

Data Analysis on ACT and SAT # in 2017 and 2018

Ken:

General Assembly – DSI 27

Background



- In the US, some states **do not** require students to take either ACT or SAT. (No mandatory test!)
- In order to foster and improve the education system, recommendations are made for states who have no mandatory test:
 - to mandate either ACT or SAT
 - or to remain as it is

But why?

- Provide all students in general to have a chance to get into college admissions.
- Encouraging students who have not planned ahead to have the opportunity to progress academically with at least 1 educational syllabus.

Data Sets & Methods

ACT 2017 Data (State, Participation, Individual Test Score Average, Composite Score Average)

ACT 2018 Data (State, Participation, Composite Score Average)

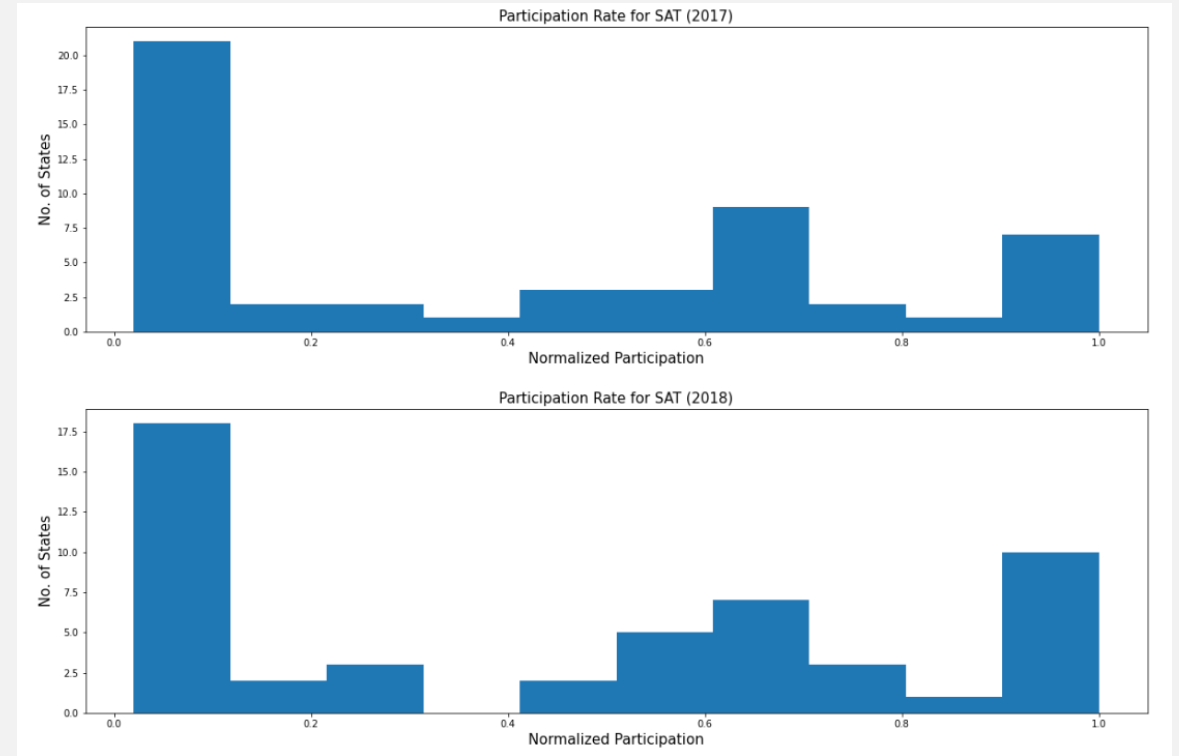
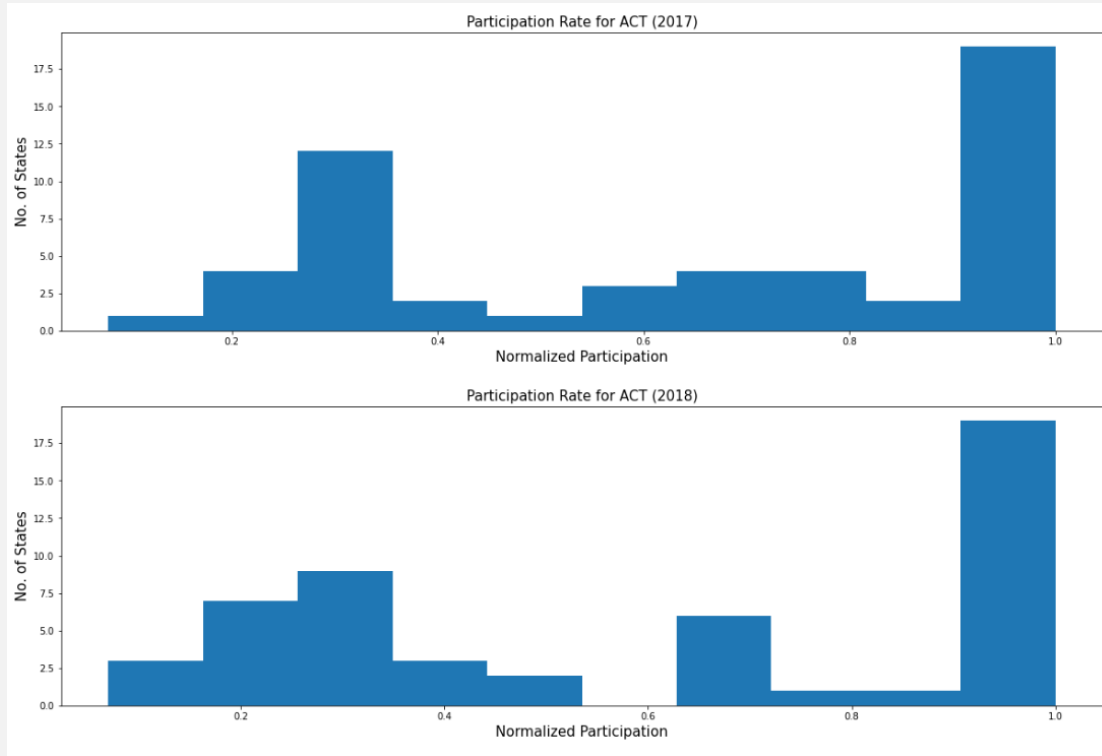
SAT 2017 Data (State, Participation, Individual Test Score Average, Total Score Average)

