The Association between Age and Party Votes in US Elections

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Abstract

As American elections gain controversy and more people begin questioning how these outcomes formulate, there is a need for further analysis into how a major factor affects them: age. Many past studies analysed how nationwide age averages can play a role in changing outcomes. However, they do not look deeper into the state level at how these ages affect the elections. The purpose of this study is to analyse and fill in the present knowledge gap in how age affects party vote percentages at a more local state level. This study's data was retrieved from datasets from the Harvard Dataverse and the US Census Bureau. This data was then sorted and put into a Spearman correlation analysis that resulted in an insignificant relationship with a p-value of 0.6 for both the Republican and Democratic parties. Despite the results not matching many studies, this was also expected by others due to multiple other socioeconomic factors that play their respective roles throughout America's complex political environment. Therefore, additional analyses can be of great interest to determine how these other socioeconomic factors, such as race and gender, can shift these elections to their outcomes.

Introduction

The United States of America has been through presidential elections since its founding in 1776. In the past twenty years, numerous studies have analysed the population's voting patterns, especially the relationship between a voter's age and their preferred party. Through this information, one could gain a greater understanding of America's modern-day political landscape.

Definition

Fisher (2014) defines the age gap between Republican and Democrat voters as a result of "people (developing) values and (assigning) priorities to their values based in large part on their socioeconomic conditions during their formative years" (p. 141). Campbell (2002) relates the age gap as more specifically caused through religion by stating "there is a sharp partisan divide defined by religious commitment among youth" (p. 1). The study further elaborated that the "electoral cleavage" regarding the divide between old and young based on religious affiliation "is reflected more among the young than the old" (Campbell, 2002 p. 220). Both of these definitions fit the general theme of age gaps being caused by "changes in societal experiences" as stated by

Fisher (2014). However, Campbell (2002) creates a level of contrast through its specific mentioning of religion. Despite the specificity used by Campbell (2002), there is an absence of a focus on the overall reason for the age gap that (Fisher, 2014) was able to cover.

State of Knowledge

The voting age gap has been explored by numerous studies in the past two decades. Many of these studies analysed how the older generations differentiated from the younger voting generations (Binstock, 2006; Binstock, 2009; Erikson & Stoker, 2011) while some other studies focused on how the age gap was formed between all generations (Fisher, 2008; RePass, 2020) and younger generations (Campbell, 2002). Binstock (2009) and Binstock (2011) all spotlighted the reasons why the age gap was being driven more as a result of greater Republican and less Democrat focuses on appealing to older generations, however, one study also analysed how the older generations voted differently as a result of social experiences (Erikson & Stoker, 2011). Campbell (2002)'s study on the younger generation focused more on how religion affected the younger age gap; this decision may make its results more relevant for Republicans due to its higher religious voter base, thus creating a lack of information as to how Democrats contributed to the age gap. There were also different methods of data collecting between certain studies, Fisher (2014) used exit polls from presidential elections to analyse the voting patterns while Campbell (2002) utilised surveys sent out to high school seniors to focus on younger voting patterns. Fisher (2014) measured those who have already voted while in contrast, there is no guarantee that all the participants in Campbell (2002) turned out to vote. Since the number of voters that turn out in elections is lower than the number of eligible voters, the variances in these two studies' methodologies can affect the comparisons between the results.

Knowledge Gap and Research Question

Many of the studies in the past two decades only observed the effects of average voting ages in the United States population at a nationwide level. Currently, there is a lack of information in studies that analyse these ages at a state level. This study retrieves data to fill this knowledge gap by further researching: How does age affect party voter percentages in US Elections at a state level?

Methodology

For this study, visualizations were made on a spreadsheet given information from two datasets. The first is a 2020 dataset originated from the Harvard Dataverse. It lists the percentage of votes received by the Democrats and Republicans in each of the fifty states plus the District of Columbia from the 1972 US Federal Election to the 2016 US Federal Election (Enns & Lagodny, 2020). The Harvard dataset was correlated with information from the United States Census Bureau which is a 2019 dataset that lists historical demographics for age, sex, and race in each of the fifty states and the District of Columbia from 2010 to 2019 (US Census Bureau, 2019). For simplicity, this study focuses on the two recent US elections in 2012 and 2016.

