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.

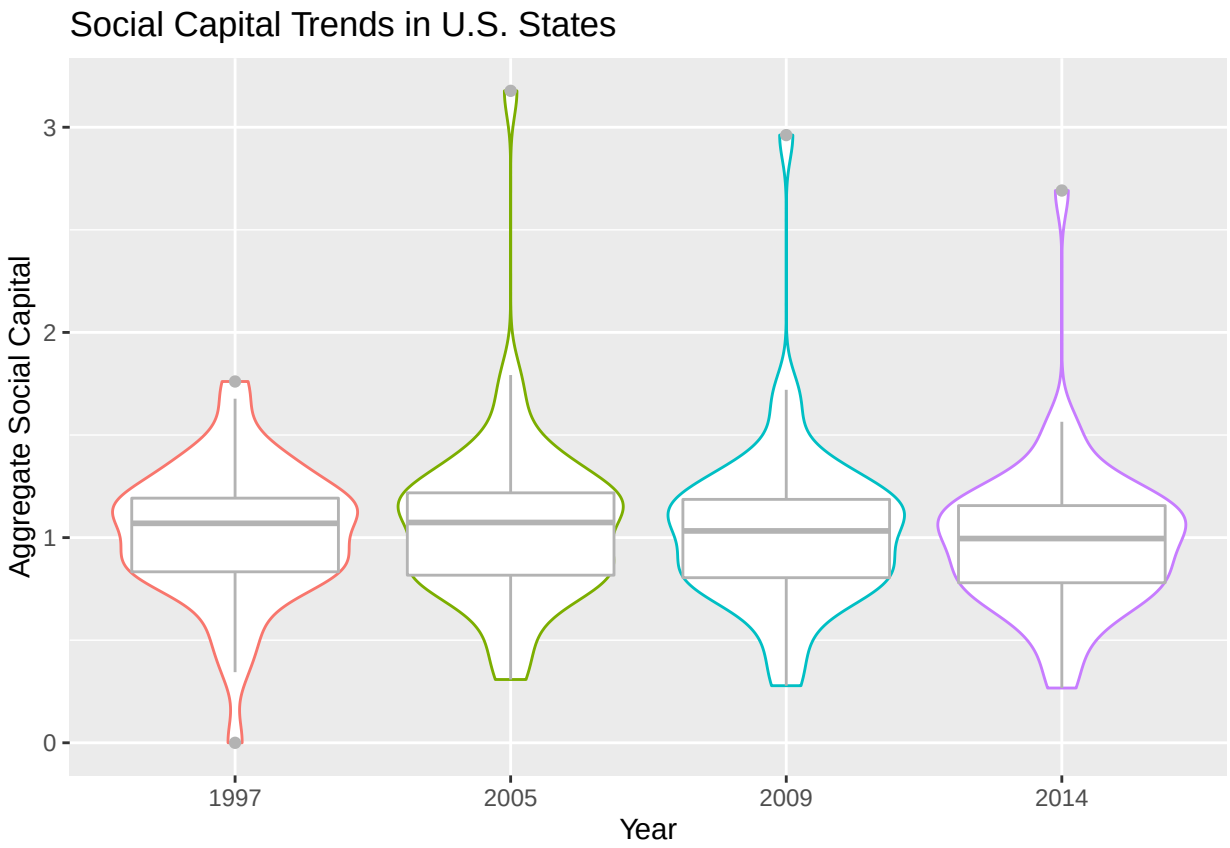
For each social capital dataset (i.e., 1997, 2005, 2009, 2014), we first added state code for some counties that do not readily contain that information. Then, we created two variables out of the area name such that we have different variables for county names and state codes. Then, we selected the relevant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

