

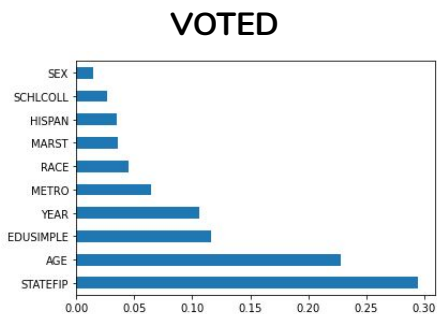


2020 ASA Data Challenge Presentation

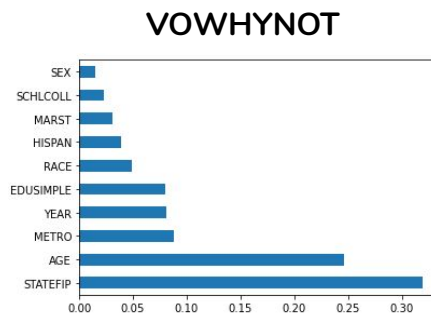
Recommendations to Increase Voter Turnout for Young Adults under 30

By: SuperJuniors
(Qi An, Mengzhi Qin, Xuling Yang, Chenyuan Zhu)

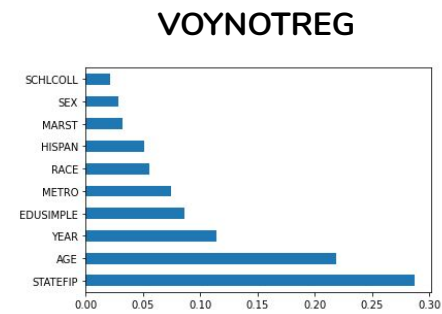
Targeting the features



Specs	Score
9	HISPAN 99346.478745
5	RACE 33977.403247
3	AGE 28101.022101
12	EDUSIMPLE 11460.217360
6	MARST 6195.606535
1	STATEFIP 1367.240522
10	LABFORCE 173.176832
4	SEX 56.101523
8	CITIZEN 32.545227
11	SCHLCOLL 26.854662



Specs	Score
9	HISPAN 66179.907915
5	RACE 36279.594098
3	AGE 11564.064603
12	EDUSIMPLE 3025.863701
6	MARST 2195.048430
1	STATEFIP 287.603578
10	LABFORCE 260.920194
11	SCHLCOLL 227.875307
4	SEX 83.888853
8	CITIZEN 56.182476



Specs	Score
9	HISPAN 68486.231813
5	RACE 37188.758984
3	AGE 5235.855696
1	STATEFIP 1042.367342
8	CITIZEN 982.409178
6	MARST 870.408200
12	EDUSIMPLE 794.907471
10	LABFORCE 285.374381
11	SCHLCOLL 227.550678
2	METRO 16.490388

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.

State, Age, and Education

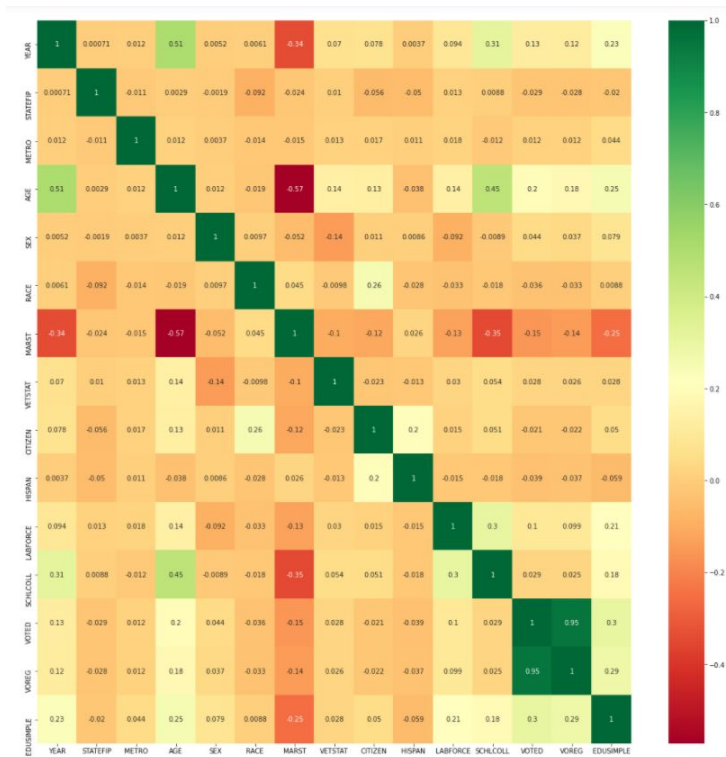
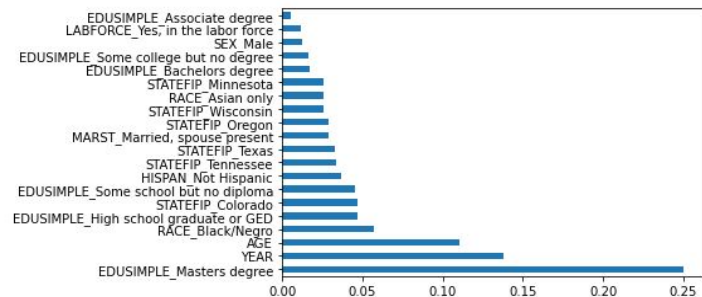
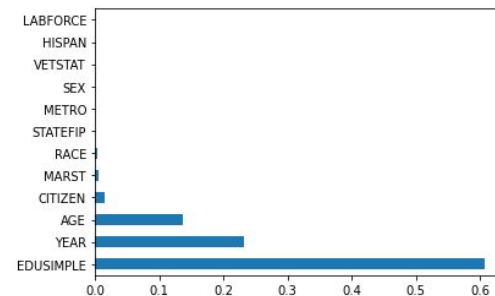


