

Did Trump Affect Candidates in 2018?

By Chris Shaw

Data Science Question

Using the Partisan Voting Index, Congressional District 'Elasticity',
Gender and agreement with Trump's legislative agenda:

Can we predict the margin of victory for
candidates in the 2018 election?

A decorative background graphic at the bottom of the slide. It features a series of vertical bars of varying heights, resembling a bar chart, in a light blue color. Overlaid on these bars is a white line graph with circular markers at each data point. The line graph shows a fluctuating trend, starting low on the left, rising to a peak, falling, rising again to a higher peak, and then fluctuating towards the right.

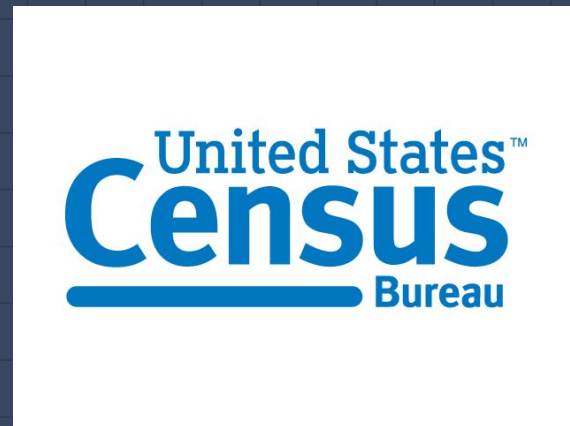
Data Collection



 **FiveThirtyEight**

- **Trump Agreement Score**
(Based on bills voted for or against in the 115th Congress)
- **'Elasticity' Score**
("how sensitive it is to changes in the national political environment")
- **'Partisan Voting Index'**
(From Cook Political Report - "measures how much more Democratic or Republican a district voted relative to the national result")

Data Collection

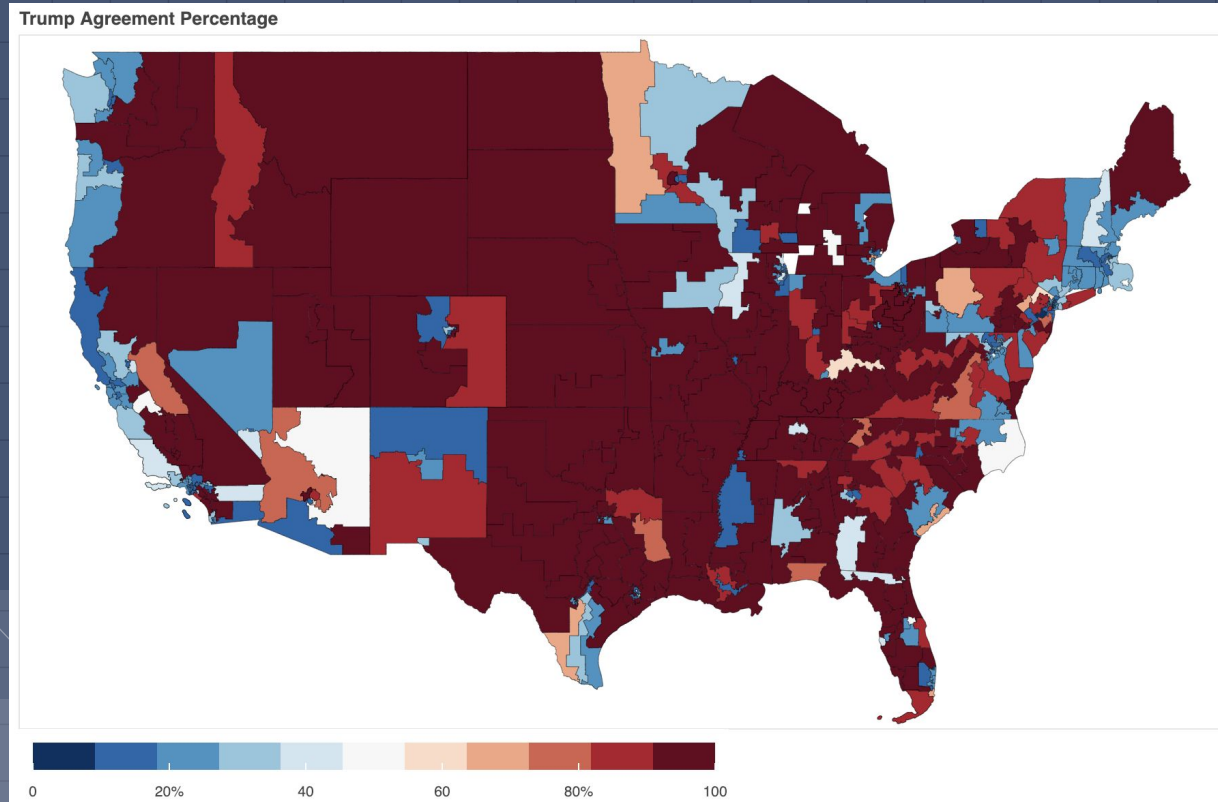


- **2018 Election Results**
(Via Ycombinator post)
- **116th Congressional District Shapefiles**

