

DSI Project 1 - SAT & ACT Analysis

- ❑ This presentation contains initial analysis of SAT & ACT average participation and test scores from 51 states for the years 2017 and 2018.

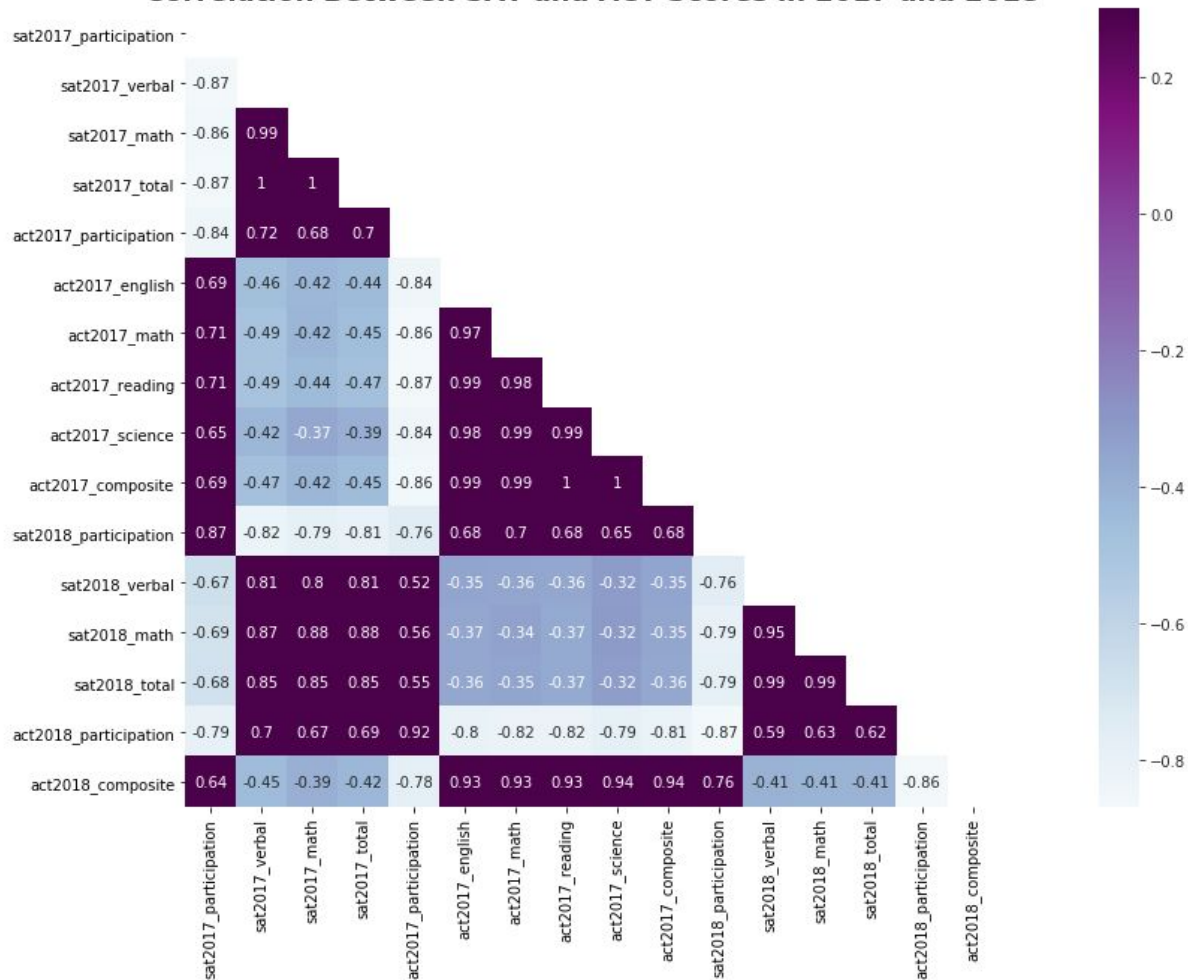


Summary Statistics

- ❑ The average participation rate of SAT increased from 40% to 45% between 2017 and 2018. However, it decreased from 65% to 61% for ACT.
- ❑ The average SAT score of all states is **1126** in 2017 and **1120** in 2018.
- ❑ The average ACT score of all states is **21.52** in 2017 and **21.50** in 2018.

The above shows that the scores are consistent year-to-year.

