  _  CUAUTITLAN IZCALLI        < 2.2e-16 ***
## id_mun15  _  DONATO GUERRA             2.062e-13 ***
## id_mun15  _  ECATEPEC DE MORELOS       0.0001739 ***
## id_mun15  _  ECATZINGO                 2.800e-08 ***
## id_mun15  _  EL ORO                    1.445e-11 ***
## id_mun15  _  HUEHUETOCA                0.8722461
## id_mun15  _  HUEYPOXTLA                1.795e-14 ***
## id_mun15  _  HUIXQUILUCAN              1.940e-06 ***
## id_mun15  _  ISIDRO FABELA             < 2.2e-16 ***
## id_mun15  _  IXTAPALUCA                1.441e-06 ***
## id_mun15  _  IXTAPAN DE LA SAL         7.891e-12 ***
## id_mun15  _  IXTAPAN DEL ORO           0.4144884
## id_mun15  _  IXTLAHUACA                < 2.2e-16 ***
## id_mun15  _  JALTENCO                  0.0124217 *
## id_mun15  _  JILOTEPEC                 0.1210141
## id_mun15  _  JILOTZINGO                1.039e-05 ***
## id_mun15  _  JIQUIPILCO                < 2.2e-16 ***
## id_mun15  _  JOCOTITLAN                < 2.2e-16 ***
## id_mun15  _  JOQUICINGO                < 2.2e-16 ***
## id_mun15  _  JUCHITEPEC                0.8279894
## id_mun15  _  LA PAZ                    1.053e-06 ***
```

```
## id_mun15  _  LERMA                          0.0010046 **
## id_mun15  _  LUVIANOS                       2.337e-05 ***
## id_mun15  _  MALINALCO                      0.0003788 ***
## id_mun15  _  MELCHOR OCAMPO                 0.9671896
## id_mun15  _  METEPEC                        0.5993345
## id_mun15  _  MEXICALTZINGO                  0.6162023
## id_mun15  _  MORELOS                        < 2.2e-16 ***
## id_mun15  _  NAUCALPAN DE JUAREZ            4.095e-08 ***
## id_mun15  _  NEXTLALPAN                     2.093e-12 ***
## id_mun15  _  NEZAHUALCOYOTL                 0.0003734 ***
## id_mun15  _  NICOLAS ROMERO                 1.751e-07 ***
## id_mun15  _  NOPALTEPEC                     0.0499464 *
## id_mun15  _  OCOYOACAC                      < 2.2e-16 ***
## id_mun15  _  OCUILAN                        6.558e-07 ***
## id_mun15  _  OTUMBA                         0.1520615
## id_mun15  _  OTZOLOAPAN                     0.0053659 **
## id_mun15  _  OTZOLOTEPEC                    0.0001282 ***
## id_mun15  _  OZUMBA                         0.6605900
## id_mun15  _  PAPALOTLA                      0.7134388
## id_mun15  _  POLOTITLAN                     < 2.2e-16 ***
## id_mun15  _  RAYON                          < 2.2e-16 ***
## id_mun15  _  SAN ANTONIO LA ISLA            0.0575415 .
## id_mun15  _  SAN FELIPE DEL PROGRESO        < 2.2e-16 ***
## id_mun15  _  SAN JOSE DEL RINCON            < 2.2e-16 ***
## id_mun15  _  SAN MARTIN DE LAS PIRAMIDES    0.0004994 ***
## id_mun15  _  SAN MATEO ATENCO               < 2.2e-16 ***
## id_mun15  _  SAN SIMON DE GUERRERO          1.274e-12 ***
## id_mun15  _  SANTO TOMAS                    0.2920641
## id_mun15  _  SOYANIQUILPAN DE JUAREZ        0.7690644
## id_mun15  _  SULTEPEC                       0.0728539 .
## id_mun15  _  TECAMAC                        8.263e-05 ***
## id_mun15  _  TEJUPILCO                      0.2143705
## id_mun15  _  TEMAMATLA                      0.0314850 *
## id_mun15  _  TEMASCALAPA                    0.0346818 *
## id_mun15  _  TEMASCALCINGO                  < 2.2e-16 ***
## id_mun15  _  TEMASCALTEPEC                  0.5741032
## id_mun15  _  TEMOAYA                        0.0336938 *
## id_mun15  _  TENANCINGO                     9.029e-10 ***
## id_mun15  _  TENANGO DEL AIRE               0.6202075
## id_mun15  _  TENANGO DEL VALLE              0.5706876
## id_mun15  _  TEOLOYUCAN                     1.423e-05 ***
## id_mun15  _  TEOTIHUACAN                    0.0085406 **
## id_mun15  _  TEPETLAOXTOC                   0.0630931 .
## id_mun15  _  TEPETLIXPA                     3.324e-06 ***
## id_mun15  _  TEPOTZOTLAN                    1.464e-15 ***
## id_mun15  _  TEQUIXQUIAC                    5.057e-05 ***
## id_mun15  _  TEXCALTITLAN                   6.588e-15 ***
## id_mun15  _  TEXCALYACAC                    < 2.2e-16 ***
## id_mun15  _  TEXCOCO                        < 2.2e-16 ***
## id_mun15  _  TEZOYUCA                       0.3593266
## id_mun15  _  TIANGUISTENCO                  0.0018734 **
## id_mun15  _  TIMILPAN                       < 2.2e-16 ***
## id_mun15  _  TLALMANALCO                    0.1203236
## id_mun15  _  TLALNEPANTLA DE BAZ            1.792e-06 ***
```

```
## id_mun15  _  TLATLAYA                    0.1628705
## id_mun15  _  TOLUCA                      0.0110068 *
## id_mun15  _  TONANITLA                   0.0450120 *
## id_mun15  _  TONATICO                    0.0002651 ***
## id_mun15  _  TULTEPEC                    0.6913840
## id_mun15  _  TULTITLAN                   0.0306656 *
## id_mun15  _  VALLE DE BRAVO              1.923e-05 ***
## id_mun15  _  VALLE DE CHALCO SOLIDARIDAD 0.0059477 **
## id_mun15  _  VILLA DE ALLENDE            < 2.2e-16 ***
## id_mun15  _  VILLA DEL CARBON            0.0044673 **
## id_mun15  _  VILLA GUERRERO              < 2.2e-16 ***
## id_mun15  _  VILLA VICTORIA              5.628e-16 ***
## id_mun15  _  XALATLACO                   0.6710599
## id_mun15  _  XONACATLAN                  1.278e-06 ***
## id_mun15  _  ZACAZONAPAN                 0.0523082 .
## id_mun15  _  ZACUALPAN                   0.7858605
## id_mun15  _  ZINACANTEPEC                < 2.2e-16 ***
## id_mun15  _  ZUMPAHUACAN                 4.533e-08 ***
## id_mun15  _  ZUMPANGO                    0.1924536
## id_mun9  _  ALVARO OBREGON               8.245e-08 ***
## id_mun9  _  AZCAPOTZALCO                 5.439e-07 ***
## id_mun9  _  BENITO JUAREZ                1.977e-05 ***
## id_mun9  _  COYOACAN                     2.783e-05 ***
## id_mun9  _  CUAJIMALPA DE MORELOS        0.5293836
## id_mun9  _  CUAUHTEMOC                   0.0003925 ***
## id_mun9  _  GUSTAVO A. MADERO            3.848e-06 ***
## id_mun9  _  IZTACALCO                    2.550e-06 ***
## id_mun9  _  IZTAPALAPA                   3.389e-06 ***
## id_mun9  _  LA MAGDALENA CONTRERAS       7.418e-06 ***
## id_mun9  _  MIGUEL HIDALGO               0.0049275 **
## id_mun9  _  MILPA ALTA                   5.445e-09 ***
## id_mun9  _  TLAHUAC                      4.036e-05 ***
## id_mun9  _  TLALPAN                      1.482e-07 ***
## id_mun9  _  VENUSTIANO CARRANZA          0.0073629 **
## id_mun9  _  XOCHIMILCO                   4.937e-05 ***
## proximity:PRIstr                         0.3249544
## proximity:highTURNOUT                    0.4319835
## PRIstr:highTURNOUT                       0.9743290
## proximity:PRDstr                         0.0467727 *
## highTURNOUT:PRDstr                       0.0796982 .
## proximity:PANstr                         0.0006747 ***
## highTURNOUT:PANstr                       0.5849779
## proximity:PRIstr:highTURNOUT             0.7187626
## proximity:highTURNOUT:PRDstr             0.0362900 *
## proximity:highTURNOUT:PANstr             0.1075289
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
g_pri <- function(b){
  return( b[2] + b[139] + b[140] + b[146] )
}

g_prd <- function(b){
  return( b[2] + b[140] + b[142] + b[147] )
```

```
}

g_pan <- function(b){
  return( b[2] + b[140] + b[144] + b[148] )
}


grad_g_pri <-  jacobian(g_pri, benchmarkPRI.1$coef)
grad_g_prd <-  jacobian(g_prd, benchmarkPRI.1$coef)
grad_g_pan <-  jacobian(g_pan, benchmarkPRI.1$coef)
```

Taking the slopes and standard errors:

```
slopesBM[1,1] <- benchmarkPRI.1$coefficients[c("proximity")] +
  benchmarkPRI.1$coefficients[c("proximity:highTURNOUT")] +
  benchmarkPRI.1$coefficients[c("proximity:PRIstr")]+
  benchmarkPRI.1$coefficients[c("proximity:PRIstr:highTURNOUT")]

slopesBM[2,1] <- benchmarkPRI.1$coefficients[c("proximity")] +
  benchmarkPRI.1$coefficients[c("proximity:highTURNOUT")] +
  benchmarkPRI.1$coefficients[c("proximity:PRDstr")]+
  benchmarkPRI.1$coefficients[c("proximity:highTURNOUT:PRDstr")]

slopesBM[3,1] <- benchmarkPRI.1$coefficients[c("proximity")] +
  benchmarkPRI.1$coefficients[c("proximity:highTURNOUT")] +
  benchmarkPRI.1$coefficients[c("proximity:PANstr")]+
  benchmarkPRI.1$coefficients[c("proximity:highTURNOUT:PANstr")]

seBM[1,1]<-sqrt(grad_g_pri%*% covBMpri %*% t(grad_g_pri))

seBM[2,1]<-sqrt(grad_g_prd%*% covBMpri %*% t(grad_g_prd))

seBM[3,1]<-sqrt(grad_g_pan%*% covBMpri %*% t(grad_g_pan))
```

The same model but testing for other parties:

```
benchmarkPRD.1 <- lm( AMLOa ~ proximity*PRIstr*highTURNOUT+
                        proximity*PRDstr*highTURNOUT+proximity*PANstr*highTURNOUT+
                         PRI09a+PRD09a+PAN09a+PART09+
                         lnpop+P18+P65+area+density+INDIGENOUS+CATHOLIC+NONRELIGIOUS+
                         EDUCATION+POSTEDUC+ILLITERACY+PROM_HNV+
                         PEAprop+PEAfemale+NOINSURANCE+FEMALEJEFA+
                         PERROOM+DIRTFLOOR+SERVICES+NO_SERVICES+
                         CAR+CELULAR+INTERNET+
                         id_mun, data=data, x=TRUE, y=TRUE)

covBMprd <- cluster.vcov(benchmarkPRD.1, data$id_dist)

coeftest(benchmarkPRD.1, covBMprd)
```

```
##
## t test of coefficients:
```

```
##
##                                          Estimate  Std. Error  t value
## (Intercept)                             1.1733e+01  7.1129e+00   1.6495
## proximity                              -1.0483e-02  2.5347e-02  -0.4136
## PRIstr                                 -2.5656e-01  3.0681e-01  -0.8362
## highTURNOUT                            -7.6506e-02  3.5699e-01  -0.2143
## PRDstr                                  5.6820e-01  3.6503e-01   1.5566
## PANstr                                 -6.6951e+00  8.9390e-01  -7.4898
## PRI09a                                 -3.7373e-01  6.2892e-02  -5.9424
## PRD09a                                  3.1199e-01  7.2513e-02   4.3025
## PAN09a                                 -4.3964e-01  7.7111e-02  -5.7014
## PART09                                  2.9275e-01  6.5620e-02   4.4613
## lnpop                                   7.4721e-02  1.3295e-01   0.5620
## P18                                     1.5445e+01  2.5872e+00   5.9696
## P65                                    -2.4113e+01  3.7957e+00  -6.3528
## area                                   -3.6136e-02  9.7494e-03  -3.7065
## density                                 2.7079e-05  9.3062e-06   2.9098
## INDIGENOUS                             -1.4554e+00  1.5073e+00  -0.9655
## CATHOLIC                                8.5267e-01  2.0284e+00   0.4204
## NONRELIGIOUS                            8.8851e-01  3.3140e+00   0.2681
## EDUCATION                              -1.8500e+00  2.9331e-01  -6.3074
## POSTEDUC                                3.0394e+01  3.0518e+00   9.9595
## ILLITERACY                             -1.9500e+01  3.5988e+00  -5.4183
## PROM_HNV                                1.8763e+00  4.8003e-01   3.9087
## PEAprop                                -1.2308e+01  3.9068e+00  -3.1505
## PEAfemale                               7.1859e+00  3.2919e+00   2.1829
## NOINSURANCE                            -7.6281e-01  1.4850e+00  -0.5137
## FEMALEJEFA                             -8.9141e-01  1.5110e+00  -0.5900
## PERROOM                                -4.6592e-02  1.2236e+00  -0.0381
## DIRTFLOOR                              -8.0695e-01  3.4692e+00  -0.2326
## SERVICES                                1.0237e+00  6.8206e-01   1.5009
## NO_SERVICES                             5.7825e+00  4.4653e+00   1.2950
## CAR                                    -1.6409e+00  1.5324e+00  -1.0709
## CELULAR                                -7.3388e-01  1.6838e+00  -0.4358
## INTERNET                               -8.2459e+00  1.3674e+00  -6.0303
## id_mun15  _  ACOLMAN                    1.6807e+00  1.6514e+00   1.0177
## id_mun15  _  ACULCO                    -8.4528e+00  1.1145e+00  -7.5845
## id_mun15  _  ALMOLOYA DE ALQUISIRAS     4.2165e+00  8.6583e-01   4.8699
## id_mun15  _  ALMOLOYA DE JUAREZ        -1.1120e+01  1.4681e+00  -7.5740
## id_mun15  _  ALMOLOYA DEL RIO          -5.3812e+00  1.6602e+00  -3.2412
## id_mun15  _  AMANALCO                  -3.5179e-01  1.3578e+00  -0.2591
## id_mun15  _  AMATEPEC                  -3.8572e-02  1.6915e+00  -0.0228
## id_mun15  _  AMECAMECA                  1.4717e+00  1.6308e+00   0.9024
## id_mun15  _  APAXCO                     3.1623e+00  7.2421e-01   4.3666
## id_mun15  _  ATENCO                     1.4414e+00  1.8842e+00   0.7650
## id_mun15  _  ATIZAPAN                   9.1664e-01  1.2216e+00   0.7504
## id_mun15  _  ATIZAPAN DE ZARAGOZA       6.6786e+00  9.9408e-01   6.7184
## id_mun15  _  ATLACOMULCO               -3.6213e+00  5.7688e-01  -6.2773
## id_mun15  _  ATLAUTLA                   3.1776e+00  1.5870e+00   2.0023
## id_mun15  _  AXAPUSCO                  -2.5437e+00  1.2782e+00  -1.9900
## id_mun15  _  AYAPANGO                  -9.9278e-01  1.5694e+00  -0.6326
## id_mun15  _  CALIMAYA                  -2.1816e+00  1.0572e+00  -2.0636
## id_mun15  _  CAPULHUAC                 -3.9421e+00  1.4636e+00  -2.6934
## id_mun15  _  CHALCO                     1.3038e-03  1.7169e+00   0.0008
```

```
## id_mun15  _  CHAPA DE MOTA              -2.9052e+00  7.2804e-01  -3.9904
## id_mun15  _  CHAPULTEPEC                -1.9344e+00  1.1386e+00  -1.6990
## id_mun15  _  CHIAUTLA                   -1.9272e+00  1.8942e+00  -1.0174
## id_mun15  _  CHICOLOAPAN                 5.8228e-01  1.7616e+00   0.3305
## id_mun15  _  CHICONCUAC                  9.7936e+00  1.6778e+00   5.8370
## id_mun15  _  CHIMALHUACAN                2.0953e+00  1.3259e+00   1.5802
## id_mun15  _  COACALCO DE BERRIOZABAL     3.1236e+00  1.2654e+00   2.4686
## id_mun15  _  COATEPEC HARINAS           -3.4095e+00  9.6881e-01  -3.5192
## id_mun15  _  COCOTITLAN                  9.0097e+00  1.3893e+00   6.4853
## id_mun15  _  COYOTEPEC                   5.2577e+00  1.2394e+00   4.2423
## id_mun15  _  CUAUTITLAN                  5.4143e+00  1.0113e+00   5.3539
## id_mun15  _  CUAUTITLAN IZCALLI          8.7482e+00  9.3149e-01   9.3916
## id_mun15  _  DONATO GUERRA              -4.9877e+00  1.8785e+00  -2.6551
## id_mun15  _  ECATEPEC DE MORELOS         4.1733e+00  1.2861e+00   3.2449
## id_mun15  _  ECATZINGO                  -8.6816e+00  1.8539e+00  -4.6829
## id_mun15  _  EL ORO                      6.1718e+00  4.9848e-01  12.3812
## id_mun15  _  HUEHUETOCA                  1.7875e+00  8.8855e-01   2.0117
## id_mun15  _  HUEYPOXTLA                  7.8200e-02  1.3028e+00   0.0600
## id_mun15  _  HUIXQUILUCAN                5.6239e+00  9.2106e-01   6.1059
## id_mun15  _  ISIDRO FABELA              -6.0003e+00  1.7939e+00  -3.3447
## id_mun15  _  IXTAPALUCA                  6.2373e+00  1.2515e+00   4.9840
## id_mun15  _  IXTAPAN DE LA SAL           1.0783e+00  1.1530e+00   0.9352
## id_mun15  _  IXTAPAN DEL ORO             2.8130e+00  1.4830e+00   1.8968
## id_mun15  _  IXTLAHUACA                 -6.0369e+00  9.2675e-01  -6.5141
## id_mun15  _  JALTENCO                    2.5802e+00  1.2048e+00   2.1416
## id_mun15  _  JILOTEPEC                  -6.9196e+00  1.4103e+00  -4.9065
## id_mun15  _  JILOTZINGO                 -4.5504e+00  1.4221e+00  -3.1997
## id_mun15  _  JIQUIPILCO                 -8.7197e+00  1.4997e+00  -5.8142
## id_mun15  _  JOCOTITLAN                 -1.2099e+00  5.7746e-01  -2.0952
## id_mun15  _  JOQUICINGO                 -1.2345e+01  1.5523e+00  -7.9522
## id_mun15  _  JUCHITEPEC                 -2.1243e+00  1.5442e+00  -1.3757
## id_mun15  _  LA PAZ                      4.6588e+00  1.4656e+00   3.1788
## id_mun15  _  LERMA                      -3.3484e+00  1.2667e+00  -2.6434
## id_mun15  _  LUVIANOS                    6.2925e+00  1.2179e+00   5.1665
## id_mun15  _  MALINALCO                   1.4058e+00  7.2264e-01   1.9454
## id_mun15  _  MELCHOR OCAMPO             -2.4328e-01  1.4551e+00  -0.1672
## id_mun15  _  METEPEC                    -5.2818e-01  9.1937e-01  -0.5745
## id_mun15  _  MEXICALTZINGO               1.0332e+00  1.1600e+00   0.8907
## id_mun15  _  MORELOS                    -3.0053e+00  1.3400e+00  -2.2428
## id_mun15  _  NAUCALPAN DE JUAREZ         6.0545e+00  9.8342e-01   6.1565
## id_mun15  _  NEXTLALPAN                 -3.5241e+00  1.5935e+00  -2.2115
## id_mun15  _  NEZAHUALCOYOTL              6.6219e+00  1.5179e+00   4.3626
## id_mun15  _  NICOLAS ROMERO              1.9653e+00  1.2137e+00   1.6193
## id_mun15  _  NOPALTEPEC                  3.6321e+00  1.0641e+00   3.4133
## id_mun15  _  OCOYOACAC                  -6.5468e+00  1.5516e+00  -4.2194
## id_mun15  _  OCUILAN                     2.0428e+00  1.6195e+00   1.2614
## id_mun15  _  OTUMBA                     -1.8578e+00  1.3893e+00  -1.3373
## id_mun15  _  OTZOLOAPAN                  1.4142e-01  1.4744e+00   0.0959
## id_mun15  _  OTZOLOTEPEC                -1.5623e+00  1.5051e+00  -1.0380
## id_mun15  _  OZUMBA                      1.1566e+00  1.5134e+00   0.7643
## id_mun15  _  PAPALOTLA                   2.8565e+00  1.3190e+00   2.1657
## id_mun15  _  POLOTITLAN                 -1.0313e+01  1.1736e+00  -8.7875
## id_mun15  _  RAYON                      -6.4573e+00  1.5637e+00  -4.1295
## id_mun15  _  SAN ANTONIO LA ISLA        -3.8293e+00  1.3938e+00  -2.7474
```

```
## id_mun15  _  SAN FELIPE DEL PROGRESO     -2.6151e+00  4.5201e-01  -5.7855
## id_mun15  _  SAN JOSE DEL RINCON         -8.0588e+00  6.9603e-01 -11.5783
## id_mun15  _  SAN MARTIN DE LAS PIRAMIDES  1.6627e+00  1.3311e+00   1.2491
## id_mun15  _  SAN MATEO ATENCO             1.7417e-01  8.3809e-01   0.2078
## id_mun15  _  SAN SIMON DE GUERRERO        3.0572e+00  1.9999e+00   1.5287
## id_mun15  _  SANTO TOMAS                  3.3568e+00  1.4629e+00   2.2946
## id_mun15  _  SOYANIQUILPAN DE JUAREZ     -2.6548e-01  9.0684e-01  -0.2928
## id_mun15  _  SULTEPEC                     7.1268e+00  6.1419e-01  11.6035
## id_mun15  _  TECAMAC                      7.7086e+00  8.4450e-01   9.1280
## id_mun15  _  TEJUPILCO                   -4.8994e-02  1.5673e+00  -0.0313
## id_mun15  _  TEMAMATLA                   -5.8775e+00  1.6930e+00  -3.4717
## id_mun15  _  TEMASCALAPA                  1.9411e+00  1.0865e+00   1.7865
## id_mun15  _  TEMASCALCINGO               -6.4563e+00  7.7400e-01  -8.3415
## id_mun15  _  TEMASCALTEPEC               -4.7839e+00  8.2430e-01  -5.8036
## id_mun15  _  TEMOAYA                     -1.2576e+00  1.0196e+00  -1.2334
## id_mun15  _  TENANCINGO                   1.0069e+00  1.2352e+00   0.8151
## id_mun15  _  TENANGO DEL AIRE            -2.6617e+00  1.5974e+00  -1.6662
## id_mun15  _  TENANGO DEL VALLE           -9.8911e-01  1.5084e+00  -0.6557
## id_mun15  _  TEOLOYUCAN                   3.5980e+00  1.3387e+00   2.6877
## id_mun15  _  TEOTIHUACAN                  4.1220e+00  1.2066e+00   3.4162
## id_mun15  _  TEPETLAOXTOC                 5.5546e-01  1.7169e+00   0.3235
## id_mun15  _  TEPETLIXPA                   9.6083e-01  1.5534e+00   0.6185
## id_mun15  _  TEPOTZOTLAN                  8.2948e+00  8.0899e-01  10.2533
## id_mun15  _  TEQUIXQUIAC                  8.7418e+00  8.6548e-01  10.1006
## id_mun15  _  TEXCALTITLAN                 8.4169e-01  7.3885e-01   1.1392
## id_mun15  _  TEXCALYACAC                 -6.8807e-01  1.4775e+00  -0.4657
## id_mun15  _  TEXCOCO                      7.9169e+00  1.7005e+00   4.6555
## id_mun15  _  TEZOYUCA                    -3.2815e+00  1.7415e+00  -1.8843
## id_mun15  _  TIANGUISTENCO                3.3049e+00  9.4155e-01   3.5101
## id_mun15  _  TIMILPAN                     4.7300e+00  4.8143e-01   9.8250
## id_mun15  _  TLALMANALCO                  1.1752e-02  1.4973e+00   0.0078
## id_mun15  _  TLALNEPANTLA DE BAZ          7.7102e+00  9.9343e-01   7.7612
## id_mun15  _  TLATLAYA                     8.7983e+00  1.8526e+00   4.7492
## id_mun15  _  TOLUCA                       1.8229e+00  7.1532e-01   2.5484
## id_mun15  _  TONANITLA                    1.3831e+00  1.8105e+00   0.7639
## id_mun15  _  TONATICO                     3.4500e+00  1.0587e+00   3.2588
## id_mun15  _  TULTEPEC                     4.9034e-01  1.5631e+00   0.3137
## id_mun15  _  TULTITLAN                    1.5377e+00  1.4499e+00   1.0605
## id_mun15  _  VALLE DE BRAVO              -8.8940e+00  1.5855e+00  -5.6096
## id_mun15  _  VALLE DE CHALCO SOLIDARIDAD  9.9595e-01  1.7183e+00   0.5796
## id_mun15  _  VILLA DE ALLENDE            -2.0841e+00  1.4809e+00  -1.4073
## id_mun15  _  VILLA DEL CARBON            -3.1413e+00  1.0797e+00  -2.9095
## id_mun15  _  VILLA GUERRERO              -6.9866e+00  1.3190e+00  -5.2969
## id_mun15  _  VILLA VICTORIA              -1.8602e+00  4.9739e-01  -3.7400
## id_mun15  _  XALATLACO                    2.5753e+00  1.0834e+00   2.3770
## id_mun15  _  XONACATLAN                   4.8023e+00  1.3380e+00   3.5892
## id_mun15  _  ZACAZONAPAN                  6.7290e+00  1.5719e+00   4.2807
## id_mun15  _  ZACUALPAN                   -1.2198e+01  1.2791e+00  -9.5369
## id_mun15  _  ZINACANTEPEC                -7.3694e+00  9.1747e-01  -8.0324
## id_mun15  _  ZUMPAHUACAN                 -6.2422e+00  6.3088e-01  -9.8944
## id_mun15  _  ZUMPANGO                     7.5788e+00  8.3793e-01   9.0447
## id_mun9   _  ALVARO OBREGON               1.0886e+01  1.4770e+00   7.3698
## id_mun9   _  AZCAPOTZALCO                 9.8519e+00  1.4429e+00   6.8280
## id_mun9   _  BENITO JUAREZ                9.3612e+00  1.3317e+00   7.0298
```

