Spatial Voting in US Presidential Election

Quantitative Methods 2020: Final Data Essay

Marie-Lou Sohnius

22 December, 2020

Abstract

The text of your abstract. 150 – 250 words.

1 adds new page after title

Contents

adds table of contents

List of Figures

List of Tables

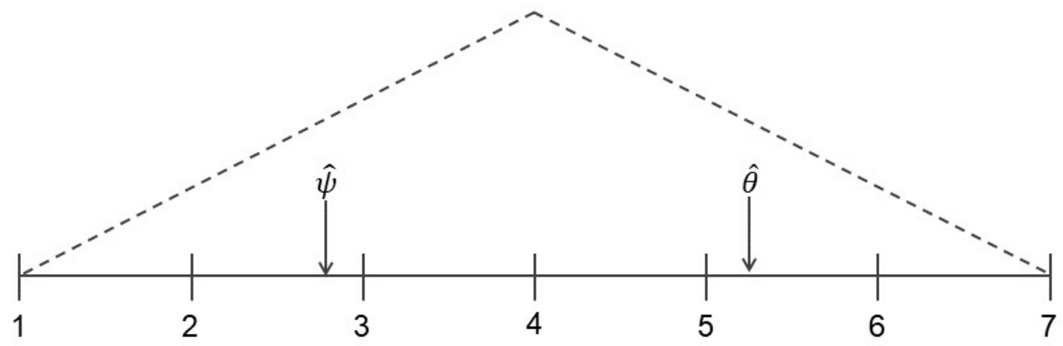

Figure 1: A caption

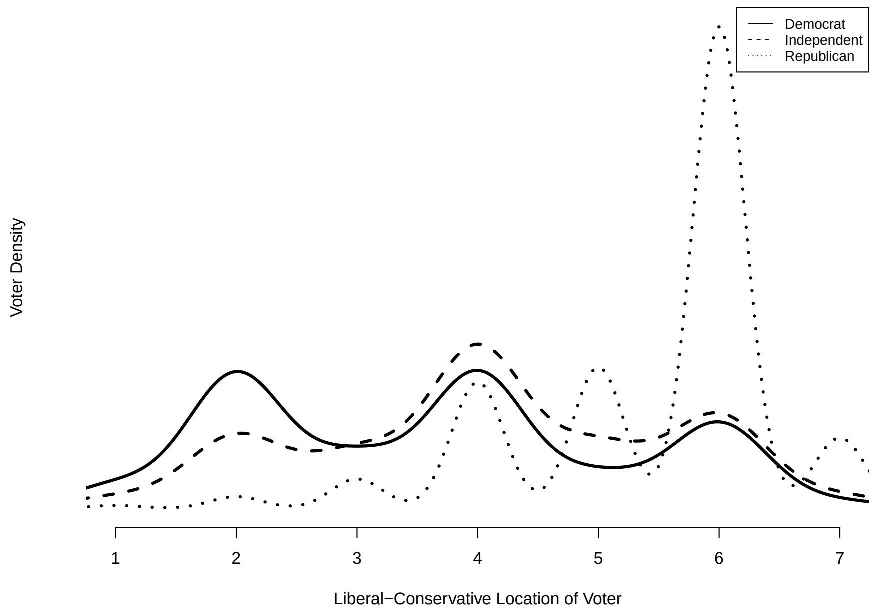

Figure 2: FDs

```
# Scenario (Black)
scenario_ind_hi_r1 <- cbind(1, # Intercept
                  lr_seq2, # LR Scale
                  0, # Race = Black
                  1, # Race = Other/Mixed
                  1, # Gender = Male
```

