

Relationship between social capital and election results

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The authors made the following contributions. Anisha Babu: Conceptualization, Data Analysis, Writing - Original Draft Preparation, Writing - Review & Editing; Hyeonjin Cha: Conceptualization, Data Analysis, Writing - Original Draft Preparation, Writing - Review & Editing; Diana DeWald: Conceptualization, Data Analysis, Writing - Original Draft Preparation, Writing - Review & Editing; Murat Kezer: Conceptualization, Data Analysis, Writing - Original Draft Preparation, Writing - Review & Editing.

Abstract

One or two sentences providing a **basic introduction** to the field, comprehensible to a scientist in any discipline.

Two to three sentences of **more detailed background**, comprehensible to scientists in related disciplines.

One sentence clearly stating the **general problem** being addressed by this particular study.

One sentence summarizing the main result (with the words “**here we show**” or their equivalent).

Two or three sentences explaining what the **main result** reveals in direct comparison to what was thought to be the case previously, or how the main result adds to previous knowledge.

One or two sentences to put the results into a more **general context**.

Two or three sentences to provide a **broader perspective**, readily comprehensible to a scientist in any discipline.

Keywords: keywords

Word count: X

Relationship between social capital and election results

Introduction

Methods

We report how we determined our sample size, all data exclusions (if any), all manipulations, and all measures in the study.

Data

The present study uses secondary datasets. First, *The production of social capital in US counties constitutes the social capital data* (Rupasingha, Goetz, & Freshwater, 2006, with updates)[link]. Second, *County Presidential Election Returns 2000-2016* (MIT Election Data and Science Lab, 2018) is used for presidential election results. Both datasets provide data on county level.

Data Preparation

To prepare the data for analysis, we started with the election data as it is more comprehensive in terms of the number of counties. First, we selected the variables of interests. Then, we selected the election years (i.e., 2000, 2008, 2012, 2016) that match with social capital data. The name of the year variable was changed in a way that shows it is the year of election so that it is not mixed with the same year variable in social capital data. Next, we create new datasets for each presidential election we are interested in. These will be later merged with corresponding social capital data.

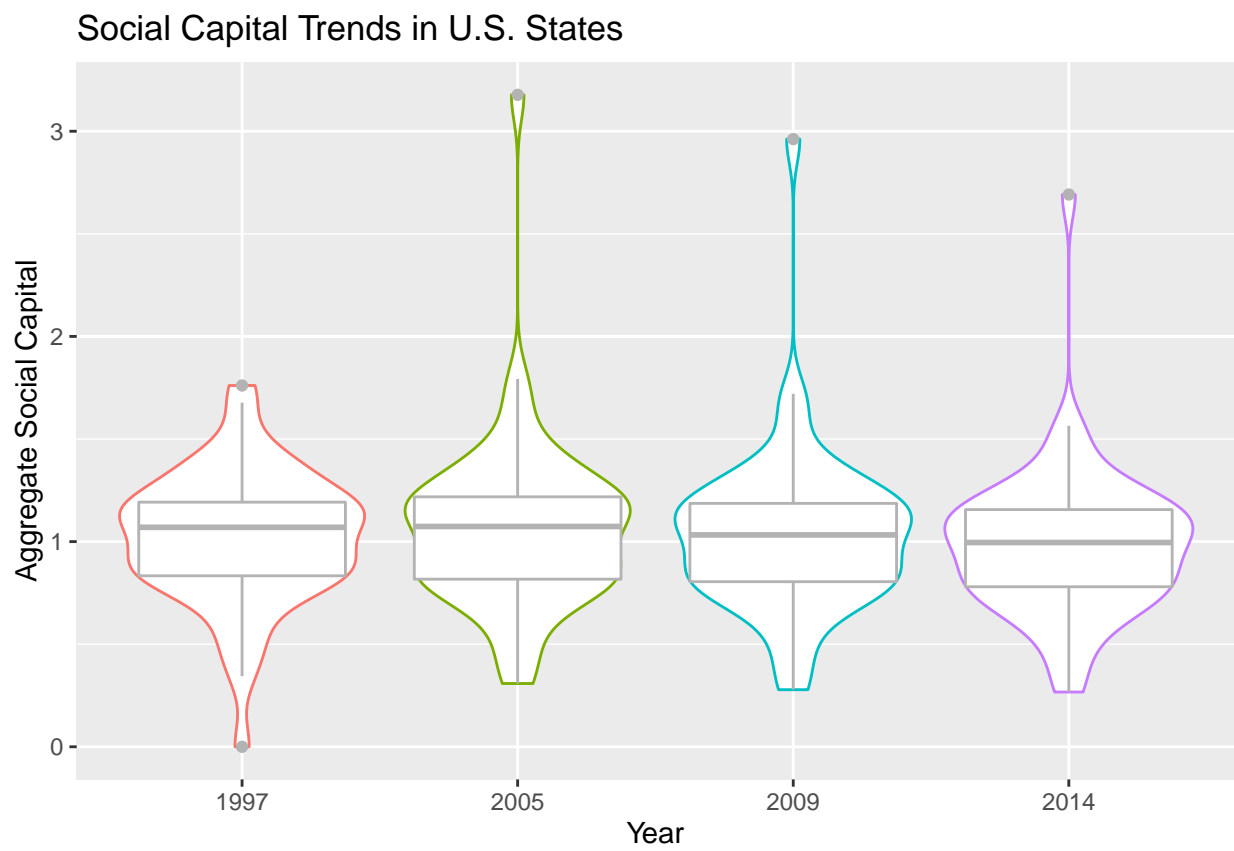
For each social capital dataset (i.e., 1997, 2005, 2009, 2014), we first added state code for some counties that do not readily contain that information. Then, we created two variables out of the area name such that we have different variables for county names and state codes. Then, we selected the relevant variables and cleaned the variable names. We

