Advanced Analysis of Hispanic Voter Activity in Florida through Sub-Ethnicities Identification

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Introduction

In recent studies, polls have been tracking the Hispanic vote in a variety of elections to try predicting which candidate they will favor based on voter trends. The Hispanic population is diverse and comprised of many sub-groups from different origins. Census data does include percentages of Hispanic subgroups for each individual zip code. However, public voter information does not include an individual’s Hispanic sub-group. The goal is to create a predictive algorithm for distribution for probabilities for possible sub-groups for each voter that self-identifies as Hispanic with the state of Florida.

Out of the 67 counties in Florida that will be analyzed, Calhoun county is one of the smallest counties which will be used to begin analysis of identify Hispanic sub-groups.

Methods

<table>
<thead>
<tr>
<th>Individual’s Information</th>
<th>Probability Calculations</th>
<th>Predicted Sub-ethnicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zip Code</td>
<td>Sub-group Percentages at given Zip Code</td>
<td>Most Probable Sub-group that individual will be classified as</td>
</tr>
<tr>
<td>First Name</td>
<td>Popularity % of first name &amp; last name(s) for each sub-group</td>
<td></td>
</tr>
<tr>
<td>Last Name / Any additional last names*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Additional last names will help create more precise probability percentages

Results

Figure 2. Probability distribution of individuals living in Calhoun county at different zip codes. (A) Probability distribution for all individuals residing at zip code 32421. (B) Probability distribution for all individuals residing at zip code 32424.

Preliminary Results

- Algorithm for identification was developed
- Primary sub-groups for each individual are determined
- Enhancement techniques have been developed but not implemented
- Identification of sub-groups within specific regions with precision
- May pinpoint which sub-groups have an increase or decrease in voter turnout by specific regions

Next Steps

- Optimize the model and develop implementation for all voters
- Provide measure for accuracy of prediction and reanalyze lost data
- Analyze results from all counties in Florida to identify Hispanic voter trends

Figure 3. Model predictions of number of individuals per sub-group within Calhoun County. A representative plot showing the most probable Hispanic sub-groups within the selected county

Acknowledgments

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References

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2. Forebears. forebears.io/