

Presented by

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SAT & ACT TESTING ANALYSIS

Outline

Background

Problem Statement

Data Analysis

Conclusions & Recommendations

The SAT logo, featuring the letters "SAT" in white on a blue rectangular background.The CollegeBoard logo, featuring a stylized acorn icon and the text "CollegeBoard" in white on a black rectangular background.

Background

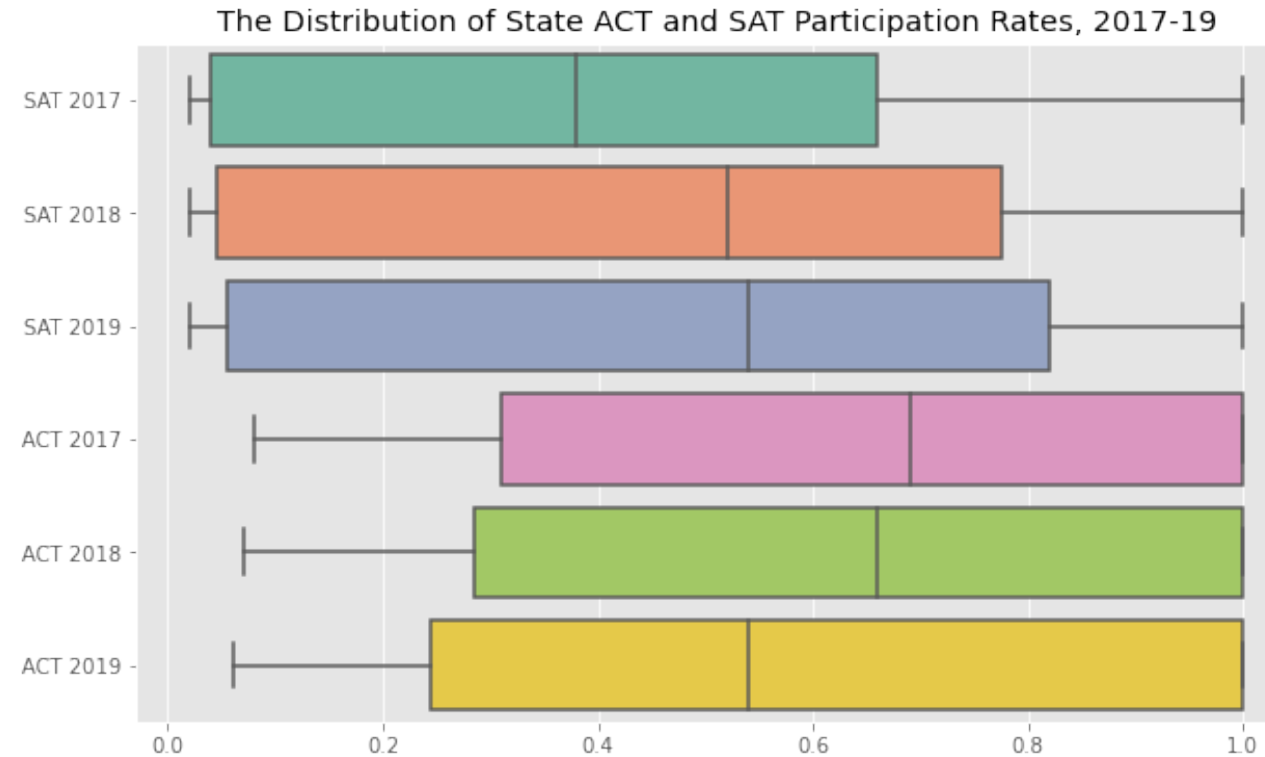
- West Virginia has the policy to increase the participation rate in 2018 by offering the **free SAT School Day** to students.
- The aim of this policy is opening the door to college, university and scholarship. This policy increased the participation rate significantly, but the total score did not increase.
- West Virginia wants to increase both participation rate and average score.

Problem Statement

How to adjust the policy to be more effective?