Correlation Between SAT and ACT Scores in 2017 and 2018



❖ Min vs Max

SAT 2017:

Min Verbal score: 482

Min Math score: 524

Min Total score: 950

Max Verbal score: 644

Max Math score: 651

Max Total score: 1295

ACT 2017:

Min English score: 16.3

Min Math score: 18.0

Min Reading score: 18.1

Min Science score: 23.2

Min Composite score: 17.8

Max English score: 25.5

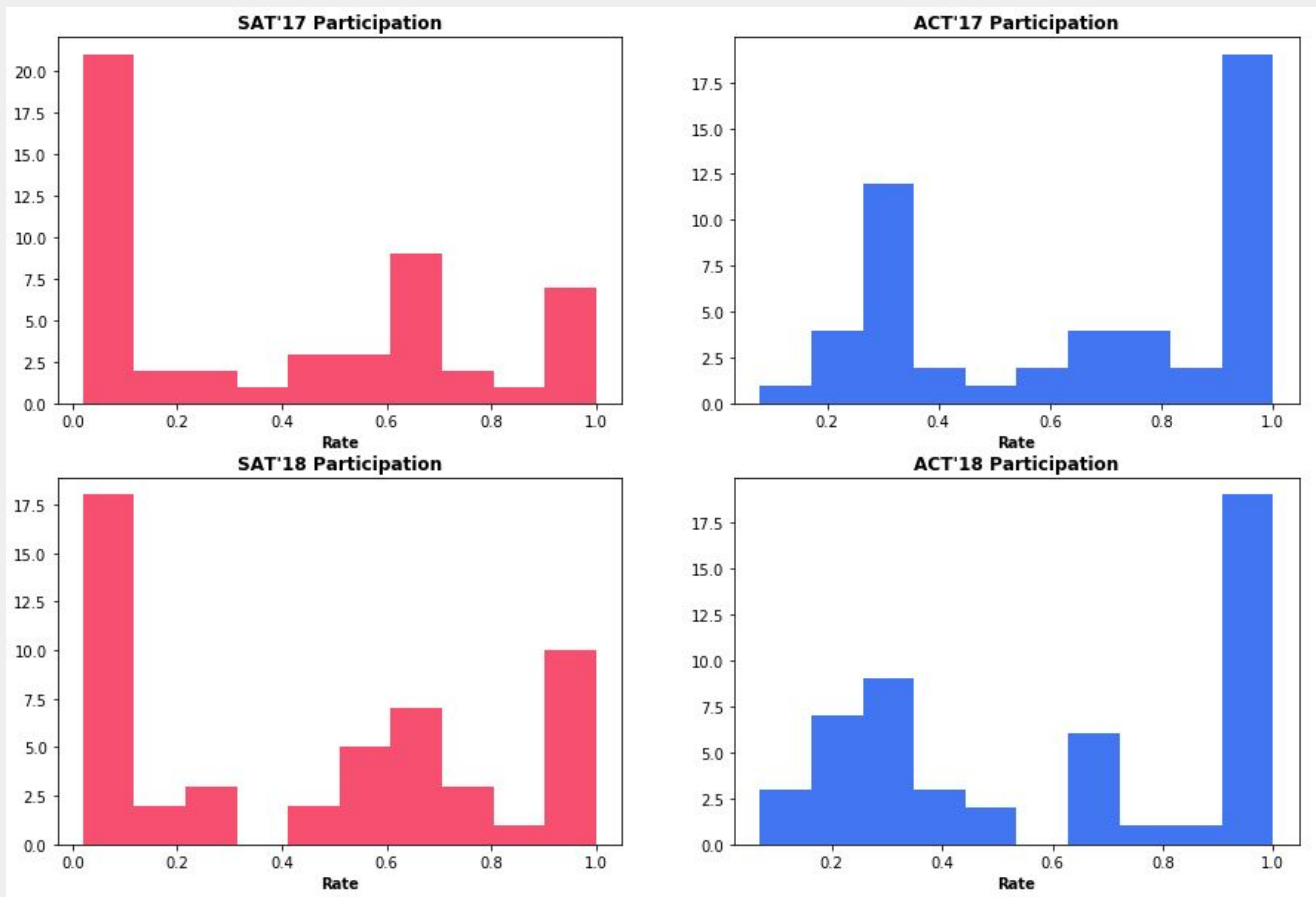
Max Math score: 25.3

Max Reading score: 26.0

Max Science score: 24.9

Max Composite score: 25.5

❖ Participation Rate (TETRIS)



❖ SAT Participation vs States

2017 SAT:

North Dakota, Mississippi, Iowa and other mid-west states (a.k.a Heartland) have the lowest participation rate (2%).

District of Columbia, Michigan, Connecticut, Delaware, New Hampshire and some other east-coast states have the highest participation rate (100%).

2018 SAT:

North Dakota, Wyoming, South Dakota, Nebraska, Wisconsin and other mid-west states have the lowest participation rate (2-3%).

Colorado, Connecticut, Delaware, Michigan, Idaho and some other east-coast states have the highest participation rate (100%). The participation rate of Colorado have significantly changed year-to-year from 11% to 100% when the test became mandatory for getting into college. <https://www.testive.com/colorado-sat-change-2017/>

❖ ACT Participation vs States

2017 ACT:

Maine, New Hampshire, Delaware, Rhode Island, Pennsylvania and other north-east states have the lowest participation rate (18%).

Alabama, Kentucky, Utah, Wisconsin, Tennessee have the highest participation rate (100%).

2018 ACT:

Maine, Rhode Island, New Hampshire, Delaware, Pennsylvania have the lowest participation rate (15%).