SAT 2018 Data (State, Participation, Individual Test Score Average, Total Score Average)

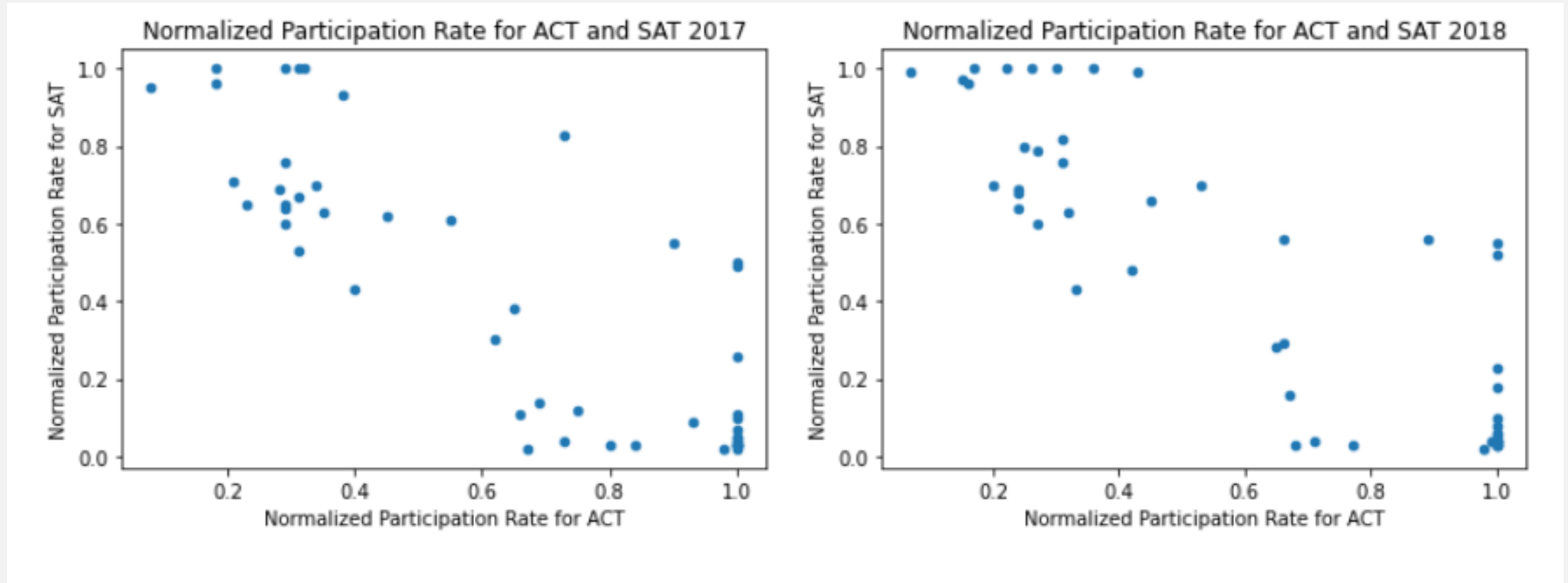
Statistics
Exploratory Data Analysis
Visualisations