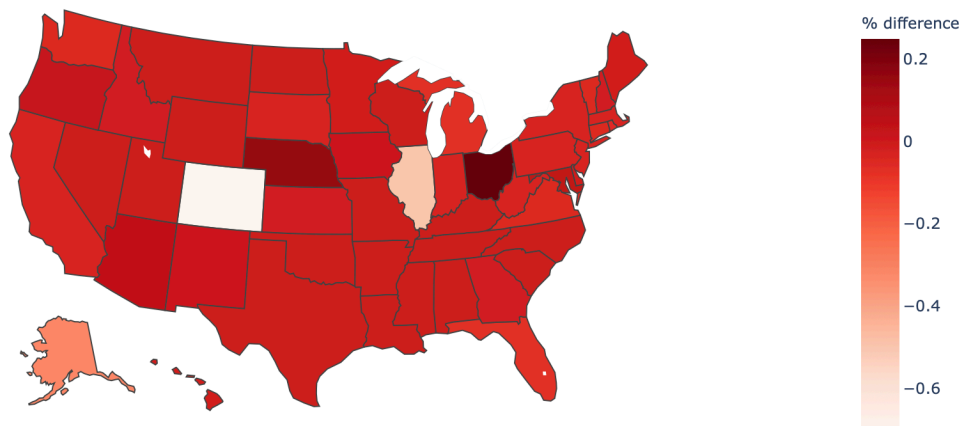
SAT Participation increases every year



- The distribution of ACT participation rate is centered significantly higher than the SAT participation rate in 2018-2019.
- The mean of SAT and ACT participation rate in 2019 are likely in the same position.
- Average of ACT participation rate decrease while SAT participation rate increase because of new policy from some states.

Students prefer ACT more than SAT if they can choose

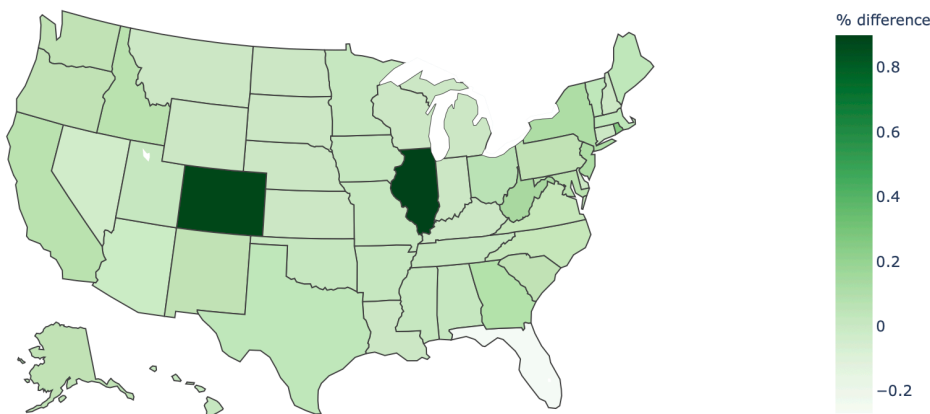
Difference in ACT participation rate between 2017 and 2018



Ohio

- Difference of participation rate in Ohio increase dramatically (2017-2018)
- Ohio schools offered ACT or SAT to all students with no charge. The ACT was the overwhelming preference of college-bound kids these days^[1].