Figure: Correlation Heat Map targeting Voted



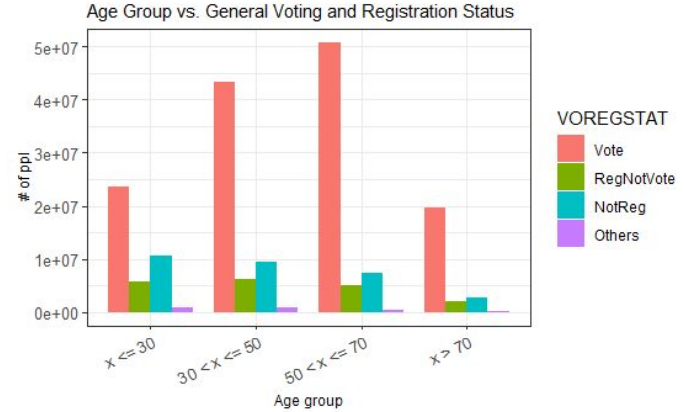
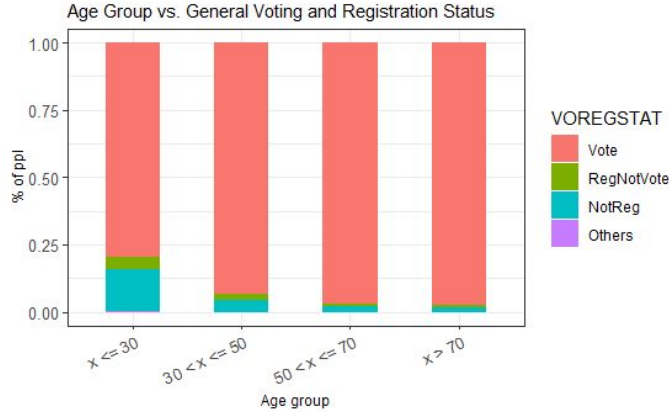
Using an optimized model, **AGE** and **EDUSIMPLE** began to become prominent when selecting the basic features.

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.



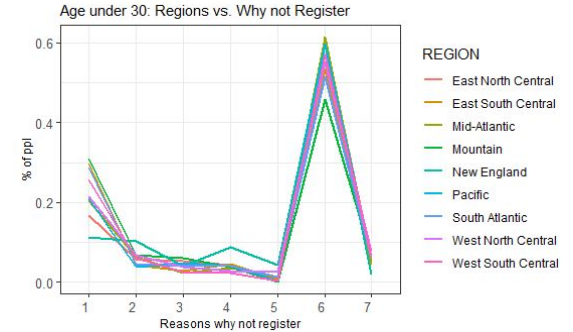
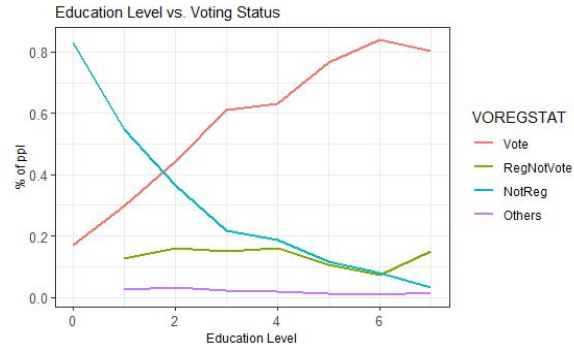
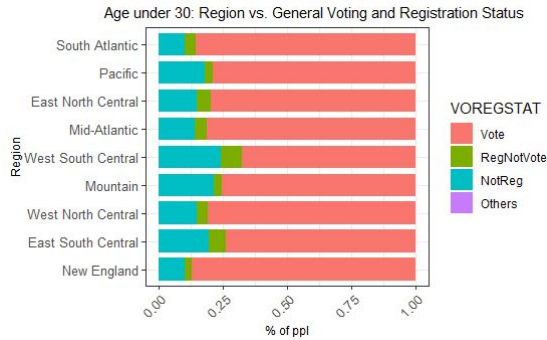
* Since we all uses the 2016 data while the model uses full labelled data, the YEAR feature is irrelevant while analyzing.