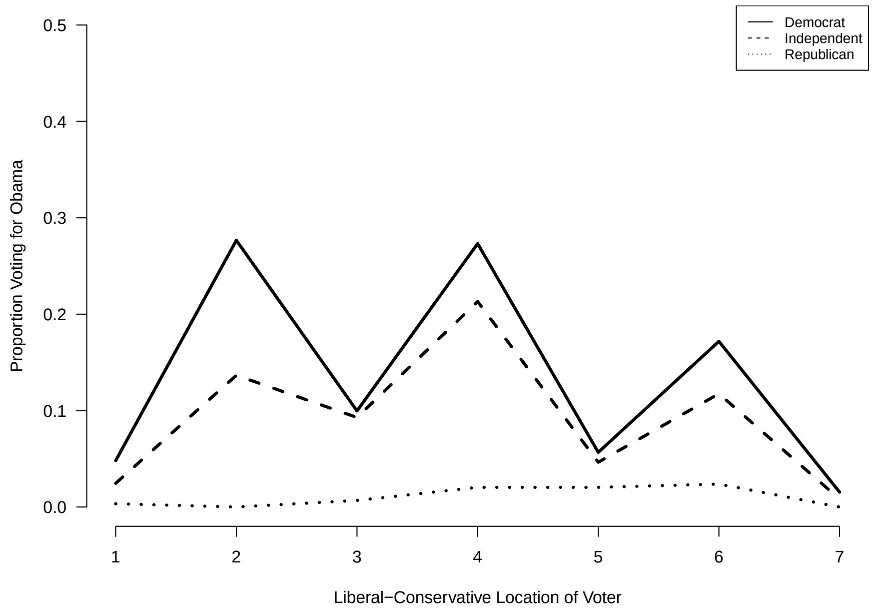

Figure 3: FDs

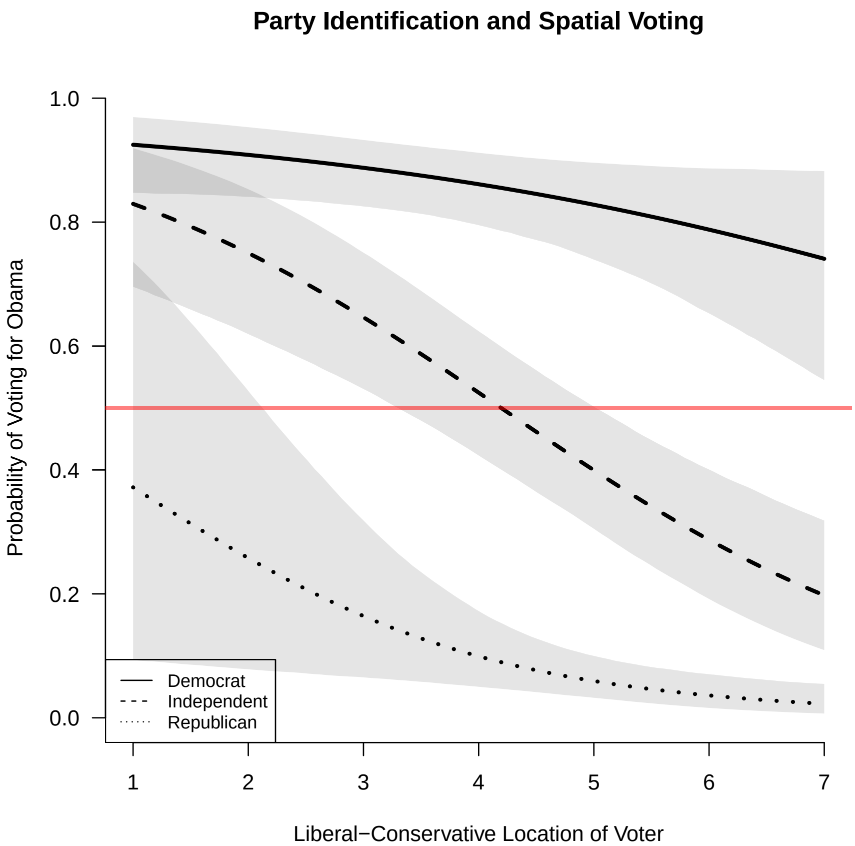

Figure 4: Cap

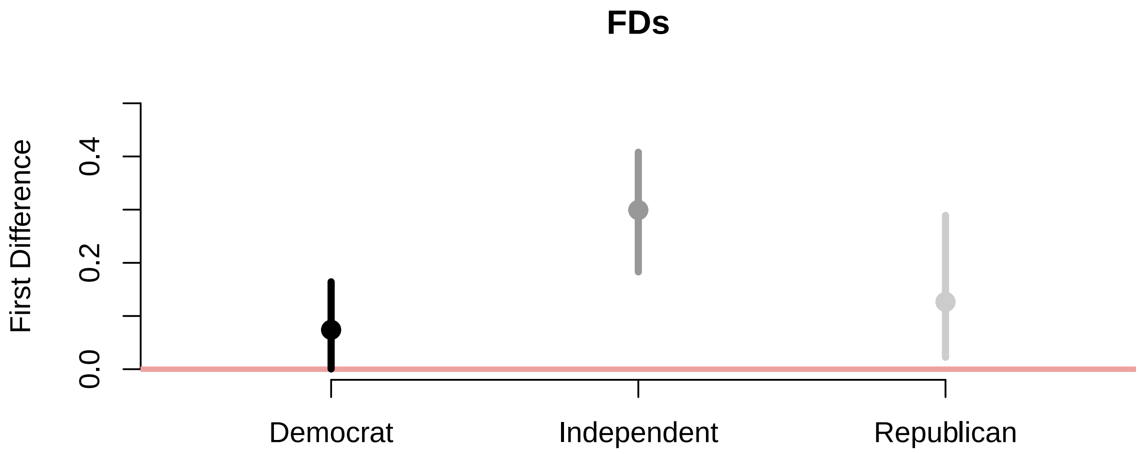

Figure 5: FDs

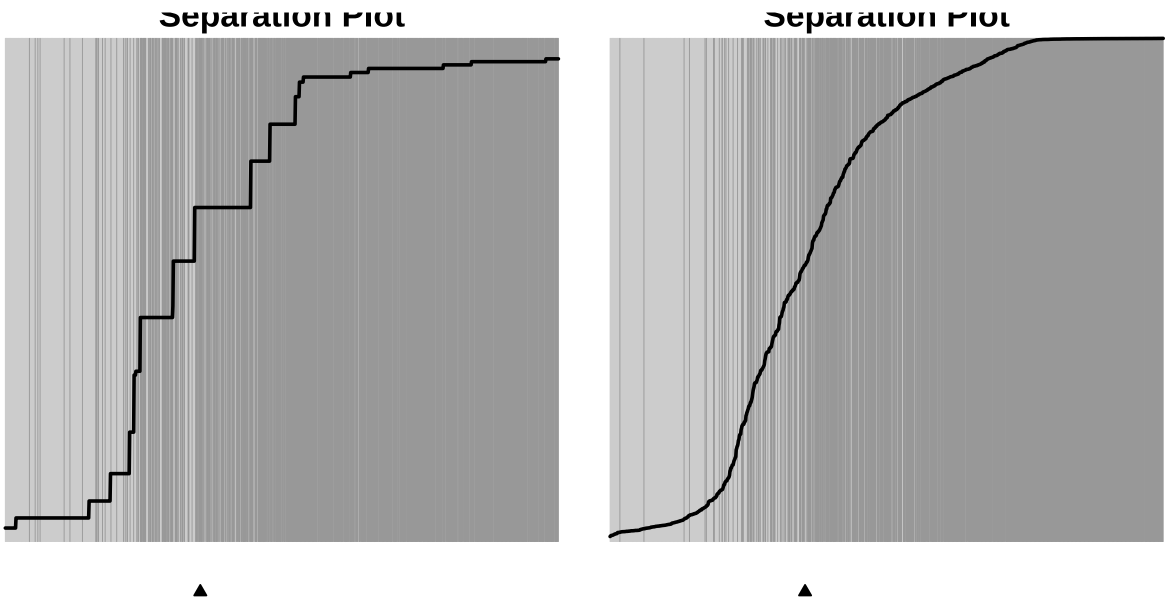

Figure 6: Model fit

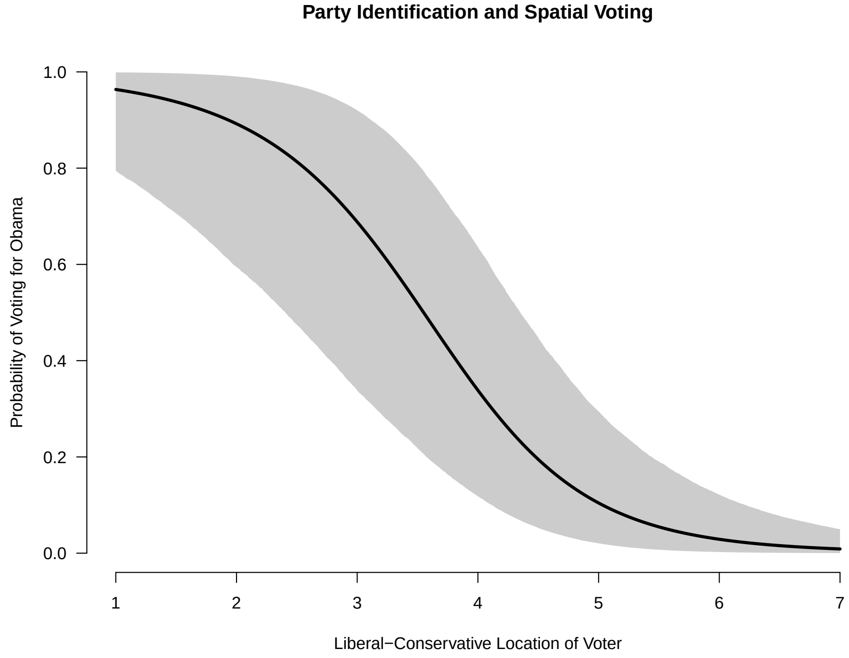

Figure 7: FDs

```
                   mean(independents_hi$age, na.rm=T), # Age
                   1, # Religion = Protestant
                   0, # Religion = Catholic
                   0, # Religion = Other
                   1, # Above Median Income
                   0 # College Degree
                   )

Xbeta_ind_hi_r1 <- S %*% t(scenario_ind_hi_r1)

p_sim_ind_hi_r1 <- (exp(Xbeta_ind_hi_r1))/ (1 + exp(Xbeta_ind_hi_r1))

p_mean_ind_hi_r1 <- apply(p_sim_ind_hi_r1, 2, mean)
p_qu_ind_hi_r1 <- t(apply(p_sim_ind_hi_r1, 2, quantile, prob = c(0.025, 0.975)))

props_ind_hi_r1 <- as.data.frame(cbind(p_mean_ind_hi_r1,lr_seq2))
```

```r
props_ind_hi_r1$dist <- abs(props_ind_hi_r1$p_mean_ind_hi_r1-0.5)

min_pos <- which.min(props_ind_hi_r1$dist)

props_ind_hi_r1[min_pos,2]
```

```
## [1] 3.954
```

```r
# Scenario 2 (Female)

scenario_ind_hi_r2 <- cbind(1, # Intercept

                  lr_seq2, # LR Scale

                  0, # Race = Black

                  0, # Race = Other/Mixed

                  0, # Gender = Male

                  mean(independents_hi$age, na.rm=T), # Age

                  1, # Religion = Protestant

                  0, # Religion = Catholic

                  0, # Religion = Other

                  1, # Above Median Income