```
## id_mun9  _  COYOACAN                      1.2598e+01  1.9546e+00   6.4452
## id_mun9  _  CUAJIMALPA DE MORELOS         5.2607e+00  1.3429e+00   3.9175
## id_mun9  _  CUAUHTEMOC                    8.2670e+00  1.5374e+00   5.3774
## id_mun9  _  GUSTAVO A. MADERO             1.0311e+01  1.5179e+00   6.7926
## id_mun9  _  IZTACALCO                     1.1421e+01  1.5138e+00   7.5448
## id_mun9  _  IZTAPALAPA                    9.8050e+00  1.6966e+00   5.7791
## id_mun9  _  LA MAGDALENA CONTRERAS        1.1898e+01  1.5200e+00   7.8281
## id_mun9  _  MIGUEL HIDALGO                6.9193e+00  1.3721e+00   5.0430
## id_mun9  _  MILPA ALTA                    1.1648e+01  1.5784e+00   7.3801
## id_mun9  _  TLAHUAC                       1.3048e+01  1.4593e+00   8.9412
## id_mun9  _  TLALPAN                       1.3236e+01  1.7815e+00   7.4299
## id_mun9  _  VENUSTIANO CARRANZA           7.8881e+00  1.5952e+00   4.9450
## id_mun9  _  XOCHIMILCO                    1.2413e+01  1.5374e+00   8.0737
## proximity:PRIstr                          1.5015e-02  1.6339e-01   0.0919
## proximity:highTURNOUT                     2.0591e-03  1.1587e-01   0.0178
## PRIstr:highTURNOUT                        9.8226e-01  4.3060e-01   2.2811
## proximity:PRDstr                         -2.1687e-01  2.3379e-01  -0.9276
## highTURNOUT:PRDstr                       -4.2323e+00  1.1227e+00  -3.7696
## proximity:PANstr                          1.2923e+00  2.5879e-01   4.9937
## highTURNOUT:PANstr                        1.0001e+01  1.0892e+00   9.1818
## proximity:PRIstr:highTURNOUT             -7.8480e-03  2.1272e-01  -0.0369
## proximity:highTURNOUT:PRDstr             -6.5424e+00  8.5781e+00  -0.7627
## proximity:highTURNOUT:PANstr             -7.1538e+00  1.1217e+00  -6.3778
##                                           Pr(>|t|)
## (Intercept)                              0.0990667 .
## proximity                                0.6791846
## PRIstr                                   0.4030552
## highTURNOUT                              0.8303114
## PRDstr                                   0.1195992
## PANstr                                   7.404e-14 ***
## PRI09a                                   2.891e-09 ***
## PRD09a                                   1.703e-05 ***
## PAN09a                                   1.218e-08 ***
## PART09                                   8.223e-06 ***
## lnpop                                    0.5741221
## P18                                      2.449e-09 ***
## P65                                      2.194e-10 ***
## area                                     0.0002111 ***
## density                                  0.0036232 **
## INDIGENOUS                               0.3342902
## CATHOLIC                                 0.6742280
## NONRELIGIOUS                             0.7886240
## EDUCATION                                2.943e-10 ***
## POSTEDUC                                 < 2.2e-16 ***
## ILLITERACY                               6.140e-08 ***
## PROM_HNV                                 9.333e-05 ***
## PEAprop                                  0.0016343 **
## PEAfemale                                0.0290603 *
## NOINSURANCE                              0.6074936
## FEMALEJEFA                               0.5552345
## PERROOM                                  0.9696258
## DIRTFLOOR                                0.8160718
## SERVICES                                 0.1334203
## NO_SERVICES                              0.1953577
```

```
## CAR                                    0.2842564
## CELULAR                                0.6629579
## INTERNET                               1.687e-09 ***
## id_mun15  _  ACOLMAN                   0.3088494
## id_mun15  _  ACULCO                    3.594e-14 ***
## id_mun15  _  ALMOLOYA DE ALQUISIRAS    1.132e-06 ***
## id_mun15  _  ALMOLOYA DE JUAREZ        3.896e-14 ***
## id_mun15  _  ALMOLOYA DEL RIO          0.0011936 **
## id_mun15  _  AMANALCO                  0.7955705
## id_mun15  _  AMATEPEC                  0.9818073
## id_mun15  _  AMECAMECA                 0.3668471
## id_mun15  _  APAXCO                    1.273e-05 ***
## id_mun15  _  ATENCO                    0.4442914
## id_mun15  _  ATIZAPAN                  0.4530569
## id_mun15  _  ATIZAPAN DE ZARAGOZA      1.925e-11 ***
## id_mun15  _  ATLACOMULCO               3.569e-10 ***
## id_mun15  _  ATLAUTLA                  0.0452791 *
## id_mun15  _  AXAPUSCO                  0.0466098 *
## id_mun15  _  AYAPANGO                  0.5270231
## id_mun15  _  CALIMAYA                  0.0390743 *
## id_mun15  _  CAPULHUAC                 0.0070820 **
## id_mun15  _  CHALCO                    0.9993941
## id_mun15  _  CHAPA DE MOTA             6.638e-05 ***
## id_mun15  _  CHAPULTEPEC               0.0893485 .
## id_mun15  _  CHIAUTLA                  0.3089828
## id_mun15  _  CHICOLOAPAN               0.7409914
## id_mun15  _  CHICONCUAC                5.458e-09 ***
## id_mun15  _  CHIMALHUACAN              0.1140856
## id_mun15  _  COACALCO DE BERRIOZABAL   0.0135796 *
## id_mun15  _  COATEPEC HARINAS          0.0004345 ***
## id_mun15  _  COCOTITLAN                9.221e-11 ***
## id_mun15  _  COYOTEPEC                 2.230e-05 ***
## id_mun15  _  CUAUTITLAN                8.774e-08 ***
## id_mun15  _  CUAUTITLAN IZCALLI        < 2.2e-16 ***
## id_mun15  _  DONATO GUERRA             0.0079394 **
## id_mun15  _  ECATEPEC DE MORELOS       0.0011783 **
## id_mun15  _  ECATZINGO                 2.861e-06 ***
## id_mun15  _  EL ORO                    < 2.2e-16 ***
## id_mun15  _  HUEHUETOCA                0.0442768 *
## id_mun15  _  HUEYPOXTLA                0.9521380
## id_mun15  _  HUIXQUILUCAN              1.055e-09 ***
## id_mun15  _  ISIDRO FABELA             0.0008262 ***
## id_mun15  _  IXTAPALUCA                6.318e-07 ***
## id_mun15  _  IXTAPAN DE LA SAL         0.3497086
## id_mun15  _  IXTAPAN DEL ORO           0.0578759 .
## id_mun15  _  IXTLAHUACA                7.620e-11 ***
## id_mun15  _  JALTENCO                  0.0322490 *
## id_mun15  _  JILOTEPEC                 9.399e-07 ***
## id_mun15  _  JILOTZINGO                0.0013793 **
## id_mun15  _  JIQUIPILCO                6.255e-09 ***
## id_mun15  _  JOCOTITLAN                0.0361757 *
## id_mun15  _  JOQUICINGO                2.003e-15 ***
## id_mun15  _  JUCHITEPEC                0.1689448
## id_mun15  _  LA PAZ                    0.0014830 **
```

```
## id_mun15  _  LERMA                        0.0082185 **
## id_mun15  _  LUVIANOS                     2.425e-07 ***
## id_mun15  _  MALINALCO                    0.0517551 .
## id_mun15  _  MELCHOR OCAMPO               0.8672197
## id_mun15  _  METEPEC                      0.5656386
## id_mun15  _  MEXICALTZINGO                0.3730824
## id_mun15  _  MORELOS                      0.0249299 *
## id_mun15  _  NAUCALPAN DE JUAREZ          7.683e-10 ***
## id_mun15  _  NEXTLALPAN                   0.0270183 *
## id_mun15  _  NEZAHUALCOYOTL               1.296e-05 ***
## id_mun15  _  NICOLAS ROMERO               0.1054203
## id_mun15  _  NOPALTEPEC                   0.0006439 ***
## id_mun15  _  OCOYOACAC                    2.468e-05 ***
## id_mun15  _  OCUILAN                      0.2071865
## id_mun15  _  OTUMBA                       0.1811601
## id_mun15  _  OTZOLOAPAN                   0.9235888
## id_mun15  _  OTZOLOTEPEC                  0.2992880
## id_mun15  _  OZUMBA                       0.4447173
## id_mun15  _  PAPALOTLA                    0.0303550 *
## id_mun15  _  POLOTITLAN                   < 2.2e-16 ***
## id_mun15  _  RAYON                        3.662e-05 ***
## id_mun15  _  SAN ANTONIO LA ISLA          0.0060170 **
## id_mun15  _  SAN FELIPE DEL PROGRESO      7.421e-09 ***
## id_mun15  _  SAN JOSE DEL RINCON          < 2.2e-16 ***
## id_mun15  _  SAN MARTIN DE LAS PIRAMIDES  0.2116610
## id_mun15  _  SAN MATEO ATENCO             0.8353754
## id_mun15  _  SAN SIMON DE GUERRERO        0.1263749
## id_mun15  _  SANTO TOMAS                  0.0217733 *
## id_mun15  _  SOYANIQUILPAN DE JUAREZ      0.7697133
## id_mun15  _  SULTEPEC                     < 2.2e-16 ***
## id_mun15  _  TECAMAC                      < 2.2e-16 ***
## id_mun15  _  TEJUPILCO                    0.9750627
## id_mun15  _  TEMAMATLA                    0.0005192 ***
## id_mun15  _  TEMASCALAPA                  0.0740384 .
## id_mun15  _  TEMASCALCINGO                < 2.2e-16 ***
## id_mun15  _  TEMASCALTEPEC                6.661e-09 ***
## id_mun15  _  TEMOAYA                      0.2174453
## id_mun15  _  TENANCINGO                   0.4150269
## id_mun15  _  TENANGO DEL AIRE             0.0956960 .
## id_mun15  _  TENANGO DEL VALLE            0.5120178
## id_mun15  _  TEOLOYUCAN                   0.0072046 **
## id_mun15  _  TEOTIHUACAN                  0.0006372 ***
## id_mun15  _  TEPETLAOXTOC                 0.7463077
## id_mun15  _  TEPETLIXPA                   0.5362266
## id_mun15  _  TEPOTZOTLAN                  < 2.2e-16 ***
## id_mun15  _  TEQUIXQUIAC                  < 2.2e-16 ***
## id_mun15  _  TEXCALTITLAN                 0.2546492
## id_mun15  _  TEXCALYACAC                  0.6414503
## id_mun15  _  TEXCOCO                      3.268e-06 ***
## id_mun15  _  TEZOYUCA                     0.0595481 .
## id_mun15  _  TIANGUISTENCO                0.0004497 ***
## id_mun15  _  TIMILPAN                     < 2.2e-16 ***
## id_mun15  _  TLALMANALCO                  0.9937380
## id_mun15  _  TLALNEPANTLA DE BAZ          9.128e-15 ***
```

```
## id_mun15  _  TLATLAYA                    2.067e-06 ***
## id_mun15  _  TOLUCA                      0.0108347 *
## id_mun15  _  TONANITLA                   0.4449237
## id_mun15  _  TONATICO                    0.0011220 **
## id_mun15  _  TULTEPEC                    0.7537636
## id_mun15  _  TULTITLAN                   0.2889300
## id_mun15  _  VALLE DE BRAVO              2.075e-08 ***
## id_mun15  _  VALLE DE CHALCO SOLIDARIDAD 0.5621773
## id_mun15  _  VILLA DE ALLENDE            0.1593648
## id_mun15  _  VILLA DEL CARBON            0.0036275 **
## id_mun15  _  VILLA GUERRERO              1.200e-07 ***
## id_mun15  _  VILLA VICTORIA              0.0001849 ***
## id_mun15  _  XALATLACO                   0.0174701 *
## id_mun15  _  XONACATLAN                  0.0003331 ***
## id_mun15  _  ZACAZONAPAN                 1.878e-05 ***
## id_mun15  _  ZACUALPAN                   < 2.2e-16 ***
## id_mun15  _  ZINACANTEPEC                1.050e-15 ***
## id_mun15  _  ZUMPAHUACAN                 < 2.2e-16 ***
## id_mun15  _  ZUMPANGO                    < 2.2e-16 ***
## id_mun9   _  ALVARO OBREGON              1.826e-13 ***
## id_mun9   _  AZCAPOTZALCO                9.048e-12 ***
## id_mun9   _  BENITO JUAREZ               2.186e-12 ***
## id_mun9   _  COYOACAN                    1.201e-10 ***
## id_mun9   _  CUAJIMALPA DE MORELOS       9.001e-05 ***
## id_mun9   _  CUAUHTEMOC                  7.707e-08 ***
## id_mun9   _  GUSTAVO A. MADERO           1.155e-11 ***
## id_mun9   _  IZTACALCO                   4.872e-14 ***
## id_mun9   _  IZTAPALAPA                  7.704e-09 ***
## id_mun9   _  LA MAGDALENA CONTRERAS      5.391e-15 ***
## id_mun9   _  MIGUEL HIDALGO              4.652e-07 ***
## id_mun9   _  MILPA ALTA                  1.691e-13 ***
## id_mun9   _  TLAHUAC                     < 2.2e-16 ***
## id_mun9   _  TLALPAN                     1.164e-13 ***
## id_mun9   _  VENUSTIANO CARRANZA         7.722e-07 ***
## id_mun9   _  XOCHIMILCO                  7.504e-16 ***
## proximity:PRIstr                         0.9267822
## proximity:highTURNOUT                    0.9858225
## PRIstr:highTURNOUT                       0.0225583 *
## proximity:PRDstr                         0.3536173
## highTURNOUT:PRDstr                       0.0001643 ***
## proximity:PANstr                         6.012e-07 ***
## highTURNOUT:PANstr                       < 2.2e-16 ***
## proximity:PRIstr:highTURNOUT             0.9705706
## proximity:highTURNOUT:PRDstr             0.4456656
## proximity:highTURNOUT:PANstr             1.865e-10 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
g_pri <- function(b){
  return( b[2] + b[139] + b[140] + b[146] )
}

g_prd <- function(b){
  return( b[2] + b[140] + b[142] + b[147] )
```

```
}

g_pan <- function(b){
  return( b[2] + b[140] + b[144] + b[148] )
}

grad_g_pri <-  jacobian(g_pri, benchmarkPRD.1$coef)
grad_g_prd <-  jacobian(g_prd, benchmarkPRD.1$coef)
grad_g_pan <-  jacobian(g_pan, benchmarkPRD.1$coef)


slopesBM[1,2] <- benchmarkPRD.1$coefficients[c("proximity")] +
  benchmarkPRD.1$coefficients[c("proximity:highTURNOUT")] +
  benchmarkPRD.1$coefficients[c("proximity:PRIstr")]+
  benchmarkPRD.1$coefficients[c("proximity:PRIstr:highTURNOUT")]
slopesBM[2,2] <- benchmarkPRD.1$coefficients[c("proximity")] +
  benchmarkPRD.1$coefficients[c("proximity:highTURNOUT")] +
  benchmarkPRD.1$coefficients[c("proximity:PRDstr")]+
  benchmarkPRD.1$coefficients[c("proximity:highTURNOUT:PRDstr")]
slopesBM[3,2] <- benchmarkPRD.1$coefficients[c("proximity")] +
  benchmarkPRD.1$coefficients[c("proximity:highTURNOUT")] +
  benchmarkPRD.1$coefficients[c("proximity:PANstr")]+
  benchmarkPRD.1$coefficients[c("proximity:highTURNOUT:PANstr")]
seBM[1,2]<-sqrt(grad_g_pri%*% covBMprd %*% t(grad_g_pri))
seBM[2,2]<-sqrt(grad_g_prd%*% covBMprd %*% t(grad_g_prd))
seBM[3,2]<-sqrt(grad_g_pan%*% covBMprd %*% t(grad_g_pan))


benchmarkPAN.1 <- lm( JVMa ~ proximity*PRIstr*highTURNOUT+proximity*PRDstr*highTURNOUT+proximity*PANstr
                        PRI09a+PRD09a+PAN09a+PART09+
                        lnpop+P18+P65+area+density+INDIGENOUS+CATHOLIC+NONRELIGIOUS+
                        EDUCATION+POSTEDUC+ILLITERACY+PROM_HNV+
                        PEAprop+PEAfemale+NOINSURANCE+FEMALEJEFA+
                        PERROOM+DIRTFLOOR+SERVICES+NO_SERVICES+
                        CAR+CELULAR+INTERNET+
                        id_mun, data=data, x=TRUE, y=TRUE)

covBMpan <- cluster.vcov(benchmarkPAN.1, data$id_dist)

coeftest(benchmarkPAN.1, covBMpan)
```

```
##
## t test of coefficients:
##
##                                          Estimate  Std. Error  t value
## (Intercept)                            2.9490e+00  2.6970e+00   1.0935
## proximity                              3.5181e-02  1.3822e-02   2.5454
## PRIstr                                 4.0976e-01  2.1772e-01   1.8820
## highTURNOUT                            1.2899e-01  3.0745e-01   0.4195
## PRDstr                                -1.6982e-01  2.1665e-01  -0.7838
## PANstr                                 3.4043e+00  5.8252e-01   5.8440
## PRI09a                                -1.3521e-01  4.1008e-02  -3.2973
## PRD09a                                -7.9604e-02  4.5529e-02  -1.7484
```

```
## PAN09a                                  4.9042e-01  4.6377e-02  10.5746
## PART09                                  4.9411e-02  2.8321e-02   1.7447
## lnpop                                   8.9157e-02  7.4872e-02   1.1908
## P18                                    -8.6778e+00  2.0887e+00  -4.1547
## P65                                     2.0321e+01  2.9035e+00   6.9990
## area                                    1.5512e-03  1.0740e-02   0.1444
## density                                -1.9094e-05  4.7949e-06  -3.9821
## INDIGENOUS                             -2.7455e+00  1.5415e+00  -1.7810
## CATHOLIC                                7.3268e-01  6.2452e-01   1.1732
## NONRELIGIOUS                           -3.7937e+00  2.5600e+00  -1.4819
## EDUCATION                               8.2936e-01  2.5414e-01   3.2634
## POSTEDUC                               -4.0576e+00  2.1346e+00  -1.9009
## ILLITERACY                              1.5367e+01  3.6740e+00   4.1827
## PROM_HNV                               -1.2594e+00  3.1577e-01  -3.9883
## PEAprop                                 5.7325e+00  2.6851e+00   2.1350
## PEAfemale                              -3.4046e+00  2.2217e+00  -1.5325
## NOINSURANCE                            -1.2916e+00  7.5264e-01  -1.7160
## FEMALEJEFA                             -3.4171e+00  7.9490e-01  -4.2988
## PERROOM                                 7.2747e-01  5.3832e-01   1.3514
## DIRTFLOOR                               2.5931e+00  1.9567e+00   1.3252
## SERVICES                               -3.4138e-01  4.1737e-01  -0.8179
## NO_SERVICES                             6.1950e+00  4.4544e+00   1.3908
## CAR                                     3.9578e+00  8.4301e-01   4.6949
## CELULAR                                -1.3146e+00  7.7626e-01  -1.6935
## INTERNET                                9.0711e+00  1.2158e+00   7.4609
## id_mun15  _  ACOLMAN                    1.0859e+00  8.6204e-01   1.2597
## id_mun15  _  ACULCO                     4.5143e+00  5.5135e-01   8.1876
## id_mun15  _  ALMOLOYA DE ALQUISIRAS     1.8087e+00  6.0092e-01   3.0098
## id_mun15  _  ALMOLOYA DE JUAREZ         2.0017e+00  7.5990e-01   2.6342
## id_mun15  _  ALMOLOYA DEL RIO          -2.4796e+00  8.2932e-01  -2.9899
## id_mun15  _  AMANALCO                   6.4433e+00  8.5729e-01   7.5159
## id_mun15  _  AMATEPEC                   1.5032e+00  1.0866e+00   1.3834
## id_mun15  _  AMECAMECA                  1.2757e+00  8.6414e-01   1.4763
## id_mun15  _  APAXCO                    -4.8959e+00  3.9488e-01 -12.3985
## id_mun15  _  ATENCO                     4.0890e+00  9.5770e-01   4.2696
## id_mun15  _  ATIZAPAN                  -3.2897e+00  6.3308e-01  -5.1964
## id_mun15  _  ATIZAPAN DE ZARAGOZA       5.8935e-01  8.3910e-01   0.7024
## id_mun15  _  ATLACOMULCO               -3.9768e+00  3.6684e-01 -10.8406
## id_mun15  _  ATLAUTLA                   1.5946e+00  8.2982e-01   1.9216
## id_mun15  _  AXAPUSCO                   1.6003e+00  5.4953e-01   2.9121
## id_mun15  _  AYAPANGO                   1.1367e+00  7.3407e-01   1.5485
## id_mun15  _  CALIMAYA                  -1.5256e+00  5.0024e-01  -3.0497
## id_mun15  _  CAPULHUAC                 -2.6953e+00  8.0705e-01  -3.3397
## id_mun15  _  CHALCO                     2.0453e+00  9.4939e-01   2.1543
## id_mun15  _  CHAPA DE MOTA              1.0338e+01  3.4051e-01  30.3622
## id_mun15  _  CHAPULTEPEC                3.6213e+00  5.6289e-01   6.4333
## id_mun15  _  CHIAUTLA                   3.4059e+00  9.3157e-01   3.6561
## id_mun15  _  CHICOLOAPAN                7.4581e-01  9.5608e-01   0.7801
## id_mun15  _  CHICONCUAC                 2.1909e-01  8.4258e-01   0.2600
## id_mun15  _  CHIMALHUACAN               1.5206e+00  8.4823e-01   1.7926
## id_mun15  _  COACALCO DE BERRIOZABAL    1.8477e+00  7.8531e-01   2.3528
## id_mun15  _  COATEPEC HARINAS           6.1600e+00  5.3825e-01  11.4444
## id_mun15  _  COCOTITLAN                -2.6603e+00  6.9761e-01  -3.8134
## id_mun15  _  COYOTEPEC                 -7.6375e-01  6.4036e-01  -1.1927
```

