



What is the Best Primary State?

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

Introduction

- What are primaries?
- The 2020 Iowa disaster
- To change or not to change

Iowa Presidential Caucus Results 2020

AP

Democrat ▾ Select County ▾

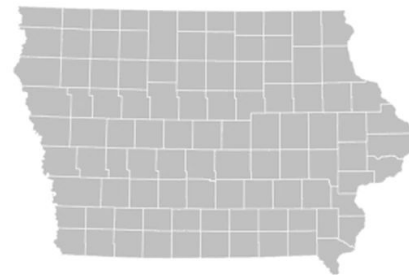
CANDIDATE	VOTES	PCT.
 Michael Bennet	0	0.00%
 Joe Biden	0	0.00%
 Michael Bloomberg	0	0.00%
 Pete Buttigieg	0	0.00%
 John Delaney	0	0.00%
 Tulsi Gabbard	0	0.00%
 Amy Klobuchar	0	0.00%
 Other	0	0.00%
 Deval Patrick	0	0.00%
 Bernie Sanders	0	0.00%

DEMOCRAT

No votes reported

REPUBLICAN

No votes reported



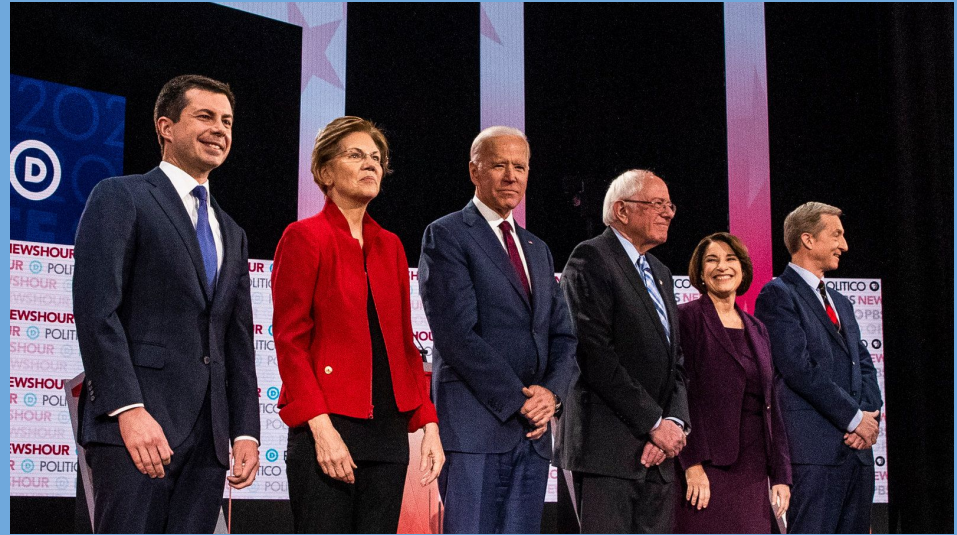
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Literature

- The Perfect State Index: If Iowa, N.H. Are Too White To Go First, Then Who?-- Khalid, A. (2016, January 30)
 - Looked at demographics of the US: Race, Education, Age, Income, and Religion
 - Finds Iowa in the middle
- We Re-Ordered The Entire Democratic Primary Calendar To Better Represent The Party's Voters--Skelley, G. (2019, March 7)
 - Looked at race demographics of the Democratic party
 - Places Iowa at the end
- Iowa: The Most Representative State?--Lewis-Beck, M., & Squire, P. (2009).
 - Divided factors into social, economic, and political.
 - Found Iowa to be reasonably representative

Research Questions

- Why just one state?
- What does “Best” mean?
 - What do we want?
 - For who?
 - Based on what?
 - When?



<https://static01.nyt.com/images/2020/01/14/us/politics/14whattowatch/14whattowatch-videoSixteenByNineJumbo1600.jpg>

Description of Data

- **Dataset:** *election-context-2018* dataset from the MIT Election Lab
 - 3114 observations
 - County-level in all states but Alaska
 - Election data from 2012-2016 and 17 demographic variables
- Electoral College Data
- State Shape Data

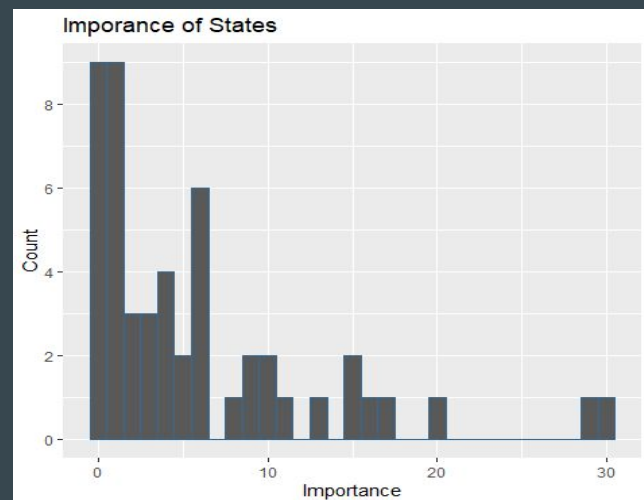
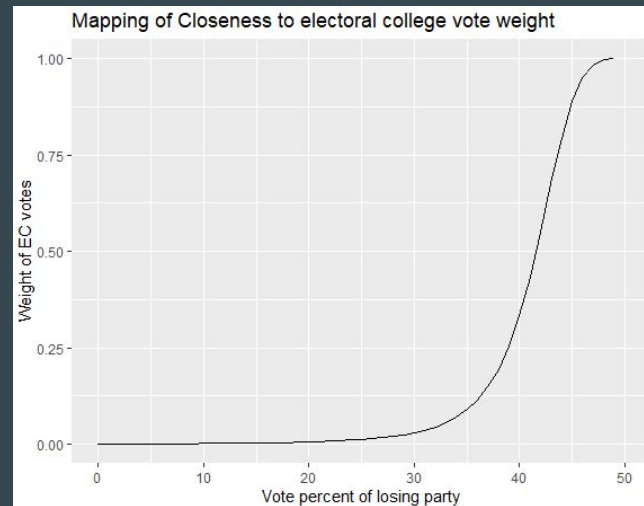
Finding the Average Swing State