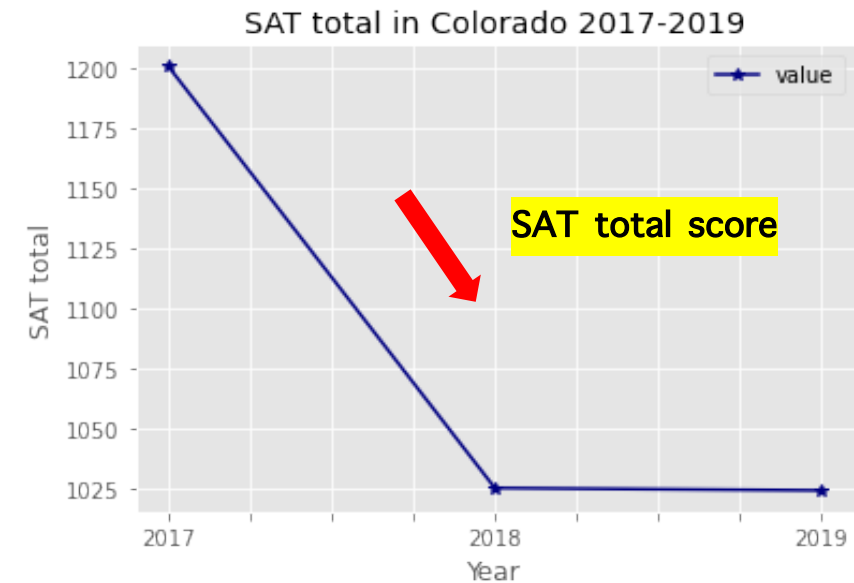
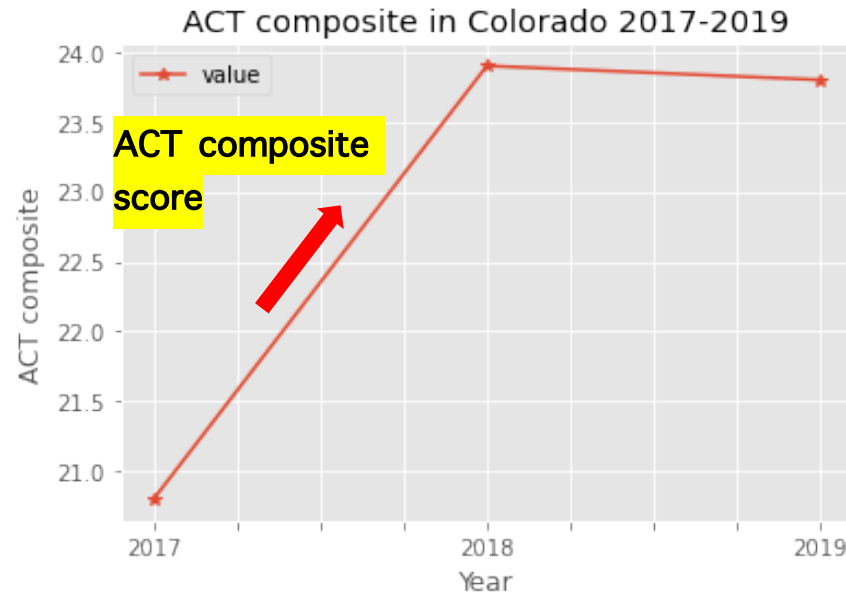
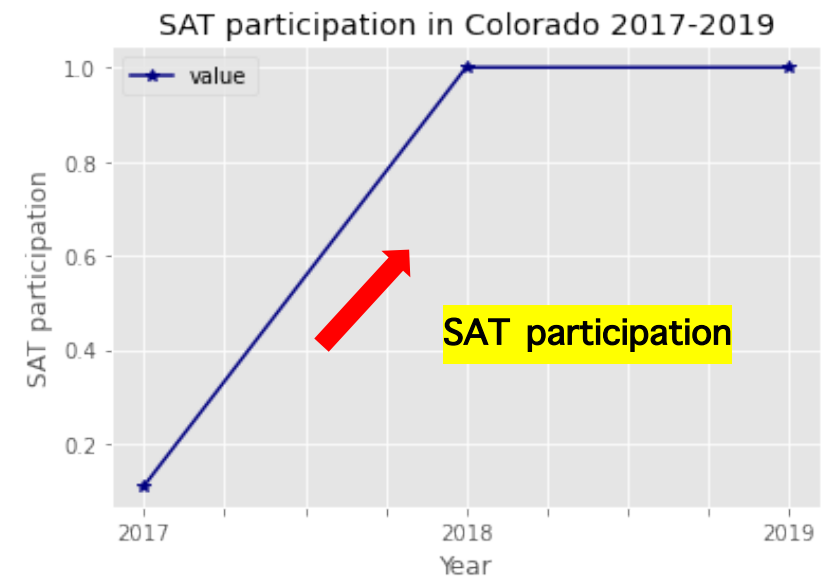
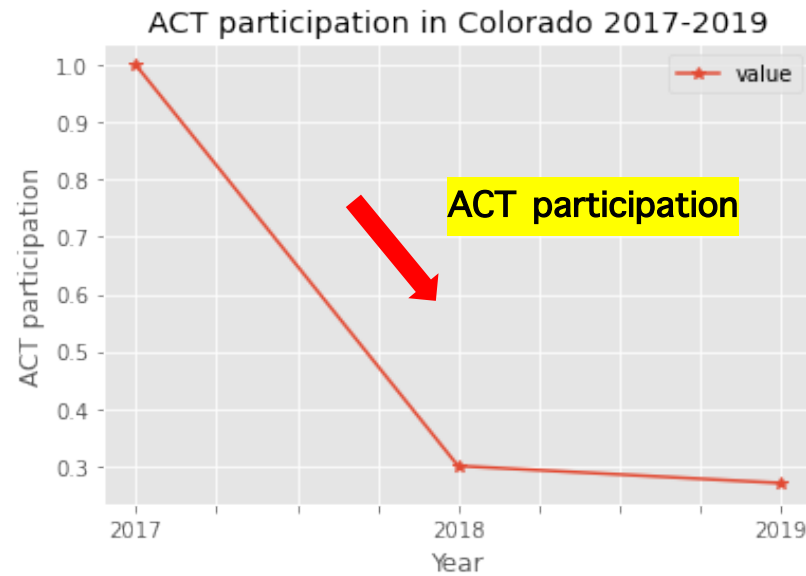
Difference in SAT participation rate between 2017 and 2018



Colorado & Illinois

- Difference of participation rate in Colorado decline significantly (2017-2018) because Colorado switched from mandatory ACT to mandatory SAT testing and free to students and Illinois also switched to the SAT. Therefore, the percentage of SAT participation rate difference of both state in 2017-2018 rises sharply^[2].