```
## id_mun15  _  CUAUTITLAN                  1.8432e-01  6.2546e-01   0.2947
## id_mun15  _  CUAUTITLAN IZCALLI         -2.6059e-01  6.1434e-01  -0.4242
## id_mun15  _  DONATO GUERRA               4.7020e+00  1.1795e+00   3.9865
## id_mun15  _  ECATEPEC DE MORELOS         4.3622e-01  8.0848e-01   0.5396
## id_mun15  _  ECATZINGO                   4.0281e+00  9.1794e-01   4.3882
## id_mun15  _  EL ORO                     -7.3561e+00  2.8777e-01 -25.5625
## id_mun15  _  HUEHUETOCA                 -1.0075e+00  4.7744e-01  -2.1102
## id_mun15  _  HUEYPOXTLA                 -2.3029e+00  5.9819e-01  -3.8498
## id_mun15  _  HUIXQUILUCAN                6.6505e-01  6.0734e-01   1.0950
## id_mun15  _  ISIDRO FABELA              -7.6049e-01  8.9212e-01  -0.8525
## id_mun15  _  IXTAPALUCA                 -8.0169e-01  7.5719e-01  -1.0588
## id_mun15  _  IXTAPAN DE LA SAL           4.0753e+00  5.7164e-01   7.1291
## id_mun15  _  IXTAPAN DEL ORO             3.8616e+00  9.4212e-01   4.0989
## id_mun15  _  IXTLAHUACA                 -4.0102e+00  4.8125e-01  -8.3331
## id_mun15  _  JALTENCO                   -1.0026e+00  6.5617e-01  -1.5279
## id_mun15  _  JILOTEPEC                   4.3605e+00  6.6246e-01   6.5822
## id_mun15  _  JILOTZINGO                  4.6685e+00  6.9274e-01   6.7392
## id_mun15  _  JIQUIPILCO                  7.2589e-01  8.1127e-01   0.8948
## id_mun15  _  JOCOTITLAN                 -2.2343e+00  3.3241e-01  -6.7214
## id_mun15  _  JOQUICINGO                  1.1044e+01  8.3349e-01  13.2504
## id_mun15  _  JUCHITEPEC                  6.3941e+00  7.7652e-01   8.2343
## id_mun15  _  LA PAZ                      4.5647e-01  8.6645e-01   0.5268
## id_mun15  _  LERMA                       4.1842e+00  6.7104e-01   6.2353
## id_mun15  _  LUVIANOS                    2.7957e+00  1.0423e+00   2.6822
## id_mun15  _  MALINALCO                  -4.0642e-01  3.5914e-01  -1.1317
## id_mun15  _  MELCHOR OCAMPO              4.6927e-02  7.9651e-01   0.0589
## id_mun15  _  METEPEC                     9.8174e-01  6.3324e-01   1.5504
## id_mun15  _  MEXICALTZINGO              -2.2366e+00  6.1069e-01  -3.6625
## id_mun15  _  MORELOS                     1.4401e+00  8.8728e-01   1.6231
## id_mun15  _  NAUCALPAN DE JUAREZ         1.1435e+00  9.3512e-01   1.2228
## id_mun15  _  NEXTLALPAN                  7.5590e-02  7.8104e-01   0.0968
## id_mun15  _  NEZAHUALCOYOTL             -1.1149e-01  9.0457e-01  -0.1233
## id_mun15  _  NICOLAS ROMERO              2.9962e+00  7.1609e-01   4.1841
## id_mun15  _  NOPALTEPEC                 -1.0840e-01  5.3960e-01  -0.2009
## id_mun15  _  OCOYOACAC                   1.7489e+00  8.2183e-01   2.1280
## id_mun15  _  OCUILAN                     5.6472e+00  8.2890e-01   6.8129
## id_mun15  _  OTUMBA                      3.2104e+00  6.2921e-01   5.1024
## id_mun15  _  OTZOLOAPAN                  3.0716e+00  1.0386e+00   2.9573
## id_mun15  _  OTZOLOTEPEC                 1.1574e+00  7.5696e-01   1.5290
## id_mun15  _  OZUMBA                      2.0119e+00  8.2198e-01   2.4476
## id_mun15  _  PAPALOTLA                   1.7591e+00  5.7092e-01   3.0812
## id_mun15  _  POLOTITLAN                  1.3537e+00  5.3853e-01   2.5136
## id_mun15  _  RAYON                       4.1358e-01  7.6683e-01   0.5393
## id_mun15  _  SAN ANTONIO LA ISLA         4.9124e+00  7.2973e-01   6.7318
## id_mun15  _  SAN FELIPE DEL PROGRESO    -3.7119e+00  3.0416e-01 -12.2035
## id_mun15  _  SAN JOSE DEL RINCON         1.1913e+00  5.5209e-01   2.1577
## id_mun15  _  SAN MARTIN DE LAS PIRAMIDES 3.8506e+00  5.9805e-01   6.4387
## id_mun15  _  SAN MATEO ATENCO           -4.9389e+00  5.2632e-01  -9.3837
## id_mun15  _  SAN SIMON DE GUERRERO      -3.2397e+00  1.1730e+00  -2.7619
## id_mun15  _  SANTO TOMAS                 4.4495e+00  7.7092e-01   5.7717
## id_mun15  _  SOYANIQUILPAN DE JUAREZ     8.0734e+00  6.9987e-01  11.5355
## id_mun15  _  SULTEPEC                    1.3685e-01  7.2507e-01   0.1887
## id_mun15  _  TECAMAC                    -2.6115e+00  4.7704e-01  -5.4744
## id_mun15  _  TEJUPILCO                   1.8553e-01  9.8434e-01   0.1885
```

```
## id_mun15  _  TEMAMATLA                    7.3490e+00  9.4780e-01   7.7537
## id_mun15  _  TEMASCALAPA                  3.2170e+00  4.5975e-01   6.9973
## id_mun15  _  TEMASCALCINGO                4.9073e-01  4.2834e-01   1.1457
## id_mun15  _  TEMASCALTEPEC                8.2919e+00  5.2453e-01  15.8083
## id_mun15  _  TEMOAYA                      3.9841e-01  5.4905e-01   0.7256
## id_mun15  _  TENANCINGO                   2.0243e+00  6.8156e-01   2.9702
## id_mun15  _  TENANGO DEL AIRE             5.4945e+00  7.4426e-01   7.3825
## id_mun15  _  TENANGO DEL VALLE            7.7228e-01  8.2566e-01   0.9353
## id_mun15  _  TEOLOYUCAN                  -6.0284e-01  6.5131e-01  -0.9256
## id_mun15  _  TEOTIHUACAN                 -1.0262e+00  5.8600e-01  -1.7512
## id_mun15  _  TEPETLAOXTOC                 2.9903e+00  8.6250e-01   3.4670
## id_mun15  _  TEPETLIXPA                   1.2202e+00  8.3959e-01   1.4533
## id_mun15  _  TEPOTZOTLAN                 -2.4986e+00  4.2448e-01  -5.8863
## id_mun15  _  TEQUIXQUIAC                 -3.2232e+00  4.5223e-01  -7.1272
## id_mun15  _  TEXCALTITLAN                -1.6066e-01  6.6434e-01  -0.2418
## id_mun15  _  TEXCALYACAC                 -4.0990e+00  7.2430e-01  -5.6592
## id_mun15  _  TEXCOCO                      1.8771e+00  9.6039e-01   1.9545
## id_mun15  _  TEZOYUCA                     4.4267e+00  9.1456e-01   4.8403
## id_mun15  _  TIANGUISTENCO               -3.4768e+00  5.0859e-01  -6.8361
## id_mun15  _  TIMILPAN                    -4.9659e+00  2.9977e-01 -16.5656
## id_mun15  _  TLALMANALCO                 -7.7914e-01  8.6101e-01  -0.9049
## id_mun15  _  TLALNEPANTLA DE BAZ         -1.4844e+00  7.6509e-01  -1.9401
## id_mun15  _  TLATLAYA                    -2.2732e+00  1.2597e+00  -1.8046
## id_mun15  _  TOLUCA                       5.6135e-01  5.8627e-01   0.9575
## id_mun15  _  TONANITLA                   -2.3029e+00  1.4134e+00  -1.6294
## id_mun15  _  TONATICO                    -7.3858e-01  4.7096e-01  -1.5682
## id_mun15  _  TULTEPEC                     2.7656e-01  8.7379e-01   0.3165
## id_mun15  _  TULTITLAN                    1.5793e+00  8.5245e-01   1.8527
## id_mun15  _  VALLE DE BRAVO               1.2564e+01  8.0111e-01  15.6834
## id_mun15  _  VALLE DE CHALCO SOLIDARIDAD  1.8554e+00  9.6184e-01   1.9290
## id_mun15  _  VILLA DE ALLENDE             1.2973e-01  8.6976e-01   0.1492
## id_mun15  _  VILLA DEL CARBON             1.5403e+00  5.7917e-01   2.6595
## id_mun15  _  VILLA GUERRERO              -2.9007e-01  5.8096e-01  -0.4993
## id_mun15  _  VILLA VICTORIA               5.0084e+00  3.0027e-01  16.6799
## id_mun15  _  XALATLACO                   -1.9895e+00  6.2425e-01  -3.1870
## id_mun15  _  XONACATLAN                   1.7559e+00  6.8365e-01   2.5685
## id_mun15  _  ZACAZONAPAN                 -2.2308e+00  9.8229e-01  -2.2710
## id_mun15  _  ZACUALPAN                    1.3961e+01  7.7638e-01  17.9826
## id_mun15  _  ZINACANTEPEC                -1.4101e+00  5.0908e-01  -2.7699
## id_mun15  _  ZUMPAHUACAN                  9.8012e+00  5.4162e-01  18.0961
## id_mun15  _  ZUMPANGO                    -6.2351e+00  4.9254e-01 -12.6590
## id_mun9   _  ALVARO OBREGON               9.9390e-01  1.0075e+00   0.9865
## id_mun9   _  AZCAPOTZALCO                -4.0279e-01  9.5582e-01  -0.4214
## id_mun9   _  BENITO JUAREZ               -4.3170e-01  9.9161e-01  -0.4354
## id_mun9   _  COYOACAN                    -2.2570e+00  1.0322e+00  -2.1866
## id_mun9   _  CUAJIMALPA DE MORELOS       -2.0930e+00  8.5207e-01  -2.4564
## id_mun9   _  CUAUHTEMOC                  -4.8625e-01  1.0215e+00  -0.4760
## id_mun9   _  GUSTAVO A. MADERO           -6.9058e-01  1.0014e+00  -0.6896
## id_mun9   _  IZTACALCO                   -8.1864e-01  1.0047e+00  -0.8148
## id_mun9   _  IZTAPALAPA                  -8.3477e-01  1.0119e+00  -0.8250
## id_mun9   _  LA MAGDALENA CONTRERAS      -9.7228e-01  9.7029e-01  -1.0020
## id_mun9   _  MIGUEL HIDALGO              -8.0950e-01  9.5894e-01  -0.8442
## id_mun9   _  MILPA ALTA                  -2.1327e+00  9.4721e-01  -2.2515
## id_mun9   _  TLAHUAC                     -2.3863e+00  9.7395e-01  -2.4501
```

```
## id_mun9  _  TLALPAN                      -1.5688e+00  9.9892e-01  -1.5705
## id_mun9  _  VENUSTIANO CARRANZA          -7.2433e-01  1.0113e+00  -0.7163
## id_mun9  _  XOCHIMILCO                   -1.8684e+00  1.0227e+00  -1.8269
## proximity:PRIstr                          2.6891e-03  1.2380e-01   0.0217
## proximity:highTURNOUT                    -3.1096e-02  1.0874e-01  -0.2860
## PRIstr:highTURNOUT                        4.1756e-01  3.0727e-01   1.3589
## proximity:PRDstr                         -3.9092e-02  1.0342e-01  -0.3780
## highTURNOUT:PRDstr                        1.7065e+00  7.7383e-01   2.2053
## proximity:PANstr                         -2.9407e-02  2.5425e-01  -0.1157
## highTURNOUT:PANstr                       -5.6197e+00  7.5134e-01  -7.4795
## proximity:PRIstr:highTURNOUT             -3.0560e-02  1.7739e-01  -0.1723
## proximity:highTURNOUT:PRDstr             -4.1939e+00  7.4550e+00  -0.5626
## proximity:highTURNOUT:PANstr              5.4505e+00  1.5337e+00   3.5538
##                                           Pr(>|t|)
## (Intercept)                              0.2742127
## proximity                                0.0109293 *
## PRIstr                                   0.0598594 .
## highTURNOUT                              0.6748282
## PRDstr                                   0.4331575
## PANstr                                   5.235e-09 ***
## PRI09a                                   0.0009791 ***
## PRD09a                                   0.0804196 .
## PAN09a                                   < 2.2e-16 ***
## PART09                                   0.0810643 .
## lnpop                                    0.2337593
## P18                                      3.281e-05 ***
## P65                                      2.722e-12 ***
## area                                     0.8851621
## density                                  6.872e-05 ***
## INDIGENOUS                               0.0749430 .
## CATHOLIC                                 0.2407470
## NONRELIGIOUS                             0.1383990
## EDUCATION                                0.0011039 **
## POSTEDUC                                 0.0573453 .
## ILLITERACY                               2.903e-05 ***
## PROM_HNV                                 6.697e-05 ***
## PEAprop                                  0.0327856 *
## PEAfemale                                0.1254313
## NOINSURANCE                              0.0861828 .
## FEMALEJEFA                               1.731e-05 ***
## PERROOM                                  0.1765971
## DIRTFLOOR                                0.1851266
## SERVICES                                 0.4134089
## NO_SERVICES                              0.1643230
## CAR                                      2.699e-06 ***
## CELULAR                                  0.0903892 .
## INTERNET                                 9.214e-14 ***
## id_mun15  _  ACOLMAN                     0.2077930
## id_mun15  _  ACULCO                      2.946e-16 ***
## id_mun15  _  ALMOLOYA DE ALQUISIRAS      0.0026198 **
## id_mun15  _  ALMOLOYA DE JUAREZ          0.0084447 **
## id_mun15  _  ALMOLOYA DEL RIO            0.0027963 **
## id_mun15  _  AMANALCO                    6.072e-14 ***
## id_mun15  _  AMATEPEC                    0.1665701
```

```
## id_mun15  _  AMECAMECA                0.1398949
## id_mun15  _  APAXCO                   < 2.2e-16 ***
## id_mun15  _  ATENCO                   1.974e-05 ***
## id_mun15  _  ATIZAPAN                 2.067e-07 ***
## id_mun15  _  ATIZAPAN DE ZARAGOZA     0.4824692
## id_mun15  _  ATLACOMULCO              < 2.2e-16 ***
## id_mun15  _  ATLAUTLA                 0.0546783 .
## id_mun15  _  AXAPUSCO                 0.0035969 **
## id_mun15  _  AYAPANGO                 0.1215402
## id_mun15  _  CALIMAYA                 0.0022961 **
## id_mun15  _  CAPULHUAC                0.0008414 ***
## id_mun15  _  CHALCO                   0.0312366 *
## id_mun15  _  CHAPA DE MOTA            < 2.2e-16 ***
## id_mun15  _  CHAPULTEPEC              1.299e-10 ***
## id_mun15  _  CHIAUTLA                 0.0002572 ***
## id_mun15  _  CHICOLOAPAN              0.4353673
## id_mun15  _  CHICONCUAC               0.7948531
## id_mun15  _  CHIMALHUACAN             0.0730568 .
## id_mun15  _  COACALCO DE BERRIOZABAL  0.0186471 *
## id_mun15  _  COATEPEC HARINAS         < 2.2e-16 ***
## id_mun15  _  COCOTITLAN               0.0001378 ***
## id_mun15  _  COYOTEPEC                0.2330156
## id_mun15  _  CUAUTITLAN               0.7682322
## id_mun15  _  CUAUTITLAN IZCALLI       0.6714481
## id_mun15  _  DONATO GUERRA            6.747e-05 ***
## id_mun15  _  ECATEPEC DE MORELOS      0.5895109
## id_mun15  _  ECATZINGO                1.153e-05 ***
## id_mun15  _  EL ORO                   < 2.2e-16 ***
## id_mun15  _  HUEHUETOCA               0.0348650 *
## id_mun15  _  HUEYPOXTLA               0.0001189 ***
## id_mun15  _  HUIXQUILUCAN             0.2735338
## id_mun15  _  ISIDRO FABELA            0.3939794
## id_mun15  _  IXTAPALUCA               0.2897245
## id_mun15  _  IXTAPAN DE LA SAL        1.071e-12 ***
## id_mun15  _  IXTAPAN DEL ORO          4.181e-05 ***
## id_mun15  _  IXTLAHUACA               < 2.2e-16 ***
## id_mun15  _  JALTENCO                 0.1265601
## id_mun15  _  JILOTEPEC                4.837e-11 ***
## id_mun15  _  JILOTZINGO               1.669e-11 ***
## id_mun15  _  JIQUIPILCO               0.3709350
## id_mun15  _  JOCOTITLAN               1.885e-11 ***
## id_mun15  _  JOQUICINGO               < 2.2e-16 ***
## id_mun15  _  JUCHITEPEC               < 2.2e-16 ***
## id_mun15  _  LA PAZ                   0.5983178
## id_mun15  _  LERMA                    4.666e-10 ***
## id_mun15  _  LUVIANOS                 0.0073250 **
## id_mun15  _  MALINALCO                0.2577951
## id_mun15  _  MELCHOR OCAMPO           0.9530205
## id_mun15  _  METEPEC                  0.1210842
## id_mun15  _  MEXICALTZINGO            0.0002509 ***
## id_mun15  _  MORELOS                  0.1045997
## id_mun15  _  NAUCALPAN DE JUAREZ      0.2214248
## id_mun15  _  NEXTLALPAN               0.9229024
## id_mun15  _  NEZAHUALCOYOTL           0.9019102
```

```
## id_mun15  _  NICOLAS ROMERO              2.884e-05 ***
## id_mun15  _  NOPALTEPEC                  0.8407872
## id_mun15  _  OCOYOACAC                   0.0333575 *
## id_mun15  _  OCUILAN                     1.005e-11 ***
## id_mun15  _  OTUMBA                      3.408e-07 ***
## id_mun15  _  OTZOLOAPAN                  0.0031094 **
## id_mun15  _  OTZOLOTEPEC                 0.1262800
## id_mun15  _  OZUMBA                      0.0143968 *
## id_mun15  _  PAPALOTLA                   0.0020666 **
## id_mun15  _  POLOTITLAN                  0.0119630 *
## id_mun15  _  RAYON                       0.5896691
## id_mun15  _  SAN ANTONIO LA ISLA         1.756e-11 ***
## id_mun15  _  SAN FELIPE DEL PROGRESO     < 2.2e-16 ***
## id_mun15  _  SAN JOSE DEL RINCON         0.0309707 *
## id_mun15  _  SAN MARTIN DE LAS PIRAMIDES 1.253e-10 ***
## id_mun15  _  SAN MATEO ATENCO            < 2.2e-16 ***
## id_mun15  _  SAN SIMON DE GUERRERO       0.0057558 **
## id_mun15  _  SANTO TOMAS                 8.052e-09 ***
## id_mun15  _  SOYANIQUILPAN DE JUAREZ     < 2.2e-16 ***
## id_mun15  _  SULTEPEC                    0.8503032
## id_mun15  _  TECAMAC                     4.483e-08 ***
## id_mun15  _  TEJUPILCO                   0.8505043
## id_mun15  _  TEMAMATLA                   9.677e-15 ***
## id_mun15  _  TEMASCALAPA                 2.756e-12 ***
## id_mun15  _  TEMASCALCINGO               0.2519518
## id_mun15  _  TEMASCALTEPEC               < 2.2e-16 ***
## id_mun15  _  TEMOAYA                     0.4680839
## id_mun15  _  TENANCINGO                  0.0029827 **
## id_mun15  _  TENANGO DEL AIRE            1.661e-13 ***
## id_mun15  _  TENANGO DEL VALLE           0.3496281
## id_mun15  _  TEOLOYUCAN                  0.3546864
## id_mun15  _  TEOTIHUACAN                 0.0799401 .
## id_mun15  _  TEPETLAOXTOC                0.0005282 ***
## id_mun15  _  TEPETLIXPA                  0.1461540
## id_mun15  _  TEPOTZOTLAN                 4.059e-09 ***
## id_mun15  _  TEQUIXQUIAC                 1.086e-12 ***
## id_mun15  _  TEXCALTITLAN                0.8089127
## id_mun15  _  TEXCALYACAC                 1.557e-08 ***
## id_mun15  _  TEXCOCO                     0.0506624 .
## id_mun15  _  TEZOYUCA                    1.313e-06 ***
## id_mun15  _  TIANGUISTENCO               8.553e-12 ***
## id_mun15  _  TIMILPAN                    < 2.2e-16 ***
## id_mun15  _  TLALMANALCO                 0.3655261
## id_mun15  _  TLALNEPANTLA DE BAZ         0.0523869 .
## id_mun15  _  TLATLAYA                    0.0711659 .
## id_mun15  _  TOLUCA                      0.3383419
## id_mun15  _  TONANITLA                   0.1032657
## id_mun15  _  TONATICO                    0.1168567
## id_mun15  _  TULTEPEC                    0.7516241
## id_mun15  _  TULTITLAN                   0.0639482 .
## id_mun15  _  VALLE DE BRAVO              < 2.2e-16 ***
## id_mun15  _  VALLE DE CHALCO SOLIDARIDAD 0.0537569 .
## id_mun15  _  VILLA DE ALLENDE            0.8814320
## id_mun15  _  VILLA DEL CARBON            0.0078359 **
```

```
## id_mun15  _  VILLA GUERRERO             0.6175896
## id_mun15  _  VILLA VICTORIA             < 2.2e-16 ***
## id_mun15  _  XALATLACO                  0.0014413 **
## id_mun15  _  XONACATLAN                 0.0102279 *
## id_mun15  _  ZACAZONAPAN                0.0231627 *
## id_mun15  _  ZACUALPAN                  < 2.2e-16 ***
## id_mun15  _  ZINACANTEPEC               0.0056165 **
## id_mun15  _  ZUMPAHUACAN                < 2.2e-16 ***
## id_mun15  _  ZUMPANGO                   < 2.2e-16 ***
## id_mun9   _  ALVARO OBREGON             0.3239121
## id_mun9   _  AZCAPOTZALCO               0.6734651
## id_mun9   _  BENITO JUAREZ              0.6633106
## id_mun9   _  COYOACAN                   0.0287943 *
## id_mun9   _  CUAJIMALPA DE MORELOS      0.0140488 *
## id_mun9   _  CUAUHTEMOC                 0.6340859
## id_mun9   _  GUSTAVO A. MADERO          0.4904359
## id_mun9   _  IZTACALCO                  0.4152089
## id_mun9   _  IZTAPALAPA                 0.4093998
## id_mun9   _  LA MAGDALENA CONTRERAS     0.3163408
## id_mun9   _  MIGUEL HIDALGO             0.3985948
## id_mun9   _  MILPA ALTA                 0.0243707 *
## id_mun9   _  TLAHUAC                    0.0142967 *
## id_mun9   _  TLALPAN                    0.1163241
## id_mun9   _  VENUSTIANO CARRANZA        0.4738425
## id_mun9   _  XOCHIMILCO                 0.0677370 .
## proximity:PRIstr                        0.9826707
## proximity:highTURNOUT                   0.7749204
## PRIstr:highTURNOUT                      0.1742042
## proximity:PRDstr                        0.7054551
## highTURNOUT:PRDstr                      0.0274510 *
## proximity:PANstr                        0.9079232
## highTURNOUT:PANstr                      8.004e-14 ***
## proximity:PRIstr:highTURNOUT            0.8632224
## proximity:highTURNOUT:PRDstr            0.5737461
## proximity:highTURNOUT:PANstr            0.0003812 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
g_pri <- function(b){
  return( b[2] + b[139] + b[140] + b[146] )
}

g_prd <- function(b){
  return( b[2] + b[140] + b[142] + b[147] )
}

g_pan <- function(b){
  return( b[2] + b[140] + b[144] + b[148] )
}

grad_g_pri <-  jacobian(g_pri, benchmarkPAN.1$coef)
grad_g_prd <-  jacobian(g_prd, benchmarkPAN.1$coef)
grad_g_pan <-  jacobian(g_pan, benchmarkPAN.1$coef)
```