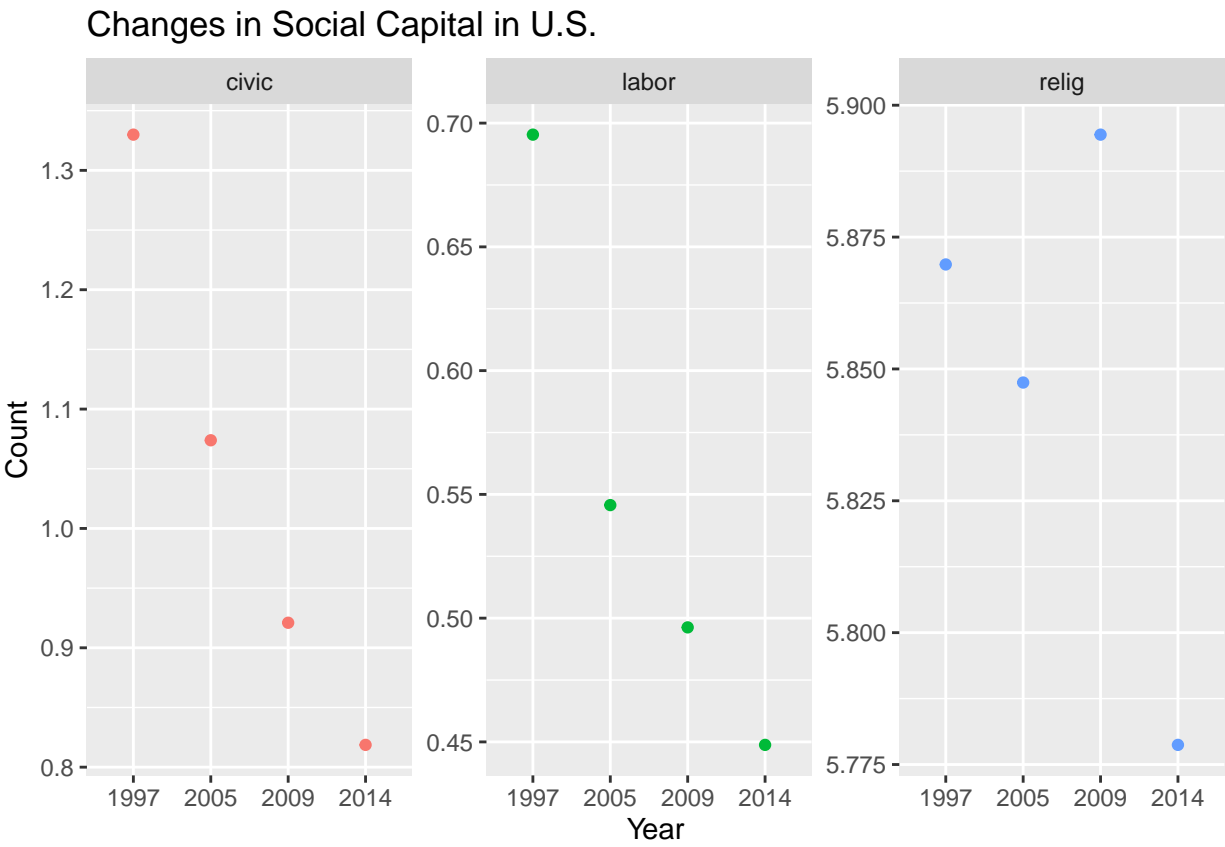
only selected the variables that were available for all time points that we chose. Next, we created a year variable indicating when the data were collected.