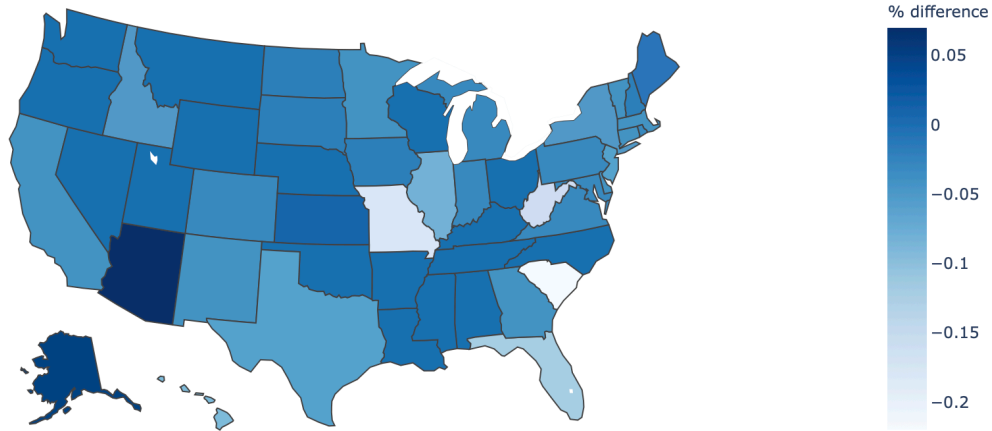
Colorado



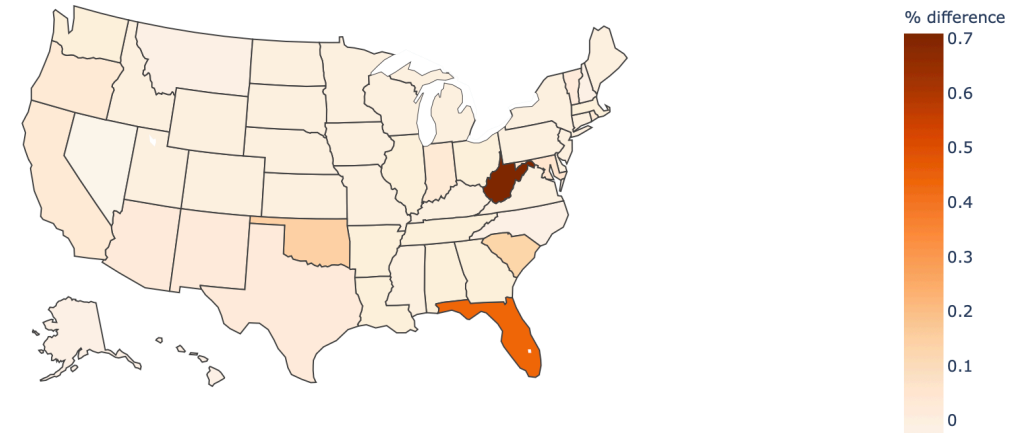
- Participation rate 2017-2018 increases significantly because of the policy that requires all students take SAT test to graduate from high school.
- Participation rate rises up to 100%, however, the overall SAT total score drops because of higher divider.