Isaac Barrash

Finding the average swing state

Goal: Determine the state which has demographics closest to all swing-states.

- Aggregated county data into the state level weighted by population
- Determined swing states based on election data
- Multiplied closeness by electoral college weight for an importance score
- Aggregated state demographic data weighted by importance



The Best Primary State

Jaeyeon Won

The Best Primary State - Generic Primary

- **Data Manipulation**

- No data manipulation or adjustment

- **Methods**

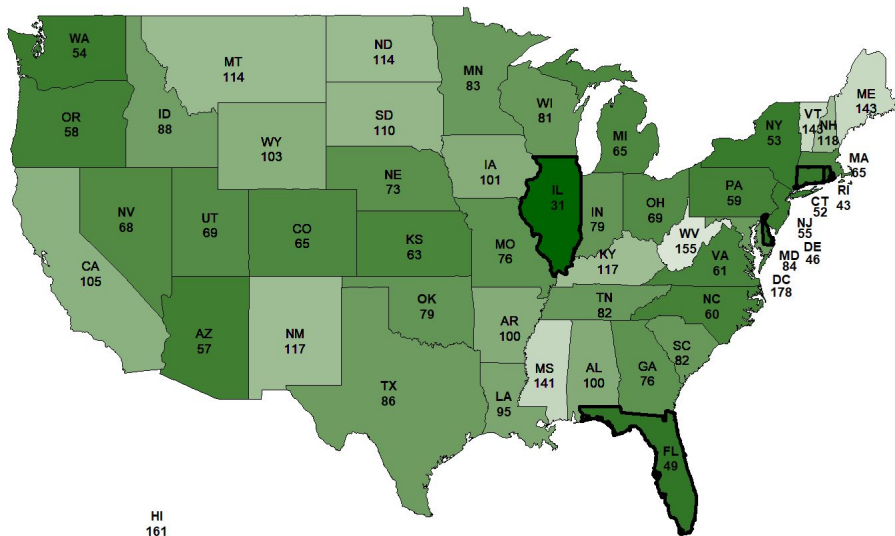
- Taking absolute difference between average state demographics and unadjusted ideal state demographics for each variable by state
- Adjustment to 2 variables
 - $average_median_hh_inc = average_median_hh_inc / 3000$
 - $foreignborn_pct = foreignborn_pct * 0.45$
- Calculating *score* for each state (sum of absolute difference of all 15 demographic variables)
- The lower the score is the better the state is

The Best Primary State - Generic Primary

- Results

State Scores based on Swing State Demographics

State Scores
60 90 120 150



Top 10 States for Generic Primary

Top	State	Score	Top	State	Score
1	Illinois	31.2	6	New York	53.2
2	Rhode Island	43.4	7	Washington	53.7
3	Delaware	45.6	8	New Jersey	55.0
4	Florida	49.1	9	Arizona	56.9
5	Connecticut	52.1	10	Oregon	58.4

The Best Primary State - Republican Party

- Data Manipulation

- Weightings

- 1. Increasing the demographics that republicans have trouble with by 1 standard deviation

- Black (*black_pct*), Hispanic (*hispanic_pct*), Female (*female_pct*), Youth (*age29andunder_pct*)

- 2. Decreasing the demographics that republicans do good with by 1 standard deviation

- Lower Education & White (*lesshs_pct*, *lesscollege_pct*, *lesshs_whites_pct*, *lesscollege_whites_pct*), Rural (*rural_pct*)

The Best Primary State - Republican Party

- **Methods**

- Taking absolute difference between average state demographics and weighted ideal state demographics for each variable by state
- Adjustment to 2 variables
 - $average_median_hh_inc = average_median_hh_inc / 3000$
 - $foreignborn_pct = foreignborn_pct * 0.45$
- Calculating *score* for each state (sum of absolute difference of all 15 demographic variables)
- The lower the score is the better the state is

- **Results**



Top 10 States for Republican Party					
Top	State	Score	Top	State	Score
1	Illinois	42.4	6	Connecticut	59.2
2	New Jersey	47.6	7	Washington	62.4
3	New York	48.9	8	Delaware	66.4
4	Virginia	56.4	9	Massachusetts	69.0
5	Colorado	59.2	10	Florida	69.4

The Best Primary State - Democratic Party

- Data Manipulation

- Weightings

- 1. Increasing the demographics that democrats have trouble with by 1 standard deviation