Finally, we reorder the variables so that they are the same across datasets, and merged the four datasets to create one dataset that contains all of the data from each dataset.

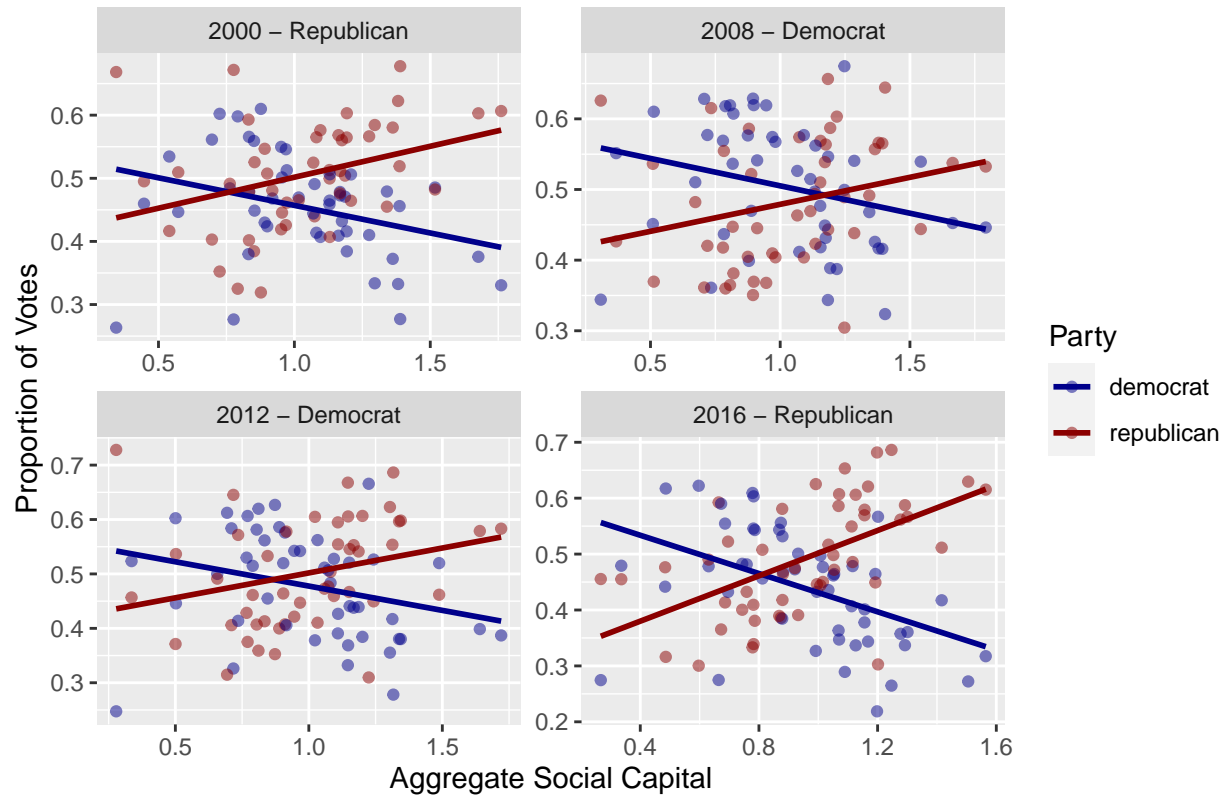
Data analysis

First, we provide the descriptive statistics in Table 1-X. Next, we visualize the data. Finally, we present regression models in which elections results are predicted by different types of social capital. We used R [Version 4.0.2; 12] and the R-packages *broom* [Version 0.7.1; 13], *corx* [Version 1.0.6.1; 4], *dplyr* [Version 1.0.2; 20], *forcats* [Version 0.5.0; 14], *ggplot2* [Version 3.3.2; 15], *ggpubr* [Version 0.4.0; 8], *here* [Version 0.1; 10], *janitor* [Version 2.0.1; 6], *kableExtra* [Version 1.3.1; 23], *knitr* [Version 1.30; 22], *magrittr* [Version 1.5; 2], *papaja* [Version 0.1.0.9997; 1], *purrr* [Version 0.3.4; 7], *readr* [Version 1.3.1; 18], *rio* [Version 0.5.16; 3], *scales* [Version 1.1.1; 19], *sjmisc* [Version 2.8.5; 9], *stringr* [Version 1.4.0; 16], *tibble* [Version 3.0.3; 11], *tidyr* [Version 1.1.2; 17], *tidyverse* [Version 1.3.0; 21], and *usmap* [Version 0.5.1; 5] for all our analyses.