Exploratory Data Analysis

- **No Null Values in any of the 538 Datasets**
- **12 Districts have had two representatives in the 115th Congress**
- **Missing 23 districts in 2018 data**
(Iowa, Indiana, Kansas, Kentucky)
- **Non-standard naming of districts across datasets**

Visualization



Modeling

Linear Regression

```
Train Score: 0.8554755313038775  
Test Score: 0.8438936206372467
```

Random Forest Regressor

```
Train Score: 0.868676248564896  
Test Score: 0.8538728567693152
```

Sklearn modules, Standard Scaler and Train/Test split

A decorative background graphic at the bottom of the slide. It features a white line graph with circular markers at various points, showing an overall upward trend. Below the line graph is a bar chart with numerous vertical bars of varying heights, rendered in a light blue-grey color. The entire graphic is set against a dark blue background with a subtle grid pattern.

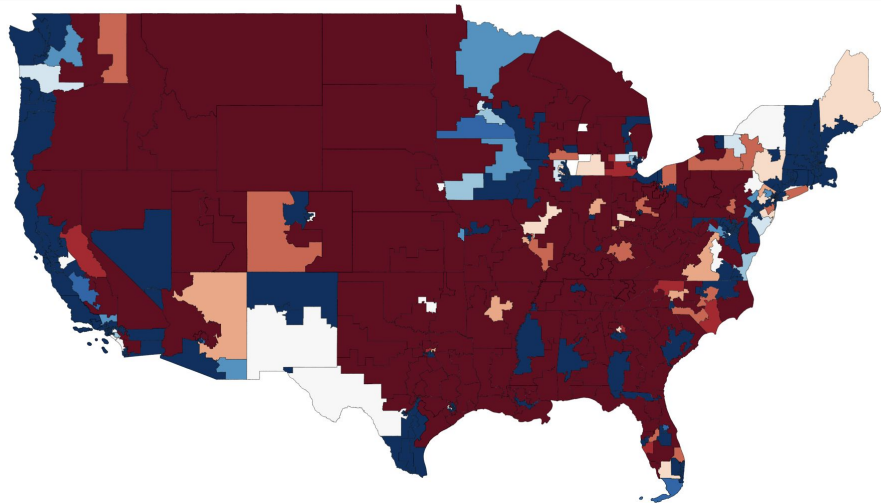
Analysis

- By far the most important feature was partisan voting index
- The mean and median predicted margin of victory for any increase or decrease of trump agreeableness were virtually identical

```
[('115agree_pct', 0.19199785408743264),  
 ('elasticity', 0.009199391883898525),  
 ('pvi_538', 0.7958235517835901),  
 ('116gender', 0.0029792022450786)]
```

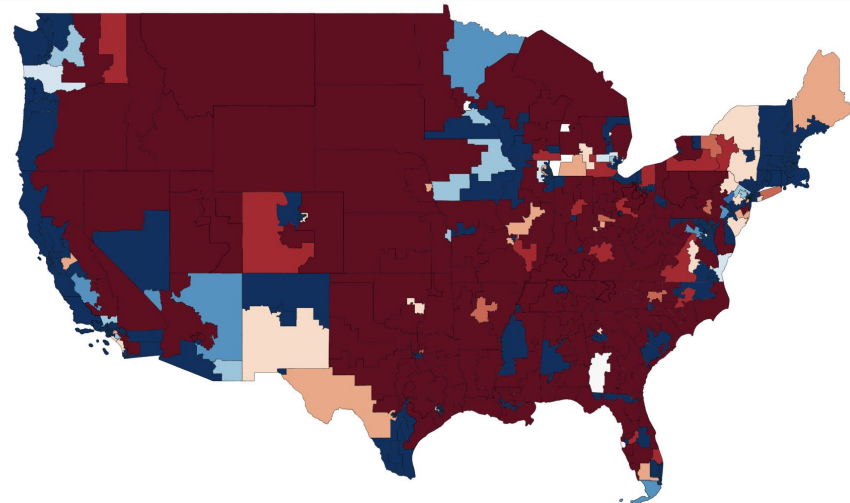

-10% Agreement

2018 Vote Margin -10% Agreement



+10% Agreement

2018 Vote Margin +10% Agreement



Works Cited

<https://fivethirtyeight.com/features/election-update-the-house-districts-that-swing-the-most-and-least-with-the-national-mood/>

<https://fivethirtyeight.com/features/we-drew-2568-congressional-districts-by-hand-heres-how/>

<https://news.ycombinator.com/item?id=18504909>

<https://koordinates.com/layer/96077-us-116th-congressional-districts/>

Questions?