- Lower Education & White (*lesshs_pct*, *lesscollege_pct*, *lesshs_whites_pct*, *lesscollege_whites_pct*), Rural (*rural_pct*)

- 2. Decreasing the demographics that democrats do good with by 1 standard deviation

- Black (*black_pct*), Hispanic (*hispanic_pct*), Female (*female_pct*), Youth (*age29andunder_pct*)

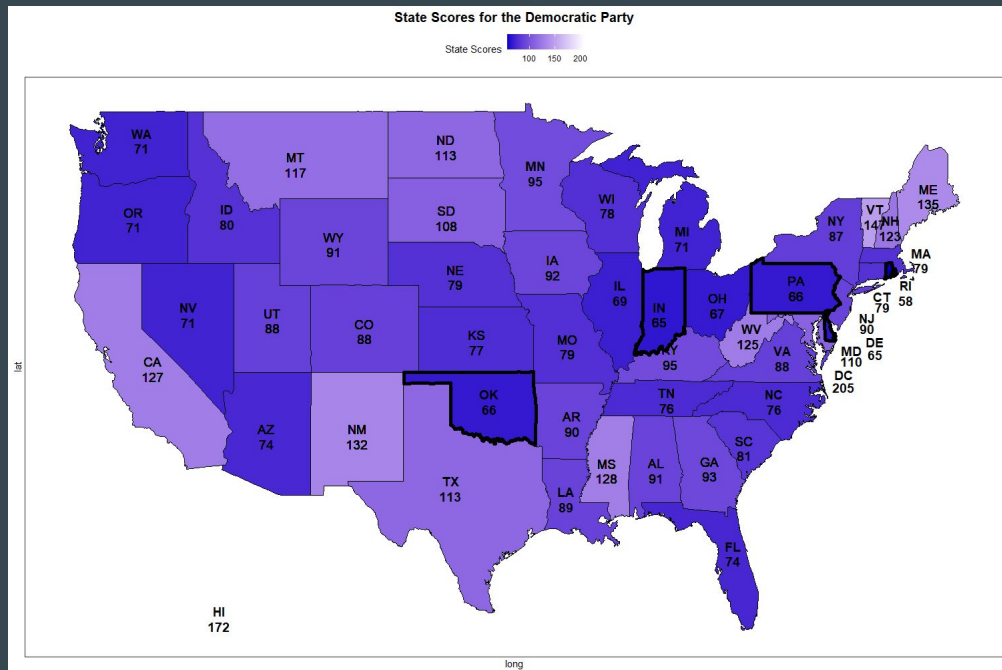
The Best Primary State - Democratic Party

- **Methods**

- Taking absolute difference between average state demographics and weighted ideal state demographics for each variable by state
- Adjustment to 2 variables
 - $average_median_hh_inc = average_median_hh_inc / 3000$
 - $foreignborn_pct = foreignborn_pct * 0.45$
- Calculating *score* for each state (sum of absolute difference of all 15 demographic variables)
- The lower the score is the better the state is

The Best Primary State - Democratic Party

- Results



Top 10 States for Democratic Party					
Top	State	Score	Top	State	Score
1	Rhode Island	57.6	6	Ohio	67.0
2	Delaware	64.8	7	Illinois	69.4
3	Indiana	64.9	8	Nevada	71.2
4	Pennsylvania	66.3	9	Oregon	71.3
5	Oklahoma	66.4	10	Washington	71.3

The Best Primary State

- **Analysis**
 - **Best Primary State** for
 - Generic Primary: Illinois
 - Republican Party: Illinois
 - Democratic Party: Rhode Island
 - **General Best States**
 - Illinois: Generic Primary (1st), Republican Party (1st), Democratic Party (7th)
 - Delaware: Generic Primary (3rd), Republican Party (8th), Democratic Party (2nd)

The Best Primary State

- **Analysis**

- States in Top 10 for Generic Primary are similar to states in Top 10 for Republican Party
 - Illinois, Delaware, Florida, Connecticut, New York, Washington, New Jersey
- Distinct best primary states for Democratic Party:
 - Indiana: Democratic Party (3rd), Generic Primary (25th), Republican Party (32nd)
 - Oklahoma: Democratic Party (5th), Generic Primary (24th), Republican Party (22nd)

