SAT & ACT Analysis

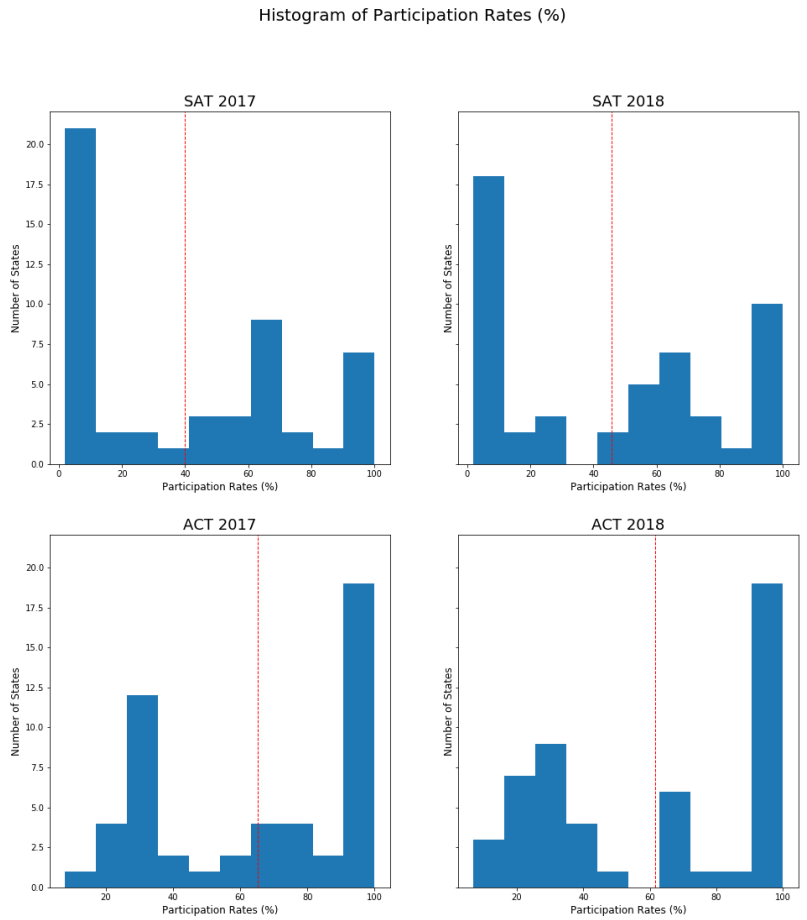
What do we have?

- 2 years worth of ACT and SAT data
  - 2017
  - 2018

Why are we interested to examine this data?

- SAT and ACT are the main standardised tests used for college applications in the U.S.
- We want to know how the two tests are correlated e.g. would a student's test performance vary significantly whether he/she takes SAT or ACT?
- We want to understand the correlation between individual test components (e.g. Reading, Math)
- We want to know if there are anomalies in the data and understand what events might have caused the anomalies