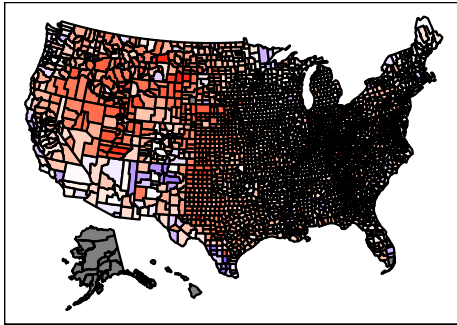


Proportion Party Votes by Social Capital in U.S. States

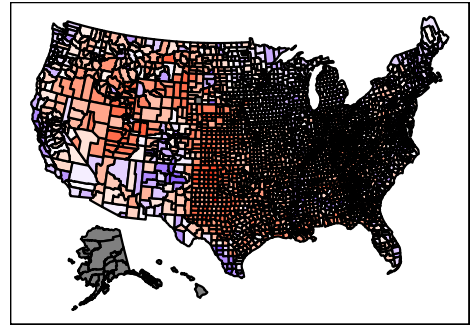


Results of US Presential Elections

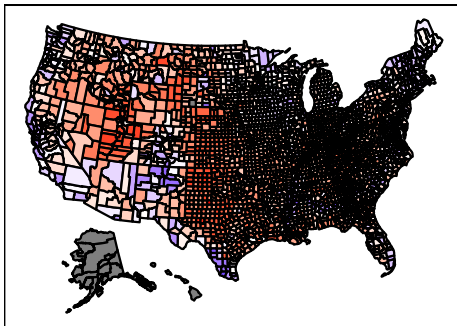
2000



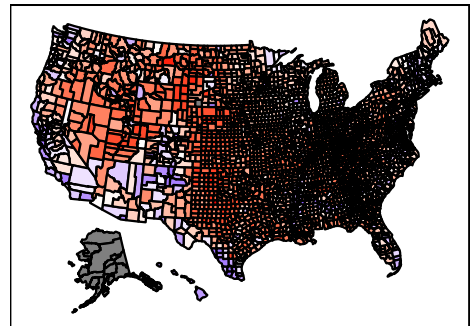
2008



2012



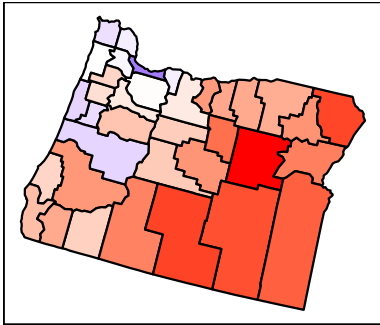
2016



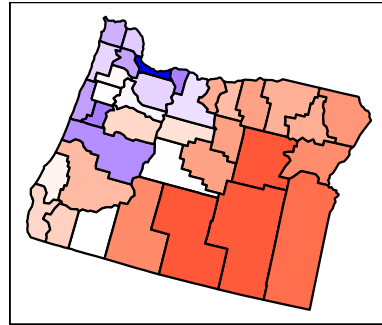
Red and blue colors indicate Republican and Democratic lead

