W200 - Project 2 - Fall 2020
Trends in Voter Behavior 2012-2020
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Summary:
In the wake of the 2020 Presidential Election, the Trump campaign has released numerous allegations of election fraud. Many of these allegations focus on statistical irregularities in voter behavior. On 11/4/2020[i] and 11/5/2020[ii], Eric Trump retweeted messages alleging election fraud based on statistical irregularities in voter behavior. The website https://everylegalvote.com/, a website established by Trump Supporters to investigate election fraud, states in its primer: "There are numerous counties in the 2020 election with over 100% voters supposedly voting and some states have astronomically high turnout percentages, such as Wisconsin.".

The goal of our project is gather the data on votes cast in the 2020 election and present basic statistical information about this data in relation to data on votes cast in the 2016 and 2012 presidential elections. Our analysis will focus on the swing states of OH, FL, GA, MI, AZ, PA, WI, and NC. We will answer questions like:

-- How did voter turnout change in each of these states from 2012 to 2016 to 2020?
-- Which counties saw the greatest changes in voter turnout?
-- Which counties saw the greatest change in party preference? (IE. votes cast for the democratic candidate vs votes cast for the republican candidate)
-- is there any correlation between change in voter turnout and change in party preference?

Primary Datasets:
County Presidential Election Returns (2012, 2016, 2020)[iii]*
- 'year' - election year
- 'State' - state
- 'county' - county
- 'dem' - votes cast for democratic presidential candidate
- 'Rep' - votes cast for republicna presidential candidate
- 'total' - number of votes cast in the county

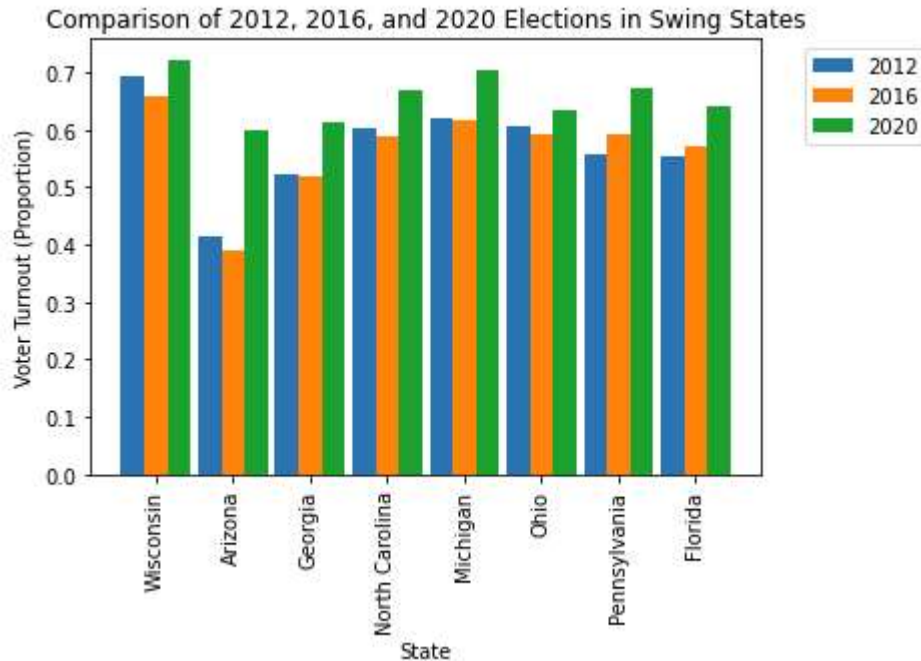US Census Data on Voting Age Population by County (2012, 2016, 2019)[iv]***
- 'year' - year
- 'county' - county
- 'AGE18PLUS_TOT' - population over the age of 18 for the county and the year