The Best Primary State for the Country

Kyung Seo

The Best Primary State for the Country

- **Data Manipulation**

- Combine all 50 states

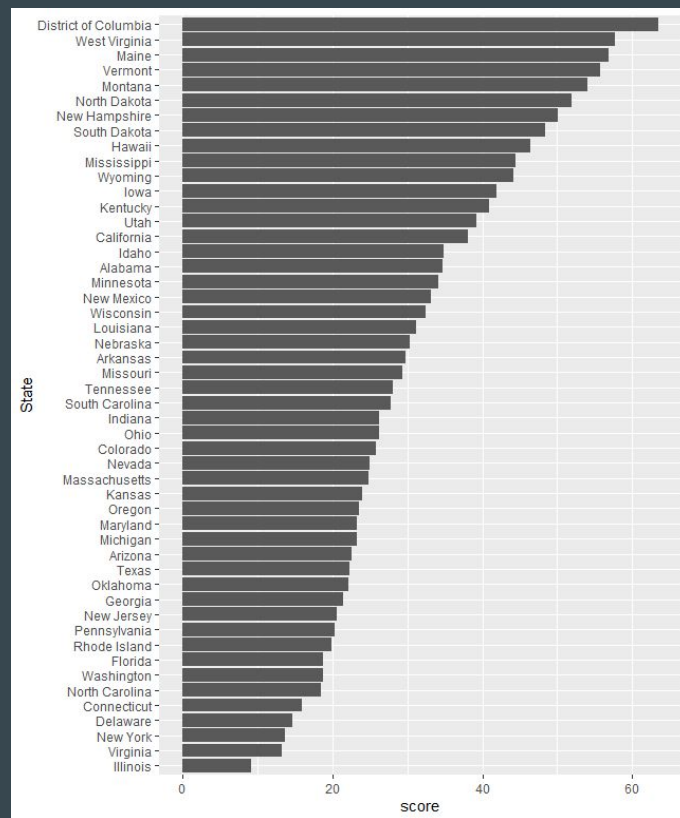
- **Methods**

- Rank the importance of demographic using logistic regression
- Calculate the weight by normalizing the rankings
- Calculate the percent difference between each state and the country using the weights

The Best Primary State for the Country

- Results

Top 10 States for the Country					
Top	State	Score	Top	State	Score
1	Illinois	9.1	6	North Carolina	18.5
2	Virginia	13.2	7	Washington	18.7
3	New York	13.7	8	Florida	18.7
4	Delaware	14.6	9	Rhode Island	19.9
5	Connecticut	15.9	10	Pennsylvania	20.3



What Makes the Best Third Party State

Hunter Blum

The Best Third Party State

- **Introduction**

- Third parties encompass a variety of political beliefs and demographics
- Focus on gaining attention instead of electoral votes
- Create models that predict the percent of third party votes based on past elections
- Compare the models to the actual results and combine it with real world context

The Best Third Party State

- **Methods**
 - Combined all county data together group by state
 - Used the MASS package to compute models
 - Plugged values for each state back into the models and created a map
 - Created maps of the 2012 and 2016 elections
 - Compared the maps to our model maps to determine reliability of the models
 - Use real world context to answer the question

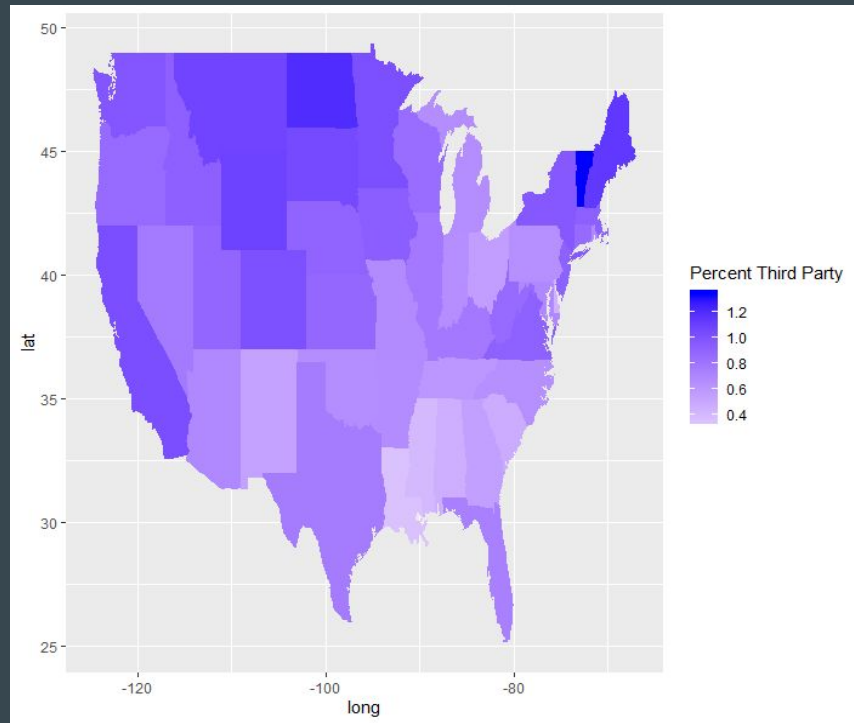
The Best Third Party State - 2012 Results

- Results

Coefficients	Estimate	Standard Error	t-value	p-value
Intercept	9.56	4.43	2.16	.037
Percent White	.012	.005	2.38	.022
Percent Foreign Born	.035	.017	2.09	.043
Percent Whites Less than College	-.017	.007	-2.32	.025
Percent Rural	.011	.007	1.68	.100
Percent Female	-.179	.083	-2.15	.037

The Best Third Party State - 2012 Results

- Predictions ranged from 0.34% to 1.35%
- Vermont, North Dakota, and Maine made up the top predicted states
- Louisiana, Mississippi, and Delaware were at the bottom of our predictions