Results of US Presential Elections in Oregon

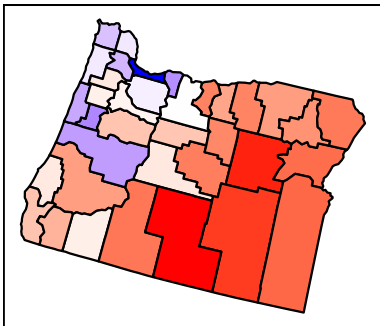
2000



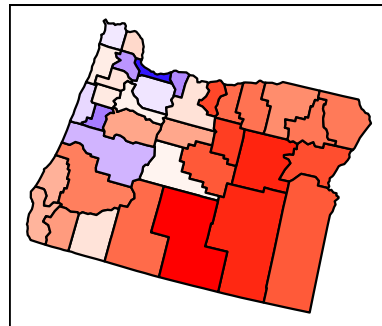
2008



2012



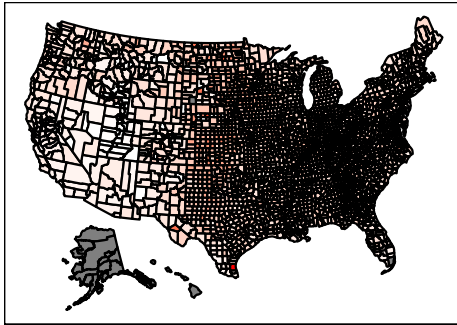
2016



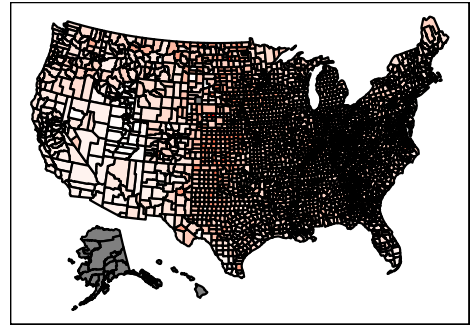
Red and blue colors indicate Republican and Democratic lead

Distribution of Religious Social Capital in US

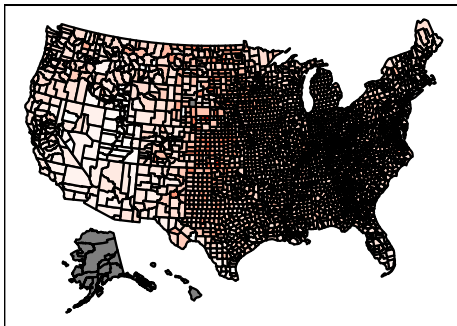
2000



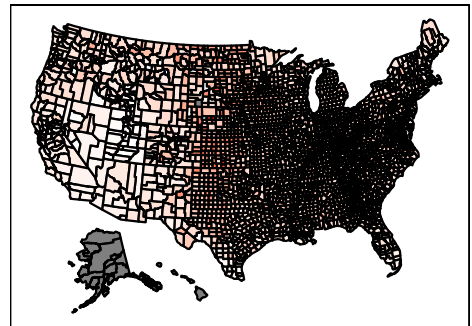
2008



2012



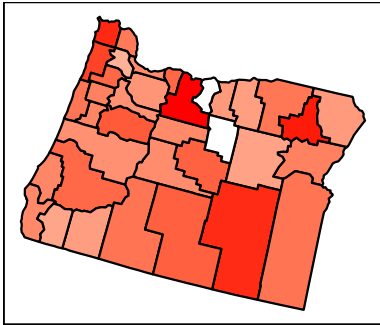
2016



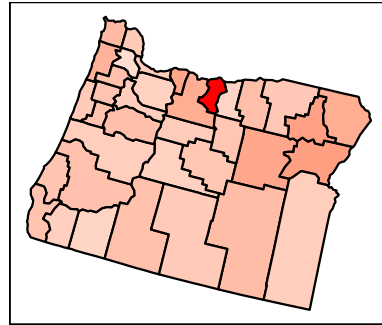
Thicker color indicates higher per capita count of religious establishments

Distribution of Religious Social Capital in Oregon

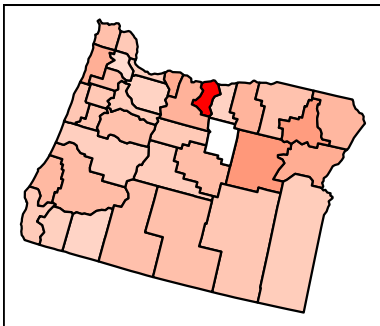
2000



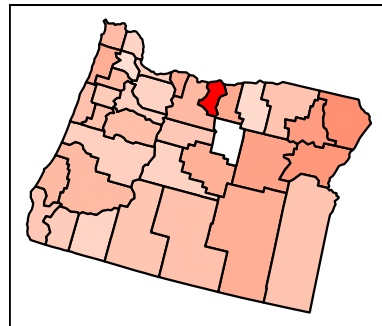
2008



2012



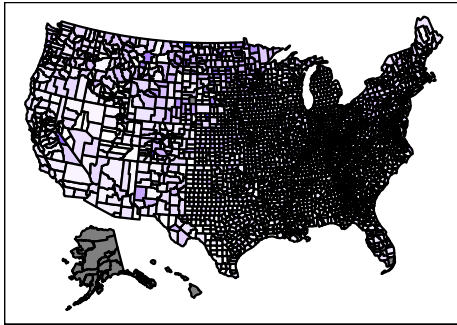
2016



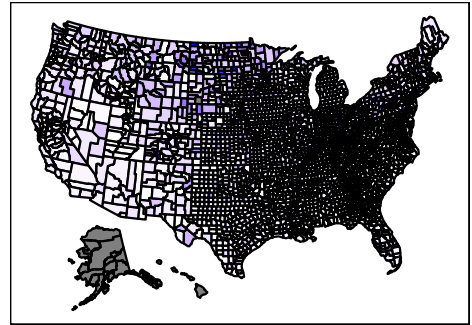
Thicker color indicates higher per capita count of religious establishments