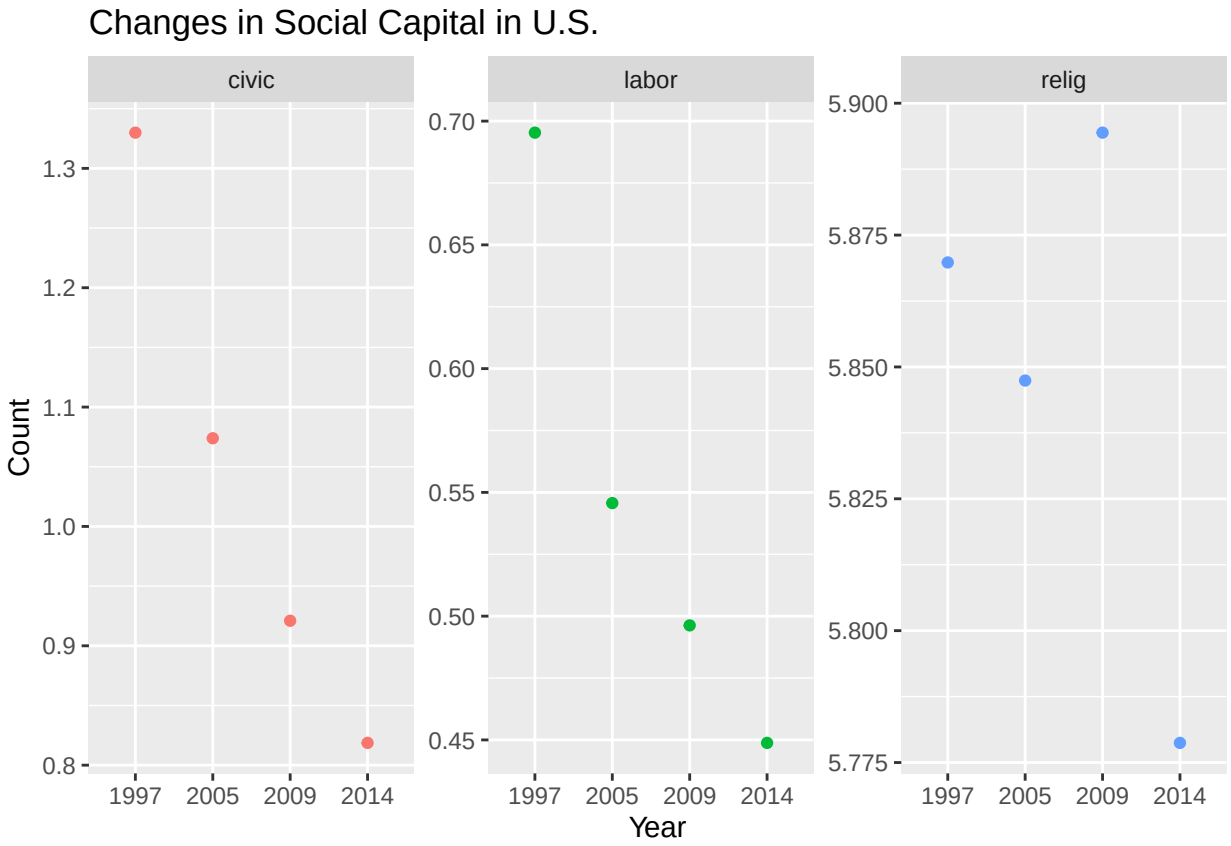
only selected the variables that were available for all time points that we chose. Next, we created a year variable indicating when the data were collected.