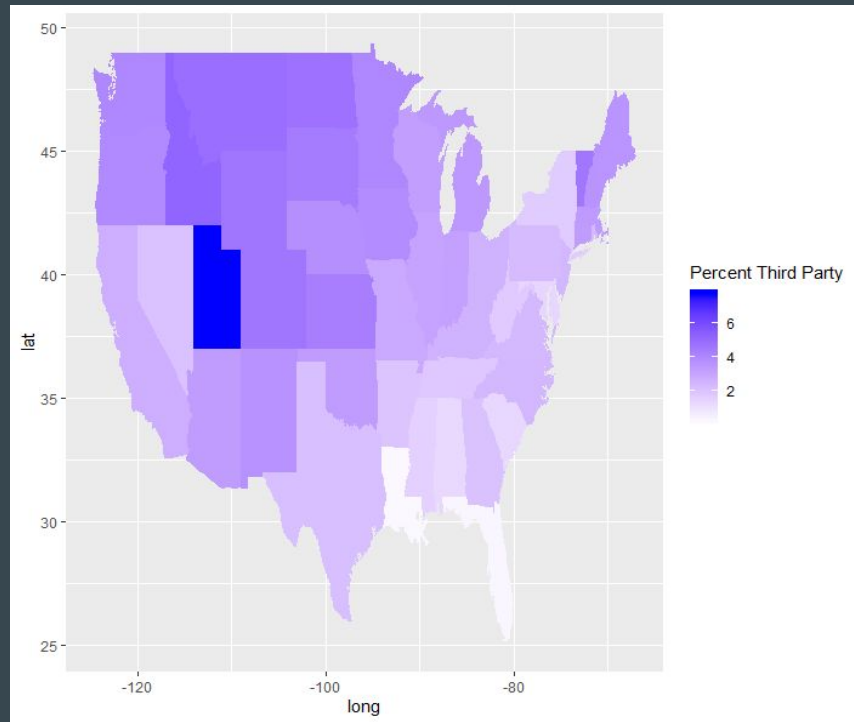


The Best Third Party State - 2016 Results

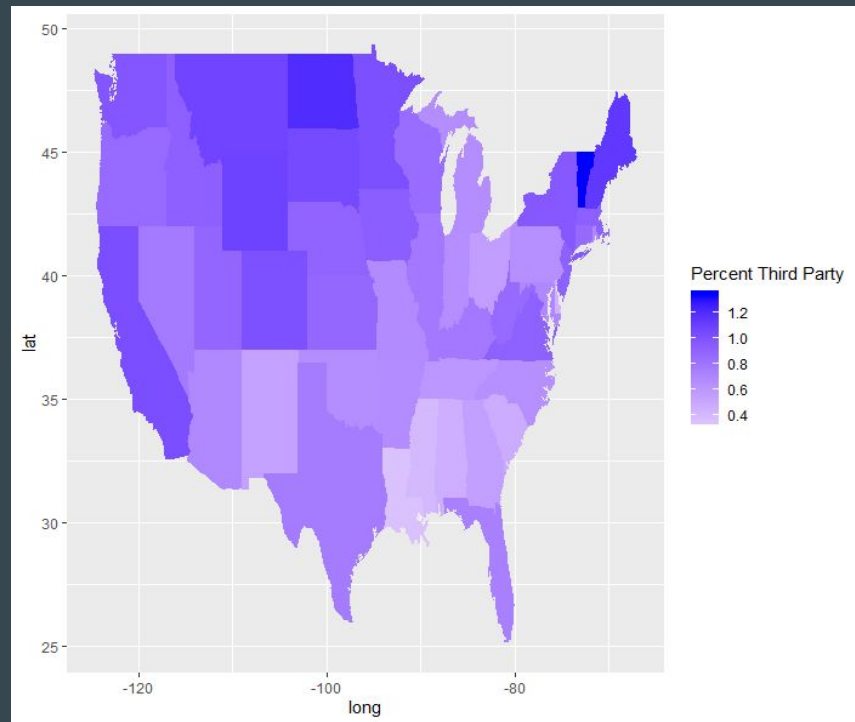
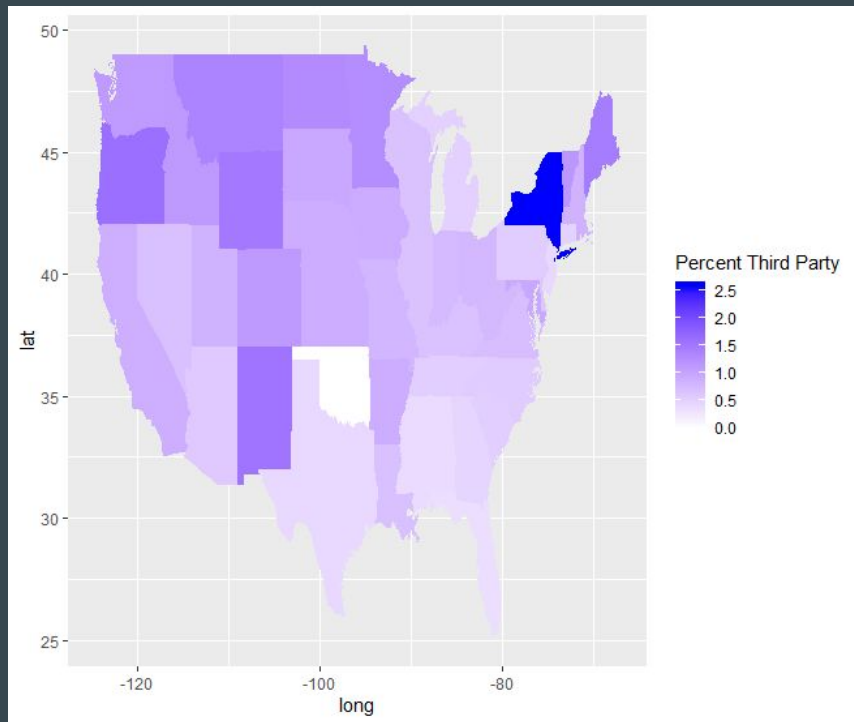
Coefficients	Estimate	Standard Error	t-value	p-value
Intercept	-8.91	3.27	-2.73	.009
Percent African American	-.098	.017	-5.647	1.91×10^{-6}
Percent Under 29 and Unemployed	.454	.069	6.53	6.19×10^{-8}
Percent of Civilian Labor Force Unemployed	.534	.168	3.17	2.77×10^{-3}
Percent Less than High School	-.293	.082	-3.59	8.33×10^{-4}
Percent Less than College	.093	.0342	-2.728	9.20×10^{-3}
Percent Rural	.048	.014	3.54	9.83×10^{-4}