```r
slopesBM[1,3] <- benchmarkPAN.1$coefficients[c("proximity")] +
  benchmarkPAN.1$coefficients[c("proximity:highTURNOUT")] +
  benchmarkPAN.1$coefficients[c("proximity:PRIstr")]+
  benchmarkPAN.1$coefficients[c("proximity:PRIstr:highTURNOUT")]
slopesBM[2,3] <- benchmarkPAN.1$coefficients[c("proximity")] +
  benchmarkPAN.1$coefficients[c("proximity:highTURNOUT")] +
  benchmarkPAN.1$coefficients[c("proximity:PRDstr")]+
  benchmarkPAN.1$coefficients[c("proximity:highTURNOUT:PRDstr")]
slopesBM[3,3] <- benchmarkPAN.1$coefficients[c("proximity")] +
  benchmarkPAN.1$coefficients[c("proximity:highTURNOUT")] +
  benchmarkPAN.1$coefficients[c("proximity:PANstr")]+
  benchmarkPAN.1$coefficients[c("proximity:highTURNOUT:PANstr")]
seBM[1,3]<-sqrt(grad_g_pri%*% covBMpan %*% t(grad_g_pri))
seBM[2,3]<-sqrt(grad_g_prd%*% covBMpan %*% t(grad_g_prd))
seBM[3,3]<-sqrt(grad_g_pan%*% covBMpan %*% t(grad_g_pan))


benchmarkPART.1 <- lm( PART ~ proximity*PRIstr*highTURNOUT+proximity*PRDstr*highTURNOUT+proximity*PANst
                         PRI09a+PRD09a+PAN09a+PART09+
                         lnpop+P18+P65+area+density+INDIGENOUS+CATHOLIC+NONRELIGIOUS+
                         EDUCATION+POSTEDUC+ILLITERACY+PROM_HNV+
                         PEAprop+PEAfemale+NOINSURANCE+FEMALEJEFA+
                         PERROOM+DIRTFLOOR+SERVICES+NO_SERVICES+
                         CAR+CELULAR+INTERNET+
                         id_mun, data=data, x=TRUE, y=TRUE)

covBMpart <- cluster.vcov(benchmarkPART.1, data$id_dist)

coeftest(benchmarkPART.1, covBMpart)
```

```
##
## t test of coefficients:
##
##                                          Estimate  Std. Error t value
## (Intercept)                             3.0074e+01  3.7025e+00  8.1224
## proximity                               2.3033e-02  1.6880e-02  1.3645
## PRIstr                                 -7.1834e-01  1.7894e-01 -4.0144
## highTURNOUT                            -6.5135e-02  2.8179e-01 -0.2311
## PRDstr                                 -8.7162e-01  2.2962e-01 -3.7960
## PANstr                                 -1.7638e+00  4.8676e-01 -3.6236
## PRI09a                                  7.0344e-02  6.3669e-02  1.1048
## PRD09a                                  1.4313e-01  6.2377e-02  2.2947
## PAN09a                                  7.1925e-02  6.6576e-02  1.0803
## PART09                                  3.9425e-01  6.3172e-02  6.2409
## lnpop                                  -7.5134e-02  1.1037e-01 -0.6807
## P18                                     9.7267e+00  1.8016e+00  5.3990
## P65                                     8.2645e+00  3.4785e+00  2.3759
## area                                    1.5537e-02  1.0269e-02  1.5131
## density                                 9.5234e-06  6.6613e-06  1.4297
## INDIGENOUS                             -5.8880e+00  1.1991e+00 -4.9105
## CATHOLIC                                3.0900e-01  7.4897e-01  0.4126
## NONRELIGIOUS                           -1.3354e+01  2.3589e+00 -5.6611
## EDUCATION                              -6.9926e-01  2.1989e-01 -3.1801
```

```
## POSTEDUC                                1.7620e+01  2.5859e+00  6.8138
## ILLITERACY                             -1.0342e+01  2.9246e+00 -3.5362
## PROM_HNV                                1.0345e+00  4.4425e-01  2.3287
## PEAprop                                -9.7311e-01  2.4920e+00 -0.3905
## PEAfemale                               1.6067e+00  2.1578e+00  0.7446
## NOINSURANCE                            -1.3406e+00  8.3492e-01 -1.6056
## FEMALEJEFA                             -1.3531e+00  8.9160e-01 -1.5176
## PERROOM                                 3.1668e-01  6.9455e-01  0.4560
## DIRTFLOOR                              -1.5896e-01  1.3946e+00 -0.1140
## SERVICES                                2.9422e-01  5.0923e-01  0.5778
## NO_SERVICES                             1.1559e+01  3.4945e+00  3.3078
## CAR                                     2.0038e+00  8.9665e-01  2.2347
## CELULAR                                -1.3084e+00  1.2339e+00 -1.0604
## INTERNET                                2.2222e+00  1.2076e+00  1.8402
## id_mun15  _  ACOLMAN                    2.1643e+00  7.8157e-01  2.7691
## id_mun15  _  ACULCO                    -1.1382e+00  4.4752e-01 -2.5434
## id_mun15  _  ALMOLOYA DE ALQUISIRAS     9.0203e+00  6.3832e-01 14.1313
## id_mun15  _  ALMOLOYA DE JUAREZ         4.5172e-01  5.5781e-01  0.8098
## id_mun15  _  ALMOLOYA DEL RIO           2.4797e+00  7.1063e-01  3.4894
## id_mun15  _  AMANALCO                   4.5837e+00  4.5228e-01 10.1347
## id_mun15  _  AMATEPEC                   8.2840e-01  7.1334e-01  1.1613
## id_mun15  _  AMECAMECA                  8.0639e-01  7.6292e-01  1.0570
## id_mun15  _  APAXCO                     3.2527e-01  3.9882e-01  0.8156
## id_mun15  _  ATENCO                     1.4799e+00  8.6336e-01  1.7141
## id_mun15  _  ATIZAPAN                   4.7083e+00  6.4601e-01  7.2883
## id_mun15  _  ATIZAPAN DE ZARAGOZA       1.6488e+00  6.1304e-01  2.6895
## id_mun15  _  ATLACOMULCO               -6.7964e-01  3.4538e-01 -1.9678
## id_mun15  _  ATLAUTLA                   3.0204e-01  6.7185e-01  0.4496
## id_mun15  _  AXAPUSCO                   7.5765e+00  6.5359e-01 11.5922
## id_mun15  _  AYAPANGO                   3.3145e+00  7.2011e-01  4.6028
## id_mun15  _  CALIMAYA                   2.5231e+00  5.8726e-01  4.2964
## id_mun15  _  CAPULHUAC                 -4.0640e+00  7.6927e-01 -5.2829
## id_mun15  _  CHALCO                    -7.5210e-01  8.0310e-01 -0.9365
## id_mun15  _  CHAPA DE MOTA              6.1735e+00  5.0281e-01 12.2778
## id_mun15  _  CHAPULTEPEC                2.5872e+00  5.9278e-01  4.3645
## id_mun15  _  CHIAUTLA                   3.6228e+00  8.3102e-01  4.3595
## id_mun15  _  CHICOLOAPAN               -5.9119e-01  8.2369e-01 -0.7177
## id_mun15  _  CHICONCUAC                 2.3875e+00  8.0230e-01  2.9758
## id_mun15  _  CHIMALHUACAN              -2.4750e-01  7.6708e-01 -0.3227
## id_mun15  _  COACALCO DE BERRIOZABAL    3.7859e-01  6.7756e-01  0.5588
## id_mun15  _  COATEPEC HARINAS           3.7412e+00  4.5600e-01  8.2043
## id_mun15  _  COCOTITLAN                 5.2665e+00  6.7948e-01  7.7508
## id_mun15  _  COYOTEPEC                 -7.2577e-01  7.4274e-01 -0.9771
## id_mun15  _  CUAUTITLAN                 1.3672e+00  6.2626e-01  2.1831
## id_mun15  _  CUAUTITLAN IZCALLI         1.2295e+00  6.2648e-01  1.9626
## id_mun15  _  DONATO GUERRA              6.6648e+00  8.2265e-01  8.1016
## id_mun15  _  ECATEPEC DE MORELOS        1.0851e+00  7.1534e-01  1.5169
## id_mun15  _  ECATZINGO                  1.3581e+00  8.3864e-01  1.6194
## id_mun15  _  EL ORO                     1.3264e+00  2.9648e-01  4.4737
## id_mun15  _  HUEHUETOCA                 6.7365e-02  6.1389e-01  0.1097
## id_mun15  _  HUEYPOXTLA                 4.3490e+00  6.3554e-01  6.8430
## id_mun15  _  HUIXQUILUCAN               1.9211e+00  6.0863e-01  3.1564
## id_mun15  _  ISIDRO FABELA              3.0419e+00  6.8458e-01  4.4435
## id_mun15  _  IXTAPALUCA                 6.3720e-01  6.7966e-01  0.9375
```

```
## id_mun15  _  IXTAPAN DE LA SAL           5.3121e-01  5.6685e-01  0.9371
## id_mun15  _  IXTAPAN DEL ORO             6.6118e+00  6.4384e-01 10.2693
## id_mun15  _  IXTLAHUACA                  1.8685e+00  3.9290e-01  4.7557
## id_mun15  _  JALTENCO                    3.3480e+00  6.4208e-01  5.2143
## id_mun15  _  JILOTEPEC                  -1.0251e+00  6.2172e-01 -1.6489
## id_mun15  _  JILOTZINGO                  4.3678e+00  6.4305e-01  6.7924
## id_mun15  _  JIQUIPILCO                  1.1665e-01  5.4043e-01  0.2159
## id_mun15  _  JOCOTITLAN                  2.8763e+00  3.5711e-01  8.0545
## id_mun15  _  JOQUICINGO                  5.5351e+00  5.9603e-01  9.2867
## id_mun15  _  JUCHITEPEC                  3.6251e+00  6.9574e-01  5.2104
## id_mun15  _  LA PAZ                      2.7121e-01  7.5415e-01  0.3596
## id_mun15  _  LERMA                       3.0239e+00  5.8041e-01  5.2099
## id_mun15  _  LUVIANOS                    3.5411e+00  5.4410e-01  6.5083
## id_mun15  _  MALINALCO                   2.8596e+00  4.0339e-01  7.0888
## id_mun15  _  MELCHOR OCAMPO             -6.9802e-01  7.3639e-01 -0.9479
## id_mun15  _  METEPEC                     3.4726e-01  5.9088e-01  0.5877
## id_mun15  _  MEXICALTZINGO              -1.1703e+00  6.1409e-01 -1.9057
## id_mun15  _  MORELOS                     5.4631e+00  4.8764e-01 11.2033
## id_mun15  _  NAUCALPAN DE JUAREZ         1.7862e+00  7.3373e-01  2.4344
## id_mun15  _  NEXTLALPAN                  3.0619e+00  8.0710e-01  3.7937
## id_mun15  _  NEZAHUALCOYOTL              2.5838e+00  8.2448e-01  3.1338
## id_mun15  _  NICOLAS ROMERO              6.3148e-01  6.5059e-01  0.9706
## id_mun15  _  NOPALTEPEC                  4.3573e+00  7.3788e-01  5.9052
## id_mun15  _  OCOYOACAC                   3.1131e+00  6.3445e-01  4.9068
## id_mun15  _  OCUILAN                     3.9795e+00  6.2742e-01  6.3427
## id_mun15  _  OTUMBA                      2.6856e+00  6.8980e-01  3.8933
## id_mun15  _  OTZOLOAPAN                  5.4981e+00  5.7909e-01  9.4944
## id_mun15  _  OTZOLOTEPEC                 2.9307e+00  6.2668e-01  4.6765
## id_mun15  _  OZUMBA                      1.6827e+00  7.1431e-01  2.3558
## id_mun15  _  PAPALOTLA                   3.5039e+00  7.1495e-01  4.9009
## id_mun15  _  POLOTITLAN                  2.2669e+00  4.8227e-01  4.7006
## id_mun15  _  RAYON                       3.7689e+00  6.4794e-01  5.8168
## id_mun15  _  SAN ANTONIO LA ISLA         2.2687e+00  7.2131e-01  3.1453
## id_mun15  _  SAN FELIPE DEL PROGRESO     9.9535e-01  4.3854e-01  2.2697
## id_mun15  _  SAN JOSE DEL RINCON        -2.0777e+00  3.8659e-01 -5.3746
## id_mun15  _  SAN MARTIN DE LAS PIRAMIDES 1.9053e+00  6.9553e-01  2.7394
## id_mun15  _  SAN MATEO ATENCO            1.8549e+00  5.3648e-01  3.4576
## id_mun15  _  SAN SIMON DE GUERRERO       8.3728e+00  8.1023e-01 10.3338
## id_mun15  _  SANTO TOMAS                 5.6196e+00  6.1942e-01  9.0724
## id_mun15  _  SOYANIQUILPAN DE JUAREZ     6.5389e+00  6.4370e-01 10.1583
## id_mun15  _  SULTEPEC                    4.8868e+00  4.6862e-01 10.4281
## id_mun15  _  TECAMAC                     2.1130e+00  5.7294e-01  3.6880
## id_mun15  _  TEJUPILCO                  -1.1960e+00  6.7607e-01 -1.7691
## id_mun15  _  TEMAMATLA                  -1.4483e+00  7.4493e-01 -1.9442
## id_mun15  _  TEMASCALAPA                 3.0305e+00  6.1479e-01  4.9293
## id_mun15  _  TEMASCALCINGO              -9.8505e-01  2.7285e-01 -3.6103
## id_mun15  _  TEMASCALTEPEC               3.5840e+00  3.2995e-01 10.8621
## id_mun15  _  TEMOAYA                     2.0356e-01  4.8148e-01  0.4228
## id_mun15  _  TENANCINGO                 -2.8458e-01  6.2170e-01 -0.4577
## id_mun15  _  TENANGO DEL AIRE            3.0442e+00  7.8257e-01  3.8900
## id_mun15  _  TENANGO DEL VALLE           1.3986e-01  6.1440e-01  0.2276
## id_mun15  _  TEOLOYUCAN                 -1.4234e+00  7.4266e-01 -1.9166
## id_mun15  _  TEOTIHUACAN                 4.4060e-01  6.5815e-01  0.6694
## id_mun15  _  TEPETLAOXTOC                5.0930e+00  7.3346e-01  6.9439
```

```
## id_mun15  _  TEPETLIXPA                  -2.1881e+00  6.7236e-01 -3.2543
## id_mun15  _  TEPOTZOTLAN                 -1.5366e-01  5.2040e-01 -0.2953
## id_mun15  _  TEQUIXQUIAC                  2.2505e+00  5.5038e-01  4.0890
## id_mun15  _  TEXCALTITLAN                 4.8861e+00  3.8395e-01 12.7257
## id_mun15  _  TEXCALYACAC                  3.0118e+00  6.4375e-01  4.6786
## id_mun15  _  TEXCOCO                     -5.3858e-02  7.8880e-01 -0.0683
## id_mun15  _  TEZOYUCA                    -5.0037e-01  8.2545e-01 -0.6062
## id_mun15  _  TIANGUISTENCO                2.1396e+00  5.4086e-01  3.9559
## id_mun15  _  TIMILPAN                     4.2864e+00  3.3326e-01 12.8620
## id_mun15  _  TLALMANALCO                  7.5561e-01  6.9991e-01  1.0796
## id_mun15  _  TLALNEPANTLA DE BAZ          1.7720e+00  5.9359e-01  2.9852
## id_mun15  _  TLATLAYA                     3.3963e+00  6.9581e-01  4.8811
## id_mun15  _  TOLUCA                       6.0805e-01  5.2932e-01  1.1487
## id_mun15  _  TONANITLA                    6.0014e-01  1.2479e+00  0.4809
## id_mun15  _  TONATICO                     5.1356e+00  5.2139e-01  9.8497
## id_mun15  _  TULTEPEC                     9.3279e-01  7.5844e-01  1.2299
## id_mun15  _  TULTITLAN                    8.2291e-01  7.3400e-01  1.1211
## id_mun15  _  VALLE DE BRAVO               5.9611e-01  6.9509e-01  0.8576
## id_mun15  _  VALLE DE CHALCO SOLIDARIDAD -3.9462e-01  8.1746e-01 -0.4827
## id_mun15  _  VILLA DE ALLENDE             6.4205e+00  5.8409e-01 10.9924
## id_mun15  _  VILLA DEL CARBON             7.0383e-01  4.6873e-01  1.5016
## id_mun15  _  VILLA GUERRERO               2.1778e+00  6.4005e-01  3.4026
## id_mun15  _  VILLA VICTORIA               6.1336e+00  4.0834e-01 15.0208
## id_mun15  _  XALATLACO                    1.6995e-01  5.4121e-01  0.3140
## id_mun15  _  XONACATLAN                   2.3734e+00  6.0915e-01  3.8962
## id_mun15  _  ZACAZONAPAN                  5.9506e+00  6.4707e-01  9.1963
## id_mun15  _  ZACUALPAN                    1.6547e+00  5.0929e-01  3.2490
## id_mun15  _  ZINACANTEPEC                 2.9569e+00  4.4615e-01  6.6276
## id_mun15  _  ZUMPAHUACAN                  6.8555e+00  3.0897e-01 22.1882
## id_mun15  _  ZUMPANGO                     2.1816e+00  5.3507e-01  4.0772
## id_mun9   _  ALVARO OBREGON               5.7099e+00  9.3414e-01  6.1124
## id_mun9   _  AZCAPOTZALCO                 3.7585e+00  7.8617e-01  4.7807
## id_mun9   _  BENITO JUAREZ                3.9354e+00  8.3708e-01  4.7013
## id_mun9   _  COYOACAN                     4.5453e+00  9.3567e-01  4.8579
## id_mun9   _  CUAJIMALPA DE MORELOS        2.0231e+00  7.6655e-01  2.6393
## id_mun9   _  CUAUHTEMOC                   3.3317e+00  8.7526e-01  3.8065
## id_mun9   _  GUSTAVO A. MADERO            4.2024e+00  8.6732e-01  4.8453
## id_mun9   _  IZTACALCO                    5.0932e+00  8.5042e-01  5.9890
## id_mun9   _  IZTAPALAPA                   3.2580e+00  9.1895e-01  3.5453
## id_mun9   _  LA MAGDALENA CONTRERAS       5.7936e+00  7.9145e-01  7.3202
## id_mun9   _  MIGUEL HIDALGO               2.6395e+00  8.1276e-01  3.2476
## id_mun9   _  MILPA ALTA                   2.8359e+00  7.5140e-01  3.7742
## id_mun9   _  TLAHUAC                      5.8750e+00  8.2205e-01  7.1468
## id_mun9   _  TLALPAN                      5.3419e+00  1.0613e+00  5.0332
## id_mun9   _  VENUSTIANO CARRANZA          3.6380e+00  8.6471e-01  4.2072
## id_mun9   _  XOCHIMILCO                   5.3954e+00  8.6421e-01  6.2431
## proximity:PRIstr                          1.2743e-01  1.6155e-01  0.7888
## proximity:highTURNOUT                    -2.6115e-01  1.2663e-01 -2.0622
## PRIstr:highTURNOUT                        1.2763e+00  2.8520e-01  4.4750
## proximity:PRDstr                          1.4493e-01  2.0208e-01  0.7172
## highTURNOUT:PRDstr                       -4.6339e-01  6.1135e-01 -0.7580
## proximity:PANstr                          4.5990e-01  2.1402e-01  2.1489
## highTURNOUT:PANstr                        3.9458e+00  9.8365e-01  4.0114
## proximity:PRIstr:highTURNOUT             -8.4523e-02  2.3203e-01 -0.3643
```

```
## proximity:highTURNOUT:PRDstr              4.3984e+00  4.7545e+00  0.9251
## proximity:highTURNOUT:PANstr             -4.6905e+00  1.6459e+00 -2.8498
##                                           Pr(>|t|)
## (Intercept)                              5.038e-16 ***
## proximity                                0.1724283
## PRIstr                                   5.998e-05 ***
## highTURNOUT                              0.8172074
## PRDstr                                   0.0001478 ***
## PANstr                                   0.0002918 ***
## PRI09a                                   0.2692527
## PRD09a                                   0.0217688 *
## PAN09a                                   0.2800167
## PART09                                   4.505e-10 ***
## lnpop                                    0.4960477
## P18                                      6.835e-08 ***
## P65                                      0.0175248 *
## area                                     0.1302937
## density                                  0.1528392
## INDIGENOUS                               9.209e-07 ***
## CATHOLIC                                 0.6799346
## NONRELIGIOUS                             1.540e-08 ***
## EDUCATION                                0.0014762 **
## POSTEDUC                                 9.979e-12 ***
## ILLITERACY                               0.0004075 ***
## PROM_HNV                                 0.0198938 *
## PEAprop                                  0.6961825
## PEAfemale                                0.4565134
## NOINSURANCE                              0.1083817
## FEMALEJEFA                               0.1291367
## PERROOM                                  0.6484312
## DIRTFLOOR                                0.9092542
## SERVICES                                 0.5634191
## NO_SERVICES                              0.0009431 ***
## CAR                                      0.0254536 *
## CELULAR                                  0.2889910
## INTERNET                                 0.0657665 .
## id_mun15  _  ACOLMAN                     0.0056295 **
## id_mun15  _  ACULCO                      0.0109901 *
## id_mun15  _  ALMOLOYA DE ALQUISIRAS      < 2.2e-16 ***
## id_mun15  _  ALMOLOYA DE JUAREZ          0.4180605
## id_mun15  _  ALMOLOYA DEL RIO            0.0004859 ***
## id_mun15  _  AMANALCO                    < 2.2e-16 ***
## id_mun15  _  AMATEPEC                    0.2455506
## id_mun15  _  AMECAMECA                   0.2905433
## id_mun15  _  APAXCO                      0.4147674
## id_mun15  _  ATENCO                      0.0865293 .
## id_mun15  _  ATIZAPAN                    3.345e-13 ***
## id_mun15  _  ATIZAPAN DE ZARAGOZA        0.0071653 **
## id_mun15  _  ATLACOMULCO                 0.0491142 *
## id_mun15  _  ATLAUTLA                    0.6530366
## id_mun15  _  AXAPUSCO                    < 2.2e-16 ***
## id_mun15  _  AYAPANGO                    4.213e-06 ***
## id_mun15  _  CALIMAYA                    1.750e-05 ***
## id_mun15  _  CAPULHUAC                   1.295e-07 ***
```

```
## id_mun15  _  CHALCO                    0.3490389
## id_mun15  _  CHAPA DE MOTA             < 2.2e-16 ***
## id_mun15  _  CHAPULTEPEC               1.285e-05 ***
## id_mun15  _  CHIAUTLA                  1.315e-05 ***
## id_mun15  _  CHICOLOAPAN               0.4729338
## id_mun15  _  CHICONCUAC                0.0029280 **
## id_mun15  _  CHIMALHUACAN              0.7469644
## id_mun15  _  COACALCO DE BERRIOZABAL   0.5763416
## id_mun15  _  COATEPEC HARINAS          2.567e-16 ***
## id_mun15  _  COCOTITLAN                9.903e-15 ***
## id_mun15  _  COYOTEPEC                 0.3285173
## id_mun15  _  CUAUTITLAN                0.0290483 *
## id_mun15  _  CUAUTITLAN IZCALLI        0.0497184 *
## id_mun15  _  DONATO GUERRA             5.974e-16 ***
## id_mun15  _  ECATEPEC DE MORELOS       0.1293085
## id_mun15  _  ECATZINGO                 0.1053886
## id_mun15  _  EL ORO                    7.760e-06 ***
## id_mun15  _  HUEHUETOCA                0.9126212
## id_mun15  _  HUEYPOXTLA                8.148e-12 ***
## id_mun15  _  HUIXQUILUCAN              0.0016013 **
## id_mun15  _  ISIDRO FABELA             8.934e-06 ***
## id_mun15  _  IXTAPALUCA                0.3485013
## id_mun15  _  IXTAPAN DE LA SAL         0.3487150
## id_mun15  _  IXTAPAN DEL ORO           < 2.2e-16 ***
## id_mun15  _  IXTLAHUACA                2.002e-06 ***
## id_mun15  _  JALTENCO                  1.877e-07 ***
## id_mun15  _  JILOTEPEC                 0.0992017 .
## id_mun15  _  JILOTZINGO                1.157e-11 ***
## id_mun15  _  JIQUIPILCO                0.8291067
## id_mun15  _  JOCOTITLAN                8.772e-16 ***
## id_mun15  _  JOQUICINGO                < 2.2e-16 ***
## id_mun15  _  JUCHITEPEC                1.918e-07 ***
## id_mun15  _  LA PAZ                    0.7191362
## id_mun15  _  LERMA                     1.922e-07 ***
## id_mun15  _  LUVIANOS                  7.919e-11 ***
## id_mun15  _  MALINALCO                 1.432e-12 ***
## id_mun15  _  MELCHOR OCAMPO            0.3432063
## id_mun15  _  METEPEC                   0.5567436
## id_mun15  _  MEXICALTZINGO             0.0567123 .
## id_mun15  _  MORELOS                   < 2.2e-16 ***
## id_mun15  _  NAUCALPAN DE JUAREZ       0.0149316 *
## id_mun15  _  NEXTLALPAN                0.0001492 ***
## id_mun15  _  NEZAHUALCOYOTL            0.0017298 **
## id_mun15  _  NICOLAS ROMERO            0.3317528
## id_mun15  _  NOPALTEPEC                3.622e-09 ***
## id_mun15  _  OCOYOACAC                 9.385e-07 ***
## id_mun15  _  OCUILAN                   2.343e-10 ***
## id_mun15  _  OTUMBA                    9.944e-05 ***
## id_mun15  _  OTZOLOAPAN                < 2.2e-16 ***
## id_mun15  _  OTZOLOTEPEC               2.951e-06 ***
## id_mun15  _  OZUMBA                    0.0185013 *
## id_mun15  _  PAPALOTLA                 9.672e-07 ***
## id_mun15  _  POLOTITLAN                2.625e-06 ***
## id_mun15  _  RAYON                     6.157e-09 ***
```