Python
NumPy
Matplotlib
Seaborn

ACT tests have higher Participation Rate than SAT tests

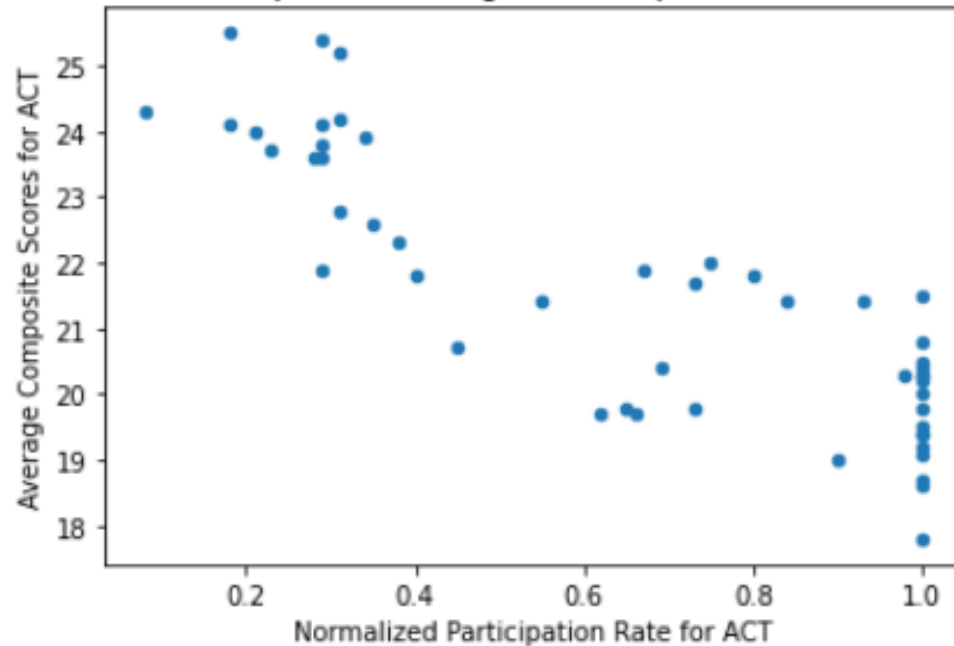


Participation Rates are **negatively correlated** between ACT and SAT