The Best Third Party State - 2016 Results

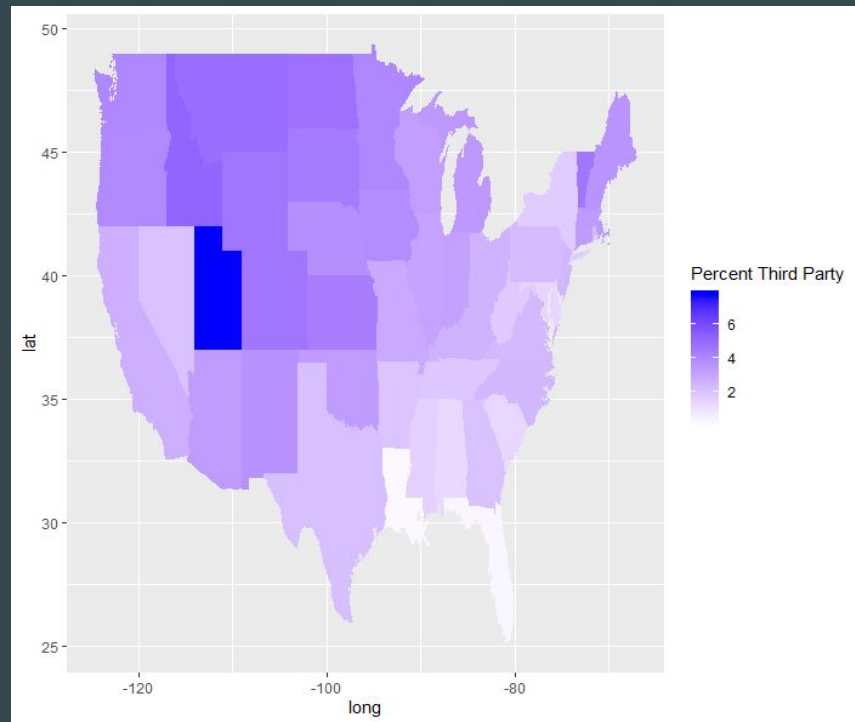
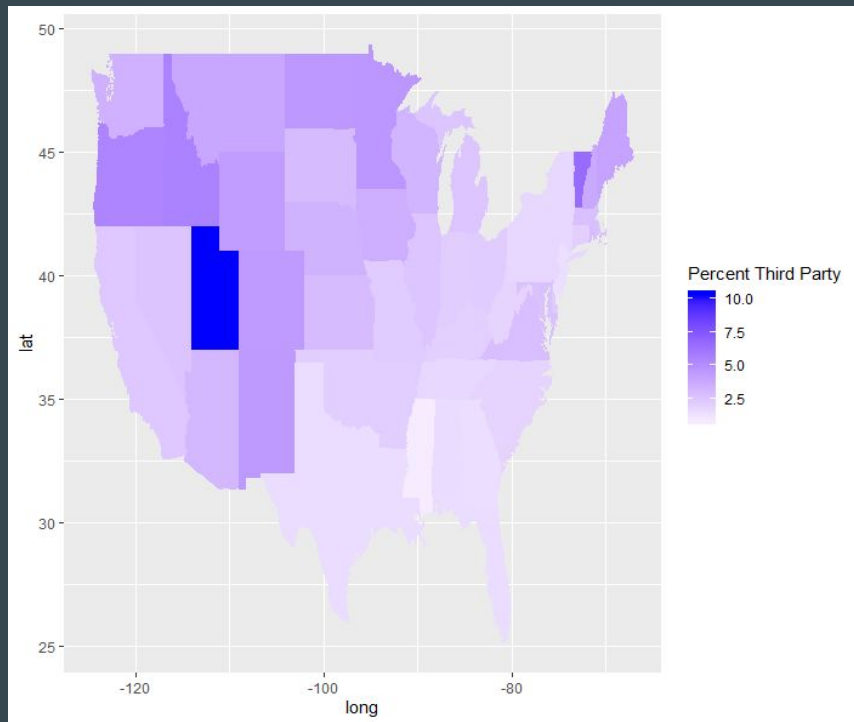
- Predictions ranged from 0.22% to 7.81%
- Utah, Idaho, and Montana were the top three predicted states
- Louisiana, Florida, and Alabama had the smallest predictions