```
## id_mun15  _  SAN ANTONIO LA ISLA         0.0016636 **
## id_mun15  _  SAN FELIPE DEL PROGRESO     0.0232436 *
## id_mun15  _  SAN JOSE DEL RINCON         7.827e-08 ***
## id_mun15  _  SAN MARTIN DE LAS PIRAMIDES 0.0061644 **
## id_mun15  _  SAN MATEO ATENCO            0.0005469 ***
## id_mun15  _  SAN SIMON DE GUERRERO       < 2.2e-16 ***
## id_mun15  _  SANTO TOMAS                 < 2.2e-16 ***
## id_mun15  _  SOYANIQUILPAN DE JUAREZ     < 2.2e-16 ***
## id_mun15  _  SULTEPEC                    < 2.2e-16 ***
## id_mun15  _  TECAMAC                     0.0002271 ***
## id_mun15  _  TEJUPILCO                   0.0769121 .
## id_mun15  _  TEMAMATLA                   0.0518910 .
## id_mun15  _  TEMASCALAPA                 8.367e-07 ***
## id_mun15  _  TEMASCALCINGO               0.0003072 ***
## id_mun15  _  TEMASCALTEPEC               < 2.2e-16 ***
## id_mun15  _  TEMOAYA                     0.6724647
## id_mun15  _  TENANCINGO                  0.6471498
## id_mun15  _  TENANGO DEL AIRE            0.0001008 ***
## id_mun15  _  TENANGO DEL VALLE           0.8199397
## id_mun15  _  TEOLOYUCAN                  0.0553095 .
## id_mun15  _  TEOTIHUACAN                 0.5032227
## id_mun15  _  TEPETLAOXTOC                4.021e-12 ***
## id_mun15  _  TEPETLIXPA                  0.0011401 **
## id_mun15  _  TEPOTZOTLAN                 0.7677839
## id_mun15  _  TEQUIXQUIAC                 4.362e-05 ***
## id_mun15  _  TEXCALTITLAN                < 2.2e-16 ***
## id_mun15  _  TEXCALYACAC                 2.922e-06 ***
## id_mun15  _  TEXCOCO                     0.9455650
## id_mun15  _  TEZOYUCA                    0.5444097
## id_mun15  _  TIANGUISTENCO               7.672e-05 ***
## id_mun15  _  TIMILPAN                    < 2.2e-16 ***
## id_mun15  _  TLALMANALCO                 0.2803510
## id_mun15  _  TLALNEPANTLA DE BAZ         0.0028401 **
## id_mun15  _  TLATLAYA                    1.069e-06 ***
## id_mun15  _  TOLUCA                      0.2506875
## id_mun15  _  TONANITLA                   0.6305866
## id_mun15  _  TONATICO                    < 2.2e-16 ***
## id_mun15  _  TULTEPEC                    0.2187669
## id_mun15  _  TULTITLAN                   0.2622568
## id_mun15  _  VALLE DE BRAVO              0.3911365
## id_mun15  _  VALLE DE CHALCO SOLIDARIDAD 0.6292912
## id_mun15  _  VILLA DE ALLENDE            < 2.2e-16 ***
## id_mun15  _  VILLA DEL CARBON            0.1332307
## id_mun15  _  VILLA GUERRERO              0.0006698 ***
## id_mun15  _  VILLA VICTORIA              < 2.2e-16 ***
## id_mun15  _  XALATLACO                   0.7535205
## id_mun15  _  XONACATLAN                  9.827e-05 ***
## id_mun15  _  ZACAZONAPAN                 < 2.2e-16 ***
## id_mun15  _  ZACUALPAN                   0.0011613 **
## id_mun15  _  ZINACANTEPEC                3.565e-11 ***
## id_mun15  _  ZUMPAHUACAN                 < 2.2e-16 ***
## id_mun15  _  ZUMPANGO                    4.588e-05 ***
## id_mun9   _  ALVARO OBREGON              1.013e-09 ***
## id_mun9   _  AZCAPOTZALCO                1.768e-06 ***
```

```
## id_mun9  _  BENITO JUAREZ                2.615e-06 ***
## id_mun9  _  COYOACAN                     1.202e-06 ***
## id_mun9  _  CUAJIMALPA DE MORELOS        0.0083199 **
## id_mun9  _  CUAUHTEMOC                   0.0001417 ***
## id_mun9  _  GUSTAVO A. MADERO            1.281e-06 ***
## id_mun9  _  IZTACALCO                    2.175e-09 ***
## id_mun9  _  IZTAPALAPA                   0.0003937 ***
## id_mun9  _  LA MAGDALENA CONTRERAS       2.642e-13 ***
## id_mun9  _  MIGUEL HIDALGO               0.0011671 **
## id_mun9  _  MILPA ALTA                   0.0001613 ***
## id_mun9  _  TLAHUAC                      9.424e-13 ***
## id_mun9  _  TLALPAN                      4.896e-07 ***
## id_mun9  _  VENUSTIANO CARRANZA          2.605e-05 ***
## id_mun9  _  XOCHIMILCO                   4.441e-10 ***
## proximity:PRIstr                         0.4302290
## proximity:highTURNOUT                    0.0392104 *
## PRIstr:highTURNOUT                       7.715e-06 ***
## proximity:PRDstr                         0.4732860
## highTURNOUT:PRDstr                       0.4484807
## proximity:PANstr                         0.0316628 *
## highTURNOUT:PANstr                       6.073e-05 ***
## proximity:PRIstr:highTURNOUT             0.7156563
## proximity:highTURNOUT:PRDstr             0.3549345
## proximity:highTURNOUT:PANstr             0.0043822 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
g_pri <- function(b){
  return( b[2] + b[139] + b[140] + b[146] )
}

g_prd <- function(b){
  return( b[2] + b[140] + b[142] + b[147] )
}

g_pan <- function(b){
  return( b[2] + b[140] + b[144] + b[148] )
}

grad_g_pri <-  jacobian(g_pri, benchmarkPART.1$coef)
grad_g_prd <-  jacobian(g_prd, benchmarkPART.1$coef)
grad_g_pan <-  jacobian(g_pan, benchmarkPART.1$coef)

slopesBM[1,4] <- benchmarkPART.1$coefficients[c("proximity")] +
  benchmarkPART.1$coefficients[c("proximity:highTURNOUT")] +
  benchmarkPART.1$coefficients[c("proximity:PRIstr")]+
  benchmarkPART.1$coefficients[c("proximity:PRIstr:highTURNOUT")]
slopesBM[2,4] <- benchmarkPART.1$coefficients[c("proximity")] +
  benchmarkPART.1$coefficients[c("proximity:highTURNOUT")] +
  benchmarkPART.1$coefficients[c("proximity:PRDstr")]+
  benchmarkPART.1$coefficients[c("proximity:highTURNOUT:PRDstr")]
slopesBM[3,4] <- benchmarkPART.1$coefficients[c("proximity")] +
  benchmarkPART.1$coefficients[c("proximity:highTURNOUT")] +
  benchmarkPART.1$coefficients[c("proximity:PANstr")]+
```

```
  benchmarkPART.1$coefficients[c("proximity:highTURNOUT:PANstr")]

seBM[1,4]<-sqrt(grad_g_pri%*% covBMpart %*% t(grad_g_pri))
seBM[2,4]<-sqrt(grad_g_prd%*% covBMpart %*% t(grad_g_prd))
seBM[3,4]<-sqrt(grad_g_pan%*% covBMpart %*% t(grad_g_pan))
```

**Table 1**

OLS Results with robust standard errors, as presented in the model. Below you will see both the table presented in the article using RSE and a version updated with classical standard errors. We see that the RSEs are, at times, at least 2x higher than classical SEs. As such, we will continue to examine potential model mis-specification here.

It is also notable that the results here slightly differ from those presented in the initial paper. After looking thoroughly, we could not identify the source of these differences. Notably, here, the number of observations in our dataset at 11,644. In the full appendix table the author cites N = 10,567. As such, I suspect the author omitted data (or somehow it was omitted by R) in a manner not discussed in the original paper, thus slightly altering the results. I note that I do not see any code deleting these observations in the author's original file, and the author's original R code creates the same table as below. This will require further investigation.

```
stargazer(coeftest(benchmarkPRI.1, covBMpri), coeftest(benchmarkPRD.1, covBMprd), coeftest(benchmarkPAN
          covariate.labels = c("Proximity", "PRI stronghold", "High Mobilization", "PRD stronghold","PA
                               "Population over 65", "Area", "Density", "Indigenous","Catholic","Nonrel
                               "Female population in the labor market", "No insurance","Female head of
                               "ALMOLOYA DEL RIO" , "AMANALCO" , "AMECAMECA" , "APAXCO" , "ATENCO" , "A
                               "CHIAUTLA" , "CHICOLOAPAN" , "CHICONCUAC" , "CHIMALHUACAN" , "COACALCO D
                               "HUEYPOXTLA" , "HUIXQUILUCAN" , "ISIDRO FABELA" , "IXTAPALUCA" , "IXTLAH
                               "LERMA" , "MELCHOR OCAMPO" , "METEPEC" , "MEXICALTZINGO" , "MORELOS" , "
                               "OTZOLOTEPEC" , "PAPALOTLA" , "POLOTITLAN" , "RAYON" , "SAN ANTONIO LA I
                               "TEMAMATLA" , "TEMASCALAPA" , "TEMOAYA" , "TENANGO DEL AIRE" , "TENANGO
                               "TIANGUISTENCO" , "TLALMANALCO" , "TLALNEPANTLA DE BAZ" , "TOLUCA" , "TO
                               "XALATLACO" , "XONACATLAN" , "ZINACANTEPEC" , "ZUMPANGO" , "ALVARO OBREG
                               "IZTAPALAPA" , "MAGDALENA CONTRERAS" , "MIGUEL HIDALGO" , "MILPA ALTA" ,
```

```
##
## ================================================================================
##
##                                        (1)         (2)         (3)         (4)
## --------------------------------------------------------------------------------
## Proximity                             0.001      -0.010      0.035*      0.023
##                                      (0.017)    (0.025)     (0.014)     (0.017)
##
## PRI stronghold                       -0.903**    -0.257      0.410      -0.718***
##                                      (0.300)    (0.307)     (0.218)     (0.179)
##
## High Mobilization                     -0.021     -0.077      0.129       -0.065
##                                      (0.388)    (0.357)     (0.307)     (0.282)
##
## PRD stronghold                       -1.151***   0.568      -0.170      -0.872***
##                                      (0.277)    (0.365)     (0.217)     (0.230)
##
## PAN stronghold                        2.038***  -6.695***   3.404***    -1.764***
```

```
##                                     (0.560)    (0.894)     (0.583)    (0.487)
##
## PRI 2009                           0.626***  -0.374***   -0.135***    0.070
##                                     (0.037)    (0.063)     (0.041)    (0.064)
##
## PRD2009                             -0.043    0.312***    -0.080      0.143*
##                                     (0.036)    (0.073)     (0.046)    (0.062)
##
## PAN2009                              0.064    -0.440***   0.490***     0.072
##                                     (0.040)    (0.077)     (0.046)    (0.067)
##
## Turnout 2009                        -0.009    0.293***     0.049     0.394***
##                                     (0.031)    (0.066)     (0.028)    (0.063)
##
## Population Log                      -0.239     0.075       0.089      -0.075
##                                     (0.134)    (0.133)     (0.075)    (0.110)
##
## Population over 18                   2.532    15.445***   -8.678***   9.727***
##                                     (2.489)    (2.587)     (2.089)    (1.802)
##
## Population over 65                 12.219***  -24.113***  20.321***    8.265*
##                                     (2.736)    (3.796)     (2.903)    (3.479)
##
## Area                                 0.046*   -0.036***     0.002      0.016
##                                     (0.018)    (0.010)     (0.011)    (0.010)
##
## Density                             -0.00000  0.00003**  -0.00002***  0.00001
##                                    (0.00001)  (0.00001)   (0.00000)  (0.00001)
##
## Indigenous                          -2.308*     -1.455     -2.745    -5.888***
##                                     (1.138)    (1.507)     (1.542)    (1.199)
##
## Catholic                            -1.560     0.853       0.733      0.309
##                                     (2.128)    (2.028)     (0.625)    (0.749)
##
## Nonreligious                        -10.357*    0.889      -3.794    -13.354***
##                                     (4.050)    (3.314)     (2.560)    (2.359)
##
## Education                            0.479*   -1.850***    0.829**    -0.699**
##                                     (0.201)    (0.293)     (0.254)    (0.220)
##
## College degree                     -10.532*** 30.394***    -4.058    17.620***
##                                     (1.974)    (3.052)     (2.135)    (2.586)
##
## Illiteracy                           -6.958   -19.500***  15.367***  -10.342***
##                                     (3.985)    (3.599)     (3.674)    (2.925)
##
## Inhabitants per house                0.341     1.876***   -1.259***    1.035*
##                                     (0.502)    (0.480)     (0.316)    (0.444)
##
## Population in the labor market       5.244*   -12.308**    5.733*      -0.973
##                                     (2.372)    (3.907)     (2.685)    (2.492)
##
## Female population in the labor market   -2.102     7.186*     -3.405      1.607
```

```
##                                (2.556)    (3.292)     (2.222)    (2.158)
##
## No insurance                    0.861     -0.763      -1.292     -1.341
##                                (1.001)    (1.485)     (0.753)    (0.835)
##
## Female head of household       2.830*     -0.891    -3.417***    -1.353
##                                (1.109)    (1.511)     (0.795)    (0.892)
##
## Inhabitants per room           -0.293     -0.047      0.727      0.317
##                                (0.956)    (1.224)     (0.538)    (0.695)
##
## Dirt floor                     -2.391     -0.807      2.593      -0.159
##                                (2.362)    (3.469)     (1.957)    (1.395)
##
## All services                   -0.424      1.024      -0.341      0.294
##                                (0.650)    (0.682)     (0.417)    (0.509)
##
## No services                    -0.755      5.782       6.195    11.559***
##                                (2.372)    (4.465)     (4.454)    (3.494)
##
## Car                            0.242      -1.641     3.958***     2.004*
##                                (1.039)    (1.532)     (0.843)    (0.897)
##
## Mobile phone                   0.581      -0.734      -1.315     -1.308
##                                (1.605)    (1.684)     (0.776)    (1.234)
##
## Internet                       2.031     -8.246***    9.071***     2.222
##                                (1.134)    (1.367)     (1.216)    (1.208)
##
## ACULCO                         -0.524      1.681       1.086     2.164**
##                                (1.044)    (1.651)     (0.862)    (0.782)
##
## ALMOLOYA DE JUAREZ            3.122***   -8.453***   4.514***    -1.138*
##                                (0.646)    (1.114)     (0.551)    (0.448)
##
## ALMOLOYA DEL RIO              3.541***    4.216***    1.809**    9.020***
##                                (0.542)    (0.866)     (0.601)    (0.638)
##
## AMANALCO                      9.076***   -11.120***   2.002**     0.452
##                                (0.791)    (1.468)     (0.760)    (0.558)
##
## AMECAMECA                    10.665***    -5.381**   -2.480**    2.480***
##                                (0.936)    (1.660)     (0.829)    (0.711)
##
## APAXCO                        -1.202*     -0.352     6.443***    4.584***
##                                (0.575)    (1.358)     (0.857)    (0.452)
##
## ATENCO                         0.045      -0.039      1.503      0.828
##                                (1.174)    (1.691)     (1.087)    (0.713)
##
## ATIZAPAN                       -1.609      1.472       1.276      0.806
##                                (1.031)    (1.631)     (0.864)    (0.763)
##
## ATIZAPAN DE ZARAGOZA          2.487***    3.162***   -4.896***    0.325
```

```
##                                (0.647)    (0.724)     (0.395)    (0.399)
##
## AXAPUSCO                      -3.469**    1.441     4.089***     1.480
##                                (1.109)    (1.884)     (0.958)    (0.863)
##
## AYAPANGO                      6.764***    0.917     -3.290***   4.708***
##                                (0.833)    (1.222)     (0.633)    (0.646)
##
## CALIMAYA                     -5.324***   6.679***     0.589     1.649**
##                                (0.835)    (0.994)     (0.839)    (0.613)
##
## CAPULHUAC                     7.154***  -3.621***   -3.977***   -0.680*
##                                (0.477)    (0.577)     (0.367)    (0.345)
##
## CHALCO                       -3.666***    3.178*      1.595      0.302
##                                (0.886)    (1.587)     (0.830)    (0.672)
##
## CHAPULTEPEC                   8.898***   -2.544*     1.600**    7.577***
##                                (0.882)    (1.278)     (0.550)    (0.654)
##
## CHIAUTLA                      3.271***    -0.993      1.137     3.315***
##                                (0.976)    (1.569)     (0.734)    (0.720)
##
## CHICOLOAPAN                   5.849***   -2.182*    -1.526**    2.523***
##                                (0.733)    (1.057)     (0.500)    (0.587)
##
## CHICONCUAC                    3.248***   -3.942**   -2.695***  -4.064***
##                                (0.889)    (1.464)     (0.807)    (0.769)
##
## CHIMALHUACAN                  -2.481*     0.001      2.045*      -0.752
##                                (1.068)    (1.717)     (0.949)    (0.803)
##
## COACALCO DE BERRIOZABAL        -0.873   -2.905***   10.338***   6.173***
##                                (0.544)    (0.728)     (0.341)    (0.503)
##
## COCOTITLAN                     1.384      -1.934    3.621***    2.587***
##                                (0.743)    (1.139)     (0.563)    (0.593)
##
## COYOTEPEC                      2.655*     -1.927    3.406***    3.623***
##                                (1.139)    (1.894)     (0.932)    (0.831)
##
## CUAUTITLAN                     -1.577     0.582       0.746      -0.591
##                                (1.054)    (1.762)     (0.956)    (0.824)
##
## CUAUTITLAN IZCALLI            -6.658***   9.794***     0.219     2.388**
##                                (1.039)    (1.678)     (0.843)    (0.802)
##
## ECATEPEC DE MORELOS           -3.461***    2.095       1.521      -0.248
##                                (1.021)    (1.326)     (0.848)    (0.767)
##
## HUEHUETOCA                    -4.429***    3.124*     1.848*      0.379
##                                (0.915)    (1.265)     (0.785)    (0.678)
##
## HUEYPOXTLA                     1.368*   -3.409***   6.160***    3.741***
```

```
##                                (0.643)    (0.969)     (0.538)    (0.456)
##
## HUIXQUILUCAN                    -0.911    9.010***   -2.660***   5.267***
##                                (0.921)    (1.389)     (0.698)    (0.679)
##
## ISIDRO FABELA                 -4.855***   5.258***    -0.764      -0.726
##                                (0.861)    (1.239)     (0.640)    (0.743)
##
## IXTAPALUCA                    -4.048***   5.414***     0.184      1.367*
##                                (0.855)    (1.011)     (0.625)    (0.626)
##
## IXTLAHUACA                    -7.184***   8.748***    -0.261      1.230*
##                                (0.832)    (0.931)     (0.614)    (0.626)
##
## JALTENCO                       6.445***   -4.988**    4.702***    6.665***
##                                (0.876)    (1.879)     (1.179)    (0.823)
##
## JILOTEPEC                     -3.394***   4.173**      0.436      1.085
##                                (0.904)    (1.286)     (0.808)    (0.715)
##
## JILOTZINGO                     5.718***  -8.682***    4.028***    1.358
##                                (1.029)    (1.854)     (0.918)    (0.839)
##
## JIQUIPILCO                     1.886***   6.172***   -7.356***   1.326***
##                                (0.279)    (0.498)     (0.288)    (0.296)
##
## JOCOTITLAN                      -0.124     1.787*     -1.007*     0.067
##                                (0.770)    (0.889)     (0.477)    (0.614)
##
## JOQUICINGO                     6.933***    0.078      -2.303***   4.349***
##                                (0.903)    (1.303)     (0.598)    (0.636)
##
## JUCHITEPEC                    -3.974***   5.624***     0.665      1.921**
##                                (0.835)    (0.921)     (0.607)    (0.609)
##
## LA PAZ                         9.532***  -6.000***    -0.760      3.042***
##                                (0.960)    (1.794)     (0.892)    (0.685)
##
## LERMA                         -4.694***   6.237***    -0.802      0.637
##                                (0.974)    (1.251)     (0.757)    (0.680)
##
## MELCHOR OCAMPO                -4.855***    1.078      4.075***    0.531
##                                (0.709)    (1.153)     (0.572)    (0.567)
##
## METEPEC                         0.615      2.813      3.862***    6.612***
##                                (0.753)    (1.483)     (0.942)    (0.644)
##
## MEXICALTZINGO                 11.509***  -6.037***    -4.010***   1.869***
##                                (0.587)    (0.927)     (0.481)    (0.393)
##
## MORELOS                         2.045*     2.580*     -1.003      3.348***
##                                (0.818)    (1.205)     (0.656)    (0.642)
##
## NAUCALPAN DE JUAREZ             1.312     -6.920***   4.360***     -1.025
```

```
##                                (0.846)    (1.410)     (0.662)    (0.622)
##
## NEXTLALPAN                    4.292***   -4.550**    4.669***   4.368***
##                                (0.973)    (1.422)     (0.693)    (0.643)
##
## NEZAHUALCOYOTL                8.009***  -8.720***     0.726      0.117
##                                (0.693)    (1.500)     (0.811)    (0.540)
##
## NICOLAS ROMERO                6.344***   -1.210*    -2.234***   2.876***
##                                (0.505)    (0.577)     (0.332)    (0.357)
##
## OCOYOACAC                     6.600***  -12.345***  11.044***   5.535***
##                                (0.788)    (1.552)     (0.833)    (0.596)
##
## OCUILAN                        -0.203     -2.124    6.394***    3.625***
##                                (0.932)    (1.544)     (0.777)    (0.696)
##
## OTUMBA                        -4.511***   4.659**      0.456      0.271
##                                (0.924)    (1.466)     (0.866)    (0.754)
##
## OTZOLOTEPEC                   2.469**    -3.348**    4.184***    3.024***
##                                (0.750)    (1.267)     (0.671)    (0.580)
##
## PAPALOTLA                     -4.817***   6.292***    2.796**    3.541***
##                                (1.138)    (1.218)     (1.042)    (0.544)
##
## POLOTITLAN                    1.543***    1.406      -0.406     2.860***
##                                (0.434)    (0.723)     (0.359)    (0.403)
##
## RAYON                          0.036      -0.243      0.047      -0.698
##                                (0.887)    (1.455)     (0.797)    (0.736)
##
## SAN ANTONIO LA ISLA            -0.418     -0.528      0.982      0.347
##                                (0.796)    (0.919)     (0.633)    (0.591)
##
## SAN FELIPE DEL PROGRESO        0.421      1.033     -2.237***    -1.170
##                                (0.840)    (1.160)     (0.611)    (0.614)
##
## SAN MARTIN DE LAS PIRAMIDES   5.619***   -3.005*      1.440     5.463***
##                                (0.611)    (1.340)     (0.887)    (0.488)
##
## SAN MATEO ATENCO              -5.010***   6.054***     1.143      1.786*
##                                (0.912)    (0.983)     (0.935)    (0.734)
##
## SOYANIQUILPAN DE JUAREZ       6.807***   -3.524*      0.076     3.062***
##                                (0.968)    (1.594)     (0.781)    (0.807)
##
## TECAMAC                       -3.551***   6.622***    -0.111     2.584**
##                                (0.998)    (1.518)     (0.905)    (0.824)
##
## TEMAMATLA                     -4.223***    1.965     2.996***     0.631
##                                (0.808)    (1.214)     (0.716)    (0.651)
##
## TEMASCALAPA                    1.522*     3.632***    -0.108     4.357***
```

