

Impact of Ad Spending on U.S. Presidential Election Outcomes

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Background

Political campaign spending has been increasing over time, making it increasingly important for political candidates to allocate funds effectively. Advertising spending does not inherently indicate who will win any election. For instance, although Hillary Clinton spent \$1,184.1M for the 2016 presidential election, she did not win more electoral votes than Donald Trump although he only spent \$616.5M (Bloomberg, 2016). In our analysis, we explored the following:

- How does ad spend impact voter turnout?
- How does ad spend vary in effectiveness based on location?

Data

FEC data was filtered for presidential campaigns and marketing expenses only. This data was merged with Historic Election Results and data from the Swing State Analysis paper. For the analysis only elections from 2004 - 2020 were included.



Entity Diagram

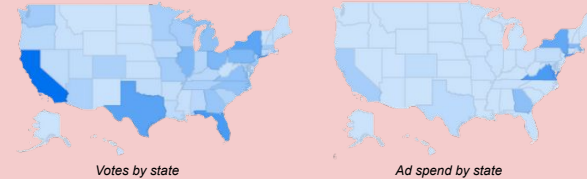
Model

To keep things simple and determine the influence of different variables on number of votes, we used a linear regression model. States and spend were the best determining factors for the number of votes. However, this model has the possibility of overfitting the data as we only included 4 election cycles.

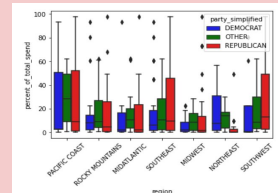
Highlights

- Presidential candidates do not allocate greater proportions of their spending to swing states, leaving an opportunity to experiment with increasing marketing spend in those locations to impact results.
- Collectively candidates of other parties spend just as much as Democratic and Republican candidates and may be able to impact election results more if they become one cohesive party.
- While party does have some impact on the effectiveness of spend to impact election results, the state that the spending is occurring in has the highest impact in our data set.

Findings

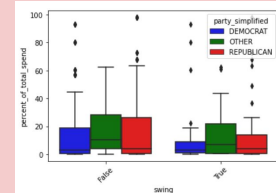


States with the larger populations (California, Florida, and Texas) garner the most votes due to population size, while smaller states (D.C., Virginia, and New York) garner the largest ad spend.



Party, Region and Spend Breakdown

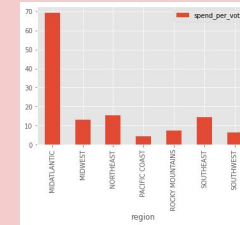
Democratic candidates allocate more spending to Pacific Coast and Northeast, while Republicans spend more in Pacific Coast, Southwest, and Southeast.



Swing State, Party and Spend Breakdown

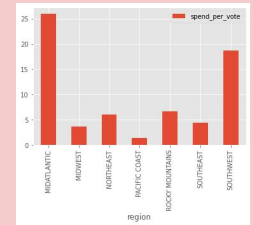
Democratic, Republican, and other presidential candidates do not allocate greater proportions of their spending to swing states.

Democrats



Spend per Vote by Region for Democrats

Republicans



Spend per Vote by Region for Republicans

Median spend per vote in Mid-Atlantic is high for both parties. Median spend per vote is also high for Republicans in Southwest.

| Spend/Vote Correlation | | |
|------------------------|-----------|-------------|
| | Democrats | Republicans |
| MIDATLANTIC | -0.06 | -0.06 |
| MIDWEST | 0.13 | 0.14 |
| NORTHEAST | 0.41 | 0.43 |
| PACIFIC COAST | 0.58 | 0.57 |
| ROCKY MOUNTAINS | 0.72 | 0.04 |
| SOUTHEAST | 0.17 | 0.02 |
| SOUTHWEST | 0.81 | 0.44 |

Due to a negative correlation, Democratic candidates should shift their marketing spend away from the Mid-Atlantic to the Rocky Mountains. Republican candidates should spend more in the Pacific Coast, Northeast, and Southwest to lean into the high correlation with spend and votes in those regions.