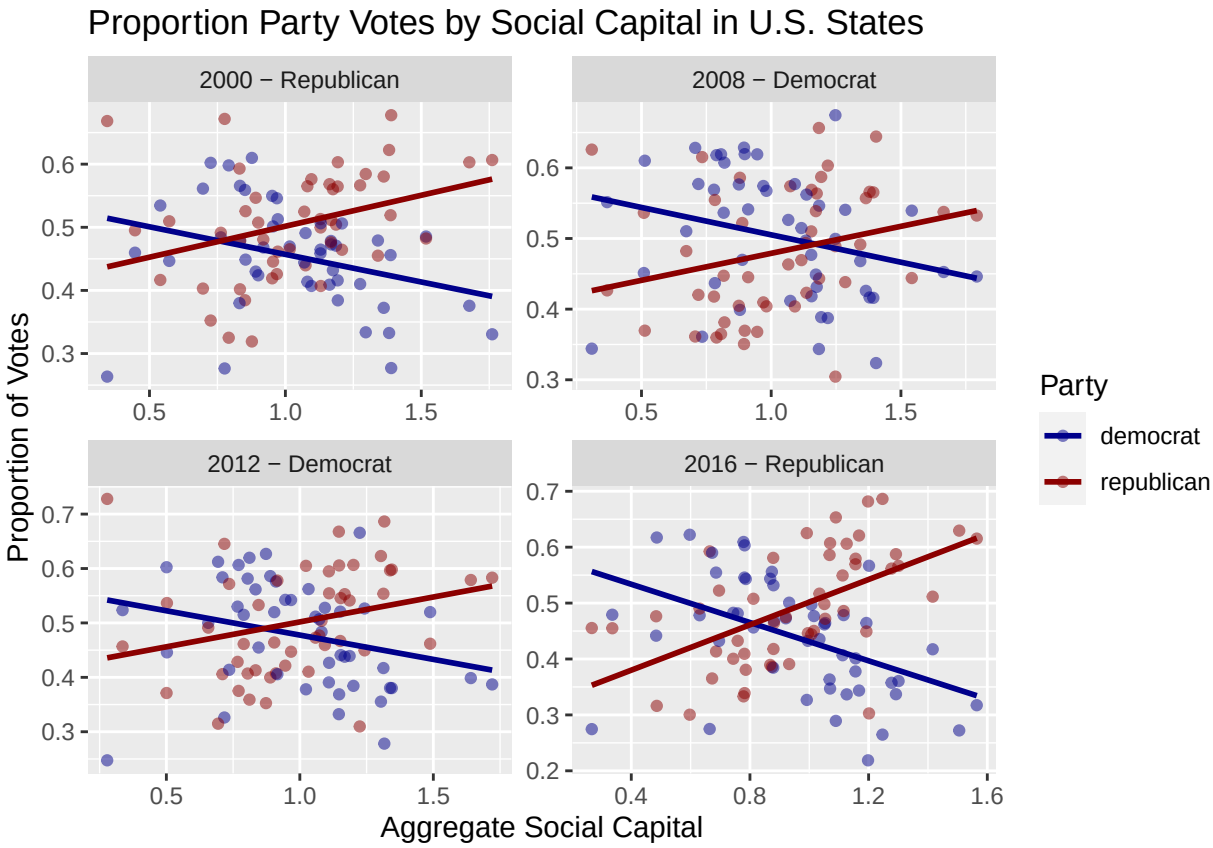
Finally, we reorder the variables so that they are the same across datasets, and merged the four datasets to create one dataset that contains all of the data from each dataset.