                  0 # College Degree

                  )


Xbeta_ind_hi_r2 <- S %*% t(scenario_ind_hi_r2)


p_sim_ind_hi_r2 <- (exp(Xbeta_ind_hi_r2))/ (1 + exp(Xbeta_ind_hi_r2))


p_mean_ind_hi_r2 <- apply(p_sim_ind_hi_r2, 2, mean)

p_qu_ind_hi_r2 <- t(apply(p_sim_ind_hi_r2, 2, quantile, prob = c(0.025, 0.975)))


props_ind_hi_r2 <- as.data.frame(cbind(p_mean_ind_hi_r2,lr_seq2))

props_ind_hi_r2$dist <- abs(props_ind_hi_r2$p_mean_ind_hi_r2-0.5)

min_pos <- which.min(props_ind_hi_r2$dist)
```

```r
props_ind_hi_r2[min_pos,2]
```

```
## [1] 3.173
```

```r
# Scenario 3 (Young)
scenario_ind_hi_r3 <- cbind(1, # Intercept
                  lr_seq2, # LR Scale
                  0, # Race = Black
                  0, # Race = Other/Mixed
                  1, # Gender = Male
                  quantile(independents_hi$age, na.rm=T, 0.25), # Age
                  1, # Religion = Protestant
                  0, # Religion = Catholic
                  0, # Religion = Other
                  1, # Above Median Income
                  0 # College Degree
                  )


Xbeta_ind_hi_r3 <- S %*% t(scenario_ind_hi_r3)


p_sim_ind_hi_r3 <- (exp(Xbeta_ind_hi_r3))/ (1 + exp(Xbeta_ind_hi_r3))


p_mean_ind_hi_r3 <- apply(p_sim_ind_hi_r3, 2, mean)
p_qu_ind_hi_r3 <- t(apply(p_sim_ind_hi_r3, 2, quantile, prob = c(0.025, 0.975)))


props_ind_hi_r3 <- as.data.frame(cbind(p_mean_ind_hi_r3,lr_seq2))
props_ind_hi_r3$dist <- abs(props_ind_hi_r3$p_mean_ind_hi_r3-0.5)
min_pos <- which.min(props_ind_hi_r3$dist)
props_ind_hi_r3[min_pos,2]
```

```