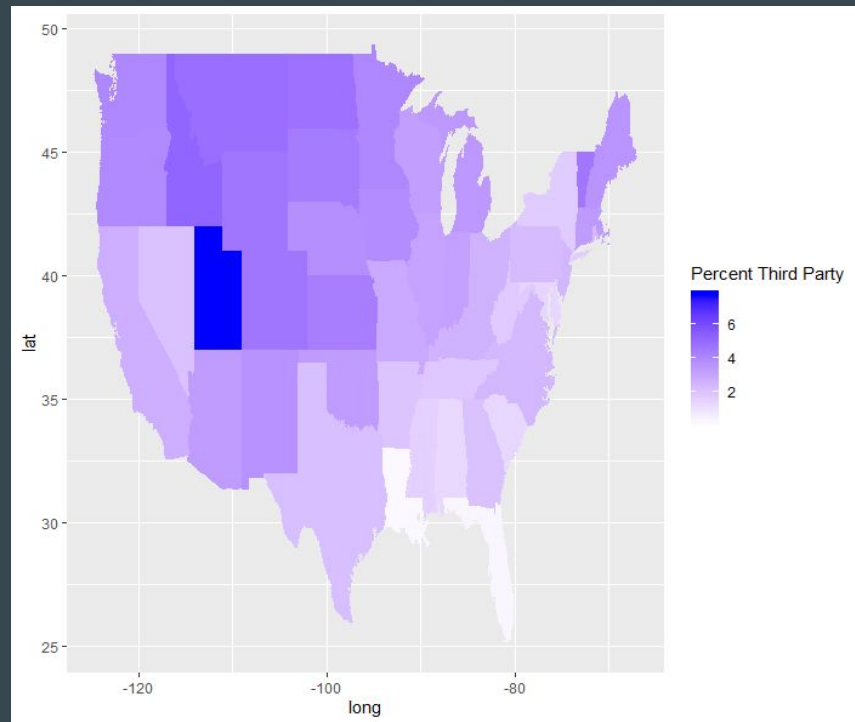
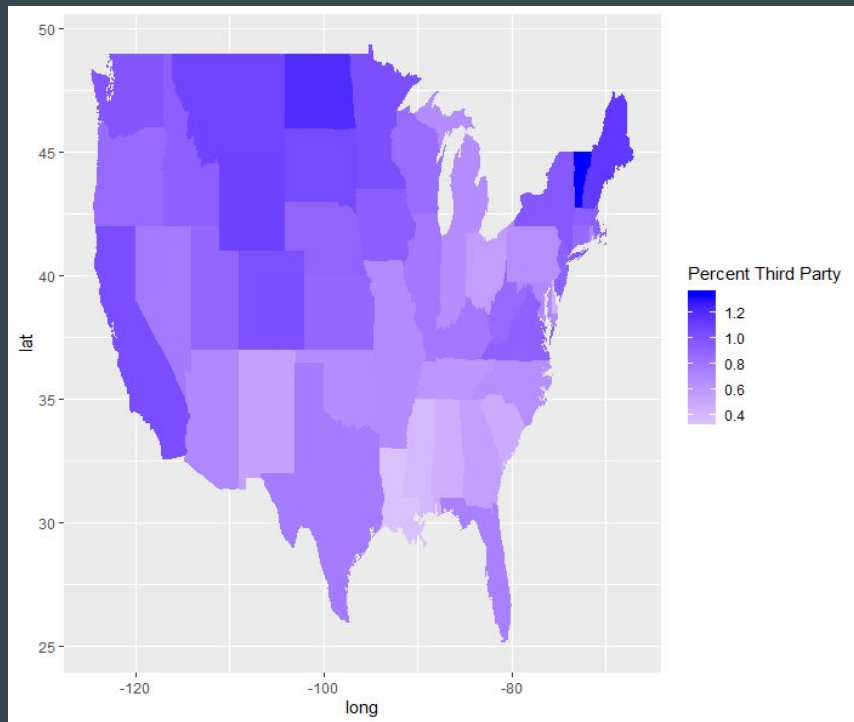
The Best Third Party State - Real World Comparison