Alabama, Kentucky, Wisconsin, Tennessee, Utah have the highest participation rate (100%).
These states are consistent year-to-year.

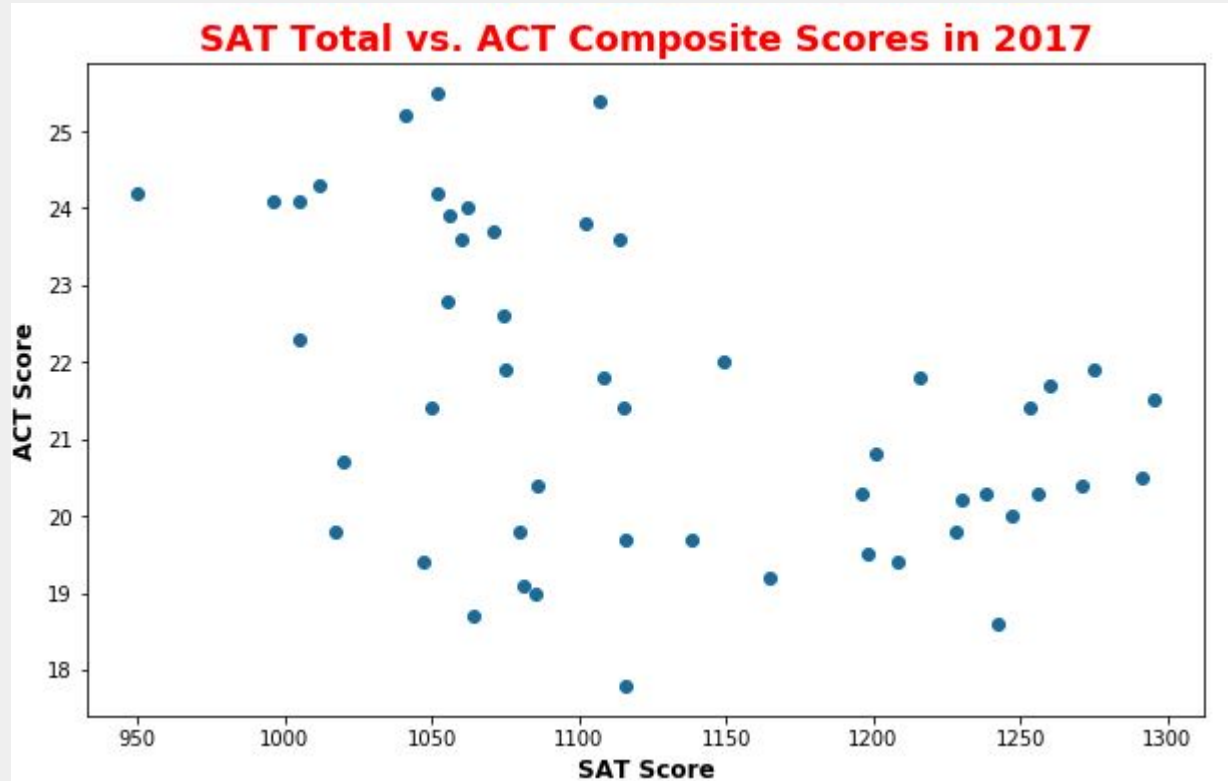
Participation Facts

There is a positive correlation in participation rates between years with Colorado exception.

However, there is a negative correlation in participation rates of SAT and ACT tests.
Demographically, east coast is SAT-dominant while mid-west is ACT-dominant.

There are also neutral states that show above 50% participation on both tests like Hawaii, Florida, South Carolina, Georgia in both years.

SAT Total vs ACT Composite '17



The data points are clustered into two groups:

- 1) Low SAT, high ACT score.
- 2) High SAT, low ACT.

❖ SAT Score vs States

2017 SAT:

District of Columbia, Delaware, Idaho, Michigan, Maine have the lowest total score (950-1000).

Minnesota, Wisconsin, Iowa, Missouri, Kansas have the highest total score (1260+).

2018 SAT:

District of Columbia, Delaware, West Virginia, Idaho, Utah have the lowest total score (1000). Minnesota, Wisconsin, North Dakota, Iowa, Kansas have the highest total score (1265+).

❖ ACT Score vs States

2017 ACT:

Nevada, Mississippi, South Carolina, Hawaii, North Carolina have the lowest composite score (18-19).

New Hampshire, Massachusetts, Connecticut, Maine, District of Columbia have the highest composite score (24+).

2018 ACT:

Nevada, South Carolina, Mississippi, Hawaii, Alabama have the lowest composite score (18-19).

Connecticut, Massachusetts, New Hampshire, New York, Michigan have the highest composite score.(24+).

Score Facts

There is a surprising result that mid-west states are consistently most successful in SAT test both years despite their low participation rate.

"In the Midwest, the SAT is often a back-up exam for perfectionists—the students who want to exhaust every possible option before turning in their college applications." (Ben Taylor, Forbes, June 2014)