West Virginia participation rate 2018-2019 is the highest rate

Difference in ACT participation rate between 2018 and 2019

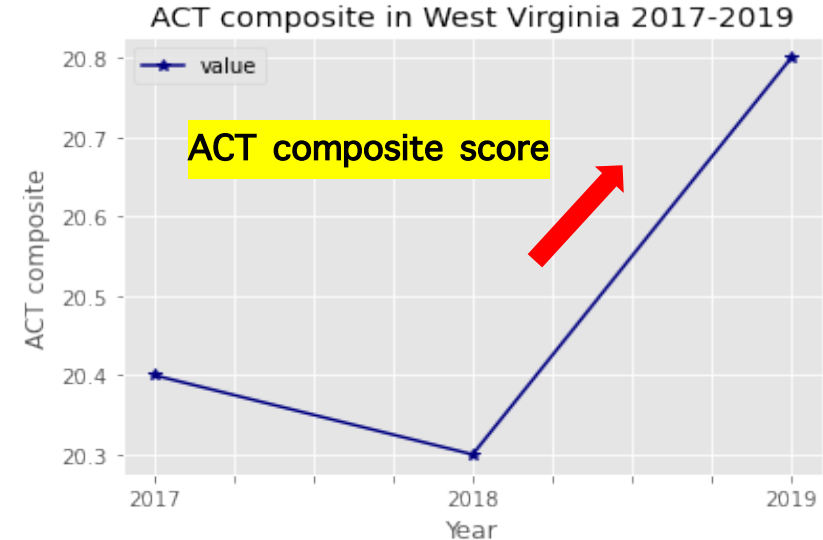
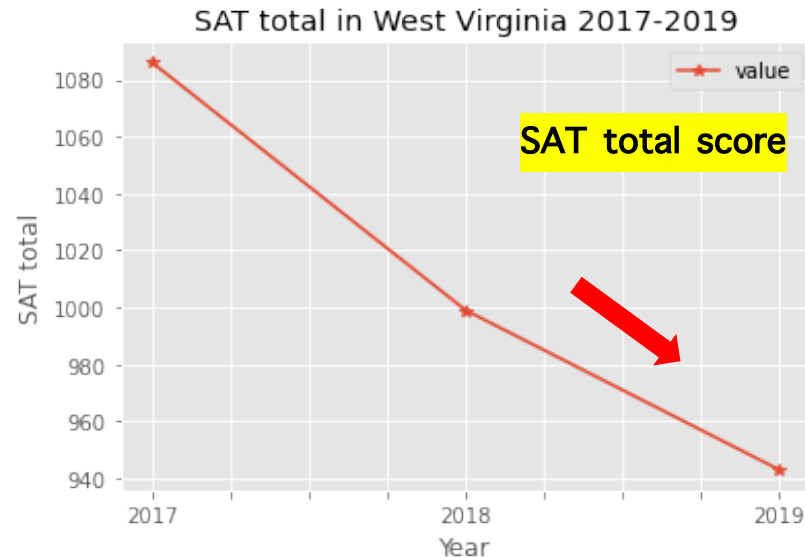
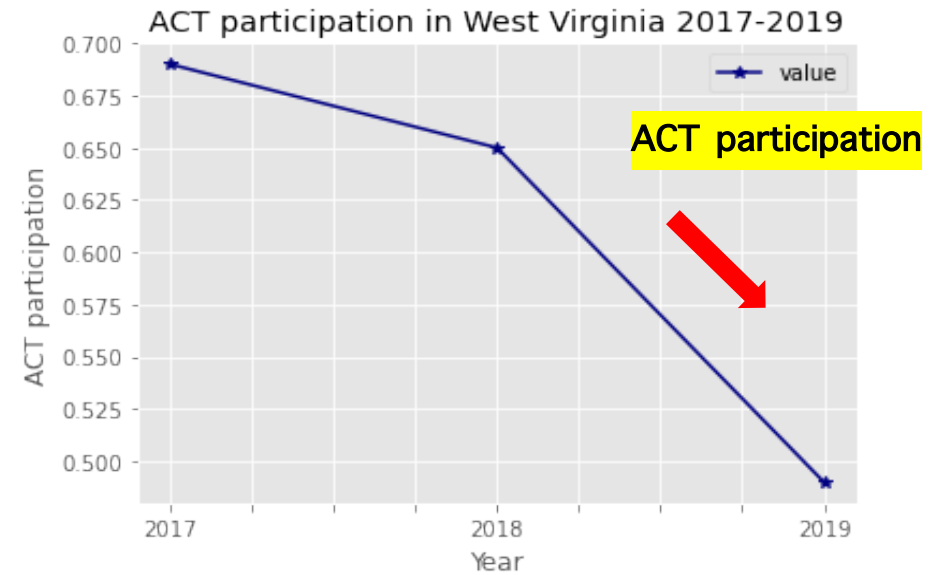
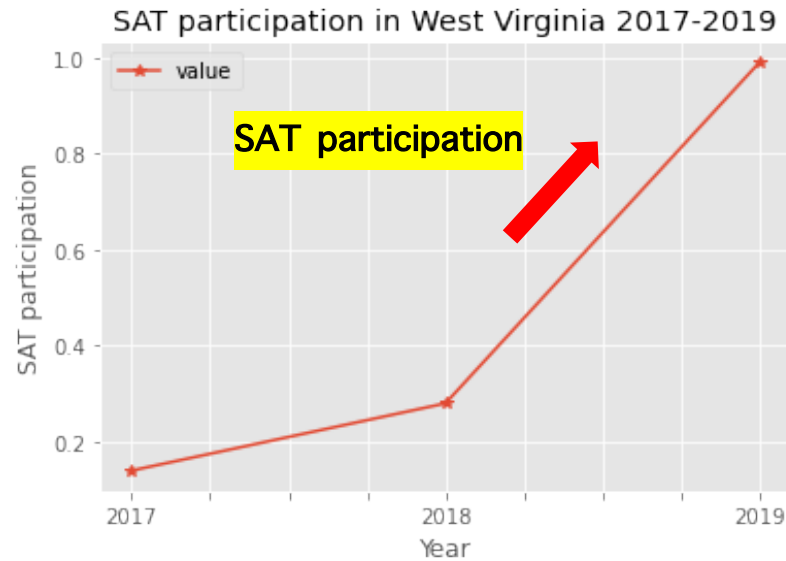


Difference in SAT participation rate between 2018 and 2019



- West Virginia offered free SAT School Day for every students so the participation in 2019 rises significantly^[3].
- The SAT is the winner in West Virginia from the heat map, the dark red shows the concentrated of rate change in the positive way.