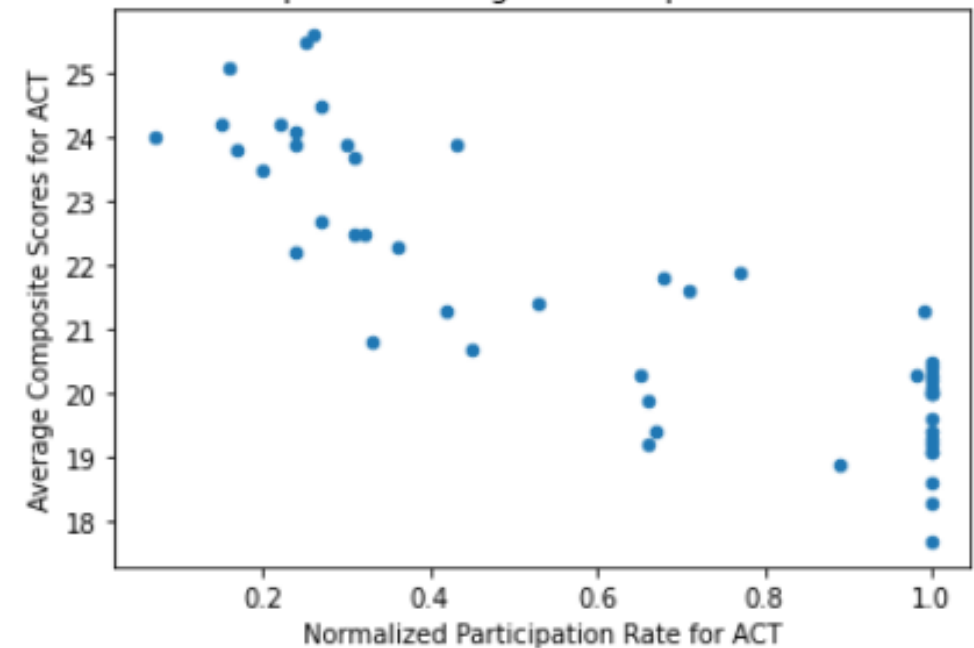


Scores are also **negatively correlated** against Participation Rates!

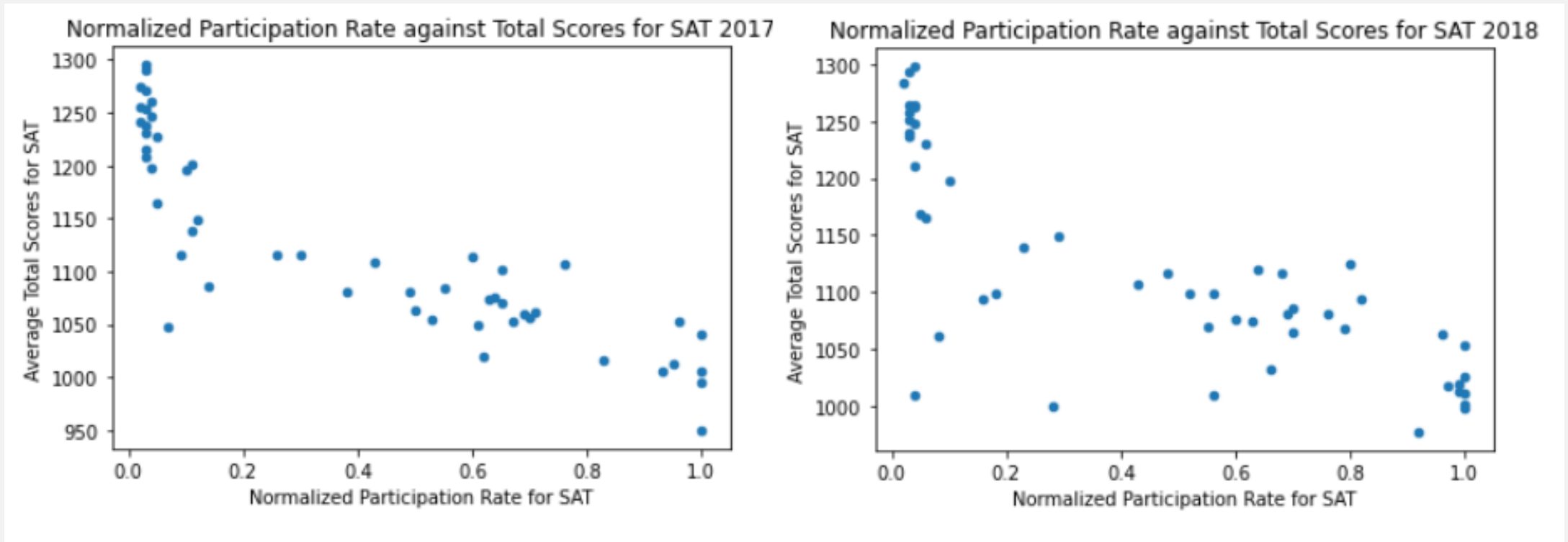
Normalized Participation Rate against Composite Scores for ACT 2017



