

Project 1 - Standardized Test Analysis ACT and SAT Analysis

GA DSI 33
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Background and Datasets

- ACT and SAT are standardized tests that many colleges and universities in the United States require for their admissions process.
- This score is used along with other materials such as grade point average (GPA) and essay responses to determine whether or not a potential student will be accepted to the university.

For this analysis, we will be using 10 datasets comprising of participations rates and scores for each American state for both ACT and SAT exams.



Problem Statement

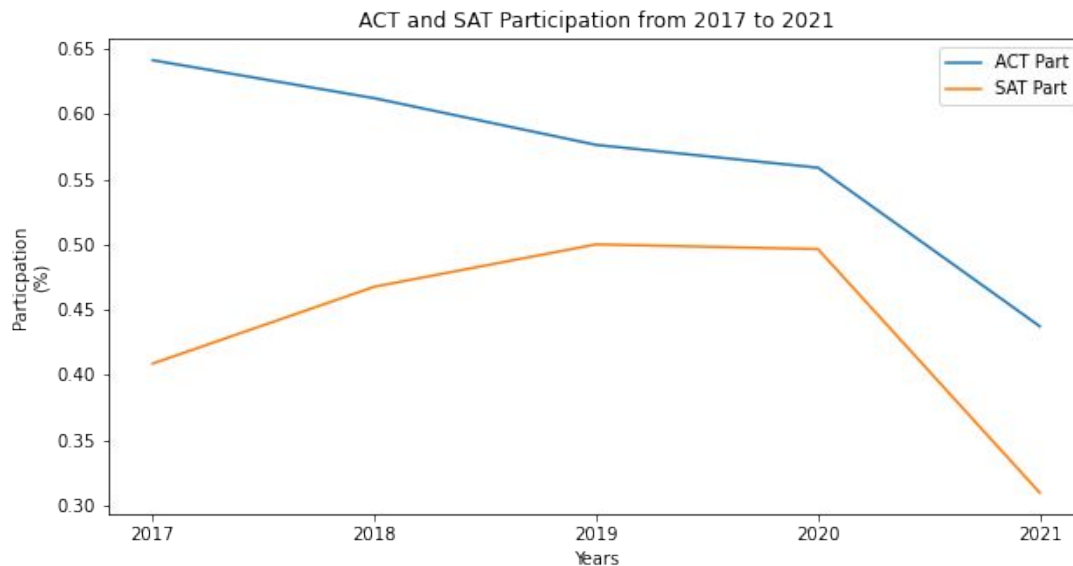
You, the US Ministry of Education, have appointed us to advise you on the impact of Covid and States choosing to go Test Optional in regards to the participation and scores of ACT and SAT exams.



Participation Analysis

Has Covid impacted the participation rates of ACT and SAT

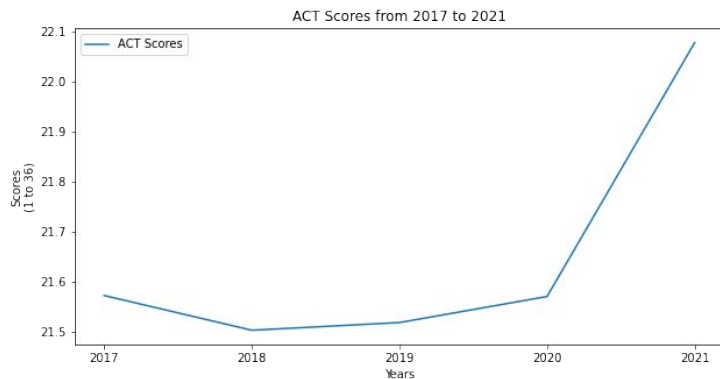
- ACT participation dropping since 2017
 - Sharp decline in 2020 and 2021
- SAT participation increasing since 2017
 - Sharp decline in 2020 and 2021



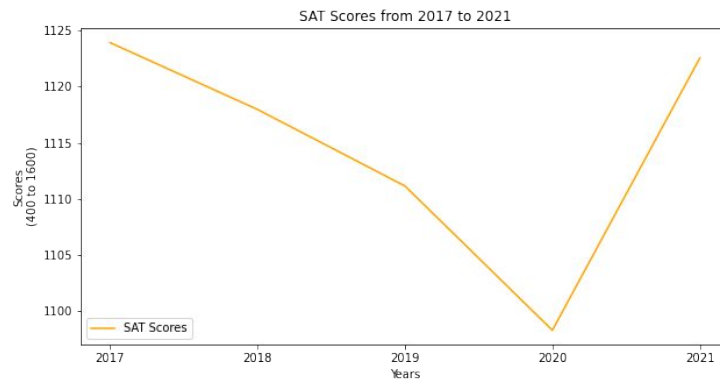


Scores Analysis

Has Covid impacted the scores of ACT and SAT



- ACT scores have been increasing since 2018
 - Significant increase in 2020 and 2021