```
##                                (0.776)    (1.064)     (0.540)    (0.738)
##
## TEMOAYA                       7.545***  -6.547***    1.749*     3.113***
##                                (0.903)    (1.552)     (0.822)    (0.634)
##
## TENANGO DEL AIRE             -3.792***    2.043     5.647***    3.980***
##                                (0.762)    (1.619)     (0.829)    (0.627)
##
## TENANGO DEL VALLE             1.370      -1.858     3.210***    2.686***
##                                (0.956)    (1.389)     (0.629)    (0.690)
##
## TEOLOYUCAN                    2.542**     0.141      3.072**     5.498***
##                                (0.913)    (1.474)     (1.039)    (0.579)
##
## TEOTIHUACAN                   3.185***    -1.562      1.157      2.931***
##                                (0.831)    (1.505)     (0.757)    (0.627)
##
## TEPETLAOXTOC                   -0.370     1.157      2.012*      1.683*
##                                (0.843)    (1.513)     (0.822)    (0.714)
##
## TEPOTZOTLAN                    -0.320     2.856*     1.759**     3.504***
##                                (0.873)    (1.319)     (0.571)    (0.715)
##
## TEQUIXQUIAC                  11.667***  -10.313***    1.354*     2.267***
##                                (0.743)    (1.174)     (0.539)    (0.482)
##
## TEXCALYACAC                  10.045***  -6.457***     0.414      3.769***
##                                (0.840)    (1.564)     (0.767)    (0.648)
##
## TEXCOCO                        1.841     -3.829**   4.912***    2.269**
##                                (0.969)    (1.394)     (0.730)    (0.721)
##
## TEZOYUCA                      7.168***  -2.615***    -3.712***     0.995*
##                                (0.311)    (0.452)     (0.304)    (0.439)
##
## TIANGUISTENCO                 4.684***  -8.059***    1.191*     -2.078***
##                                (0.374)    (0.696)     (0.552)    (0.387)
##
## TLALMANALCO                  -3.331***    1.663     3.851***    1.905**
##                                (0.957)    (1.331)     (0.598)    (0.696)
##
## TLALNEPANTLA DE BAZ           6.404***    0.174     -4.939***   1.855***
##                                (0.725)    (0.838)     (0.526)    (0.536)
##
## TOLUCA                        9.406***    3.057     -3.240**    8.373***
##                                (1.324)    (2.000)     (1.173)    (0.810)
##
## TONANITLA                      -0.733     3.357*     4.450***    5.620***
##                                (0.696)    (1.463)     (0.771)    (0.619)
##
## TULTEPEC                       -0.189     -0.265     8.073***    6.539***
##                                (0.643)    (0.907)     (0.700)    (0.644)
##
## TULTITLAN                      -1.382    7.127***     0.137      4.887***
```

```
##                                 (0.771)    (0.614)     (0.725)    (0.469)
##
## VALLE DE CHALCO SOLIDARIDAD   -2.854***   7.709***   -2.612***   2.113***
##                                 (0.725)    (0.845)     (0.477)    (0.573)
##
## VILLA DE ALLEND                  -1.211     -0.049      0.186      -1.196
##                                 (0.975)    (1.567)     (0.984)    (0.676)
##
## VILLA DEL CARBON                -2.348*   -5.877***   7.349***     -1.448
##                                 (1.091)    (1.693)     (0.948)    (0.745)
##
## VILLA VICTORIA                  -1.608*     1.941     3.217***    3.031***
##                                 (0.761)    (1.087)     (0.460)    (0.615)
##
## XALATLACO                       4.770***  -6.456***     0.491    -0.985***
##                                 (0.368)    (0.774)     (0.428)    (0.273)
##
## XONACATLAN                       0.325    -4.784***   8.292***    3.584***
##                                 (0.579)    (0.824)     (0.525)    (0.330)
##
## ZINACANTEPEC                     1.181*     -1.258      0.398      0.204
##                                 (0.556)    (1.020)     (0.549)    (0.481)
##
## ZUMPANGO                       -4.090***    1.007      2.024**     -0.285
##                                 (0.667)    (1.235)     (0.682)    (0.622)
##
## ALVARO OBREGON                   0.505      -2.662    5.494***    3.044***
##                                 (1.019)    (1.597)     (0.744)    (0.783)
##
## AZCAPOTZALCO                     0.431      -0.989      0.772      0.140
##                                 (0.760)    (1.508)     (0.826)    (0.614)
##
## BENITO JUAREZ                  -4.039***   3.598**     -0.603      -1.423
##                                 (0.930)    (1.339)     (0.651)    (0.743)
##
## COYOACAN                        -2.428**   4.122***    -1.026      0.441
##                                 (0.923)    (1.207)     (0.586)    (0.658)
##
## CUAJIMALPA DE MORELOS            1.856      0.555     2.990***    5.093***
##                                 (0.998)    (1.717)     (0.863)    (0.733)
##
## CUAUHTEMOC                     -3.990***    0.961       1.220     -2.188**
##                                 (0.858)    (1.553)     (0.840)    (0.672)
##
## GUSTAVO A. MADERO              -5.506***   8.295***   -2.499***     -0.154
##                                 (0.689)    (0.809)     (0.424)    (0.520)
##
## IZTACALCO                      -2.720***   8.742***   -3.223***   2.250***
##                                 (0.671)    (0.865)     (0.452)    (0.550)
##
## IZTAPALAPA                      4.514***    0.842      -0.161     4.886***
##                                 (0.578)    (0.739)     (0.664)    (0.384)
##
## MAGDALENA CONTRERAS             7.463***    -0.688    -4.099***   3.012***
```

```
##                                      (0.862)    (1.478)     (0.724)    (0.644)
##
## MIGUEL HIDALGO                     -9.577***   7.917***     1.877      -0.054
##                                      (0.989)    (1.701)     (0.960)    (0.789)
##
## MILPA ALTA                          -1.041     -3.282     4.427***     -0.500
##                                      (1.135)    (1.741)     (0.915)    (0.825)
##
## TLAHUAC                             2.041**    3.305***   -3.477***   2.140***
##                                      (0.656)    (0.942)     (0.509)    (0.541)
##
## TLALPAN                             5.514***   4.730***   -4.966***   4.286***
##                                      (0.359)    (0.481)     (0.300)    (0.333)
##
## VENUSTIANO CARRANZA                  1.412      0.012      -0.779      0.756
##                                      (0.909)    (1.497)     (0.861)    (0.700)
##
## XOCHIMILCO                         -4.202***   7.710***    -1.484     1.772**
##                                      (0.879)    (0.993)     (0.765)    (0.594)
##
## id_mun15 TLATLAYA                    -1.618    8.798***    -2.273     3.396***
##                                      (1.159)    (1.853)     (1.260)    (0.696)
##
## id_mun15 TOLUCA                     -1.921*     1.823*      0.561      0.608
##                                      (0.755)    (0.715)     (0.586)    (0.529)
##
## id_mun15 TONANITLA                   2.354*     1.383      -2.303      0.600
##                                      (1.174)    (1.811)     (1.413)    (1.248)
##
## id_mun15 TONATICO                   2.697***   3.450**     -0.739     5.136***
##                                      (0.739)    (1.059)     (0.471)    (0.521)
##
## id_mun15 TULTEPEC                    0.374      0.490       0.277      0.933
##                                      (0.941)    (1.563)     (0.874)    (0.758)
##
## id_mun15 TULTITLAN                  -2.160*     1.538       1.579      0.823
##                                      (0.999)    (1.450)     (0.852)    (0.734)
##
## id_mun15 VALLE DE BRAVO            -3.940***  -8.894***   12.564***    0.596
##                                      (0.922)    (1.586)     (0.801)    (0.695)
##
## id_mun15 VALLE DE CHALCO SOLIDARIDAD  -2.812**    0.996       1.855      -0.395
##                                      (1.022)    (1.718)     (0.962)    (0.817)
##
## id_mun15 VILLA DE ALLENDE           7.689***    -2.084      0.130      6.421***
##                                      (0.764)    (1.481)     (0.870)    (0.584)
##
## id_mun15 VILLA DEL CARBON           1.840**    -3.141**    1.540**      0.704
##                                      (0.647)    (1.080)     (0.579)    (0.469)
##
## id_mun15 VILLA GUERRERO             9.458***  -6.987***    -0.290     2.178***
##                                      (0.656)    (1.319)     (0.581)    (0.640)
##
## id_mun15 VILLA VICTORIA             3.273***  -1.860***    5.008***    6.134***
```

```
##                                  (0.404)    (0.497)     (0.300)    (0.408)
##
## id_mun15 XALATLACO                0.277      2.575*    -1.989**     0.170
##                                  (0.652)    (1.083)     (0.624)    (0.541)
##
## id_mun15 XONACATLAN              -3.797***   4.802***    1.756*     2.373***
##                                  (0.784)    (1.338)     (0.684)    (0.609)
##
## id_mun15 ZACAZONAPAN              2.208      6.729***   -2.231*     5.951***
##                                  (1.138)    (1.572)     (0.982)    (0.647)
##
## id_mun15 ZACUALPAN                0.251    -12.198***  13.961***   1.655**
##                                  (0.925)    (1.279)     (0.776)    (0.509)
##
## id_mun15 ZINACANTEPEC            11.445***  -7.369***   -1.410**    2.957***
##                                  (0.614)    (0.917)     (0.509)    (0.446)
##
## id_mun15 ZUMPAHUACAN              3.071***  -6.242***   9.801***    6.856***
##                                  (0.561)    (0.631)     (0.542)    (0.309)
##
## id_mun15 ZUMPANGO                 0.921      7.579***   -6.235***   2.182***
##                                  (0.707)    (0.838)     (0.493)    (0.535)
##
## id_mun9 ALVARO OBREGON           -5.842***  10.886***     0.994     5.710***
##                                  (1.089)    (1.477)     (1.008)    (0.934)
##
## id_mun9 AZCAPOTZALCO             -5.208***   9.852***    -0.403     3.758***
##                                  (1.039)    (1.443)     (0.956)    (0.786)
##
## id_mun9 BENITO JUAREZ            -4.542***   9.361***    -0.432     3.935***
##                                  (1.064)    (1.332)     (0.992)    (0.837)
##
## id_mun9 COYOACAN                 -5.251***  12.598***    -2.257*    4.545***
##                                  (1.252)    (1.955)     (1.032)    (0.936)
##
## id_mun9 CUAJIMALPA DE MORELOS     -0.615     5.261***   -2.093*     2.023**
##                                  (0.978)    (1.343)     (0.852)    (0.767)
##
## id_mun9 CUAUHTEMOC               -3.894***   8.267***    -0.486     3.332***
##                                  (1.098)    (1.537)     (1.022)    (0.875)
##
## id_mun9 GUSTAVO A. MADERO        -4.953***  10.311***    -0.691     4.202***
##                                  (1.072)    (1.518)     (1.001)    (0.867)
##
## id_mun9 IZTACALCO                -5.093***  11.421***    -0.819     5.093***
##                                  (1.082)    (1.514)     (1.005)    (0.850)
##
## id_mun9 IZTAPALAPA               -5.114***   9.805***    -0.835     3.258***
##                                  (1.100)    (1.697)     (1.012)    (0.919)
##
## id_mun9 LA MAGDALENA CONTRERAS   -4.760***  11.898***    -0.972     5.794***
##                                  (1.062)    (1.520)     (0.970)    (0.791)
##
## id_mun9 MIGUEL HIDALGO            -2.958**   6.919***    -0.810     2.640**
```

```
##                                    (1.052)    (1.372)     (0.959)    (0.813)
##
## id_mun9 MILPA ALTA                -5.788***  11.648***    -2.133*    2.836***
##                                    (0.992)    (1.578)     (0.947)    (0.751)
##
## id_mun9 TLAHUAC                   -4.227***  13.048***    -2.386*    5.875***
##                                    (1.029)    (1.459)     (0.974)    (0.822)
##
## id_mun9 TLALPAN                   -5.790***  13.236***    -1.569     5.342***
##                                    (1.101)    (1.781)     (0.999)    (1.061)
##
## id_mun9 VENUSTIANO CARRANZA        -3.103**   7.888***    -0.724     3.638***
##                                    (1.158)    (1.595)     (1.011)    (0.865)
##
## id_mun9 XOCHIMILCO                -4.451***  12.413***    -1.868     5.395***
##                                    (1.096)    (1.537)     (1.023)    (0.864)
##
## proximity:PRIstr                    0.177      0.015       0.003      0.127
##                                    (0.180)    (0.163)     (0.124)    (0.162)
##
## proximity:highTURNOUT               -0.214     0.002       -0.031     -0.261*
##                                    (0.272)    (0.116)     (0.109)    (0.127)
##
## PRIstr:highTURNOUT                  0.014      0.982*      0.418      1.276***
##                                    (0.433)    (0.431)     (0.307)    (0.285)
##
## proximity:PRDstr                    0.405*     -0.217      -0.039      0.145
##                                    (0.204)    (0.234)     (0.103)    (0.202)
##
## highTURNOUT:PRDstr                  1.765     -4.232***    1.707*      -0.463
##                                    (1.007)    (1.123)     (0.774)    (0.611)
##
## proximity:PANstr                  -0.872***   1.292***    -0.029      0.460*
##                                    (0.256)    (0.259)     (0.254)    (0.214)
##
## highTURNOUT:PANstr                  -0.499   10.001***   -5.620***   3.946***
##                                    (0.913)    (1.089)     (0.751)    (0.984)
##
## proximity:PRIstr:highTURNOUT        -0.130     -0.008      -0.031      -0.085
##                                    (0.361)    (0.213)     (0.177)    (0.232)
##
## proximity:highTURNOUT:PRDstr        17.259*     -6.542     -4.194      4.398
##                                    (8.243)    (8.578)     (7.455)    (4.755)
##
## proximity:highTURNOUT:PANstr        -2.593   -7.154***   5.451***    -4.690**
##                                    (1.611)    (1.122)     (1.534)    (1.646)
##
## Constant                           13.134**    11.733      2.949     30.074***
##                                    (4.472)    (7.113)     (2.697)    (3.703)
##
## ================================================================================
## Notes:                                  ***Significant at the 0.1 percent level.
##                                            **Significant at the 1 percent level.
##                                             *Significant at the 5 percent level.
```

### Classical Standard Errors

Here I present the results with classical standard errors. Here we see that in many instances robust standard errors are two-times (or larger) the size of classical standard errors. Some examples for this are on the coefficients for `PRI stronghold`, `PAN stronghold`, and the `PAN stronhold x Proximity x High Mobilization` interaction term. Here, perhaps, we find evidence of model mis-specification. Our group plans to investigate this further.

```
stargazer(coeftest(benchmarkPRI.1), coeftest(benchmarkPRD.1), coeftest(benchmarkPAN.1), coeftest(benchma
          covariate.labels = c("Proximity", "PRI stronghold", "High Mobilization", "PRD stronghold","PA
                               "Population over 65", "Area", "Density", "Indigenous","Catholic","Nonrel
                               "Female population in the labor market", "No insurance","Female head of
                               "ALMOLOYA DEL RIO" , "AMANALCO" , "AMECAMECA" , "APAXCO" , "ATENCO" , "A
                               "CHIAUTLA" , "CHICOLOAPAN" , "CHICONCUAC" , "CHIMALHUACAN" , "COACALCO D
                               "HUEYPOXTLA" , "HUIXQUILUCAN" , "ISIDRO FABELA" , "IXTAPALUCA" , "IXTLAH
                               "LERMA" , "MELCHOR OCAMPO" , "METEPEC" , "MEXICALTZINGO" , "MORELOS" , "
                               "OTZOLOTEPEC" , "PAPALOTLA" , "POLOTITLAN" , "RAYON" , "SAN ANTONIO LA I
                               "TEMAMATLA" , "TEMASCALAPA" , "TEMOAYA" , "TENANGO DEL AIRE" , "TENANGO
                               "TIANGUISTENCO" , "TLALMANALCO" , "TLALNEPANTLA DE BAZ" , "TOLUCA" , "TO
                               "XALATLACO" , "XONACATLAN" , "ZINACANTEPEC" , "ZUMPANGO" , "ALVARO OBREG
                               "IZTAPALAPA" , "MAGDALENA CONTRERAS" , "MIGUEL HIDALGO" , "MILPA ALTA" ,
```

```
##
## ===============================================================================
##
##                                        (1)        (2)         (3)        (4)
## -------------------------------------------------------------------------------
## Proximity                             0.001      -0.010      0.035      0.023
##                                      (0.024)    (0.028)     (0.019)    (0.023)
##
## PRI stronghold                      -0.903***    -0.257    0.410***   -0.718***
##                                      (0.146)    (0.170)     (0.118)    (0.139)
##
## High Mobilization                    -0.021     -0.077      0.129      -0.065
##                                      (0.165)    (0.192)     (0.133)    (0.158)
##
## PRD stronghold                      -1.151***   0.568**     -0.170    -0.872***
##                                      (0.150)    (0.175)     (0.121)    (0.144)
##
## PAN stronghold                       2.038***  -6.695***   3.404***   -1.764***
##                                      (0.264)    (0.307)     (0.213)    (0.252)
##
## PRI 2009                             0.626***  -0.374***   -0.135***   0.070***
##                                      (0.020)    (0.023)     (0.016)    (0.019)
##
## PRD2009                              -0.043*    0.312***   -0.080***   0.143***
##                                      (0.020)    (0.024)     (0.016)    (0.019)
##
## PAN2009                              0.064**   -0.440***   0.490***    0.072***
##                                      (0.020)    (0.023)     (0.016)    (0.019)
##
## Turnout 2009                         -0.009     0.293***   0.049***    0.394***
##                                      (0.018)    (0.021)     (0.014)    (0.017)
##
```

```
## Population Log                          -0.239***    0.075       0.089      -0.075
##                                          (0.057)    (0.067)     (0.046)    (0.055)
##
## Population over 18                        2.532*   15.445***   -8.678***   9.727***
##                                          (1.080)    (1.257)     (0.872)    (1.032)
##
## Population over 65                       12.219***  -24.113***  20.321***   8.265***
##                                          (1.527)    (1.776)     (1.232)    (1.458)
##
## Area                                      0.046***  -0.036***     0.002     0.016**
##                                          (0.006)    (0.007)     (0.005)    (0.006)
##
## Density                                  -0.00000  0.00003*** -0.00002***  0.00001*
##                                         (0.00000)  (0.00000)   (0.00000)  (0.00000)
##
## Indigenous                               -2.308**    -1.455    -2.745***  -5.888***
##                                          (0.830)    (0.966)     (0.670)    (0.793)
##
## Catholic                                 -1.560*     0.853       0.733      0.309
##                                          (0.612)    (0.712)     (0.494)    (0.585)
##
## Nonreligious                            -10.357***   0.889     -3.794**   -13.354***
##                                          (1.465)    (1.705)     (1.183)    (1.400)
##
## Education                                 0.479***  -1.850***   0.829***   -0.699***
##                                          (0.109)    (0.127)     (0.088)    (0.104)
##
## College degree                          -10.532*** 30.394***   -4.058***  17.620***
##                                          (1.080)    (1.256)     (0.871)    (1.032)
##
## Illiteracy                              -6.958***  -19.500***  15.367***  -10.342***
##                                          (2.098)    (2.441)     (1.693)    (2.005)
##
## Inhabitants per house                     0.341     1.876***   -1.259***   1.035***
##                                          (0.214)    (0.249)     (0.173)    (0.204)
##
## Population in the labor market           5.244***  -12.308***  5.733***     -0.973
##                                          (1.300)    (1.513)     (1.050)    (1.242)
##
## Female population in the labor market    -2.102    7.186***   -3.405***    1.607
##                                          (1.114)    (1.296)     (0.899)    (1.065)
##
## No insurance                              0.861      -0.763    -1.292***   -1.341**
##                                          (0.444)    (0.517)     (0.358)    (0.424)
##
## Female head of household                 2.830***    -0.891    -3.417***   -1.353*
##                                          (0.681)    (0.792)     (0.549)    (0.650)
##
## Inhabitants per room                      -0.293     -0.047     0.727*      0.317
##                                          (0.385)    (0.448)     (0.310)    (0.368)
##
## Dirt floor                               -2.391*     -0.807     2.593**     -0.159
##                                          (1.066)    (1.240)     (0.860)    (1.018)
##
```

```
## All services                -0.424    1.024**     -0.341      0.294
##                            (0.300)    (0.349)     (0.242)    (0.287)
##
## No services                 -0.755     5.782*     6.195***   11.559***
##                            (1.975)    (2.297)     (1.594)    (1.887)
##
## Car                         0.242     -1.641**    3.958***    2.004***
##                            (0.543)    (0.632)     (0.438)    (0.519)
##
## Mobile phone                0.581      -0.734     -1.315**    -1.308*
##                            (0.544)    (0.633)     (0.439)    (0.520)
##
## Internet                   2.031**    -8.246***   9.071***    2.222***
##                            (0.681)    (0.792)     (0.550)    (0.650)
##
## ACULCO                      -0.524     1.681       1.086      2.164**
##                            (0.812)    (0.945)     (0.655)    (0.776)
##
## ALMOLOYA DE JUAREZ         3.122***   -8.453***   4.514***    -1.138
##                            (0.800)    (0.930)     (0.645)    (0.764)
##
## ALMOLOYA DEL RIO           3.541***   4.216***    1.809*      9.020***
##                            (1.024)    (1.191)     (0.826)    (0.978)
##
## AMANALCO                   9.076***   -11.120***  2.002***    0.452
##                            (0.681)    (0.792)     (0.549)    (0.650)
##
## AMECAMECA                 10.665***   -5.381***   -2.480*     2.480
##                            (1.390)    (1.617)     (1.122)    (1.328)
##
## APAXCO                      -1.202     -0.352     6.443***    4.584***
##                            (1.048)    (1.219)     (0.846)    (1.002)
##
## ATENCO                      0.045      -0.039      1.503*     0.828
##                            (0.839)    (0.976)     (0.677)    (0.802)
##
## ATIZAPAN                   -1.609*     1.472       1.276      0.806
##                            (0.817)    (0.951)     (0.660)    (0.781)
##
## ATIZAPAN DE ZARAGOZA       2.487**    3.162**     -4.896***   0.325
##                            (0.928)    (1.079)     (0.749)    (0.886)
##
## AXAPUSCO                  -3.469***    1.441      4.089***    1.480
##                            (0.971)    (1.129)     (0.784)    (0.927)
##
## AYAPANGO                   6.764***    0.917      -3.290*     4.708**
##                            (1.725)    (2.007)     (1.393)    (1.648)
##
## CALIMAYA                  -5.324***   6.679***     0.589      1.649**
##                            (0.614)    (0.715)     (0.496)    (0.587)
##
## CAPULHUAC                  7.154***   -3.621***   -3.977***   -0.680
##                            (0.688)    (0.800)     (0.555)    (0.657)
##
```