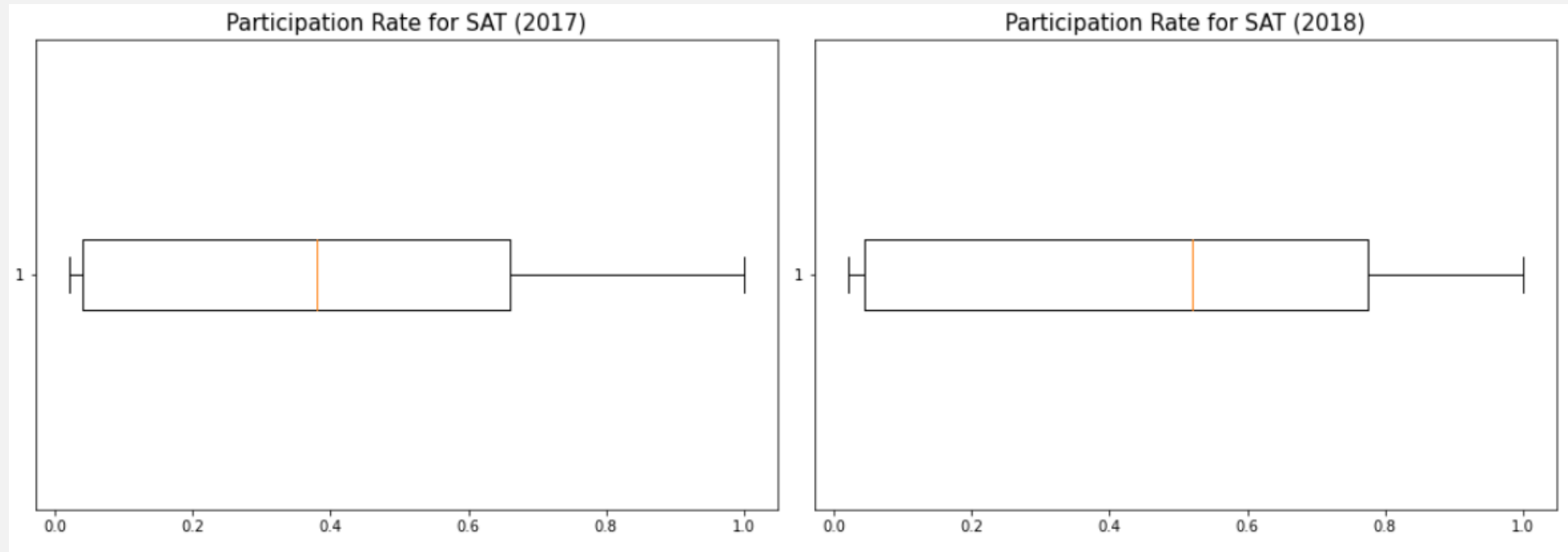
Normalized Participation Rate against Composite Scores for ACT 2018