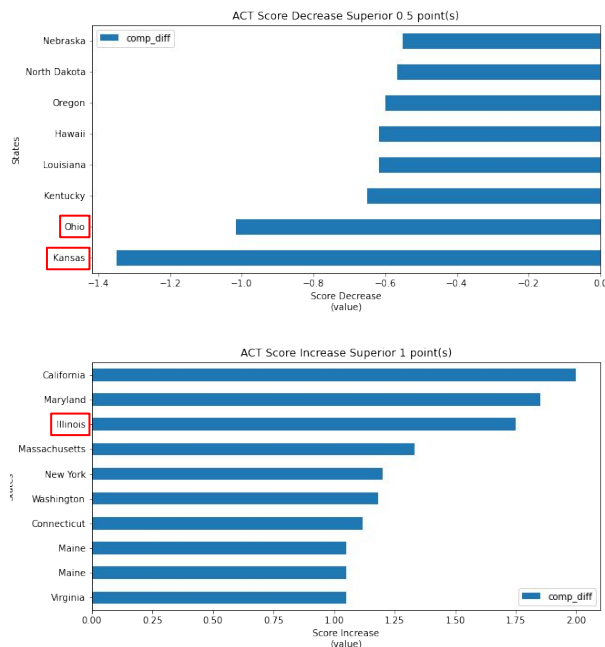
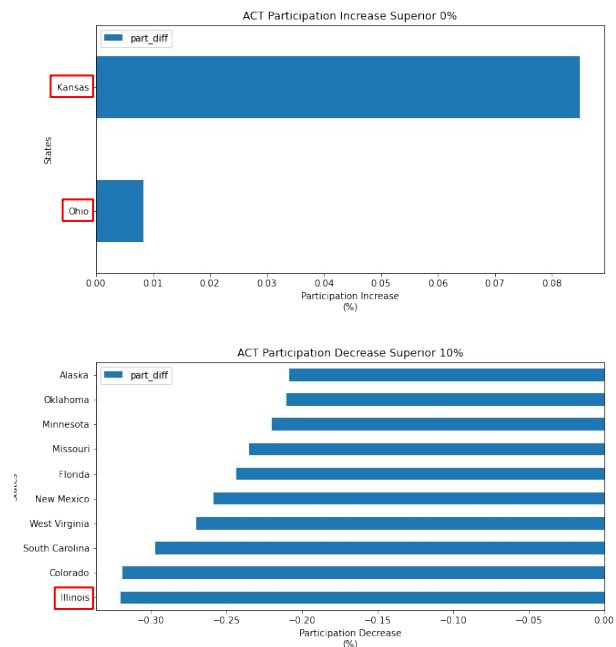


- SAT scores have been decreasing until 2020
 - Significant increase in 2020 and 2021



Participation effects on scores

Does a change in ACT participation rate impact the scores



- Participation increase
=
Score decrease

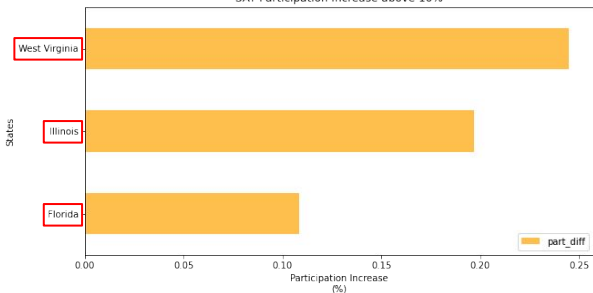
- Participation decrease
=
Score increase



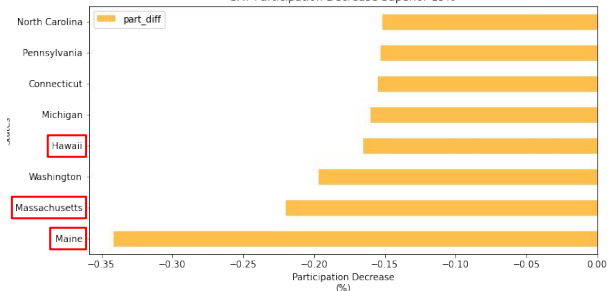
Participation effects on scores

Does a change in SAT participation rate impact the scores

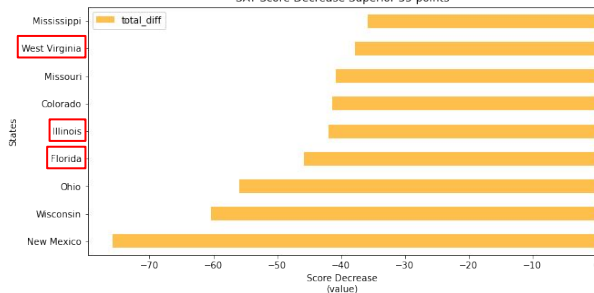
SAT Participation Increase above 10%



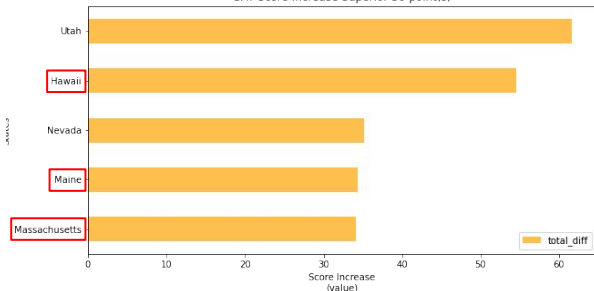
SAT Participation Decrease Superior 15%



SAT Score Decrease Superior 35 points



SAT Score Increase Superior 30 point(s)