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**.

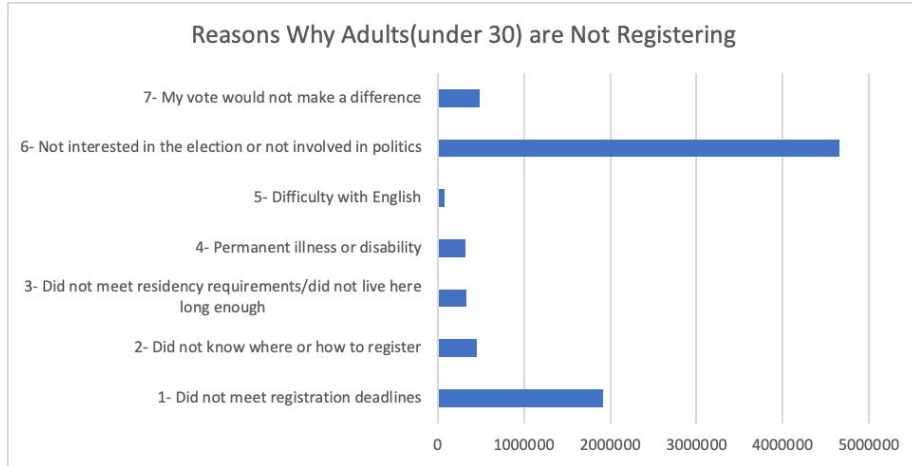
REGION/STATE: Not decisive, but much relevant!



- 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**.

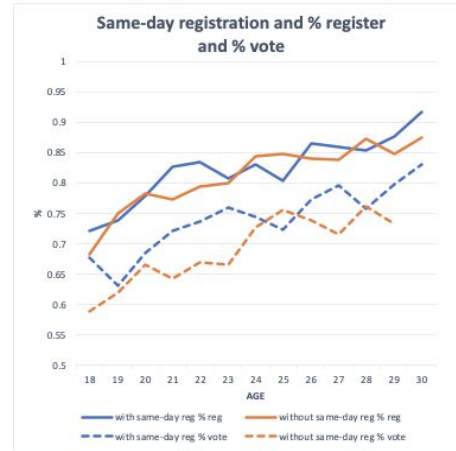
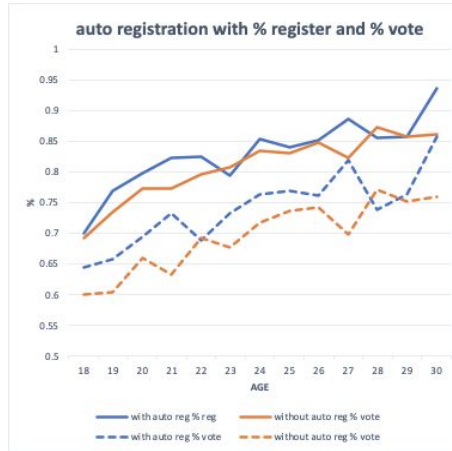
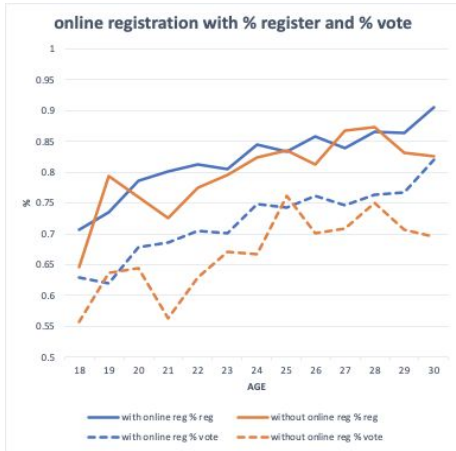


To improve registration due to no interest(Education)



Conclusion: Among young adults(age \leq 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)