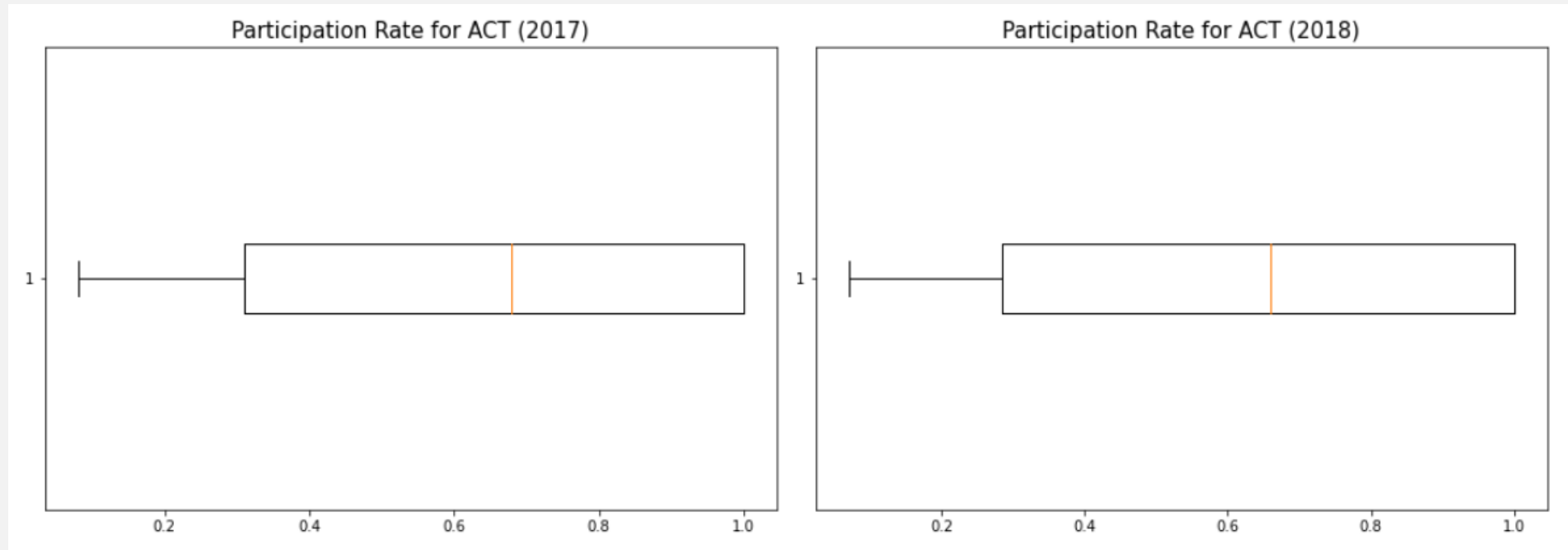
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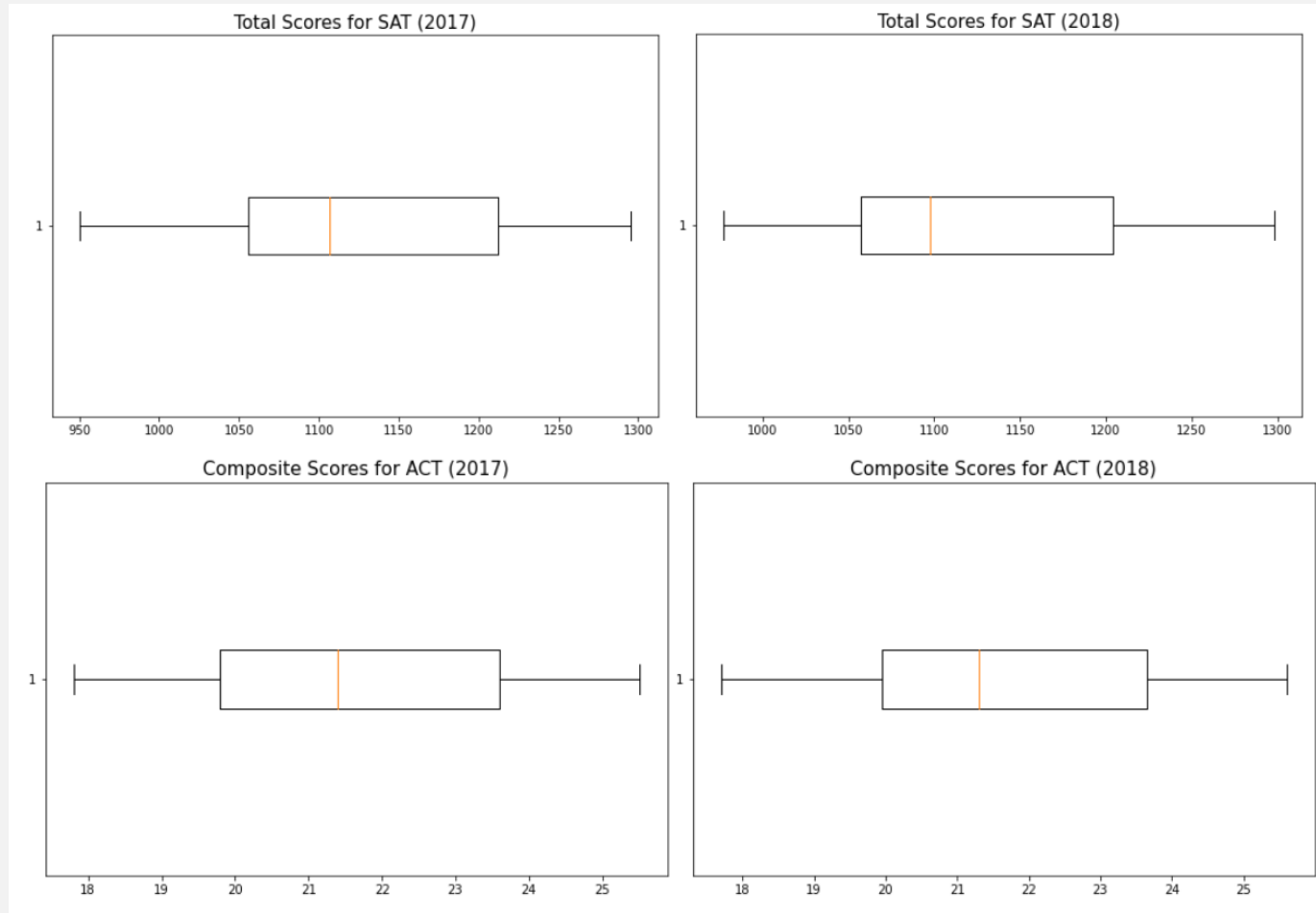
The larger portion of participate rate fall in the **Q1** for SAT, indicating that the **participation rate is low**.



75th-100th percentile fall under 100% participation rate!!



There is a larger range for SAT test score in the Q3 than ACT!



And so? What are the findings?

The participation rate for ACT has been performing well, which may indicate that **more states are leading towards taking ACT rather than SAT.**



And so? What are the findings?

The SAT test has a large range of average test scores, as such, it may show that students who **do well in SAT will do very well and vice versa.**



And so? What are the findings?

Even with a higher number of participation rates, ACT results have been consistent with its disparity less than SAT which may indicate that **ACT has more consistency in its difficulty and grading.**



And so? What are the findings?

Participation Rates are **negative correlated** and there are a number of states with mandatory ACT and SAT tests.



Recommendations?

To remain as it is, as there are no benefits in mandating either ACT or SAT based on the data.

Collect more data!

- Student data - include students who take neither or both
- Income
- City level participation rate and scores