## [1] 3.737
```

```r
# Scenario 4 (No Religion)
scenario_ind_hi_r4 <- cbind(1, # Intercept
                  lr_seq2, # LR Scale
                  0, # Race = Black
                  0, # Race = Other/Mixed
                  1, # Gender = Male
                  mean(independents_hi$age, na.rm=T), # Age
                  0, # Religion = Protestant
                  0, # Religion = Catholic
                  0, # Religion = Other
                  1, # Above Median Income
                  0 # College Degree
                  )

Xbeta_ind_hi_r4 <- S %*% t(scenario_ind_hi_r4)

p_sim_ind_hi_r4 <- (exp(Xbeta_ind_hi_r4))/ (1 + exp(Xbeta_ind_hi_r4))

p_mean_ind_hi_r4 <- apply(p_sim_ind_hi_r4, 2, mean)
p_qu_ind_hi_r4 <- t(apply(p_sim_ind_hi_r4, 2, quantile, prob = c(0.025, 0.975)))

props_ind_hi_r4 <- as.data.frame(cbind(p_mean_ind_hi_r4,lr_seq2))
props_ind_hi_r4$dist <- abs(props_ind_hi_r4$p_mean_ind_hi_r4-0.5)
min_pos <- which.min(props_ind_hi_r4$dist)
props_ind_hi_r4[min_pos,2]
```

```
## [1] 4.142
```

```
# Scenario (Low Income)

# scenario_ind_hi_r5 <- cbind(1, # Intercept

#                    lr_seq2, # LR Scale

#                    0, # Race = Black

#                    0, # Race = Other/Mixed

#                    1, # Gender = Male

#                    mean(independents_hi$age, na.rm=T), # Age

#                    1, # Religion = Protestant

#                    0, # Religion = Catholic

#                    0, # Religion = Other

#                    0, # Above Median Income

#                    0 # College Degree