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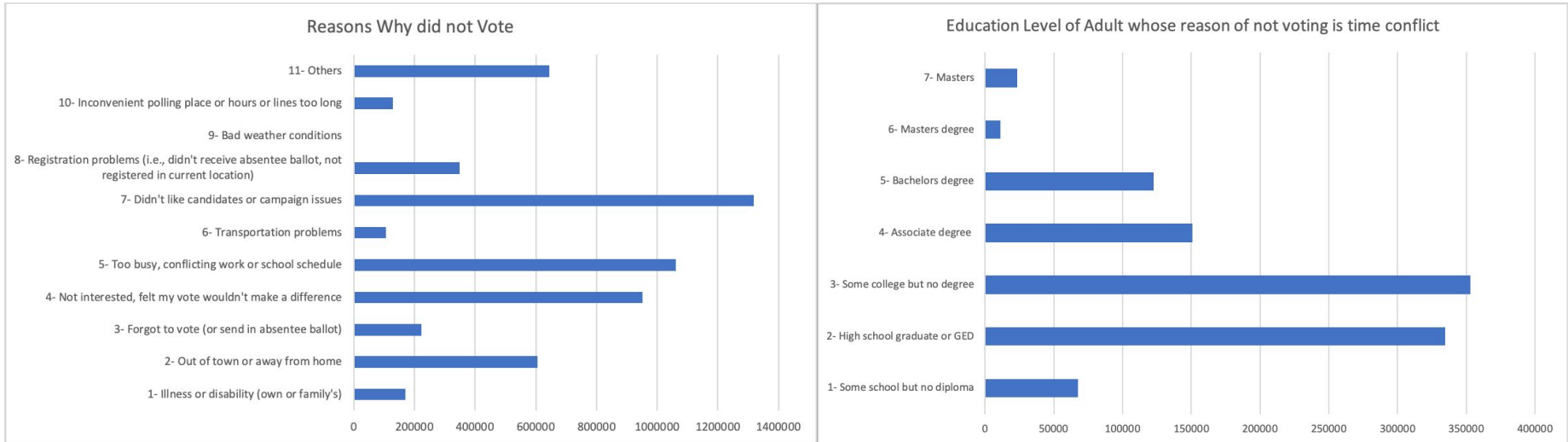
Techniques to improve reg	% register difference for AGE <=30	% voted difference for AGE <=30
Online registration	2.23%	5.12%
Auto registration	2.24%	4.48%
Same-day registration	1.32%	4.42%

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

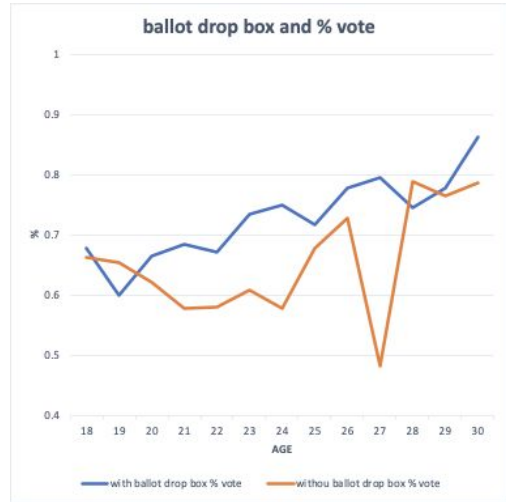
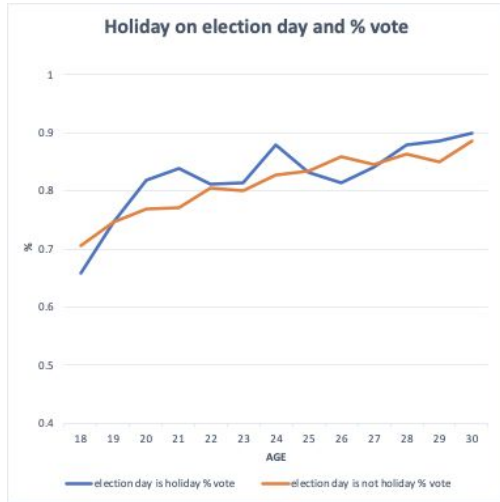


To improve the problem of time conflicts(Education)



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)



Techniques to improve vote	% voted difference for AGE <=30
Holiday on election day	-0.38%
Ballot drop box	7.60%**

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

- [Civics Education Testing Only Required In 9 States For High School Graduation: CIRCLE Study](#)
- [A Look at Civics Education in the United States](#)
- [What does civics education look like in America?](#)
- Wikipedia: [Educational attainment in the United States](#)
- Wikipedia: [List of regions of the United States](#)