```
## CHALCO                          -3.666***   3.178**     1.595*      0.302
##                                  (0.981)    (1.141)     (0.791)    (0.937)
##
## CHAPULTEPEC                      8.898***   -2.544*     1.600*     7.577***
##                                  (0.849)    (0.988)     (0.685)    (0.811)
##
## CHIAUTLA                          3.271*     -0.993      1.137      3.315*
##                                  (1.392)    (1.620)     (1.124)    (1.330)
##
## CHICOLOAPAN                      5.849***   -2.182*     -1.526*    2.523**
##                                  (0.902)    (1.049)     (0.728)    (0.861)
##
## CHICONCUAC                       3.248**   -3.942***   -2.695***  -4.064***
##                                  (1.003)    (1.166)     (0.809)    (0.958)
##
## CHIMALHUACAN                    -2.481***    0.001      2.045***    -0.752
##                                  (0.692)    (0.805)     (0.559)    (0.661)
##
## COACALCO DE BERRIOZABAL          -0.873    -2.905**   10.338***   6.173***
##                                  (0.925)    (1.076)     (0.747)    (0.884)
##
## COCOTITLAN                        1.384      -1.934     3.621*      2.587
##                                  (2.074)    (2.412)     (1.674)    (1.981)
##
## COYOTEPEC                        2.655**     -1.927    3.406***    3.623***
##                                  (1.017)    (1.183)     (0.821)    (0.972)
##
## CUAUTITLAN                       -1.577*     0.582       0.746      -0.591
##                                  (0.736)    (0.857)     (0.594)    (0.703)
##
## CUAUTITLAN IZCALLI               -6.658***   9.794***     0.219      2.388*
##                                  (1.224)    (1.423)     (0.988)    (1.169)
##
## ECATEPEC DE MORELOS              -3.461***   2.095**     1.521**     -0.248
##                                  (0.632)    (0.735)     (0.510)    (0.604)
##
## HUEHUETOCA                       -4.429***   3.124***   1.848***     0.379
##                                  (0.649)    (0.755)     (0.524)    (0.620)
##
## HUEYPOXTLA                        1.368     -3.409***   6.160***    3.741***
##                                  (0.849)    (0.987)     (0.685)    (0.811)
##
## HUIXQUILUCAN                      -0.911     9.010***   -2.660*     5.267***
##                                  (1.290)    (1.500)     (1.041)    (1.232)
##
## ISIDRO FABELA                    -4.855***   5.258***    -0.764      -0.726
##                                  (1.031)    (1.199)     (0.832)    (0.985)
##
## IXTAPALUCA                       -4.048***   5.414***     0.184      1.367
##                                  (0.787)    (0.915)     (0.635)    (0.752)
##
## IXTLAHUACA                       -7.184***   8.748***    -0.261      1.230*
##                                  (0.600)    (0.698)     (0.484)    (0.573)
##
```

```
## JALTENCO                  6.445***  -4.988***   4.702***    6.665***
##                           (0.954)    (1.109)    (0.770)    (0.911)
##
## JILOTEPEC                -3.394***   4.173***    0.436      1.085
##                           (0.592)    (0.689)    (0.478)    (0.566)
##
## JILOTZINGO                5.718***  -8.682***   4.028**     1.358
##                           (1.538)    (1.789)    (1.241)    (1.469)
##
## JIQUIPILCO                 1.886*    6.172***  -7.356***    1.326
##                           (0.860)    (1.001)    (0.694)    (0.822)
##
## JOCOTITLAN                -0.124      1.787     -1.007      0.067
##                           (0.863)    (1.004)    (0.696)    (0.824)
##
## JOQUICINGO                6.933***    0.078     -2.303**    4.349***
##                           (0.911)    (1.060)    (0.735)    (0.870)
##
## JUCHITEPEC               -3.974***   5.624***    0.665      1.921**
##                           (0.654)    (0.761)    (0.528)    (0.625)
##
## LA PAZ                    9.532***  -6.000***   -0.760      3.042*
##                           (1.399)    (1.627)    (1.129)    (1.336)
##
## LERMA                    -4.694***   6.237***   -0.802      0.637
##                           (0.623)    (0.724)    (0.502)    (0.595)
##
## MELCHOR OCAMPO           -4.855***    1.078     4.075***    0.531
##                           (0.854)    (0.993)    (0.689)    (0.816)
##
## METEPEC                    0.615      2.813     3.862***    6.612***
##                           (1.392)    (1.620)    (1.124)    (1.330)
##
## MEXICALTZINGO            11.509***  -6.037***   -4.010***   1.869**
##                           (0.680)    (0.791)    (0.549)    (0.650)
##
## MORELOS                    2.045*     2.580*    -1.003      3.348***
##                           (0.951)    (1.106)    (0.767)    (0.908)
##
## NAUCALPAN DE JUAREZ        1.312    -6.920***   4.360***    -1.025
##                           (0.706)    (0.821)    (0.570)    (0.674)
##
## NEXTLALPAN                4.292***  -4.550***   4.669***    4.368***
##                           (1.067)    (1.241)    (0.861)    (1.020)
##
## NEZAHUALCOYOTL            8.009***  -8.720***    0.726      0.117
##                           (0.758)    (0.881)    (0.611)    (0.724)
##
## NICOLAS ROMERO            6.344***   -1.210    -2.234***   2.876***
##                           (0.741)    (0.862)    (0.598)    (0.708)
##
## OCOYOACAC                 6.600***  -12.345***  11.044***   5.535***
##                           (1.393)    (1.620)    (1.124)    (1.330)
##
```

```
## OCUILAN                          -0.203     -2.124    6.394***    3.625**
##                                 (1.161)    (1.351)    (0.937)    (1.109)
##
## OTUMBA                         -4.511***   4.659***     0.456      0.271
##                                 (0.683)    (0.794)    (0.551)    (0.652)
##
## OTZOLOTEPEC                     2.469***  -3.348***   4.184***    3.024***
##                                 (0.696)    (0.810)    (0.562)    (0.665)
##
## PAPALOTLA                      -4.817***   6.292***   2.796***    3.541***
##                                 (0.820)    (0.954)    (0.662)    (0.784)
##
## POLOTITLAN                       1.543      1.406      -0.406     2.860***
##                                 (0.882)    (1.026)    (0.712)    (0.843)
##
## RAYON                            0.036      -0.243      0.047      -0.698
##                                 (0.924)    (1.075)    (0.746)    (0.883)
##
## SAN ANTONIO LA ISLA              -0.418     -0.528      0.982      0.347
##                                 (0.638)    (0.743)    (0.515)    (0.610)
##
## SAN FELIPE DEL PROGRESO          0.421      1.033      -2.237      -1.170
##                                 (1.519)    (1.767)    (1.226)    (1.451)
##
## SAN MARTIN DE LAS PIRAMIDES      5.619***   -3.005**    1.440*     5.463***
##                                 (0.868)    (1.009)    (0.700)    (0.829)
##
## SAN MATEO ATENCO               -5.010***   6.054***    1.143*     1.786**
##                                 (0.589)    (0.686)    (0.476)    (0.563)
##
## SOYANIQUILPAN DE JUAREZ          6.807***   -3.524**     0.076     3.062**
##                                 (1.070)    (1.245)    (0.864)    (1.022)
##
## TECAMAC                        -3.551***   6.622***    -0.111     2.584***
##                                 (0.604)    (0.703)    (0.488)    (0.577)
##
## TEMAMATLA                      -4.223***   1.965**    2.996***     0.631
##                                 (0.638)    (0.743)    (0.515)    (0.610)
##
## TEMASCALAPA                      1.522      3.632*     -0.108     4.357**
##                                 (1.388)    (1.615)    (1.120)    (1.326)
##
## TEMOAYA                          7.545***  -6.547***   1.749**    3.113***
##                                 (0.834)    (0.970)    (0.673)    (0.796)
##
## TENANGO DEL AIRE               -3.792***    2.043     5.647***    3.980***
##                                 (0.967)    (1.125)    (0.781)    (0.924)
##
## TENANGO DEL VALLE                1.370      -1.858    3.210***    2.686**
##                                 (0.879)    (1.022)    (0.709)    (0.840)
##
## TEOLOYUCAN                       2.542      0.141      3.072*     5.498***
##                                 (1.529)    (1.778)    (1.234)    (1.460)
##
```

```
## TEOTIHUACAN                      3.185***    -1.562      1.157     2.931***
##                                  (0.811)    (0.943)     (0.654)    (0.775)
##
## TEPETLAOXTOC                      -0.370     1.157      2.012*     1.683
##                                  (0.979)    (1.139)     (0.790)    (0.936)
##
## TEPOTZOTLAN                       -0.320     2.856      1.759      3.504
##                                  (2.075)    (2.414)     (1.675)    (1.983)
##
## TEQUIXQUIAC                     11.667***  -10.313***    1.354      2.267*
##                                  (1.054)    (1.226)     (0.850)    (1.007)
##
## TEXCALYACAC                     10.045***  -6.457***     0.414     3.769**
##                                  (1.524)    (1.773)     (1.230)    (1.456)
##
## TEXCOCO                           1.841     -3.829*    4.912***     2.269
##                                  (1.524)    (1.773)     (1.230)    (1.456)
##
## TEZOYUCA                         7.168***  -2.615***   -3.712***     0.995
##                                  (0.682)    (0.794)     (0.551)    (0.652)
##
## TIANGUISTENCO                    4.684***  -8.059***    1.191*     -2.078**
##                                  (0.687)    (0.799)     (0.554)    (0.656)
##
## TLALMANALCO                     -3.331***    1.663     3.851***     1.905*
##                                  (0.952)    (1.107)     (0.768)    (0.909)
##
## TLALNEPANTLA DE BAZ              6.404***    0.174     -4.939***     1.855*
##                                  (0.806)    (0.937)     (0.650)    (0.770)
##
## TOLUCA                           9.406***    3.057     -3.240**    8.373***
##                                  (1.553)    (1.806)     (1.253)    (1.484)
##
## TONANITLA                         -0.733    3.357**    4.450***    5.620***
##                                  (1.059)    (1.232)     (0.855)    (1.012)
##
## TULTEPEC                          -0.189     -0.265    8.073***    6.539***
##                                  (1.212)    (1.410)     (0.978)    (1.158)
##
## TULTITLAN                         -1.382    7.127***     0.137     4.887***
##                                  (0.854)    (0.994)     (0.690)    (0.816)
##
## VALLE DE CHALCO SOLIDARIDAD     -2.854***   7.709***   -2.612***   2.113***
##                                  (0.664)    (0.772)     (0.536)    (0.634)
##
## VILLA DE ALLEND                   -1.211     -0.049      0.186      -1.196
##                                  (0.733)    (0.853)     (0.591)    (0.700)
##
## VILLA DEL CARBON                  -2.348   -5.877***   7.349***     -1.448
##                                  (1.398)    (1.626)     (1.128)    (1.336)
##
## VILLA VICTORIA                    -1.608     1.941     3.217***    3.031***
##                                  (0.918)    (1.068)     (0.741)    (0.877)
##
```

```
## XALATLACO                    4.770***  -6.456***    0.491     -0.985
##                              (0.713)   (0.829)    (0.575)    (0.681)
##
## XONACATLAN                    0.325    -4.784***  8.292***   3.584***
##                              (0.791)   (0.920)    (0.638)    (0.756)
##
## ZINACANTEPEC                  1.181     -1.258     0.398      0.204
##                              (0.785)   (0.913)    (0.634)    (0.750)
##
## ZUMPANGO                     -4.090***   1.007    2.024***    -0.285
##                              (0.731)   (0.850)    (0.590)    (0.698)
##
## ALVARO OBREGON                0.505     -2.662   5.494***    3.044*
##                              (1.398)   (1.626)    (1.128)    (1.335)
##
## AZCAPOTZALCO                  0.431     -0.989     0.772      0.140
##                              (0.788)   (0.916)    (0.636)    (0.753)
##
## BENITO JUAREZ                -4.039***  3.598***   -0.603     -1.423
##                              (0.808)   (0.940)    (0.652)    (0.772)
##
## COYOACAN                      -2.428**  4.122***   -1.026      0.441
##                              (0.819)   (0.952)    (0.661)    (0.782)
##
## CUAJIMALPA DE MORELOS         1.856     0.555    2.990***   5.093***
##                              (1.049)   (1.220)    (0.847)    (1.002)
##
## CUAUHTEMOC                   -3.990***  0.961      1.220     -2.188*
##                              (1.164)   (1.354)    (0.939)    (1.112)
##
## GUSTAVO A. MADERO            -5.506***  8.295***  -2.499***   -0.154
##                              (0.795)   (0.925)    (0.642)    (0.760)
##
## IZTACALCO                     -2.720**  8.742***  -3.223***   2.250*
##                              (0.966)   (1.124)    (0.780)    (0.923)
##
## IZTAPALAPA                    4.514***   0.842     -0.161    4.886***
##                              (1.136)   (1.321)    (0.916)    (1.085)
##
## MAGDALENA CONTRERAS           7.463***  -0.688     -4.099*    3.012
##                              (2.076)   (2.415)    (1.675)    (1.983)
##
## MIGUEL HIDALGO               -9.577***  7.917***   1.877***   -0.054
##                              (0.675)   (0.786)    (0.545)    (0.645)
##
## MILPA ALTA                    -1.041    -3.282*   4.427***    -0.500
##                              (1.123)   (1.306)    (0.906)    (1.073)
##
## TLAHUAC                       2.041*    3.305***  -3.477***   2.140**
##                              (0.795)   (0.925)    (0.642)    (0.760)
##
## TLALPAN                       5.514***  4.730***  -4.966***   4.286***
##                              (0.997)   (1.160)    (0.805)    (0.953)
##
```

```
## VENUSTIANO CARRANZA                    1.412      0.012      -0.779      0.756
##                                       (0.853)    (0.992)    (0.688)    (0.815)
##
## XOCHIMILCO                           -4.202***   7.710***   -1.484**    1.772**
##                                       (0.587)    (0.683)    (0.474)    (0.561)
##
## id_mun15 TLATLAYA                     -1.618*    8.798***   -2.273***   3.396***
##                                       (0.820)    (0.954)    (0.662)    (0.784)
##
## id_mun15 TOLUCA                      -1.921***   1.823**     0.561      0.608
##                                       (0.567)    (0.660)    (0.458)    (0.542)
##
## id_mun15 TONANITLA                     2.354      1.383      -2.303      0.600
##                                       (1.969)    (2.290)    (1.589)    (1.881)
##
## id_mun15 TONATICO                      2.697*     3.450**    -0.739     5.136***
##                                       (1.095)    (1.273)    (0.883)    (1.046)
##
## id_mun15 TULTEPEC                      0.374      0.490      0.277      0.933
##                                       (0.787)    (0.916)    (0.635)    (0.752)
##
## id_mun15 TULTITLAN                   -2.160***    1.538*     1.579**     0.823
##                                       (0.625)    (0.727)    (0.504)    (0.597)
##
## id_mun15 VALLE DE BRAVO              -3.940***  -8.894***   12.564***    0.596
##                                       (0.780)    (0.908)    (0.630)    (0.746)
##
## id_mun15 VALLE DE CHALCO SOLIDARIDAD -2.812***    0.996     1.855***     -0.395
##                                       (0.666)    (0.775)    (0.538)    (0.637)
##
## id_mun15 VILLA DE ALLENDE             7.689***   -2.084*      0.130     6.421***
##                                       (0.821)    (0.955)    (0.663)    (0.785)
##
## id_mun15 VILLA DEL CARBON              1.840*    -3.141**    1.540*      0.704
##                                       (0.846)    (0.984)    (0.682)    (0.808)
##
## id_mun15 VILLA GUERRERO               9.458***  -6.987***    -0.290     2.178**
##                                       (0.796)    (0.926)    (0.642)    (0.760)
##
## id_mun15 VILLA VICTORIA               3.273***   -1.860*    5.008***    6.134***
##                                       (0.684)    (0.796)    (0.552)    (0.653)
##
## id_mun15 XALATLACO                     0.277      2.575      -1.989*     0.170
##                                       (1.207)    (1.404)    (0.974)    (1.153)
##
## id_mun15 XONACATLAN                  -3.797***   4.802***    1.756*     2.373**
##                                       (0.945)    (1.099)    (0.763)    (0.903)
##
## id_mun15 ZACAZONAPAN                   2.208      6.729**    -2.231     5.951**
##                                       (2.095)    (2.437)    (1.691)    (2.002)
##
## id_mun15 ZACUALPAN                     0.251    -12.198***  13.961***    1.655
##                                       (0.934)    (1.086)    (0.753)    (0.892)
##
```

```
## id_mun15 ZINACANTEPEC              11.445***  -7.369***   -1.410*    2.957***
##                                     (0.680)    (0.790)    (0.548)    (0.649)
##
## id_mun15 ZUMPAHUACAN                3.071**   -6.242***   9.801***   6.856***
##                                     (1.004)    (1.168)    (0.811)    (0.960)
##
## id_mun15 ZUMPANGO                   0.921      7.579***   -6.235***  2.182**
##                                     (0.706)    (0.822)    (0.570)    (0.675)
##
## id_mun9 ALVARO OBREGON             -5.842***  10.886***    0.994*    5.710***
##                                     (0.623)    (0.725)    (0.503)    (0.595)
##
## id_mun9 AZCAPOTZALCO               -5.208***   9.852***   -0.403     3.758***
##                                     (0.620)    (0.721)    (0.500)    (0.592)
##
## id_mun9 BENITO JUAREZ              -4.542***   9.361***   -0.432     3.935***
##                                     (0.639)    (0.743)    (0.516)    (0.610)
##
## id_mun9 COYOACAN                   -5.251***  12.598***   -2.257***  4.545***
##                                     (0.627)    (0.729)    (0.506)    (0.599)
##
## id_mun9 CUAJIMALPA DE MORELOS       -0.615     5.261***   -2.093***  2.023**
##                                     (0.679)    (0.790)    (0.548)    (0.649)
##
## id_mun9 CUAUHTEMOC                 -3.894***   8.267***   -0.486     3.332***
##                                     (0.642)    (0.747)    (0.518)    (0.614)
##
## id_mun9 GUSTAVO A. MADERO          -4.953***  10.311***   -0.691     4.202***
##                                     (0.609)    (0.709)    (0.492)    (0.582)
##
## id_mun9 IZTACALCO                  -5.093***  11.421***   -0.819     5.093***
##                                     (0.631)    (0.734)    (0.510)    (0.603)
##
## id_mun9 IZTAPALAPA                 -5.114***   9.805***   -0.835     3.258***
##                                     (0.617)    (0.718)    (0.498)    (0.589)
##
## id_mun9 LA MAGDALENA CONTRERAS     -4.760***  11.898***   -0.972     5.794***
##                                     (0.647)    (0.753)    (0.522)    (0.618)
##
## id_mun9 MIGUEL HIDALGO             -2.958***   6.919***   -0.810     2.640***
##                                     (0.632)    (0.736)    (0.510)    (0.604)
##
## id_mun9 MILPA ALTA                 -5.788***  11.648***   -2.133***  2.836***
##                                     (0.729)    (0.848)    (0.589)    (0.697)
##
## id_mun9 TLAHUAC                    -4.227***  13.048***   -2.386***  5.875***
##                                     (0.651)    (0.757)    (0.525)    (0.622)
##
## id_mun9 TLALPAN                    -5.790***  13.236***   -1.569**   5.342***
##                                     (0.627)    (0.729)    (0.506)    (0.599)
##
## id_mun9 VENUSTIANO CARRANZA        -3.103***   7.888***   -0.724     3.638***
##                                     (0.631)    (0.734)    (0.509)    (0.603)
##
```

```
## id_mun9 XOCHIMILCO                    -4.451***  12.413***   -1.868***   5.395***
##                                        (0.646)    (0.751)     (0.521)    (0.617)
##
## proximity:PRIstr                        0.177      0.015       0.003      0.127
##                                        (0.140)    (0.163)     (0.113)    (0.134)
##
## proximity:highTURNOUT                  -0.214      0.002      -0.031     -0.261*
##                                        (0.118)    (0.137)     (0.095)    (0.113)
##
## PRIstr:highTURNOUT                      0.014      0.982***    0.418*     1.276***
##                                        (0.213)    (0.248)     (0.172)    (0.203)
##
## proximity:PRDstr                        0.405*    -0.217      -0.039      0.145
##                                        (0.174)    (0.202)     (0.140)    (0.166)
##
## highTURNOUT:PRDstr                      1.765**   -4.232***    1.707***   -0.463
##                                        (0.553)    (0.643)     (0.446)    (0.528)
##
## proximity:PANstr                       -0.872***   1.292***   -0.029      0.460*
##                                        (0.206)    (0.239)     (0.166)    (0.197)
##
## highTURNOUT:PANstr                     -0.499     10.001***   -5.620***   3.946***
##                                        (0.591)    (0.688)     (0.477)    (0.565)
##
## proximity:PRIstr:highTURNOUT           -0.130     -0.008      -0.031     -0.085
##                                        (0.211)    (0.245)     (0.170)    (0.201)
##
## proximity:highTURNOUT:PRDstr           17.259**   -6.542      -4.194      4.398
##                                        (6.620)    (7.700)     (5.342)    (6.324)
##
## proximity:highTURNOUT:PANstr           -2.593*    -7.154***    5.451***  -4.690***
##                                        (1.158)    (1.347)     (0.934)    (1.106)
##
## Constant                               13.134***  11.733***    2.949*    30.074***
##                                        (1.656)    (1.927)     (1.337)    (1.582)
##
## ================================================================================
## Notes:                                    ***Significant at the 0.1 percent level.
##                                              **Significant at the 1 percent level.
##                                               *Significant at the 5 percent level.
```

## Table 2

```
BM<-matrix(NA,6,4)
```

```
for(j in 1:4){
  BM[1,j]<-specify_decimal(slopesBM[1,j], 3)
  BM[2,j]<-paste("(",specify_decimal(seBM[1,j], 3),")", sep="")
  BM[3,j]<-specify_decimal(slopesBM[2,j], 3)
  BM[4,j]<-paste("(",specify_decimal(seBM[2,j], 3),")", sep="")
  BM[5,j]<-specify_decimal(slopesBM[3,j], 3)
  BM[6,j]<-paste("(",specify_decimal(seBM[3,j], 3),")", sep="")
```

```
}

xtable(BM)
```

```
## % latex table generated in R 4.0.2 by xtable 1.8-4 package
## % Wed Nov  4 17:03:46 2020
## \begin{table}[ht]
## \centering
## \begin{tabular}{rllll}
##   \hline
##  & 1 & 2 & 3 & 4 \\
##   \hline
## 1 & -0.166 & -0.001 & -0.024 & -0.195 \\
##   2 & (2.480) & (4.010) & (2.202) & (1.805) \\
##   3 & 17.452 & -6.768 & -4.229 & 4.305 \\
##   4 & (1.952) & (2.952) & (1.460) & (1.457) \\
##   5 & -3.678 & -5.870 & 5.425 & -4.469 \\
##   6 & (2.031) & (3.001) & (1.678) & (1.515) \\
##    \hline
## \end{tabular}
## \end{table}
```

Latex code for the table:

| | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| 1 | -0.166 | -0.001 | -0.024 | -0.195 |
| 2 | (2.480) | (4.010) | (2.202) | (1.805) |
| 3 | 17.452 | -6.768 | -4.229 | 4.305 |
| 4 | (1.952) | (2.952) | (1.460) | (1.457) |
| 5 | -3.678 | -5.870 | 5.425 | -4.469 |
| 6 | (2.031) | (3.001) | (1.678) | (1.515) |

Note, here, this differs strongly from the table presented on page 798 of our paper. This is likely related to the number of observations comment made at the outset of our Table 1 re-creation.

## Figure 2

```
####Predicted vote shares in PRD Mobilized Strongholds

g <- glm(EPNa ~ proximity*PRIstr*highTURNOUT+proximity*PRDstr*highTURNOUT+proximity*PANstr*highTURNOUT+
           PRI09a+PRD09a+PAN09a+PART09+
           lnpop+P18+P65+area+density+INDIGENOUS+CATHOLIC+NONRELIGIOUS+
           EDUCATION+POSTEDUC+ILLITERACY+PROM_HNV+
           PEAprop+PEAfemale+NOINSURANCE+FEMALEJEFA+
           PERROOM+DIRTFLOOR+SERVICES+NO_SERVICES+
           CAR+CELULAR+INTERNET+
           id_mun, data=data, family = 'gaussian')

at.prox <- seq(1/20, 1/2.5, 1/1000)
marg<-marg(mod = g, var_interest = c("proximity"), type = 'levels', data=data[data$PRDstr==1 & data$high
           at_var_interest = seq(1/20, 1/2.5, 1/1000),  cofint=.95)
```

```
#getting confidence intervals for the expected PN turnout in PRD strongholds
mean <- marg[[1]]$Margin
upper <- marg[[1]]$'Lower CI (95%)'
lower <- marg[[1]]$'Upper CI (95%)'

dataPRI<-data.frame(cbind(at.prox, mean, upper, lower))
dataPRI$distance<-(1/dataPRI$at.prox)