• Participation increase
=
Score decrease

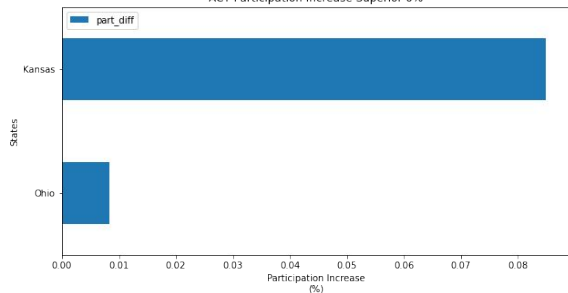
• Participation decrease
=
Score increase



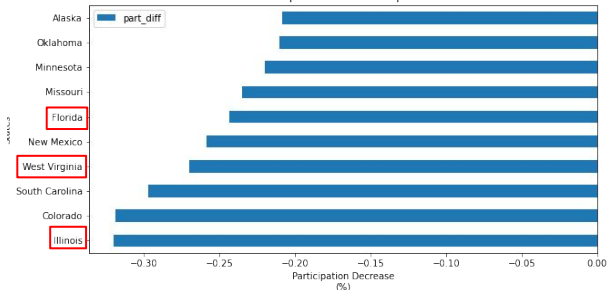
Participation affects inter-exam

Does a change in participation rate in one exam impact the other

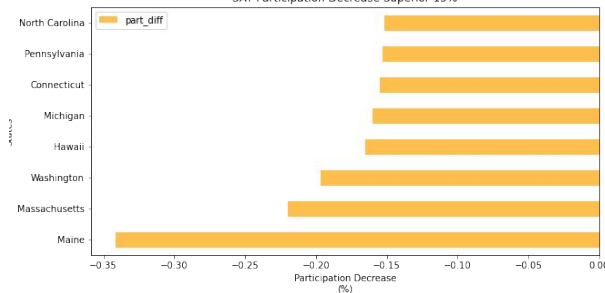
ACT Participation Increase Superior 0%



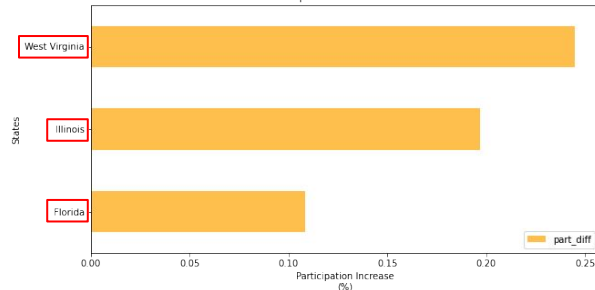
ACT Participation Decrease Superior 10%



SAT Participation Decrease Superior 15%



SAT Participation Increase above 10%



- ACT Participation increase
=/
SAT Participation decrease
- ACT Participation decrease
=
SAT Participation increase



Analysis Conclusion

- Covid had an important impact on ACT and SAT participations
 - Examinations center and schools might have been disrupted by Covid
 - Some states and/or universities decided go to test optional
- Covid also had an important impact on ACT and SAT scores
 - Scores for both ACT and SAT have seen a sharp increase in 2020
- There is a strong negative correlation between participation and scores
 - Higher participation causes lower scores
 - Lower participation causes higher scores
- There is also a negative correlation between exams participation rates
 - The state with the highest ACT participation drops are also the states with highest SAT participation increase
 - While this is true for ACT to SAT this is not the case for SAT to ACT



Analysis Recommendations

- Covid had an important impact on ACT and SAT participations
 - A further analysis of examination center availability and school disruption during preparation period might give more insight on the cause of the drops in participation
 - A state by state analysis on test optional schools may also provide a clearer picture on possible causes
- Covid also had an important impact on ACT and SAT scores
- There is a strong negative correlation between participation and scores
 - An further analysis on the population of students who attended the test might give a clearer picture on the scores evolution
 - A societal analysis of covid impact on minorities can also help understand the disparity
- There is also a negative correlation between exams participation rates
 - A further analysis on the SAT adoption trend over ACT in the past 5 years might help understand why some states are moving over to SAT
 - An analysis on how ACT and SAT have handled exam availability during Covid can also help understand this trend.