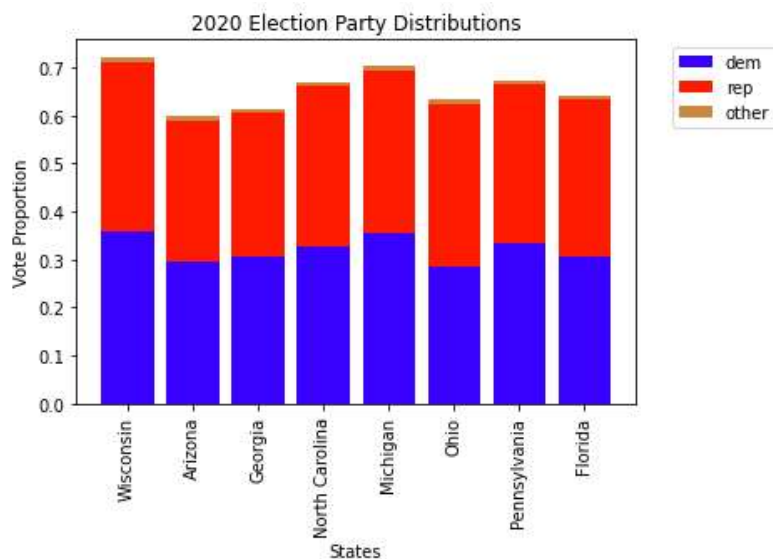US Census Demographic[v] (2012, 2016, 2018_5yr projection)
- Gender: Male_pop, female_pop
- Age: median_age
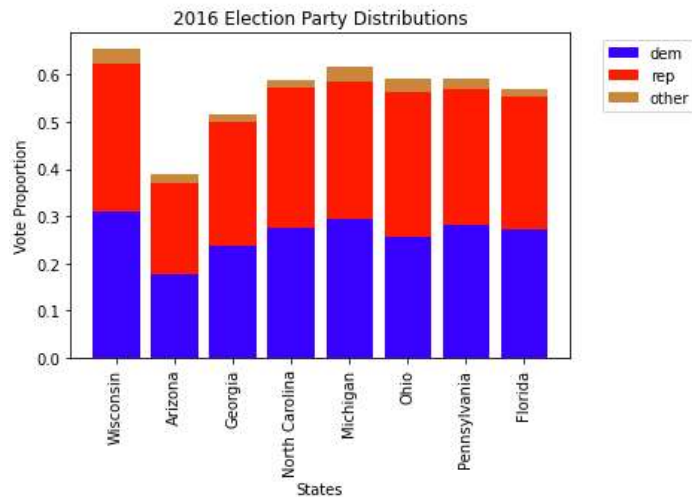- Ethnicity: white_pop, black_pop, asian_pop, hispanic_pop

Approach:
We will compare voter turnout in the 2012, 2016, and 2020 election by state and then by county. We will look at the change in voter turnout in both percent and absolute terms. A preliminary bar chart of voter turnout for each state in the 3 elections is shown below. A similar analysis will be performed at the county level.

After this we will compare party preference (IE. votes cast for the Democratic candidate vs votes cast for the Republican candidate) in percent and absolute terms in the 3 elections at both the state and county level.

2016 Election Party Distributions

Finally, we will examine if any trends exist between change in voter turnout and change in party preference at the country level.

Time permitting, we will also examine how changing demographics (race, age, gender, etc.) plays a role in voter turnout and party preference.

Notes
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Data independently verified by comparison with the following sources
2000 - 2016:
https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/VOQCHQ
2020:
https://elections.wi.gov/node/7234
https://results.arizona.vote/#/featured/18/0
https://floridaelectionwatch.gov/CountyReportingStatus
https://results.enr.clarityelections.com/GA/105369/web.264614/#/summary
https://mielections.us/election/results/2020GEN_CENR.html
https://www.ncsbe.gov/results-data/election-results
https://liveresults.ohiosos.gov/
https://www.electionreturns.pa.gov/

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Data from the 2020 US census is not currently available. The 2019 projections developed in the 2010 Census are currently the best available approximation of 2020 voting age population.

[i] https://twitter.com/EricTrump/status/1324085320296574979?s=20

[ii] https://twitter.com/EricTrump/status/1324447793918971904?s=20

[iii] https://github.com/evangambit/JsonOfCounties/blob/master/counties.json

[iv] https://www.census.gov/data/datasets/time-series/demo/popest/2010s-counties-detail.html

[v] https://console.cloud.google.com/marketplace/product/united-states-census-bureau/us-census-data?filter=solution-type:dataset&q=census&id=2c089839-2b4a-477a-962b-4a8b730d0a12