Distribution of Civic Social Capital in US

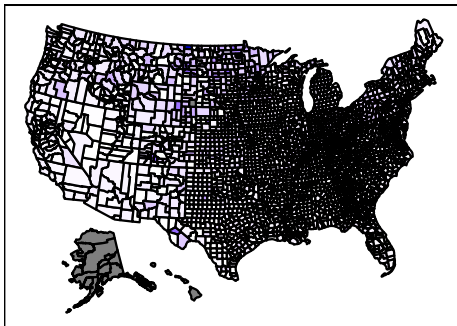
2000



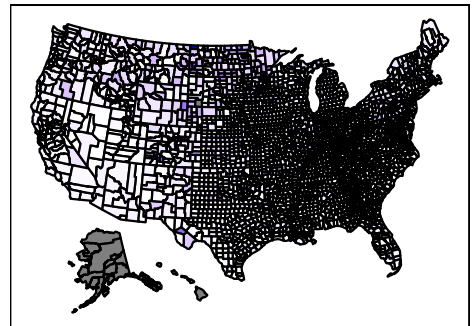
2008



2012



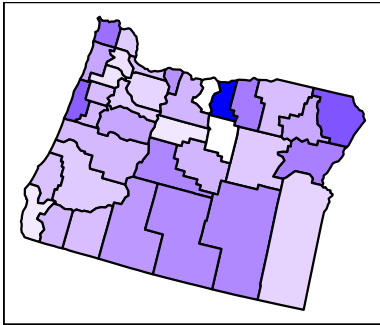
2016



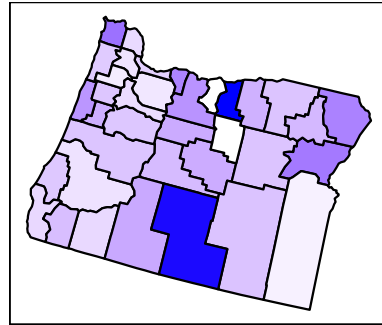
Thicker color indicates higher per capita count of civic establishments

Distribution of Civic Social Capital in Oregon

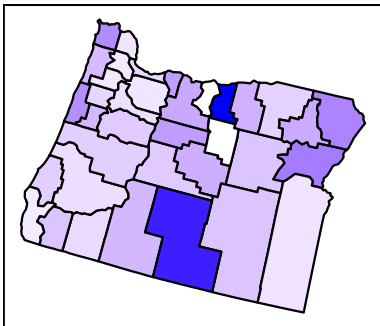
2000



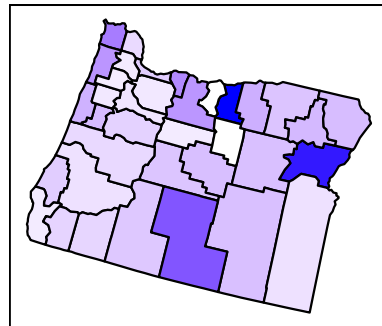
2008



2012



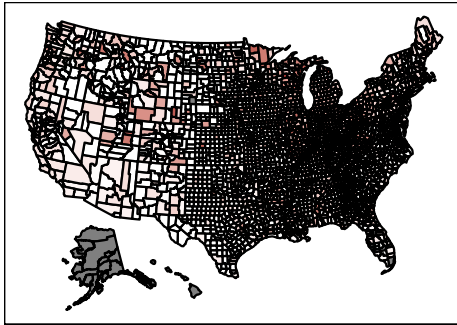
2016



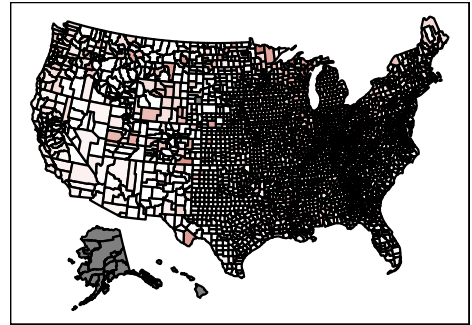
Thicker color indicates higher per capita count of civic establishments