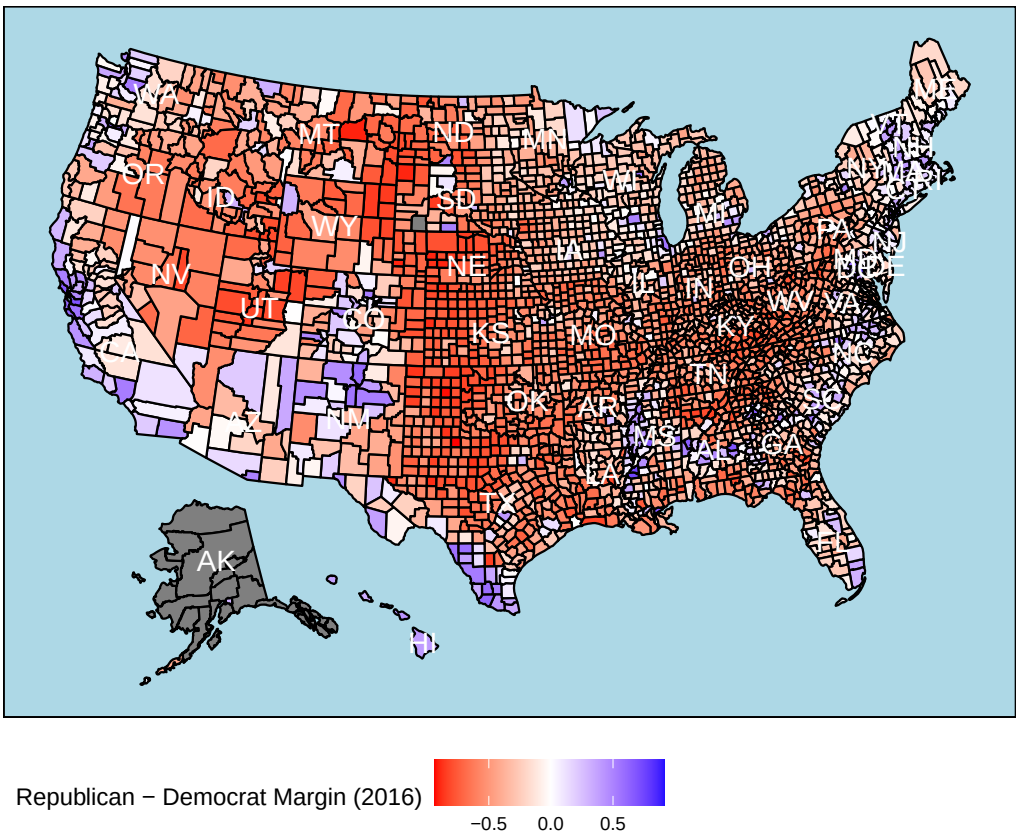
Data analysis

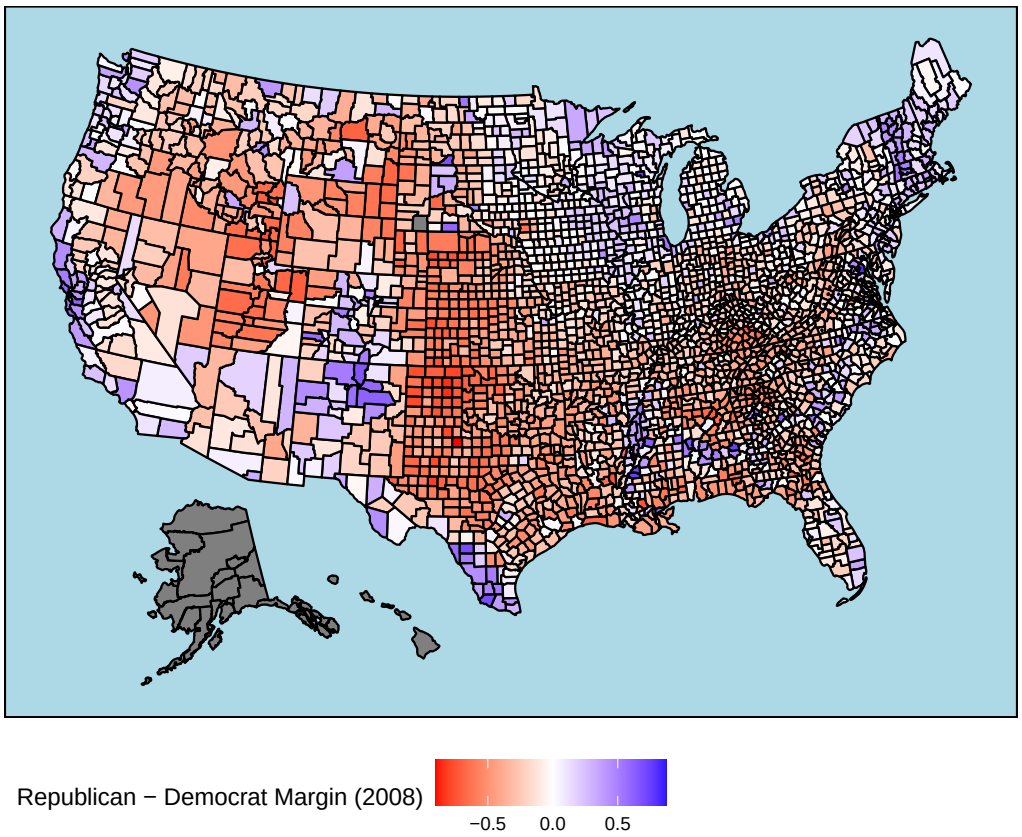
First, we provide the descriptive statistics in Table 1-X. Next, we visualize the data. Finally, we present regression models in which elections results are predicted by different types of social capital. We used R [Version 3.6.1; 11] and the R-packages *broom* [Version 0.7.0; 12], *corx* [Version 1.0.6.1; 4], *dplyr* [Version 1.0.2; 19], *forcats* [Version 0.5.0; 13], *ggplot2* [Version 3.3.2; 14], *gtsummary* [**R-gtsummary**], *here* [Version 0.1; 9], *janitor* [Version 2.0.1; 6], *kableExtra* [Version 1.3.1; 22], *knitr* [Version 1.29; 21], *magrittr* [Version 1.5; 2], *papaja* [Version 0.1.0.9997; 1], *purrr* [Version 0.3.4; 7], *readr* [Version 1.3.1; 17], *rio* [Version 0.5.16; 3], *scales* [Version 1.1.1; 18], *sjlabelled* [**R-sjlabelled**], *sjmisc* [Version 2.8.5; 8], *stringr* [Version 1.4.0; 15], *tibble* [Version 3.0.4; 10], *tidyr* [Version 1.1.2; 16], *tidyverse* [Version 1.3.0; 20], and *usmap* [Version 0.5.1; 5] for all our analyses.


Social Capital Trends in U.S. States
Aggregate Social Capital
3
2
1
0
1997
2005
2009
2014
Year