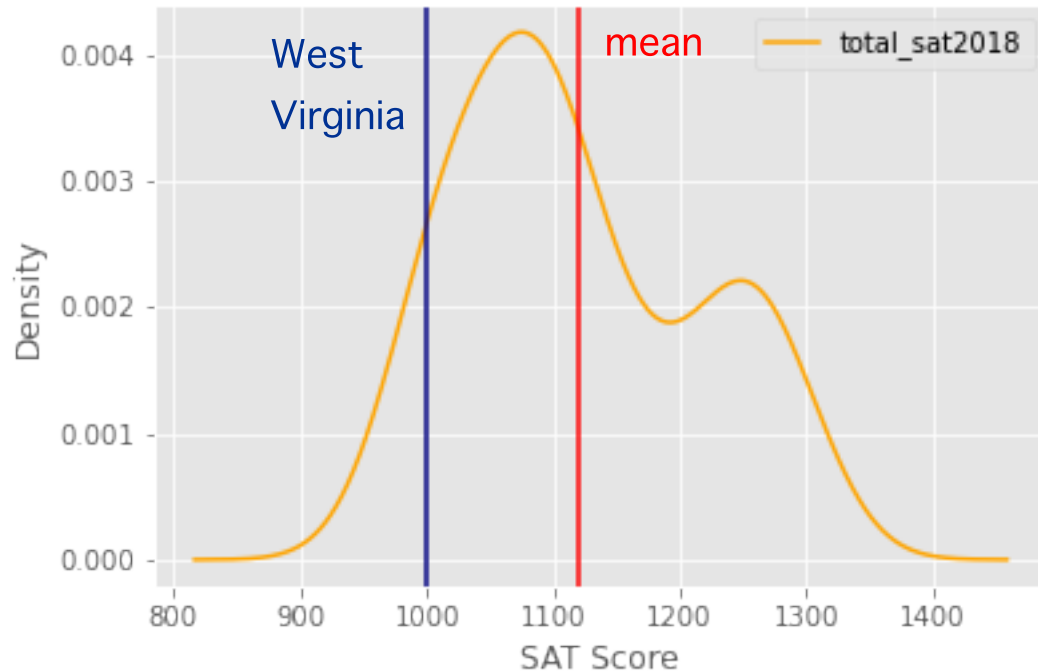
West Virginia



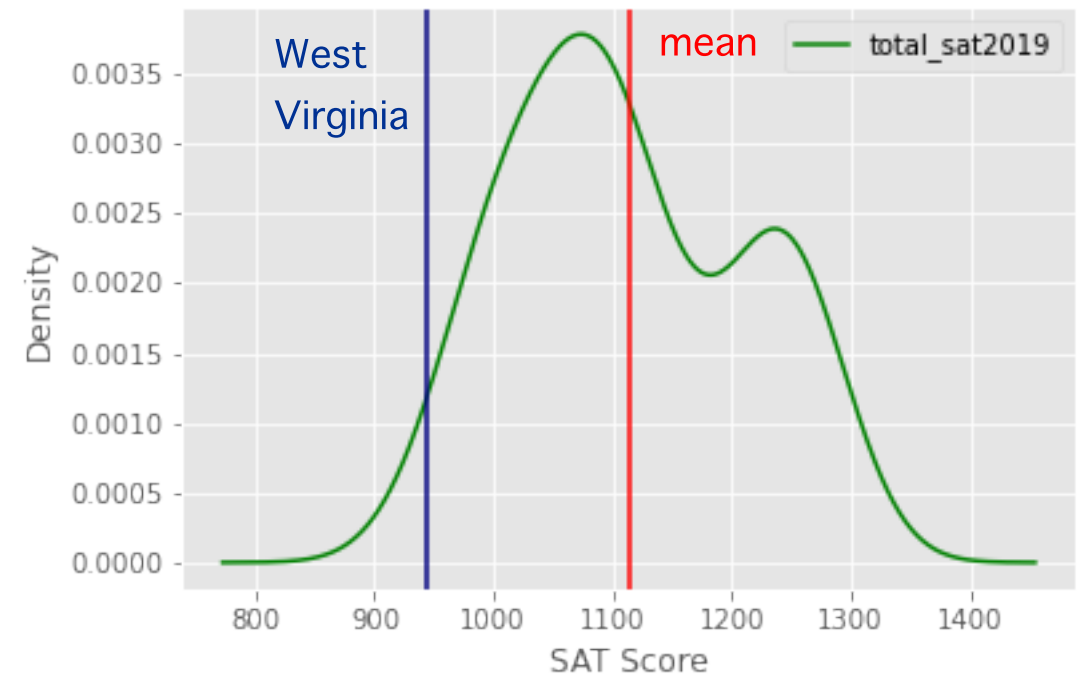
- Due to the new policy in West Virginia, SAT participation increases while ACT participation decreases during the period.
- The change of participation rate impacts on total score because SAT total score of this state decreases while ACT composite score increases.