Distribution of Labor Social Capital in US

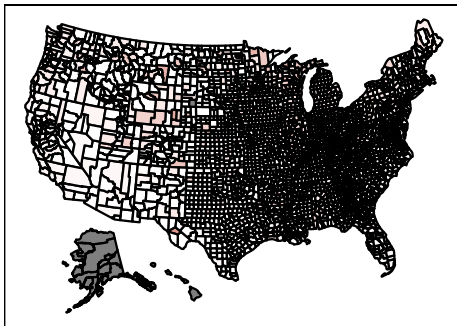
2000



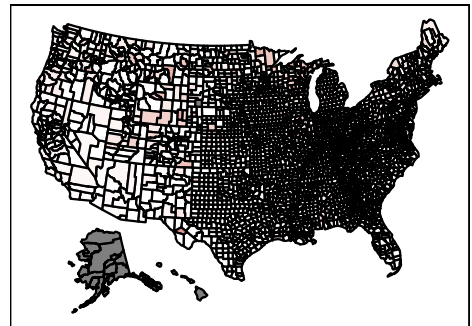
2008



2012



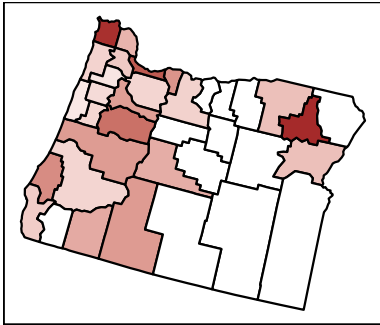
2016



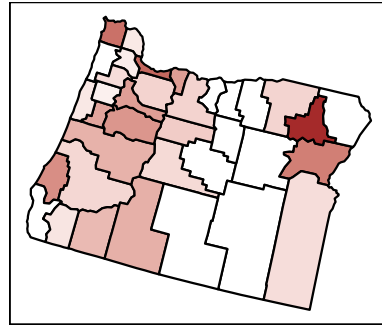
Thicker color indicates higher per capita count of labor establishments

Distribution of Labor Social Capital in Oregon

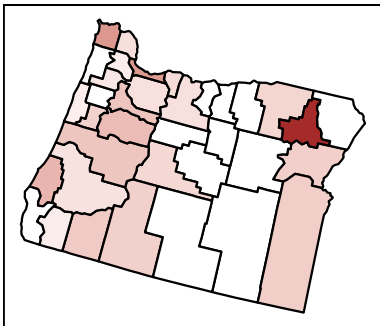
2000



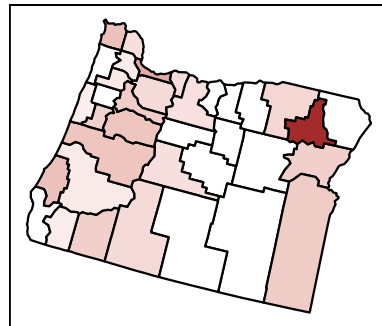
2008



2012



2016



Thicker color indicates higher per capita count of labor establishments

Results

Discussion

References

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Table 1

(#tab:descriptives table 1) *A summary table for votes by candidate and year of election.*

Year	Party	N	Mean Candidate Votes	SD Candidate Votes
2000	Dem	3107	16218	57150
2000	Green	3107	–	–
2000	Rep	3107	16049	38632
2000	–	3107	339	954
2008	Dem	3108	22157	76972
2008	Rep	3108	19167	44840
2008	–	3108	577	1848
2012	Dem	3108	20974	73998
2012	Rep	3108	19409	44596
2012	–	3108	838	2952
2016	Dem	3115	21071	80496
2016	Rep	3115	20160	43157
2016	–	3115	2449	7509

Note: N = total number of counties in the US reporting data.

Table 2

Table X. Correlation between social capital variables (2014) and democratic margin (2016)

	1	2	3	4	5	6	7	8	9	10	11
1. Bowling	-										
2. Civic	.16*	-									
3. Golf	.18*	.17*	-								
4. Religious	.18*	.25*	.35*	-							
5. Sport	-.01	.00	-.02	.00	-						
6. Political	-.03	.00	-.03	.00	.01	-					
7. Professional	-.01	.08*	-.04*	-.03	.02	.20*	-				
8. Business	.10*	.14*	.14*	.31*	-.02	.09*	.16*	-			
9. Labor	.01	.13*	-.03	-.05*	.02	.05*	.11*	-.02	-		
10. NonProfit	.22*	.35*	.28*	.37*	.02	.09*	.14*	.33*	.00	-	
11. Social Capital Index	.29*	.46*	.43*	.68*	.03	.09*	.13*	.44*	.03	.85*	-
12. Democratic Margin	-.09*	-.04*	-.14*	-.33*	.02	.09*	.19*	-.09*	.13*	-.07*	-.14*