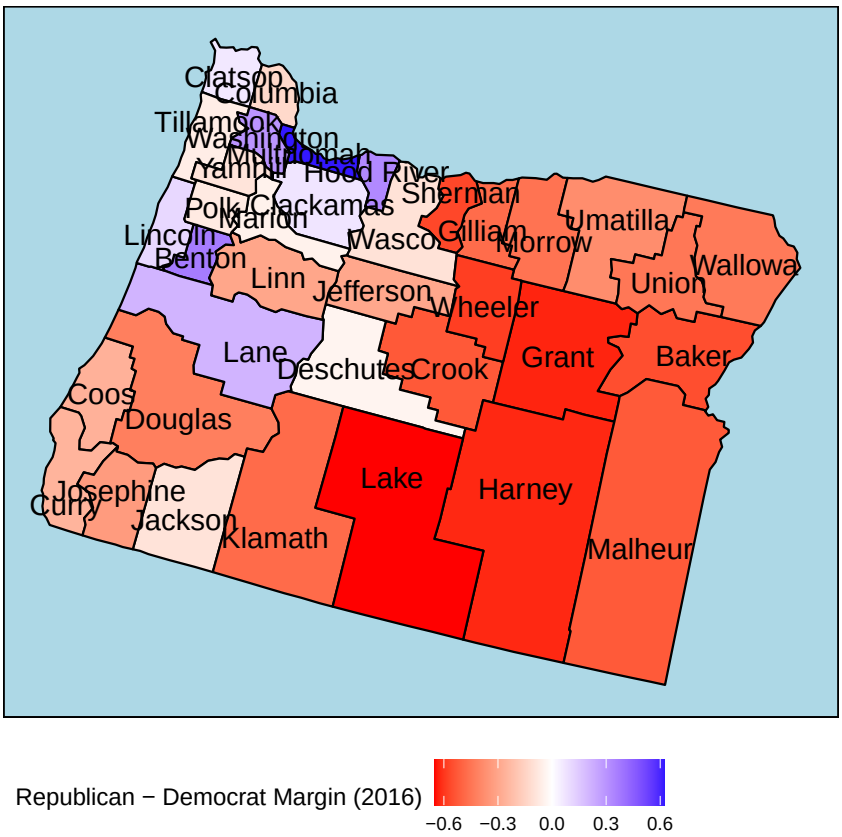

Changes in Social Capital in U.S.
civic
labor
relig
Count
Year
1.3
1.2
1.1
1.0
0.9
0.8
0.70
0.65
0.60
0.55
0.50
0.45
5.900
5.875
5.850
5.825
5.800
5.775
1997
2005
2009
2014

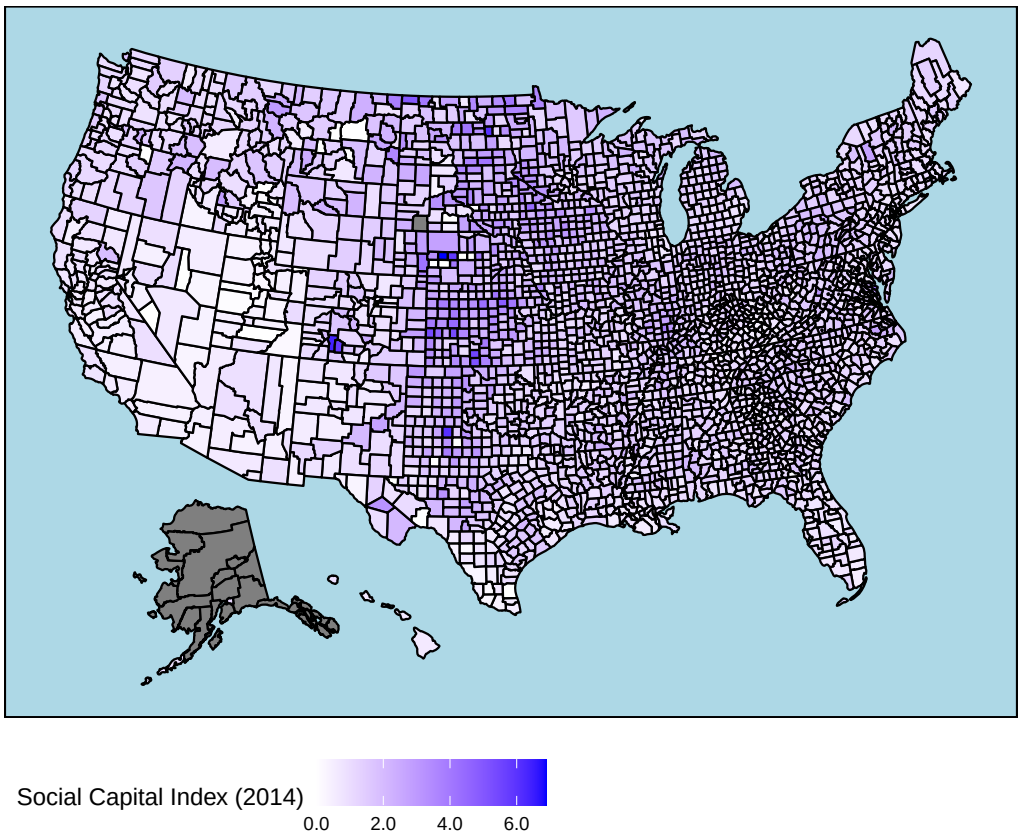

Proportion Party Votes by Social Capital in U.S. States
2000 − Republican
2008 − Democrat
2012 − Democrat
2016 − Republican
Proportion of Votes
Aggregate Social Capital
Party
democrat
republican