The sample for this study includes people aged 18 and over from each of the 50 states plus the District of Columbia and the number of votes received for each party by percentage. There are two quantitative variables: the number of people by each age (18 and older) in 2012 and 2016 and the percentage of votes received by the Republicans and the Democrats in the 2012 and 2016 elections, both these variables will be found by state. Figure 1 details these variables.

Figure 1

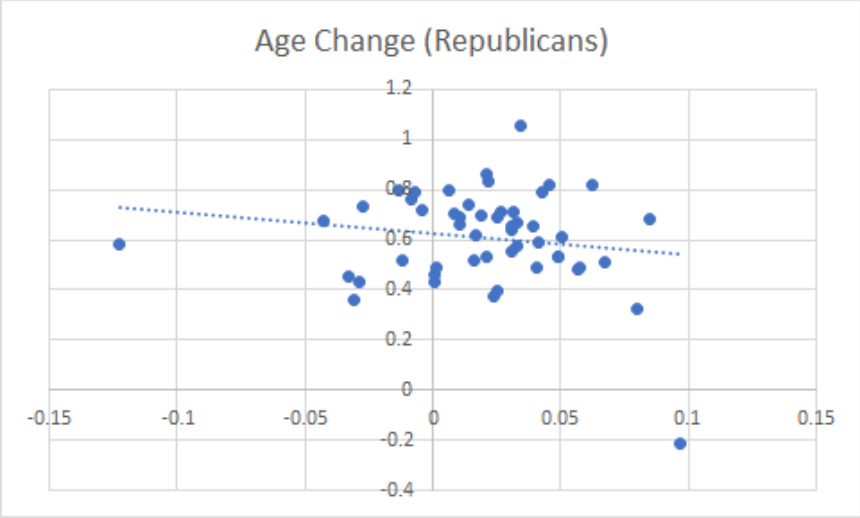
Name of Variable	Variable Type	Range
Change of average age	Quantitative, Numeric value	(-0.209348178 - 1.056277694)
Change of votes for the Republican Party	Quantitative, Percentage	(-12.24735% - 9.69697%)
Change of votes for the Democratic Party	Quantitative, Percentage	(-9.696974% - 12.247348%)

To organize data, the quantitative variables of each of the 50 American states plus the District of Columbia were inputted into a spreadsheet. Data processing was involved by taking the amount of people per age (18 and over) and then calculating an average age value for each state along with the District of Columbia in 2012 and 2016. The change in votes for the Democrats and Republicans was also calculated for 2012 and 2016 for each state and the District of Columbia. Data cleansing was involved to remove data in the years that were not part of this study. 2 scatter plot graphs became the data visualization for each respective party which has

each state represented by a single dot. The vote change is reflected on the x-axis while the average age change is reflected on the y-axis.

Results

The result of this test discovered a weak correlation between average age changes and vote changes between the 2012 and 2016 US elections as seen through the visualizations in Figure 2. Using Rho's calculator, a value of 0.6 was found between the two variables for both parties, therefore making it not statistically significant due to its p-value being higher than the maximum 0.05 to become a significant correlation result. The interpretation that can be resulted from this is that the age changes in the state voting populations are not consequential enough factors for voting changes to reflect closely upon them.