West Virginia is a loser of SAT score in 2019

Density of SAT total Score 2018 with mean line (red) and West Virginia score line (navy)



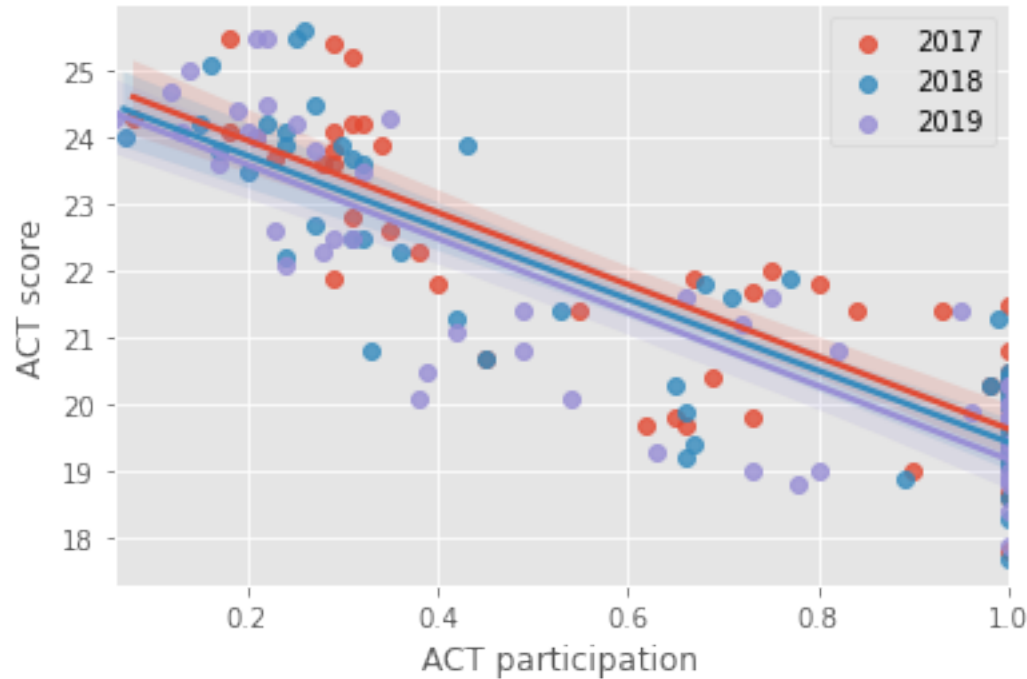
Density of SAT total Score 2019 with mean line (red) and West Virginia score line (navy)



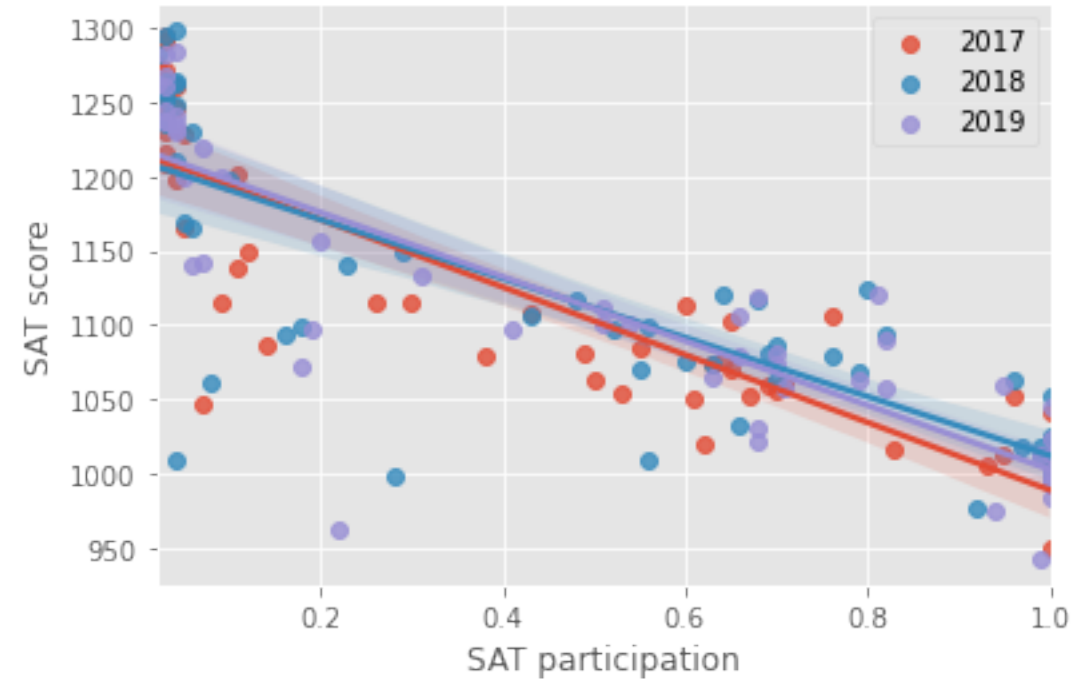
- West Virginia's is lower than mean score of SAT score 2018 (49th of 51 states).
- West Virginia is the loser of score in 2019.
- The distribution of score in 2018 and 2019 are not normal distribution which has the high density between 1000 - 1100.