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

Table 3

Table X. Correlation between social capital variables (2009) and democratic margin (2012)

	1	2	3	4	5	6	7	8	9	10	11
1. Bowling	-										
2. Civic	.21*	-									
3. Golf	.23*	.18*	-								
4. Religious	.23*	.23*	.42*	-							
5. Sport	-.02	-.01	-.02	.00	-						
6. Political	.00	.05*	-.04*	-.01	.01	-					
7. Professional	.06*	.05*	-.04*	-.01	.01	.24*	-				
8. Business	.12*	.21*	.17*	.26*	-.02	.15*	.22*	-			
9. Labor	.04*	.13*	-.05*	-.03	.01	.06*	.11*	-.04*	-		
10. NonProfit	.29*	.38*	.33*	.41*	.01	.09*	.16*	.33*	.01	-	
11. Social Capital Index	.36*	.47*	.48*	.65*	.03	.10*	.16*	.41*	.05*	.86*	-
12. Democratic Margin	-.05*	.02	-.10*	-.27*	.02	.06*	.12*	-.12*	.19*	-.05*	-.08*

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

Table 4

Table X. Correlation between social capital variables (2005) and democratic margin (2008)

	1	2	3	4	5	6	7	8	9	10	11
1. Bowling	-										
2. Civic	.29*	-									
3. Golf	.23*	.18*	-								
4. Religious	.22*	.24*	.34*	-							
5. Sport	-.04*	.04*	-.05*	-.09*	-						
6. Political	-.02	.04*	-.05*	-.01	.05*	-					
7. Professional	.02	.12*	-.03	.03	.12*	.21*	-				
8. Business	.11*	.13*	.16*	.26*	-.01	.12*	.17*	-			
9. Labor	.02	.15*	-.04*	-.01	.14*	.12*	.10*	-.02	-		
10. NonProfit	.30*	.37*	.29*	.40*	.02	.06*	.18*	.30*	.02	-	
11. Social Capital Index	.39*	.48*	.42*	.63*	.01	.07*	.18*	.35*	.11*	.81*	-
12. Democratic Margin	-.04*	.08*	-.07*	-.23*	.14*	.06*	.12*	-.14*	.23*	-.03	-.05*

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

Table 5

Table X. Correlation between social capital variables (1997) and democratic margin (2000)

	1	2	3	4	5	6	7	8	9	10	11
1. Bowling	-										
2. Civic	.25*	-									
3. Golf	.22*	.18*	-								
4. Religious	.23*	.21*	.17*	-							
5. Sport	-.01	.04*	.01	.01	-						
6. Political	-.02	.05*	-.01	-.06*	.04*	-					
7. Professional	.03	.12*	-.03	-.01	.06*	.33*	-				
8. Business	.10*	.14*	.05*	.09*	.01	.17*	.22*	-			
9. Labor	.03	.14*	-.01	-.04*	.03	.10*	.08*	-.02	-		
10. NonProfit	.39*	.44*	.24*	.39*	.04*	.06*	.18*	.30*	.00	-	
11. Social Capital Index	.45*	.51*	.31*	.60*	.08*	.06*	.17*	.31*	.07*	.87*	-
12. Democratic Margin	-.15*	-.06*	-.13*	-.20*	.01	.08*	.07*	-.08*	.25*	-.23*	-.26*

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

Table 6

Table X. Social Capital Variables Regressed on Democratic Margin for Each Time Point

Term	2000			2004			2008			2012		
	B	SE	p	B	SE	p	B	SE	p	B	SE	p
Intercept	-0.12	0.01	<0.05	-0.09	0.01	<0.05	-0.11	0.01	<0.05	-0.17	0.01	<0.05
Religious	-0.09	0.01	<0.05	-0.15	0.01	<0.05	-0.16	0.01	<0.05	-0.21	0.01	<0.05
Civic	-0.09	0.03	<0.05	0.20	0.03	<0.05	0.11	0.03	<0.05	0.08	0.04	0.05
Labor	0.89	0.06	<0.05	1.03	0.08	<0.05	0.90	0.09	<0.05	0.65	0.10	<0.05

Note: The headers indicate election years.