2020 ASA Data Challenge Presentation
Recommendations to Increase Voter Turnout for Young Adults under 30

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Targeting the features

At the beginning of research, feature selection was made onto various target variables. Where the top row reflecting the results of tree-based classifier, and the bottom row is from chi-square feature selection, both preferring higher scores. By comparing the results we decided to focus on the top-6 list and further analyze the features on the list to get what we want.
Using an optimized model, AGE and EDUSIMPLE began to become prominent when selecting the basic features.

Though STATEFIP alone weighs little in this optimized model, it turns out to be influential when using specified features, thus we still need further exploration to the listed features.

* Since we all uses the 2016 data while the model uses full labelled data, the YEAR feature is irrelevant while analyzing.
AGE: Why should we focus on voters under 30?

- **Left chart** shows that eligible voters under 30 have the highest probability of “not register” or “registered but not vote”.
- **Right chart** shows that though “age <= 30” has relatively small population among the four age groups, the amount of people not registering or voting turns out to be the most, which is a pretty serious problem.
- Furthermore, as young people grow older, their behaviors substantially contribute to the society.
REGION/STATE: Not decisive, but much relevant!

- Distinctions exist between states, but according to the region map from US Census Bureau, they are not simply due to regions’ geography or population.
- Need further exploration into social or political factors

- Line chart shows that there is a positive correlation between education level and the likeliness of voting
  The education map and the voting rate charts give consistent results.
  Education turns out to be another key factor

- In the distributions of “why not register”, all options show a similar distribution except option 1 (“cannot meet deadline”), which have relatively large distinctions between regions.
  These distinctions largely corresponds to registration policy maps, showing that state policy is a key factor.
To improve registration due to no interest (Education)

**Conclusion:** Among young adults (age <= 30), the prominent education level causing no interest in election, which further leads to no registration, is high school or GED. We should target high school civics curriculum to improve voter registration.
To improve the registration deadline issue (Policy)

<table>
<thead>
<tr>
<th>Techniques to improve reg</th>
<th>% register difference for AGE &lt;=30</th>
<th>% voted difference for AGE &lt;=30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online registration</td>
<td>2.23%</td>
<td>5.12%</td>
</tr>
<tr>
<td>Auto registration</td>
<td>2.24%</td>
<td>4.48%</td>
</tr>
<tr>
<td>Same-day registration</td>
<td>1.32%</td>
<td>4.42%</td>
</tr>
</tbody>
</table>

**Conclusion:** All three methods correlates to percent register and percent voted positively. However, considering all age range (especially seniors), auto registration and same-day registration would be a better choice.

*The y-axis of the charts above have all been adjusted*
To improve the problem of time conflicts (Education)

**Conclusion:** the prominent education level causing **time conflicts**, which further leads to not voting, is **high school or GED and some college but no degree**. After researching after potential job opportunities for young people with this education level, we should impose **policies for companies to organize voting activities**. Hence, without hurting the operating hours, staff are able to vote.
To improve the problem of time conflicts (Policy)

**Conclusion**: There is no significant difference regarding the voting rate whether or not the election day is a civic holiday of the state. However, the difference of percent voted among the states that explicitly use or forbid the use of ballot drop box is pretty large. Therefore, we can conclude that **ballot drop box** should be set up.

*The y-axis of the charts above have all been adjusted only involves data of 12 states*
Results and Recommendations

1. For states without civics/government course requirements, add this requirement for high school curriculum. For those who have this requirement, modify the curriculum to be more problem-solving and experimental based.

2. Policies should be made for companies to organize group voting/registering activities without hurting normal business operation.

3. States should impose auto registration and same day registration.

4. States should set up ballot drop boxes in working areas.

Bibliography

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