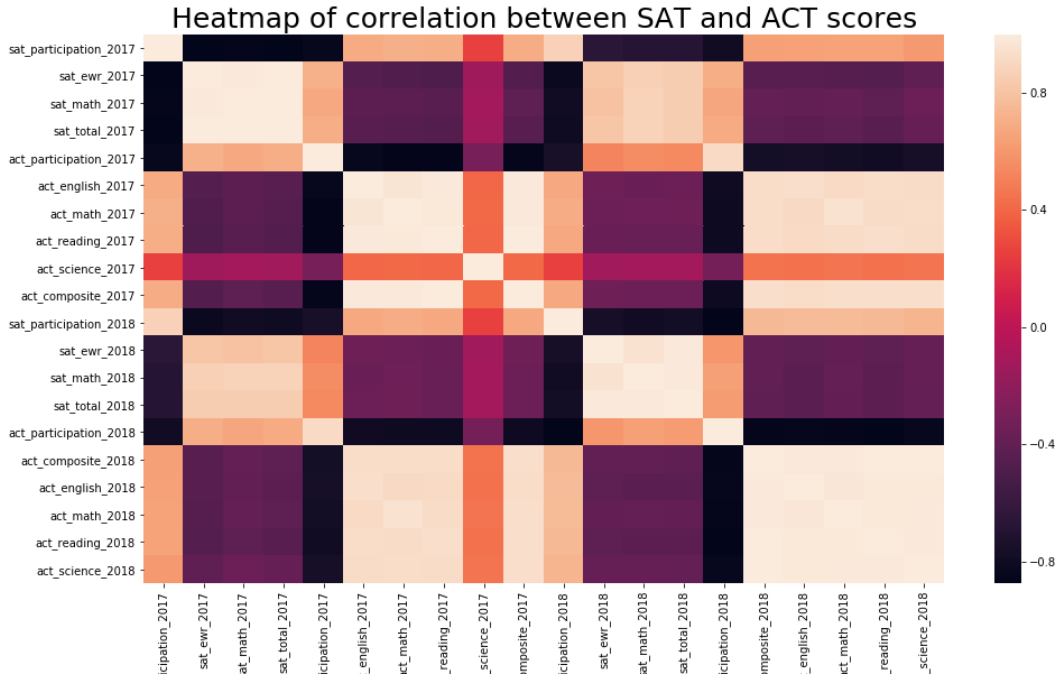
Exploration & Analysis



Findings

- Participation scores do not follow normal distributions

Correlations for a quick overview

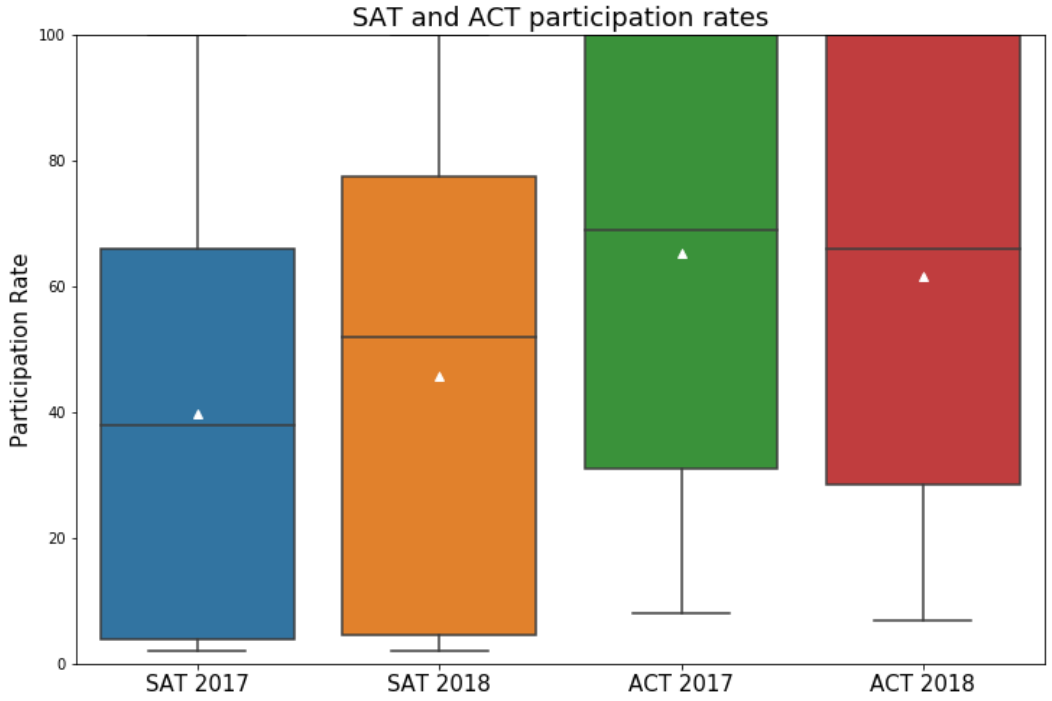


Some results to investigate

- strong –ve correlation between SAT and ACT participation rates
- ACT 2017 Science data does not seem to correlate with anything else
- strong –ve correlation between SAT and ACT subject scores