#same for AMLO
g <- glm(AMLOa ~ proximity*PRIstr*highTURNOUT+proximity*PRDstr*highTURNOUT+proximity*PANstr*highTURNOUT+
           PRI09a+PRD09a+PAN09a+PART09+
           lnpop+P18+P65+area+density+INDIGENOUS+CATHOLIC+NONRELIGIOUS+
           EDUCATION+POSTEDUC+ILLITERACY+PROM_HNV+
           PEAprop+PEAfemale+NOINSURANCE+FEMALEJEFA+
           PERROOM+DIRTFLOOR+SERVICES+NO_SERVICES+
           CAR+CELULAR+INTERNET+
           id_mun, data=data, family = 'gaussian')

marg<-marg(mod = g, var_interest = c("proximity"), type = 'levels', data=data[data$PRDstr==1 & data$high
           at_var_interest = seq(1/20, 1/2.5, 1/1000), cofint=.95)

mean <- marg[[1]]$Margin
upper <- marg[[1]]$'Lower CI (95%)'
lower <- marg[[1]]$'Upper CI (95%)'

dataPRD<-data.frame(cbind(at.prox, mean, upper, lower))
dataPRD$distance<-(1/dataPRD$at.prox)


g <- glm(JVMa ~ proximity*PRIstr*highTURNOUT+proximity*PRDstr*highTURNOUT+proximity*PANstr*highTURNOUT+
           PRI09a+PRD09a+PAN09a+PART09+
           lnpop+P18+P65+area+density+INDIGENOUS+CATHOLIC+NONRELIGIOUS+
           EDUCATION+POSTEDUC+ILLITERACY+PROM_HNV+
           PEAprop+PEAfemale+NOINSURANCE+FEMALEJEFA+
           PERROOM+DIRTFLOOR+SERVICES+NO_SERVICES+
           CAR+CELULAR+INTERNET+
           id_mun, data=data, family = 'gaussian')

marg<-marg(mod = g, var_interest = c("proximity"),
           type = 'levels', data=data[data$PRDstr==1 & data$highTURNOUT==1,],
           at_var_interest = seq(1/20, 1/2.5, 1/1000),cofint=.95)

mean <- marg[[1]]$Margin
upper <- marg[[1]]$'Lower CI (95%)'
lower <- marg[[1]]$'Upper CI (95%)'

dataPAN<-data.frame(cbind(at.prox, mean, upper, lower))
dataPAN$distance<-(1/dataPAN$at.prox)

datasim<-data.frame(rbind(dataPRI, dataPRD, dataPAN))

datasim$dv<-NA
```

```
datasim$dv[1:351]<-"Peña Nieto"
datasim$dv[352:702]<-"López Obrador"
datasim$dv[703:1053]<-"Vázquez Mota"

ggplot()+
  geom_line(data=datasim, aes(x=distance, y=mean,  linetype=dv))+
  geom_ribbon(data=datasim, aes(x=distance,  ymin=lower,
                      ymax=upper, fill=dv),  alpha=0.5)+theme_bw()+
  ylab("Predicted vote shares (%)")+
  xlab("Distance to Soriana (km)")+xlim(2.5,20)+ylim(0,50)+
  scale_fill_manual(values = c("#F0E442","red", "deepskyblue2"), name="")+
  scale_linetype_manual(values=c("solid", "longdash","dotted"), name="" )+
  theme(axis.text=element_text(size=18),
        axis.title=element_text(size=18),
        legend.text = element_text(size = 18))
```

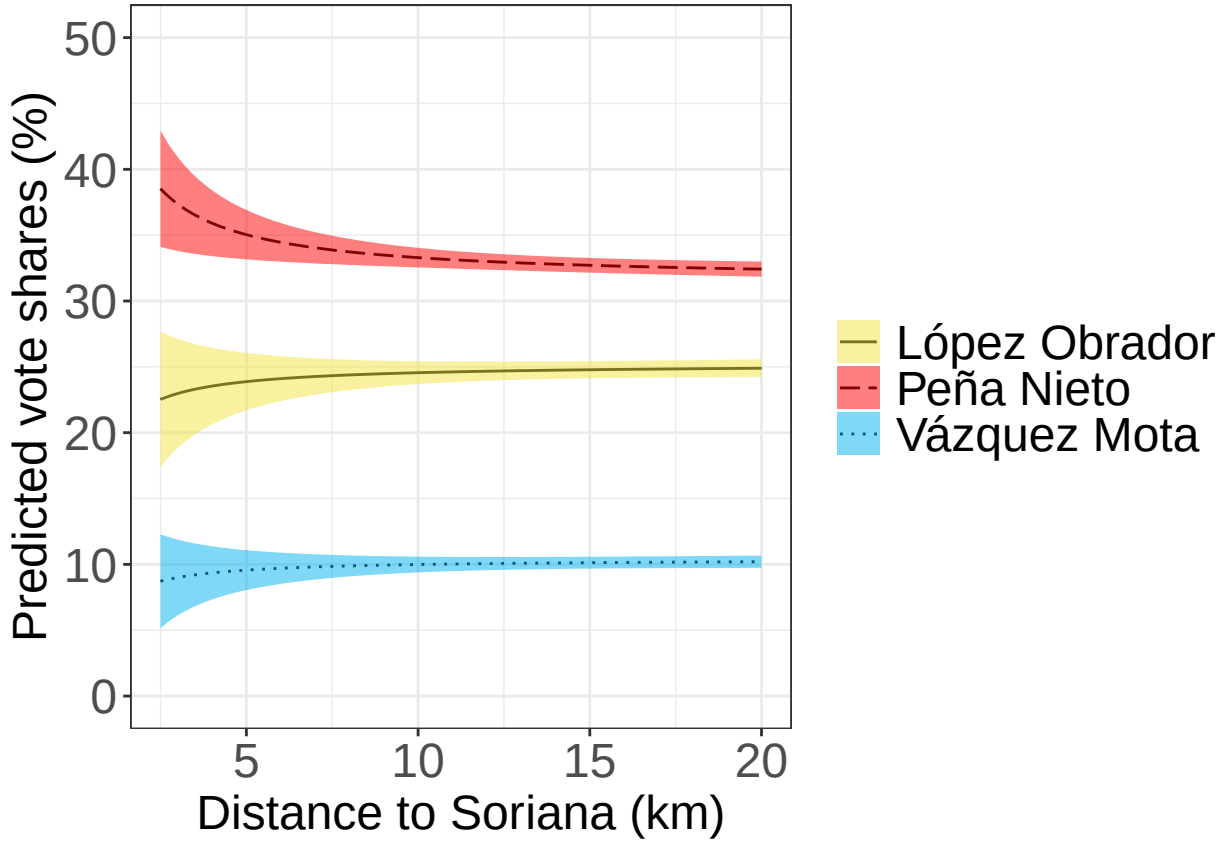



Figure 2 visualizes the predicted relationship between the distance to a Soriana store and the percent of a vote share received by a candidate, showing that the PRI candidate earned a vote increase in areas that were closer to Soriana stores. This figure is repeated as it was in the original paper, but notably the model uses sample *proximities* not *distances* to Soriana stores, and thus it is mis-labeled here. We will be testing if this trend holds for distance.

This figure largely matches that found on page 799 of the article, though I note that in the article the Peña Nieto curve rises above 40% and López Obrador drops below 20%. This again is likely due to the difference in data between this model and that of the paper.

## Table 3: Effects of the Location of Soriana Stores on Voting Behavior (Molly)

Table 3 is designed to illustrate that the vote-buying effort influenced only voters within a certain proximity. It compares the aggregated votes in PRD strongholds of Pena Nieto, the PRI beneficiary of the vote-buying effort, and Lopez Obrador, the PRD candidate who lost out due to vote buying. It imagines a counterfactual in which all PRD strongholds were either 15km or 2.5 km from the nearest Soriana store. In the paper, the table shows very little effect at 15km, but a much stronger effect at 2.5 km. When we replicated this table, we were unable to reach the same figures.

Regressing proximity and stronghold on EPN voteshare

```
g <- glm(EPNa ~ proximity*PRIstr*highTURNOUT+proximity*PRDstr*highTURNOUT+proximity*PANstr*highTURNOUT+
           PRI09a+PRD09a+PAN09a+PART09+
           lnpop+P18+P65+area+density+INDIGENOUS+CATHOLIC+NONRELIGIOUS+
           EDUCATION+POSTEDUC+ILLITERACY+PROM_HNV+
           PEAprop+PEAfemale+NOINSURANCE+FEMALEJEFA+
           PERROOM+DIRTFLOOR+SERVICES+NO_SERVICES+
           CAR+CELULAR+INTERNET+
           id_mun, data=data, family = 'gaussian')
```

Marg function estimates the predictive effects and levels for variables within a model

```
marg<-marg(mod = g, var_interest = c("proximity"),
           type = 'levels', data=data[data$PRDstr==1 & data$highTURNOUT==1,],
           at_var_interest = c(1/15, 1/2.5))
```

Estimating the effect on PRI and PRD if all stores were 2.5km 15km away

```
#At 15 km
PRIat15<-c()
PRIat2.5<-c()
#predictions if 2.5 and 15 away
low<-round(sum((marg[[1]]$`Lower CI (95%)`[1]/100)*data[data$PRDstr==1 & data$highTURNOUT==1,]$ln2012))
high<-round(sum((marg[[1]]$`Upper CI (95%)`[1]/100)*data[data$PRDstr==1 & data$highTURNOUT==1,]$ln2012))
mean<-round(sum((marg[[1]]$`Margin`[1]/100)*data[data$PRDstr==1 &
                                    data$highTURNOUT==1,]$ln2012))

#predictions minus actual
PRIat15<-c(sum(data[data$PRDstr==1 & data$highTURNOUT==1,]$epn2012)-mean,
           sum(data[data$PRDstr==1 & data$highTURNOUT==1,]$epn2012)-low,
           sum(data[data$PRDstr==1 & data$highTURNOUT==1,]$epn2012)-high)

PRIat15
```

```
## [1] -182  557 -920
```

```
low<-round(sum((marg[[1]]$`Lower CI (95%)`[2]/100)*data[data$PRDstr==1
                                          & data$highTURNOUT==1,]$ln2012))
high<-round(sum((marg[[1]]$`Upper CI (95%)`[2]/100)*data[data$PRDstr==1
                                            & data$highTURNOUT==1,]$ln2012))
mean<-round(sum((marg[[1]]$`Margin`[2]/100)*data[data$PRDstr==1 &
                                                 data$highTURNOUT==1,]$ln2012))
```

```r
PRIat2.5<-c(mean-sum(data[data$PRDstr==1 & data$highTURNOUT==1,]$epn2012),
            low-sum(data[data$PRDstr==1 & data$highTURNOUT==1,]$epn2012),
            high-sum(data[data$PRDstr==1 & data$highTURNOUT==1,]$epn2012))

PRIat2.5
```

```
## [1]  7860  2023 13696
```

```r
g <- glm(AMLOa ~ proximity*PRIstr*highTURNOUT+proximity*PRDstr*highTURNOUT+proximity*PANstr*highTURNOUT+
           lnpop+P18+P65+area+density+INDIGENOUS+CATHOLIC+NONRELIGIOUS+
           EDUCATION+POSTEDUC+ILLITERACY+PROM_HNV+
           PEAprop+PEAfemale+NOINSURANCE+FEMALEJEFA+
           PERROOM+DIRTFLOOR+SERVICES+NO_SERVICES+
           CAR+CELULAR+INTERNET+
           id_mun, data=data, family = 'gaussian')

marg <-marg(mod = g, var_interest = c("proximity"), type = 'levels',
            data=data[data$PRDstr==1 & data$highTURNOUT==1,],
           at_var_interest = c(1/15, 1/2.5))
```

```r
#At 15 km
PRDat15<-c()
PRDat2.5<-c()
low<-round(sum((marg[[1]]$`Lower CI (95%)`[1]/100)*data[data$PRDstr==1
                                          & data$highTURNOUT==1,]$ln2012))
high<-round(sum((marg[[1]]$`Upper CI (95%)`[1]/100)*data[data$PRDstr==1
                                         & data$highTURNOUT==1,]$ln2012))
mean<-round(sum((marg[[1]]$`Margin`[1]/100)*data[data$PRDstr==1
                                        & data$highTURNOUT==1,]$ln2012))

PRDat15<-c(mean-sum(data[data$PRDstr==1 & data$highTURNOUT==1,]$amlo2012),
           low-sum(data[data$PRDstr==1 & data$highTURNOUT==1,]$amlo2012),
           high-sum(data[data$PRDstr==1 & data$highTURNOUT==1,]$amlo2012))

PRDat15
```

```
## [1]  -317 -1175   542
```

```r
low<-round(sum((marg[[1]]$`Lower CI (95%)`[2]/100)*data[data$PRDstr==1 &
                          data$highTURNOUT==1,]$ln2012))
high<-round(sum((marg[[1]]$`Upper CI (95%)`[2]/100)*data[data$PRDstr==1 &
                                         data$highTURNOUT==1,]$ln2012))
mean<-round(sum((marg[[1]]$`Margin`[2]/100)*data[data$PRDstr==1 &
                                  data$highTURNOUT==1,]$ln2012))

PRDat2.5<-c(mean-sum(data[data$PRDstr==1 & data$highTURNOUT==1,]$amlo2012),
            low-sum(data[data$PRDstr==1 & data$highTURNOUT==1,]$amlo2012),
            high-sum(data[data$PRDstr==1 & data$highTURNOUT==1,]$amlo2012))

PRDat2.5
```

```
## [1]  -3294 -10083   3495
```

Trying to turn the results into a table–in progress

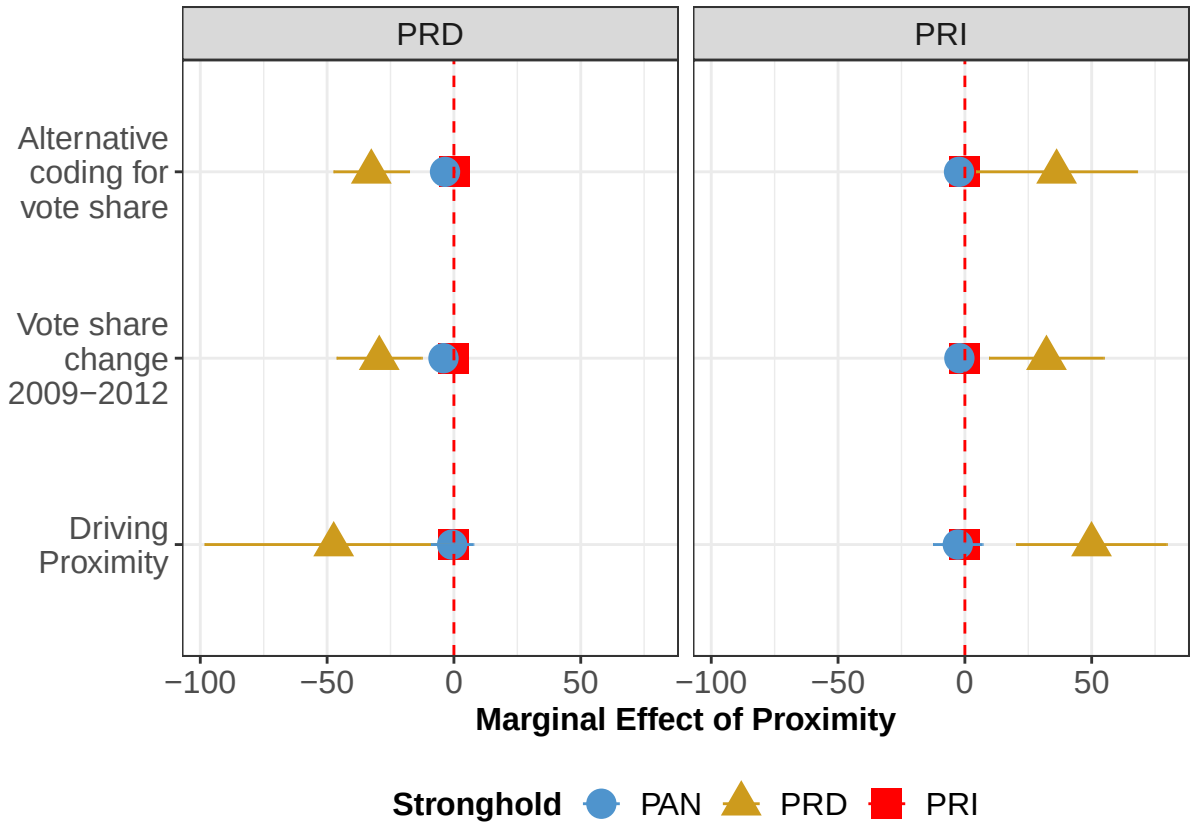
```
results <- data.frame(PRIat15, PRIat2.5, PRDat15, PRDat2.5)

results

<<<<<<< HEAD
xtable(results)
stargazer(results)
=======
>>>>>>> 89b00b4189ce4e98fef10ba0ee452ed6839f5bac
```

## Figure 3: Robustness check and placebo tests

Figure 3 offers on the left, a robustness check, and on the right a placebo test. The robustness check (3A) test the marginal effect of proximity to a Soriana store for proximity in PRD strongholds using three different alternative model specifications. Instead of coding the vote shares the number of registered voters supporting each candidate, the author coded them as the proportion of the total number of votes, the vote share change from 2009 to 2012, and driving proximity. In all of these cases, the marginal effects are similar to the magintudes shown in Table 2. The placebo test (3B) tests for unobserved characteristics in the precints, by applying the replicating the analysis in the following ways: with the dependent variable as the vote shares from the 2006 and 2009 federal elections, with precints outside the State of Mexico and Mexico City, and with proximity to Walmart-Mexico stores instead of Soriana. The effects of these tests are not significantly different from zero.

```
results <- read.table(header=T, con <- textConnection('
Stronghold DV   Coefficient StdError    Model    Order
                  PRD "PRI" 36.173  16.187  "Model 1: Relative vote share"  1
              PRD "PRD" -32.573 7.584   "Model 1: Relative vote share"  2
             PRD "PRI"  32.166  11.547  "Model 2: Vote share change 2009-2012"  1
       PRD "PRD"    -29.444 8.562   "Model 2: Vote share change 2009-2012"  2
      PRD "PRI" 49.939  15.148  "Model 3: Driving Proximity"    1
    PRD "PRD"   -47.396 25.959  "Model 3: Driving Proximity"    2
   PRI "PRI"    -0.020  0.071   "Model 1: Relative vote share"  1
         PRI "PRD"  0.065   0.051   "Model 1: Relative vote share"  2
    PRI "PRI"   -0.029  0.080   "Model 2: Vote share change 2009-2012"  1
        PRI "PRD"   -0.002  0.046   "Model 2: Vote share change 2009-2012"  2
         PRI "PRI"  -0.009  0.001   "Model 3: Driving Proximity"    1
       PRI "PRD"    0.006   0.002   "Model 3: Driving Proximity"    2
         PAN "PRI"  -2.298  2.553   "Model 1: Relative vote share"  1
     PAN "PRD"  -3.507  1.248   "Model 1: Relative vote share"  2
       PAN "PRI"    -2.163  1.630   "Model 2: Vote share change 2009-2012"  1
    PAN "PRD"   -4.113  0.763   "Model 2: Vote share change 2009-2012"  2
   PAN "PRI"    -2.777  4.976   "Model 3: Driving Proximity"    1
     PAN "PRD"  -0.700  4.262   "Model 3: Driving Proximity"    2
                                                          '))
#close(con)

results$min<-results$Coefficient-(1.96*results$StdError)
results$max<-results$Coefficient+(1.96*results$StdError)

results$Model <- factor(results$Model)
# , levels=results$Model[order(results$Order)])
```

```
ggplot(results, aes(y=Model, x = Coefficient, shape=Stronghold, color=Stronghold)) +
  #  scale_colour_gradient(low="white", high="black")+
  geom_point(size=5) +
  facet_grid( ~ DV)+
  geom_errorbarh(aes(xmin=min, xmax=max), height = 0) +
  geom_vline(xintercept = 0, linetype=2, color="red") +
  labs( x = "Marginal Effect of Proximity", y = "") +
  theme_bw()+
  theme(legend.text = element_text(size = 12),
        legend.title = element_text(siz=12, face="bold"),
        legend.position="bottom")+
  theme(
    axis.title.x = element_text(face="bold", size=12),
    axis.title.y = element_text(face="bold", size=12, angle=90),
    axis.text.x  = element_text( size=12),
    strip.text.x = element_text(size=12),
    axis.text.y  = element_text( size=12))+

scale_y_discrete(limit = c("Model 3: Driving Proximity",
        "Model 2: Vote share change 2009-2012", "Model 1: Relative vote share" ),
                 labels = c("Driving\nProximity",  "Vote share\nchange\n2009-2012", "Alternative\ncodi
  scale_colour_manual(name="Stronghold",
  values = c("PAN"="steelblue3", "PRI"="red", "PRD"="goldenrod3"))
```



```
#########################
#########################

results <- read.table(header=T, con <- textConnection('
                    Stronghold DV  Coefficient StdError    Model    Order
                   PRD "PRI"   4.458   6.992   "Model 1: 2006 Election"    1
                   PRD "PRD"   21.475  18.431  "Model 1: 2006 Election"    1
                       PRD "PRI"   -11.068 9.221   "Model 2: 2009 Election"    2
                   PRD "PRD"   8.086   20.695  "Model 2: 2009 Election"    2
 PRD "PRI"  0.338   0.822   "Model 3: Precincts outside Mexico City and State of Mexico"    3
  PRD "PRD" 0.257   0.8695  "Model 3: Precincts outside Mexico City and State of Mexico"    3
               PRD "PRI"   3.671   2.273   "Model 4: Proximity to WalMart" 4
             PRD "PRD" -2.366  3.041   "Model 4: Proximity to WalMart" 4
                 PRI "PRI" -0.078  0.034   "Model 1: 2006 Election"    1
               PRI "PRD"   0.141   0.063   "Model 1: 2006 Election"    1
                         PRI "PRI" -0.070  0.098   "Model 2: 2009 Election"    2
                          PRI "PRD"    0.006   0.039   "Model 2: 2009 Election"    2
   PRI "PRI"    0.077   0.194   "Model 3: Precincts outside Mexico City and State of Mexico"    3
 PRI "PRD"  0.107   0.234   "Model 3: Precincts outside Mexico City and State of Mexico"    3
                PRI "PRI"  0.100   0.196   "Model 4: Proximity to WalMart" 4
                   PRI "PRD"   -0.080  0.125   "Model 4: Proximity to WalMart" 4
                    PAN "PRI"  -1.063  1.177   "Model 1: 2006 Election"    1
                     PAN "PRD" -3.356  1.362   "Model 1: 2006 Election"    1
         PAN "PRI"  -2.269  0.959   "Model 2: 2009 Election"    2
                   PAN "PRD"    3.347   0.674   "Model 2: 2009 Election"    2
   PAN "PRI"    -0.233  0.201   "Model 3: Precincts outside Mexico City and State of Mexico"    3
 PAN "PRD"  -0.209  0.253   "Model 3: Precincts outside Mexico City and State of Mexico"    3
                          PAN "PRI"   -0.730  0.624   "Model 4: Proximity to WalMart" 4
                      PAN "PRD"    -1.517  1.472   "Model 4: Proximity to WalMart" 4
                                ’))
close(con)

results$min<-results$Coefficient-(1.96*results$StdError)
results$max<-results$Coefficient+(1.96*results$StdError)

ggplot(results, aes(y=Model, x = Coefficient, shape=Stronghold, color=Stronghold)) +
  #  scale_colour_gradient(low="white", high="black")+
  geom_point(size=5) +
  facet_grid( ~ DV)+
  geom_errorbarh(aes(xmin=min, xmax=max), height = 0) +
  geom_vline(xintercept = 0, linetype=2, color="red") +
  labs( x = "Marginal Effect of Proximity", y = "") +
  theme_bw()+
  theme(legend.text = element_text(size = 12),
        legend.title = element_text(siz=12, face="bold"),
        legend.position="bottom")+
  theme(
    axis.title.x = element_text(face="bold", size=12),
    axis.title.y = element_text(face="bold", size=12, angle=90),
    axis.text.x  = element_text( size=12),
    strip.text.x = element_text(size=12),
    axis.text.y  = element_text( size=12))+
  scale_y_discrete(limit = c("Model 4: Proximity to WalMart",
```

```
                "Model 3: Precincts outside Mexico City and State of Mexico",
                "Model 2: 2009 Election", "Model 1: 2006 Election" ),
                    labels=c("Proximity\nto WalMart",
                  "Outside\nMexico City\nand State\nof Mexico",
                  "2009\nElection", "2006\nElection" ))+
scale_colour_manual(name="Stronghold",
                    values = c("PAN"="steelblue3",
                               "PRI"="red", "PRD"="goldenrod3"))
```