Negative correlation between average score and participation rate

Relationship between ACT participation and ACT score



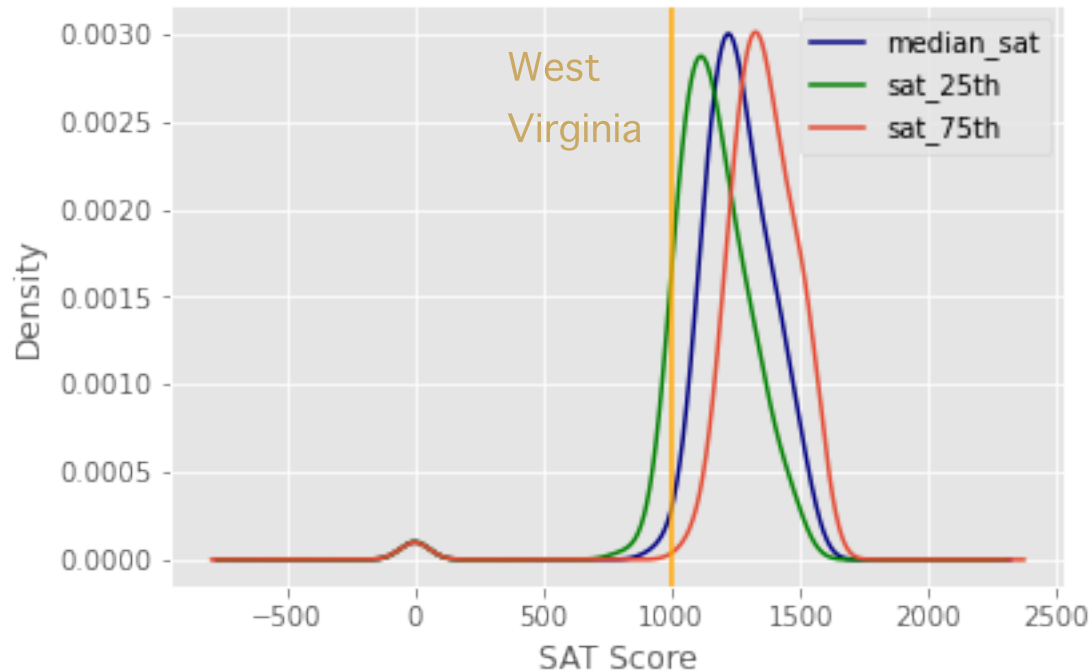
Relationship between SAT participation and SAT score



- The participation increases and gives the higher of divider. So, the average score decreases.
- The distribution of score in all 3 years are the same pattern that means school should improve student to get the higher level of knowledge.

West Virginia's students has low success rate for university admission

Density of SAT score at 25th percentile, median and 75th percentile compared with West Virginia's SAT score



- West Virginia's score is lower than the median of 25th percentile of SAT score.
- To increase chance for university admission, West Virginia should encourages school and student to hit the median score of university admission. This will help student to have more university choice that they will choose.
- The recommended score is 1150, it is the median score and make the success rate higher than the present.

Conclusions & Recommendations

- Without SAT testing policy, students prefer to take ACT test more than SAT test.
- Mandatory SAT testing can reserve the high level of participation for West Virginia.
- The score range for reward policy should be applied with mandatory SAT testing.
- This will encourage student to take the SAT and motivate school to improve the student performance.
- Students will get 2 ways of benefits.
 - Get high score of SAT without cost
 - Get more training from school
- West Virginia will get the better score rank and can assess the real quality of school through the SAT.

Score range	Reward
Meet the average SAT score from all states (about 1100)	You graduated from High School!
Meet the median score of university admission	You get a free SAT School Day and more choice of university.

References

- [1] www.dispatch.com/news/20170228/ohio-schools-must-now-give-act-or-sat-to-all-juniors
- [2] www.testive.com/colorado-sat-change-2017/
- [3] <https://collegereadiness.collegeboard.org/sat/k12-educators/sat-school-day/about>