

# Election Forecasting in the Ten Largest Counties of Texas

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## Introduction

- In this paper, we hope to present and analyze a rudimentary election forecasting model based on the ten largest counties (as of 2015) in the state of Texas, woven from both national and state-level statistics. It is our goal to understand which factors are most relevant in predicting voting behavior for each party in three most high-profile types of elections in the state (U.S. Senate, Governorship, and Presidency). We hope to diversify electoral knowledge currently in existence and contribute to the micro-level of psephology as it currently stands in American elections.

## Review

- Studies have shown the underlying fundamentals do have some accuracy in predicting national elections, although their level of success with regard to presidential elections differs from senatorial and gubernatorial elections. We desire to delve further into this idea on a local level, while maintaining the focus on nationalized elections. The objective of this research project is to create a model to analyze and predict major statewide elections (presidential, gubernatorial, and senatorial elections) in the local government areas of Harris County, Tarrant County, Dallas County, Bexar County, Travis County, El Paso County, Collin County, Fort Bend County, Hidalgo County, and Denton County (all in the state of Texas), using underlying fundamental factors as well as more traditionally accurate factors such as opinion polling.

## Experimental Procedure

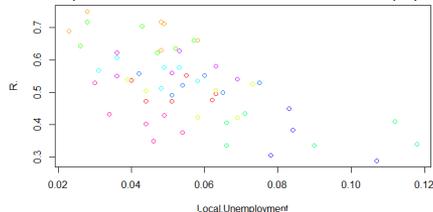
- For our election results by county race, only the votes for the two major party candidates were collected and added to the total. The percentage attained by the Republican Party candidate was then used to measure performance. A binary system was added to factor for the incumbency effect, with a one being placed in the instance that the sitting officeholder was a member of the Republican Party elected at the last election, and a zero otherwise. National unemployment and local unemployment rates were collected for September, the last month for such data would be released to the public prior to the election. Approval rating was the hardest factor to incorporate, and finally the last approval rating collected for the incumbent president preceding the election was collected, with net spread being collected for Republicans and the negative net spread being collected for Democrats.
- Eventually, seven tests were run per office, and four data plots created based on all the factors collected, in unison and individually.
- The percentage of a county's Republican vote share across time (years)
- The percentage of a county's Republican vote share across local unemployment
- The percentage of a county's Republican vote share across national unemployment
- The percentage of a county's Republican vote share across local and national unemployment
- The percentage of a county's Republican vote share across approval rating, incumbency, and national unemployment
- The percentage of a county's Republican vote share across incumbency and local unemployment
- The percentage of a county's Republican vote share across incumbency and national unemployment

## Experimental Data Sample

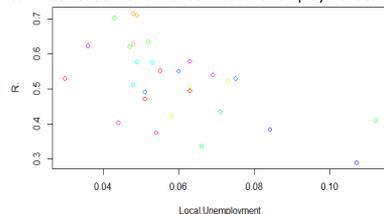
### County Key

Orange- Denton  
Lime Green- Collin  
Teal- Fort Bend  
Pink- Bexar  
Yellow- Tarrant  
Green- Dallas  
Red- Harris  
Dark Pink- El Paso  
Teal- Travis  
Purple- Hidalgo

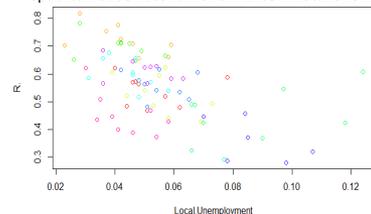
Republican Presidential Performance v. Local Unemployment



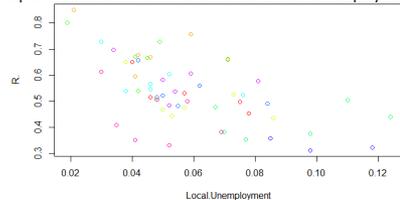
Republican Presidential Performance v. Local Unemployment & Incumbency



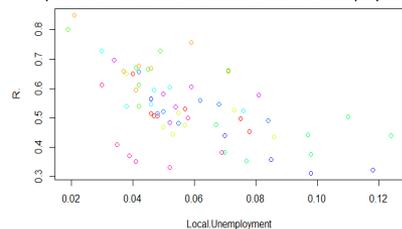
Republican Gubernatorial Performance v. Local Unemployment



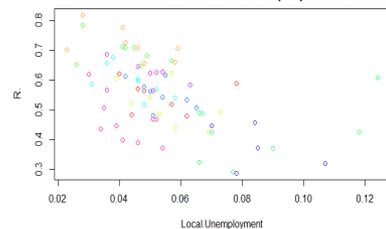
Republican Gubernatorial Performance v. Local Unemployment & Incumbency



Republican Senatorial Performance v. Local Unemployment



Republican Senatorial Performance v. Local Unemployment & Incumbency



## Results and Analysis

- Local unemployment was quite possibly the most critical element of our model. While less pronounced in gubernatorial and (especially) senatorial elections, it created a fascinating regression. While virtually meaningless when compared by incumbency, it demonstrated a very fascinating negative correlation with Republican presidential vote. It seems plausible that many individuals, especially in counties like Hidalgo and Bexar prone to economic cycles, are less likely to vote Republican regardless of whether that party currently holds office or not, especially in executive elections. Meanwhile, counties like Fort Bend and Collin which are fairly sheltered from economic downturns, have more stable voting patterns regardless, although a slight negative correlation in the same manner can be found. Although it is possible that this is only a result of the fact that there have been more economic downturns in the last twenty-five years under Republican Presidents than Democratic Presidents, a clear explanation might be found in the fact that the Democratic Party is more likely to support interventionist economic policies which individuals personally affected by an economic downturn might choose to back.
- The other factors proved to be of limited value, perhaps because they were impractical to apply to a micro setting such as this one. It is possible that national unemployment, presidential approval rating, and incumbency for these offices play a less of a role than an individual area's well-being.

## Conclusion and Future Work

- There are a number of challenges present in creating a viable model through this data, such as the lack of Labor Department data on unemployment by county before the year 1990, making it impossible to test the final model on any results before that date. In addition, approval ratings for officials such as governors and senators has not always been consistently tracked, meaning that we will have to make do with the approval rating of the incumbent president as a benchmark on which to base our opinion polling factor, lastly skewing our data. Finally, the results of gubernatorial and senatorial issues possess confounding variables, including the simple fact that some of these races have not been seriously contested by the Democratic Party during this time period and due to the personal popularity level certain candidates have that we cannot measure.
- Although much more data will have to be collected, it seems extremely likely that on the micro-level of politics, local unemployment plays a major role in the preferences of voters as they select their leaders, especially the President. Opinion polling on which office voters hold responsible for societal ills such as unemployment will have to be conducted, and many more statistical analyses will have to be performed to confirm our results. It is possible that these findings might assist executive officeholders in their campaigns and that those in executive positions could eventually want to campaign more on local issues within a particular area rather than focusing predominantly on nationalized topics, for it seems that at least part of the old adage that "all politics is local" rings true here.