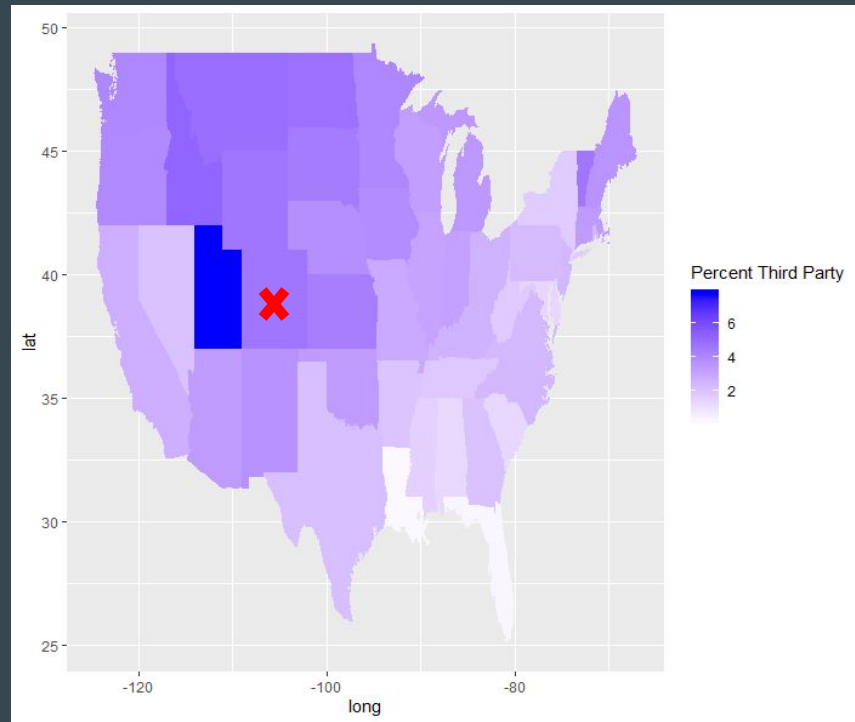
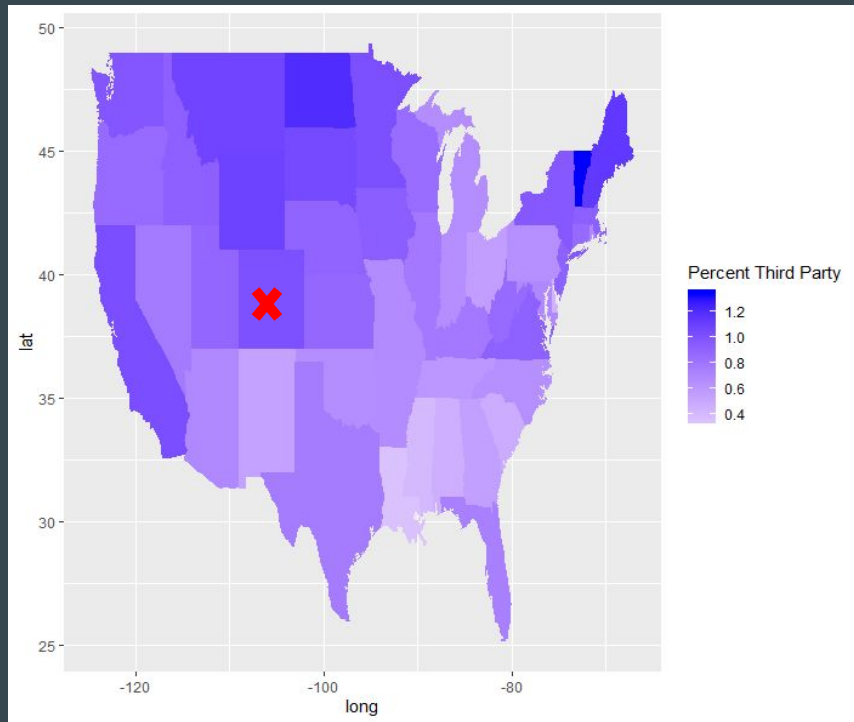
The Best Third Party State - Real World Comparison



The Best Third Party State - Conclusions

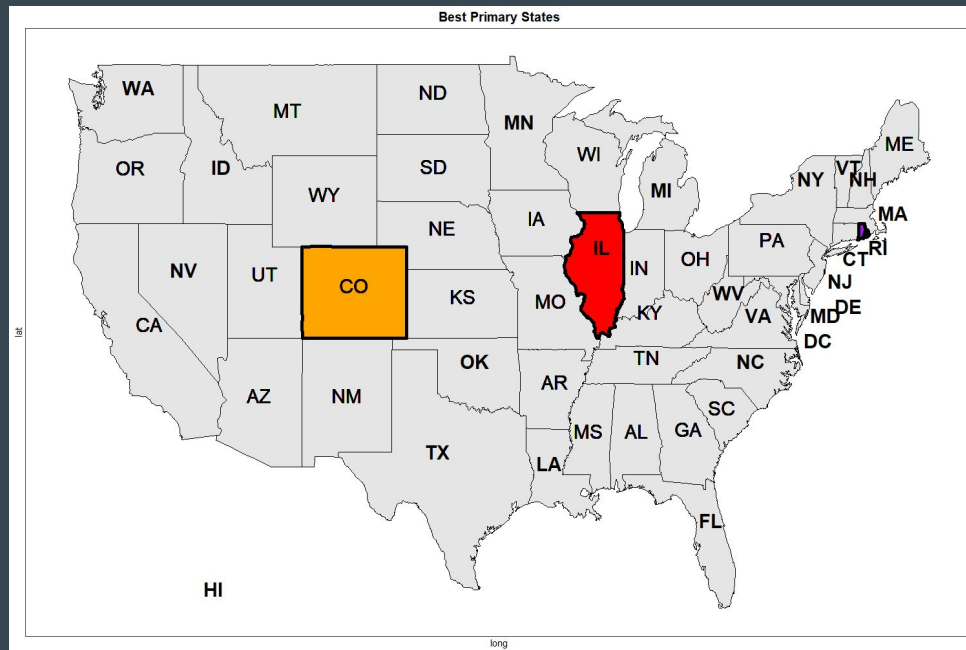


The Best Third Party State - Conclusions



Conclusion

- **Best Primary State for**
 - **Generic Primary:** Illinois
 - **Republican Party:** Illinois
 - **Democratic Party:** Rhode Island
 - **The Country as a Whole:** Illinois
 - **Third Party:** Colorado



Future Works

- **Future Works**

- Integrating 2020 Census to include more updated and various demographic variables
- Integrating election data previous to 2012 to incorporate trends into our closeness score
- Integrating 2020 election data to give different weights based on how likely the demographics are to vote