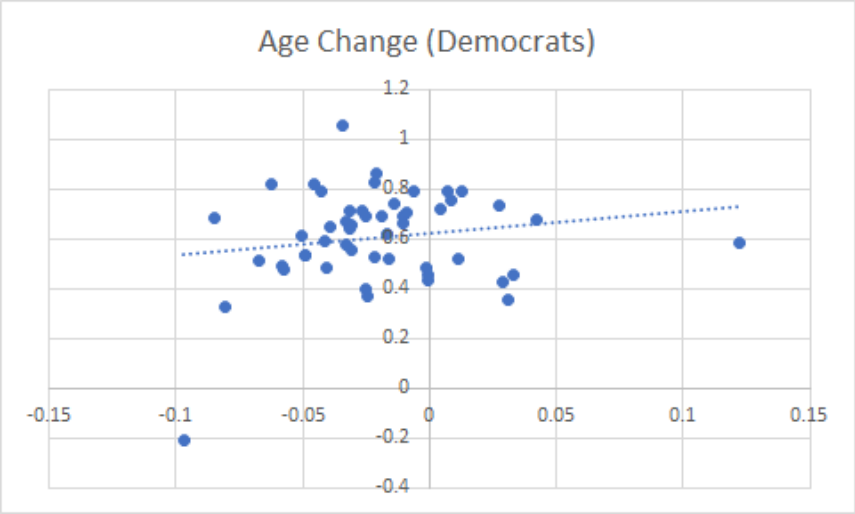


Figure 2: Scatter Plots showing Vote Changes along x-axis and Age Changes along the y-axis

Discussion

The results indicated that the states flipped from the Democratic to Republican Party achieved the average age value of 48.36373. Compared to those states which stayed loyal to their respective parties, this was the highest average age in the 2016 US election. This finding was expected as a major study on US elections found this result to appear relatively consistent throughout decades of elections (Fisher, 2014). Specific reasons that this can be connected to are the newly strengthened focuses by the Republican party to develop more policies that benefit the older generations more than their younger counterparts. This was the key focus of Robert Binstock's 2012 study "Older Voters and the 2010 US Election". A notable example of the results of the Republicans new focuses was when the Republican party clashed against the Democrats on healthcare policies which would have negatively affected the senior populations thus causing voters aged older than 65 to give a large majority of their votes to the Republicans (Binstock, 2011 p.408).

A surprising result was that despite the high average ages of the flipped Democrat to Republican states, the states that stayed loyal to the Republicans throughout the 2012 and 2016 elections showed a lower average age than the loyal Democrat states. These states reported an average age value of 47.19848. It was expected that the Republican states will follow with past studies that predicted these states to generally have older voters than Democrat states (Fisher,

2014; Binstock, 2009) which is what made this result surprising. However, instances of this finding have occurred in rare elections. This type of result can be explained from Patrick Fisher's 2014 study "Demographic Gaps in American Political Behavior", where he found moments where the young generations can be shifted towards the Republican side due to popularity and policy changes. These developments stemmed from a non-traditional campaign method that heavily utilised social media, a highly popular platform among young people (Nelson & Thurber, 2018). This can be a major reason why the 2016 US election went towards the Republican's Donald Trump while many were expecting a win for Hilary Clinton of the Democrats.

Despite data coming from official government sources, there were a great number of limitations that can be found in this study which created unexpected results. The most notable being that the dataset which reported the voting percentages for the Democratic and Republican parties did not offer information about third-parties which could have resulted in major changes as to why the largest 2 parties received their amount of votes. For example, a third-party can offer more direct competition to either the Democrats or the Republicans, thus preventing their competing party from ultimately winning the state. As a result of this limitation, age correlation will be less accurate since there can be some ages which may be more strongly associated with third-parties. This creates a degree of overgeneralization as it does not account for the American political landscape to its entirety. With more information regarding third-parties, there can be a more accurate correlation model run along the new voting data that would reveal more about how ages vote. Furthermore, the census data would not reflect the number of people that turn out to cast their ballots in the US elections. The average ages of people that turned out for the election could have been closer to expected results rather than the average ages of people in total throughout the state. Every state has varying rates attributed through multiple socioeconomic factors which especially include age (Hill, 2006). These factors on turnout rates can determine which party will win the state and further research that includes this can greatly refine the accuracy of the study to show more regarding the association between age and voting patterns.

Conclusion

The purpose of this study was to fulfill the knowledge gap of how ages affected voting patterns and why they occurred throughout two recent US elections in 2012 and 2016. After a

thorough analysis using data from a US Government census and the Harvard Dataverse, the Spearman correlation analysis discovered an insignificant relationship between these two datasets. Despite one certain group of states exhibiting the expected average age, the other groups showed average ages which were the opposite of the expected outcome. These were all explainable through the results of past studies that analysed decades of elections. What was also learned from this was how many other socioeconomic factors can play roles which shift elections to their controversial but respective outcomes.

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