

2017-2018 SAT and ACT Analysis

...

Rose Dennis

Overview

- Goal
- Data Changes
- Analysis
 - Scores vs Participation
 - SAT participation - largest difference
 - ACT participation - largest difference
- Conclusions
- Further Steps
 - Data
 - Modeling
- Thank you!

Goal:

To explore and glean insights about participation rates on the SAT and ACT datasets in 2017 and 2018 for the United States

Data -amendments to the original final dataset

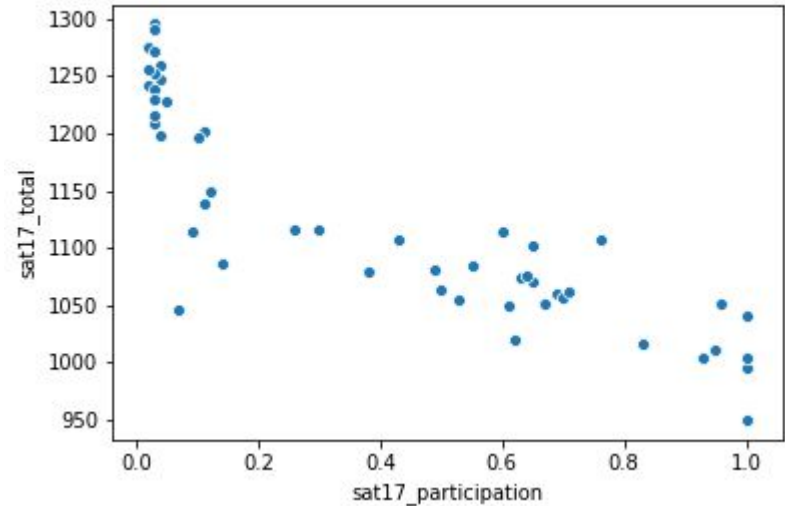
New dataset size: 50 rows by 21 columns

Feature	Type	Dataset	Description
sat_total_diff	integer	SAT	The absolute value of the difference between SAT Total scores in 2017 and 2018
act_composite_diff	float	ACT	The absolute value of the difference between ACT Composite scores in 2017 and 2018
sat_diff	float	SAT	The absolute value of the difference between SAT Participation Rates in 2017 and 201
act_diff	float	ACT	The absolute value of the difference between ACT Participation Rates in 2017 and 2018

Analysis

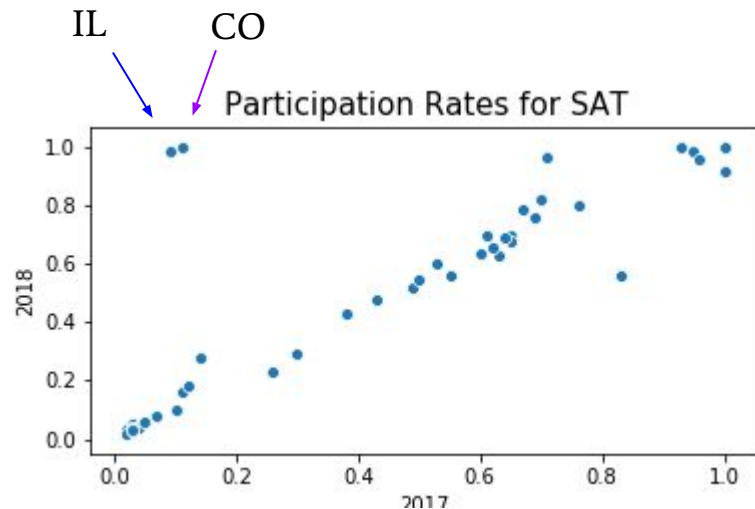
- Exemplifies negative relationship between participation rates and total scores
 - The higher the participation rate is, the lower the total score
- Specific plot is for the 2017 SAT
- This pattern was seen across the board

Participation Rate vs Total Scores



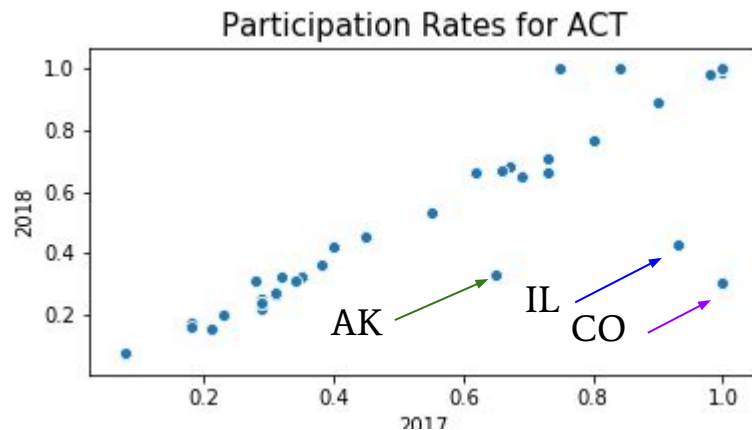
Analysis

- Two states had huge jumps of SAT participation rates from 2017 to 2018
 - Illinois increased from 0.09 to 0.99
 - Colorado increased from 0.11 to 1.0



Analysis

- Two states had huge jumps of ACT participation rates from 2017 to 2018
 - Illinois decreased from 0.93 to 0.43
 - Colorado decreased from 1.0 to 0.3
 - Alaska decreased from 0.65 to 0.33



Conclusions

- Colorado and Illinois made the SAT mandatory in the year 2017
 - Indicates the upwards trend in participation
- Colorado and Illinois also made the SAT free
 - Indicates the upwards trend in participation
- Alaska stopped requiring their high school students to take either of these tests
 - Indicates the large decrease in ACT participation
- More people taking the test -> lower total average

Further Steps

Data:

- Is the test required?
- Gender of test takers within each state
- Price of taking a given test

Modeling:

- Can we predict test scores?
- What kind of statistical model is best?



Thank you!

Resources:

- <https://www.chalkbeat.org/posts/co/2015/12/23/goodbye-act-hello-sat-a-significant-change-for-colorado-high-schoolers/>
- <https://www.testive.com/illinois/>
- <https://www.adn.com/alaska-news/education/2016/06/30/students-no-longer-need-national-tests-to-graduate/>
- <https://blog.prepscholar.com/act-scores-by-state-averages-highs-and-lows>
- <https://blog.collegevine.com/here-are-the-average-sat-scores-by-state/>