Too Close to Call
Assessing 2020 Potential to Gain Democrat Votes in Maricopa County, Arizona

Methodology

This project utilizes raster tools to identify precincts where the Democratic Party has potential to gain votes in the 2020 election. The analysis was conducted using four metrics from the 2016 general election: the percent victory margin of either the Republican or Democratic Party, the percent voter turnout rate, the percent undervote rates, and the number of ballots, all per precinct. These layers were converted into raster data with values ranging from 0 to 4 in which lower numbers indicate lower likelihood to gain Democrat votes. The final assessment was determined through a weighted overlay analysis using the factors shown in Table 1.

Background

In 2016, Donald Trump won the state’s eleven electoral votes with only a 3.9 percentage point difference. This margin was even smaller in Maricopa county, the state’s most populous county, where Trump won by only 2.9 percentage points, approximately 41,000 votes. Targeting campaign efforts in Maricopa county will be a key strategy to secure a Democrat victory in the 2020 election. This project uses 2016 election data to identify precincts where there were: (1) close victory margins between Democrats and Republicans, (2) low voter turnout rates, (3) high undervote rates, and (4) high ballot counts. These factors highlight “battleground” areas where Democrats have potential to gain votes in 2020.

Results

The final analysis ranks voting precincts in Maricopa County with their potential to gain Democrat votes in the upcoming 2020 election. The results of the weighted overlay range in values from 1-4. This value classifies the corresponding precinct to either unlikely, low, medium, or high potential to gain Democrat votes in 2020, with 1 denoting the lowest class. The ranking gradient essentially highlights where there may be populations of “undecided” voters. Precincts with higher victory margins for either the Democratic or Republican parties are not denoted as high potential areas to gain votes. This is because voters in such precincts are unlikely to change their voting trends to drastically swing election results. Rather, high potential areas may contain people whose vote might be influenced by campaigning. With the election season in sight, the Democratic Party should focus campaigning efforts in these high potential areas to attempt to gain the necessary votes to win Maricopa County and Arizona.

Limitations

This analysis uses a simplified model with limited parameters to predict areas with potential for Democrat votes in 2020. It also assumes that the 2020 election field is dependent upon spatial trends in 2016. The model could be expanded upon by including other variables, such as the percent of registered voters, previous election year data, and overall candidate polling statistics. The model also focuses solely on spatial trends and does not account for the variance in voting trends between different demographic groups. This analysis could be strengthened by including factors of age, gender, geographic location, socio-economic status, and their respective influence on election trends.

Sources


Yarmina Kamal
CES187 Geographic Information Systems December 15, 2019
Projection: NAD 1983 UTM Zone 12N Data Sources: Maricopa County Recorder’s Office, AZ Secretary of State

Tufts University School of Engineering