The 2016 United States (U.S.) Presidential Election: An Econometric analysis of U.S. Census Bureau data and Federal Election Commission results

Introduction

The general overarching question to be answered is whether factors of race, education, and income affected the results of the 2016 United States Presidential Election. To further our understanding of the voting patterns of citizens across the United States of America (U.S.A.) it will be essential to create a regression function where the dependent variable will be the percentage of Republican votes in each state. This will allow us to determine whether various explanatory variables accounting for state-level demographic data can accurately model the results of the 2016 United States Presidential Election.

Regression Equation

The data included in this paper was obtained from the U.S. Census Bureau, as well as from the Federal Election Commission (i.e. government website that publishes state-level election results). The following regression equation is a cross-sectional analysis of state-level data:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon$$

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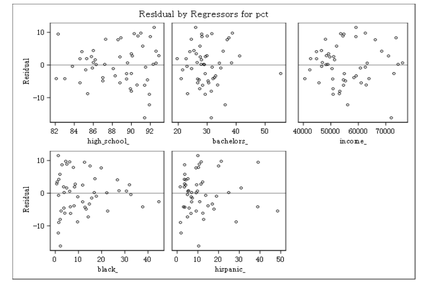
Where X_1 = 'High School', X_2 = 'Bachelor's', X_3 = 'Income', X_4 = 'Black or African American', and X_5 = 'Hispanic'.

Residual by Regressors



Review of Literature

Presidential elections offer economists with data that establishes an understanding of economic indicators, monetary and fiscal policy, and patterns identifying voter behavior. Current literature addresses whether the 2016 Election results were influenced by variables such as race and gender, as well as the influx of fake news published on social network outlets. The PollyVote model is a model that combines forecasts from the combination of indexes and econometric models, which are based on theory. Their results indicate that "[only] one component, the econometric models, underestimated the Clinton vote. As a result the PollyVote did not perform as well as in previous elections and was only slightly more accurate than the typical forecast" (Armstrong, Graefe, Jones, & Cuzán 15). The paper attests to the fact that in the long run, using combined forecasts will provide researchers with the most accurate forecast.

Results (Model 1 & Model 2)

Both the regular and Heteroscedasticity Consistent linear regression equations determined that there was significance between the dependent variable (i.e. pct) and the 'Bachelor's' variable. Additionally, there was relatively severe multicollinearity between the 'Bachelor's' and the 'Income' variable, as well as heteroscedasticity present in the model. With the multicollinearity present in the model OLS estimates are still BLUE, but they are not with heteroscedasticity, which is why it was necessary to use the 2nd model with the heteroscedasticity consistent values.

Study Limitations & Future Research

Further research would need to assess the county-level results of the 2016 U.S. Presidential Election because it will be able to more accurately describe the election results. Such data can be purchased from *Dave Leip's Atlas of U.S. Presidential Elections,* and would provide an in-depth glance at the States where voters voted Republican. The data would also enable one to test the hypothesis and discuss whether citizens in large cities voted republican or democratic in 2016.

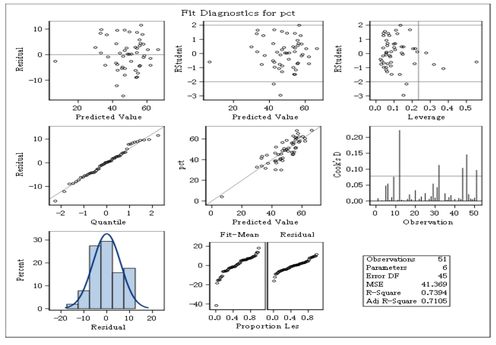
Data

The dependent variable (i.e. pct) was computed by assessing the popular vote for Donald Trump, Hillary Clinton, as well as the Other category; then by dividing the number of votes for Donald Trump by the summation of the total vote in each state, and multiplying by 100.

The following categorical explanatory variables describe factors of Race, Education, as well as Income & Poverty and include:

- Black or African American
- Hispanic
- High school graduate or higher, percent of persons age 25 years+, 2012-2016
- Bachelor's degree or higher, percent of persons age 25 years+, 2012-2016
- Median household income (in 2016 dollars), 2012-2016

Fit Diagnostics



Bibliography (Data)

Federal Elections Commission (2018). *Federal Elections 2016: Election Results for the U.S. President, the U.S. Senate, and the U.S. House of Representatives.* Retrieved from: https://transition.fec.gov/general/FederalElections2016.shtml.

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