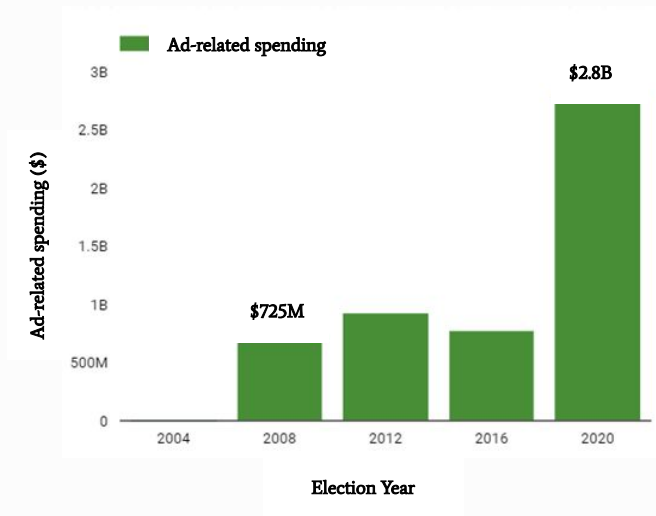# Impact of Ad Spending on U.S Presidential Election Outcomes

DS4A Team 53

Background

Advertising spending for presidential candidates has reached unprecedented amounts, totaling at least $2.5B on TV ads so far (PBS, Oct. 2020).

However, total ad spending does not inherently dictate who wins an election (e.g., Hillary Clinton 2016 election).

How did we evaluate effective ad spending?

- Impact on voting outcomes

- Effectiveness based on location

What Data Did We Use?

Data Sources (2004-2020)
- Federal Election Commission (FEC)
- MIT Election Lab Election Outcomes
- Swing State Analysis by Jon Clayton

Data Querying
- FEC "Category" : Presidential Ad Spending
- FEC "Purpose" : Advertising, Media, and Digital

Data Cleansing
- Feature engineering
  - Won: T/F
  - Region
  - Spend per vote
  - %vote per year, state, party
  - %spend per year, state, party
  - %spend by year, party compared to all states

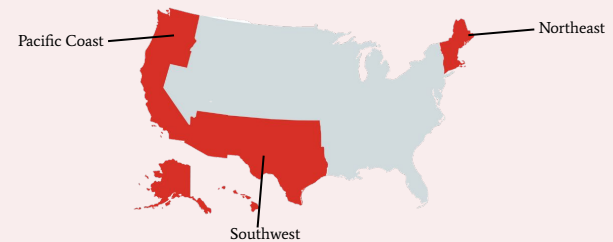# Spend Advice for Major Political Party Candidate

Democrats

- **Reevaluate spend in Mid-Atlantic and consider spending in other more effective regions**
  - Median spend per vote is very high.
  - Negative correlation between spend and vote.
  - Democrats had most wins in this region. Party might already have strong hold in the region.

- **Consider increasing spend in Southwest and Rocky Mountain**
  - High correlation means higher spend equals more votes.
  - However, historically Democrats had fewer wins in Southwest.
  - Higher chances of winning in Rocky Mountain if they spend more.

Rocky Mountain
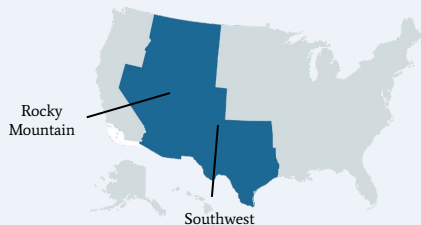
Southwest

Republicans

- **Consider spending more in Pacific Coast, Northeast, and Southwest**
  - High correlation between spend and votes.
  - High ad spend can increase number of votes.
  - Historically, Republicans had most wins in Southwest, so it is a safe region to remain consistent with current level of ad spend.