#                    )

#

# Xbeta_ind_hi_r5 <- S %*% t(scenario_ind_hi_r5)

#

# p_sim_ind_hi_r5 <- (exp(Xbeta_ind_hi_r5))/ (1 + exp(Xbeta_ind_hi_r5))

#

# p_mean_ind_hi_r5 <- apply(p_sim_ind_hi_r5, 2, mean)

# p_qu_ind_hi_r5 <- t(apply(p_sim_ind_hi_r5, 2, quantile, prob = c(0.025, 0.975)))

#

# props_ind_hi_r5 <- as.data.frame(cbind(p_mean_ind_hi_r5,lr_seq2))

# props_ind_hi_r5$dist <- abs(props_ind_hi_r5$p_mean_ind_hi_r5-0.5)

# min_pos <- which.min(props_ind_hi_r5$dist)

# props_ind_hi_r5[min_pos,2]



# Scenario 6 (College Degree)

# scenario_ind_hi_r6 <- cbind(1, # Intercept
```

```
#                    lr_seq2, # LR Scale
#                    0, # Race = Black
#                    0, # Race = Other/Mixed
#                    1, # Gender = Male
#                    mean(independents_hi$age, na.rm=T), # Age
#                    1, # Religion = Protestant
#                    0, # Religion = Catholic
#                    0, # Religion = Other
#                    1, # Above Median Income
#                    1 # College Degree
#                    )
#
# Xbeta_ind_hi_r6 <- S %*% t(scenario_ind_hi_r6)
#
# p_sim_ind_hi_r6 <- (exp(Xbeta_ind_hi_r6))/ (1 + exp(Xbeta_ind_hi_r6))
#
# p_mean_ind_hi_r6 <- apply(p_sim_ind_hi_r6, 2, mean)
# p_qu_ind_hi_r6 <- t(apply(p_sim_ind_hi_r6, 2, quantile, prob = c(0.025, 0.975)))
#
# props_ind_hi_r6 <- as.data.frame(cbind(p_mean_ind_hi_r6,lr_seq2))
# props_ind_hi_r6$dist <- abs(props_ind_hi_r6$p_mean_ind_hi_r6-0.5)
# min_pos <- which.min(props_ind_hi_r6$dist)
# props_ind_hi_r6[min_pos,2]
#
```