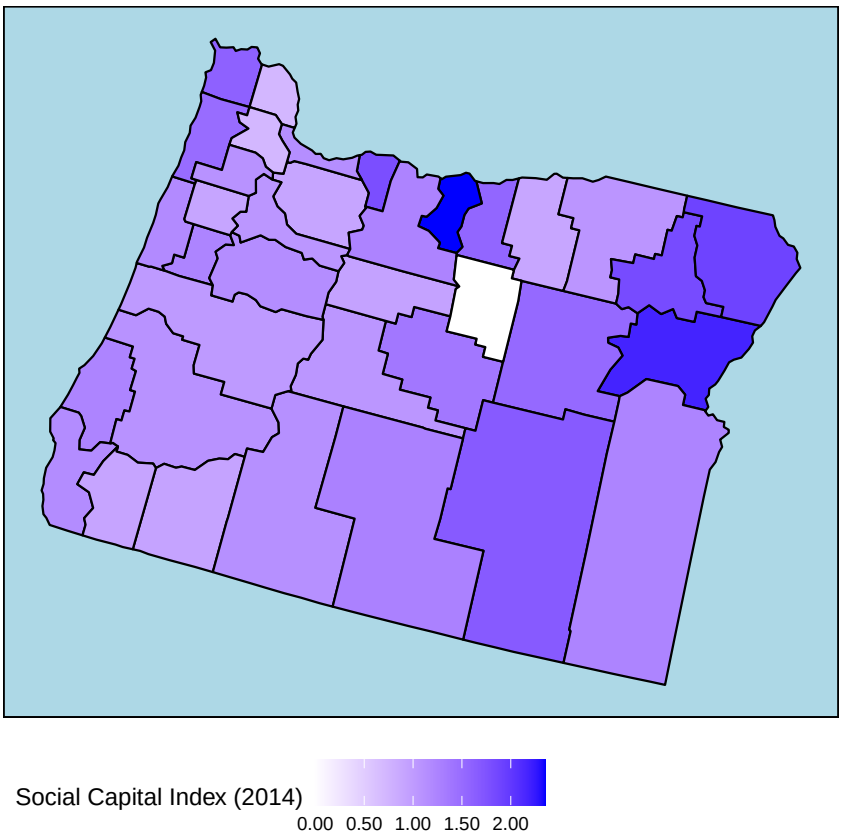

WA
MT
ND
MN
OR
ID
SD
WI
MI
WY
NY
PA
NJ
NE
IA
OH
NV
IL
IN
WV
VA
UT
CO
KS
MO
KY
MD
DE
CA
OK
AR
TN
SC
AZ
NM
MS
AL
GA
LA
TX
FL
AK
HI
Republican − Democrat Margin (2016)
−0.5
0.0
0.5


Republican − Democrat Margin (2008)
−0.5
0.0
0.5


2000
2008
2012
2016
NA
Republican − Democrat Margin (2016)
−0.5
0.0
0.5


Clatsop
Columbia
Tillamook
Washington
Multnomah
Yamhill
Hood River
Sherman
Polk
Clackamas
Marion
Lincoln
Wasco
Gilliam
Morrow
Umatilla
Benton
Linn
Jefferson
Wallowa
Union
Wheeler
Lane
Deschutes
Crook
Grant
Baker
Coos
Douglas
Lake
Harney
Josephine
Curry
Jackson
Klamath
Malheur
Republican − Democrat Margin (2016)
−0.6 −0.3 0.0 0.3 0.6


Social Capital Index (2014)
0.0
2.0
4.0
6.0



Results

Discussion

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CSLReferences

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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

	2000			**2004**			**2008**			**2012**		
Term	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.