Correlations for a quick overview

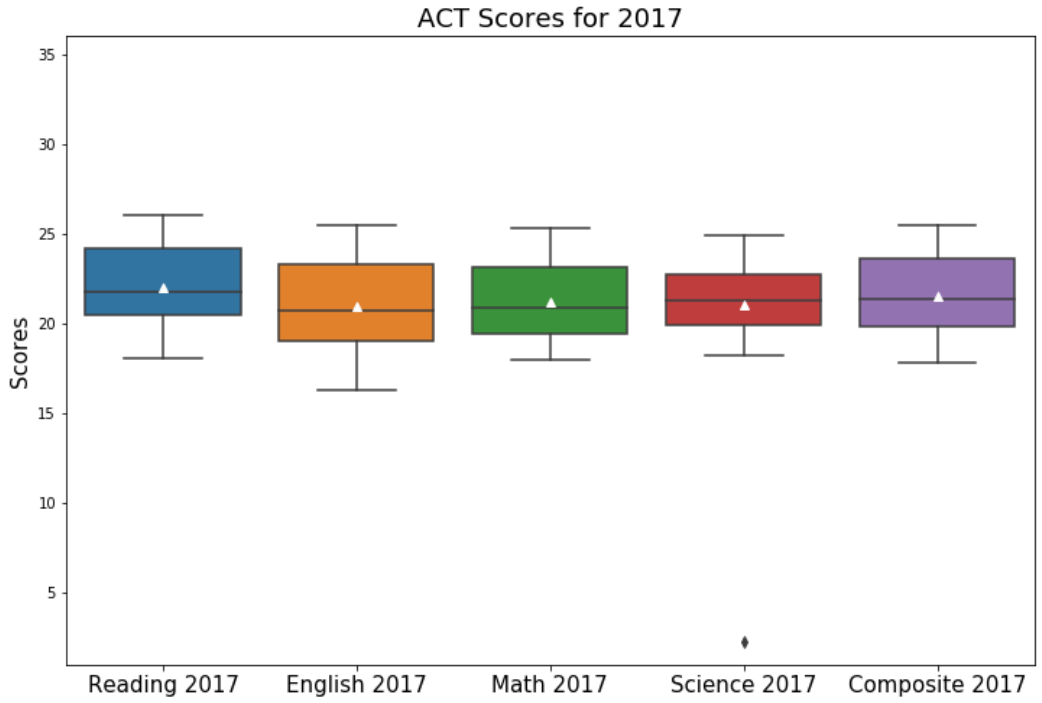
SAT vs ACT participation rates



Findings

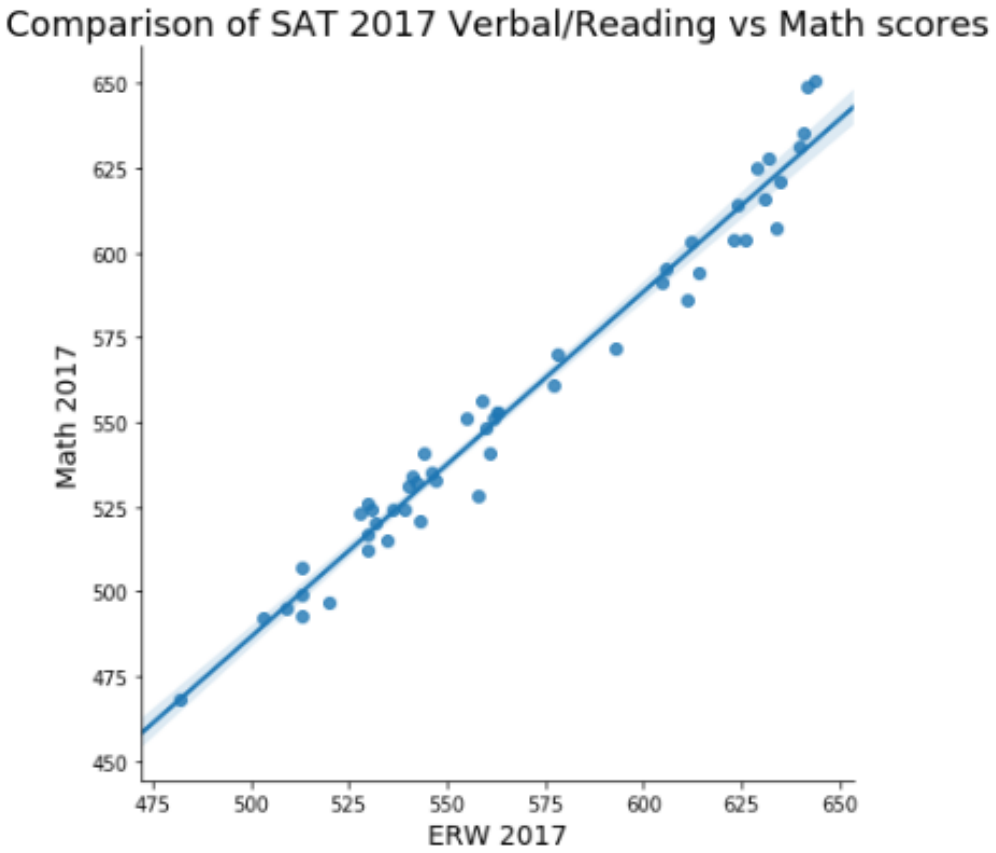
- Median participation rates higher for ACT than for SAT
- Participation rates have fairly symmetrical spreads, except for SAT 2018

ACT subject scores



Findings

- ACT subjects are generally good indicators of one another.
- Subject scores have fairly narrow spreads with the mean lying close to the median.



Findings

- Verbal/Reading is actually not dichotomous with Math (correlation 0.98)7

SAT vs ACT participation rates

Anomalies: Colorado

- WHAT?
  - SAT 2017 : 11% participation rate → SAT 2018: 100% participation rate
  - SAT 2017: 1201.0 average total score → SAT 2018: 1025.0 average total score

- WHY?
  - In mid 2017, Colorado passed a ruling that all high school students must sit for the SAT test
  - Possibly huge spike in number of test-takers brought down the state average

Anomalies: Alaska

- WHAT?
  - ACT 2017 : 65% participation rate → ACT 2018: 33% participation rate
- WHY?
  - In mid-2016, Alaska scraped away mandatory requirements to sit for either SAT or ACT

Conclusions & Recommendations

- Make SAT/ACT testing compulsory, free, and administered during curriculum time
  - Bring greater opportunities of attending college to students (surface high-achieving students who are not aware of their own potential)
  - Most viable way of reducing barriers to testing for low-income students

- Give time
  - A huge surge in the size of the test-taking population will understandably bring down state averages. Give it a couple of years for the effects of changes to smooth out