

DSI – Project 1

(Analysis on SAT vs ACT)

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PROBLEM STATEMENT

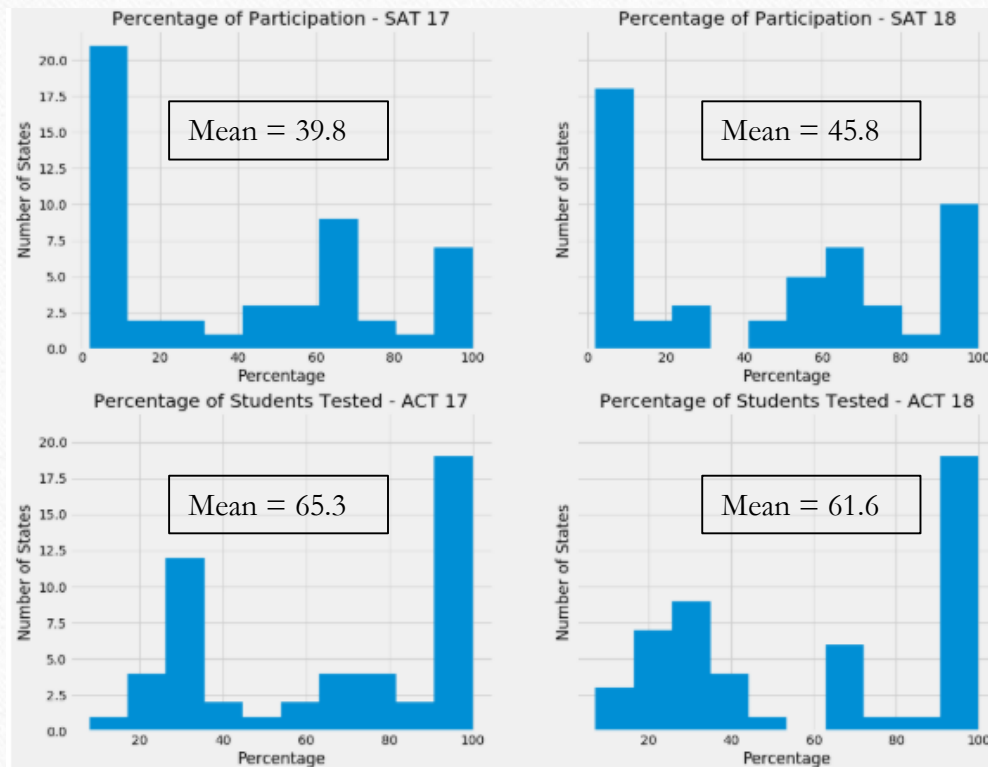
How to increase the participation rate of SAT for states with low participation rate?

Data set:

Feature	Type	Dataset	Description
Percentage of Students Tested	integer	ACT 17 & 18	Percentage of Students went for the test of the State (units in percentage ranges from 0 - 100)
Average Composite Score	float	ACT 17 & 18	Average Composite Score of the State (ranges from 1 - 36)
Average English Score	float	ACT 17 & 18	Average English Score of the State(ranges from 1 - 36)
Average Math Score	float	ACT 17 & 18	Average Math Score of the State(ranges from 1 - 36)
Average Reading Score	float	ACT 17 & 18	Average Reading Score of the State(ranges from 1 - 36)
Average Science Score	float	ACT 17 & 18	Average Science Score of the State(ranges from 1 - 36)
Participation	integer	SAT 17 & 18	Participation rate for the test of the State (units in percentage ranges from 0 - 100)
Evidence-Based Reading and Writing	float	SAT 17 & 18	Average Evidence-Based Reading and Writing Score of the State (ranges from 200 - 800)
Math	float	SAT 17 & 18	Average Math Score of the State (ranges from 200 - 800)
Total	float	SAT 17 & 18	Average Total Score of the State (ranges from 400 - 1600)

We focus on analysing the 'Percentage of Students Tested' for ACT 17 & 18 and 'Participation' for SAT 17 & 18 to address to the problem statement

Rate of participation for SAT 2017 & 2018



- There is a higher number of states within the 80 – 100% interval for ACT as compared to SAT, but there is an decrease in the participation rate for ACT by looking at the mean.
- There is a decrease in the number of states within the 0 – 20% interval, and an Increase within the 80 – 100% interval for SAT.
- Also with the means stated on the graphs, we can infer that there's an increase in the rate of participation from 2017 to 2018 for SAT.

Possible reason for the increase in SAT participation rate

	state	pct_participation_sat_18	pct_participation_sat_17
5	Colorado	100	11
6	Connecticut	100	100
7	Delaware	100	100
22	Michigan	100	100
12	Idaho	100	93
19	Maine	99	95
13	Illinois	99	9
39	Rhode Island	97	71
29	New Hampshire	96	96
8	District of Columbia	92	100

In the 2016-17 school year:

- **Nine states** administered the SAT statewide, at no cost to students:
 - **Colorado**
 - Connecticut
 - Delaware
 - Idaho
 - **Illinois**
 - Maine
 - Michigan
 - New Hampshire
 - **Rhode Island**
 - District of Columbia
 - (In the 2014-15 school year, three states—Delaware, Idaho, Maine—and the District of Columbia did.)

- We can see a drastic increase in the rate of participation with the highlighted states after the new initiative (SAT statewide) has been implemented:
 - Colorado: from 11% to 100%
 - Illinois: from 9% to 100%
 - Rhode Island: from 71% to 97%

SAT States with new initiative vs without new initiative



Percentage increase

	Percentage increase
No Initiative 2017 to 2018	7.6%
With Initiative 2017 to 2018	26.8%
Total from 2017 to 2018	14.9%

We can see that the states with initiatives increased almost 3.5 times more than the states with no initiatives,

Which indicates that the initiative has a significant impact on increasing the participation rate.

Recommendation

- To provide fee waiver & SAT School Day to the lower participating states, the targeted states should be in the middle range of SAT and ACT:
 - Alaska
 - California
 - Florida

References

- <https://reports.collegeboard.org/archive/sat-suite-program-results/2017/class-2017-results>