Pacific Coast

Northeast

Southwest

Spend Advice for Other Political Party Candidate

- **Consider merging to form a competitive third major party**
  - Spend share by party has been mostly consistent since 2008, with other parties collectively spending as much as the major parties.
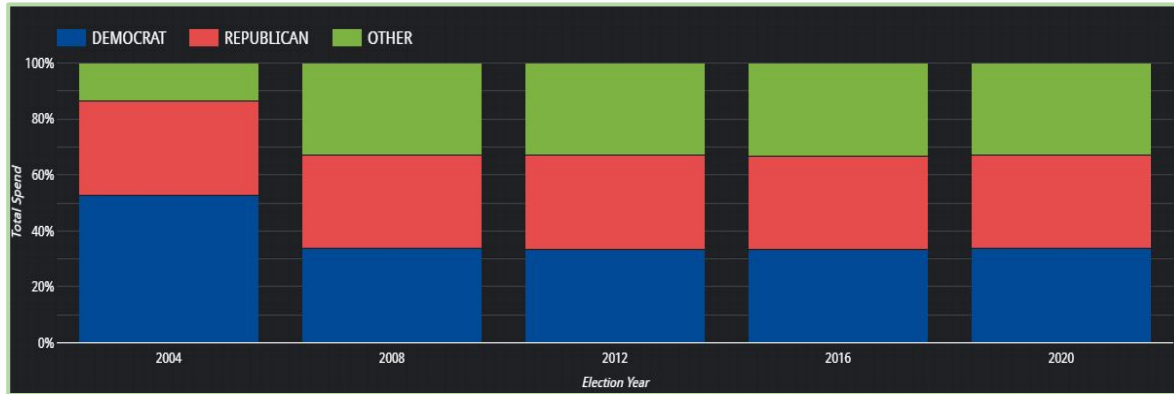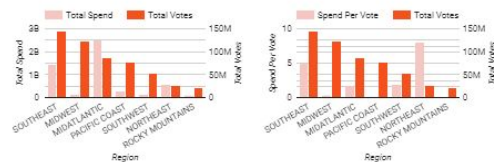

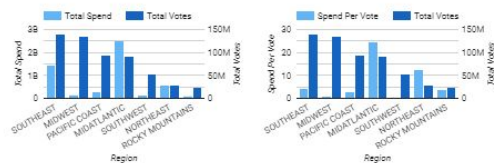*Spend share by parties over years*

Dashboard Demonstration
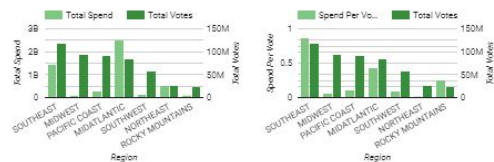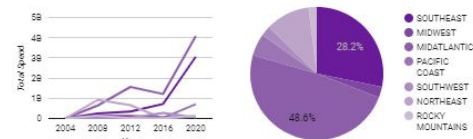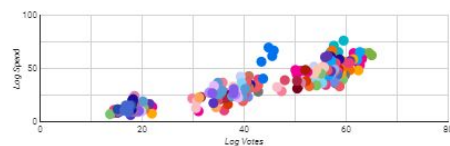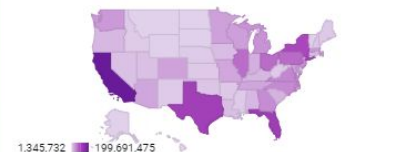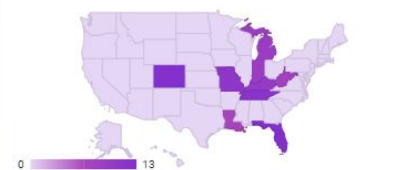
Next Steps

- Analyzing

  - Quality of different fundraising channels

  - Effectiveness of different marketing channels

  - Local/state election impact

  - Electoral votes as outcomes

- Deploying model into web application to

  - Predict election outcomes based on party and expected budget

  - Optimize budget allocation across states

Questions?