Table 1: Logit equations predicting the vote

	Dependent variable:		
	Vote for Obama		
	Model 1 (Base)	Model 1 (with controls)	Model 2
	(1)	(2)	(3)
Left-Right	−0.134	−0.248*	−1.628***
	(0.110)	(0.128)	(0.412)
Independent	−0.810	−0.692	
	(0.606)	(0.696)	
Republican	−2.842***	−2.889**	
	(0.988)	(1.147)	
Black/African-American		5.286***	21.565
		(1.041)	(1,975.579)
Other/Mixed		1.523***	0.653
		(0.354)	(1.181)
Male		0.129	0.615
		(0.201)	(0.682)
Age		−0.017***	−0.022
		(0.006)	(0.019)
Protestant		−0.374	−0.966
		(0.271)	(0.785)
Catholic		−0.324	−0.398
		(0.298)	(0.969)
Other		0.503	−23.450
		(0.752)	(10,754.010)
Above Median Income		−0.443**	−0.763
		(0.209)	(0.648)
College Degree		0.239	1.175*
		(0.231)	(0.646)
Left-Right × Independent	−0.316**	−0.263	
	(0.139)	(0.162)	
Left-Right × Republican	−0.442**	−0.302	
	(0.206)	(0.241)	
Constant	3.291***	4.024***	7.968***
	(0.471)	(0.641)	(2.262)
Observations	1,242	1,242	104
Log Likelihood	−424.972	−339.847	−34.213
Akaike Inf. Crit.	861.943	709.693	90.427
Note:			*p<0.1; **p<0.05; ***p<0.01

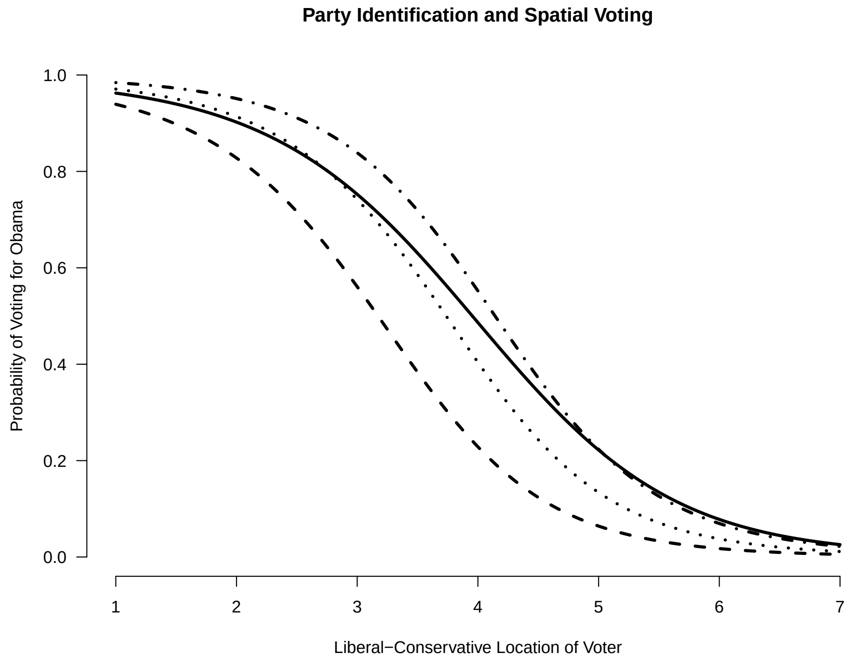

Figure 8: cap

2 Introduction

3 Research Design

3.1 Data

3.2 Methods

4 Results

4.1 Partisanship under the Spatial Voting Theorem

4.2 The Independent Voter Equilibrium

5 Robustness

6 Conclusion

7 Appendix