

Analysis of SAT & ACT

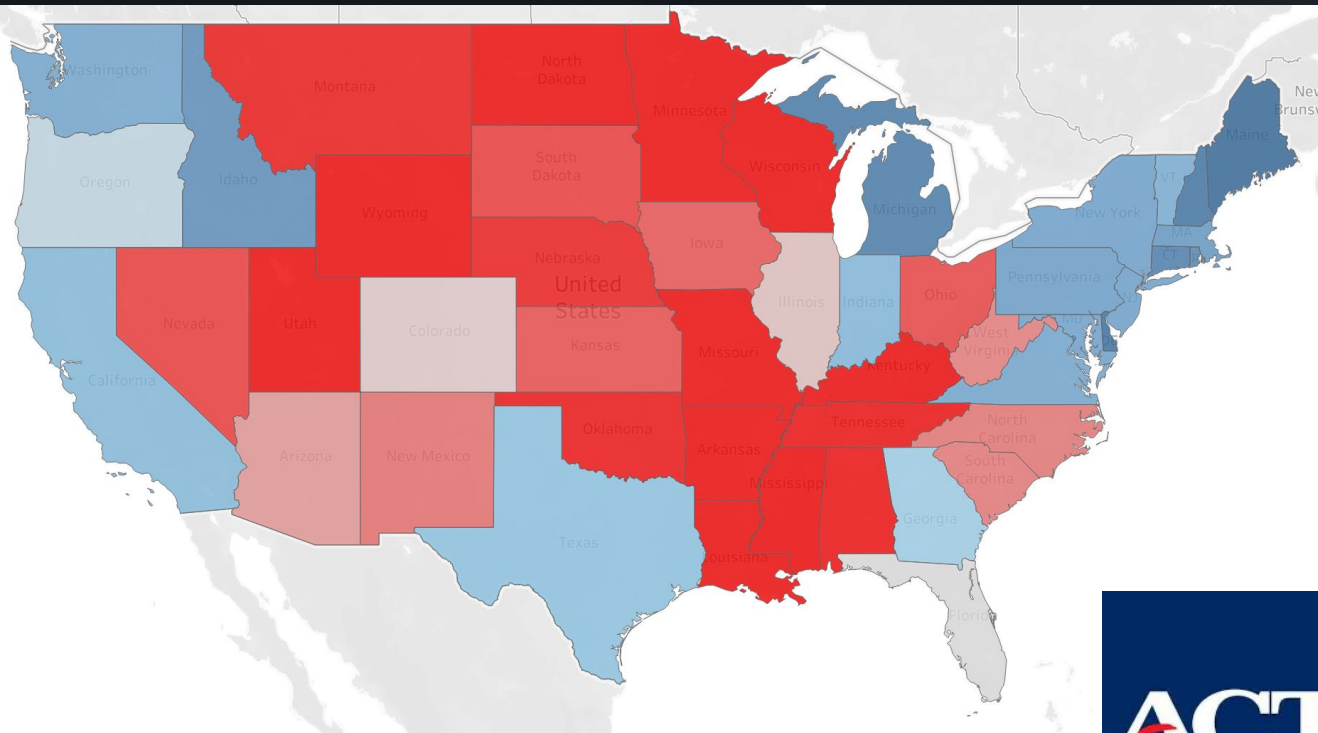


Problem Statement

- 1) relationship between participation rates and scores
- 2) relationship between personal income and participation rates
- 3) difference in performance between 2017 and 2018
- 4) states that showed large change in participation



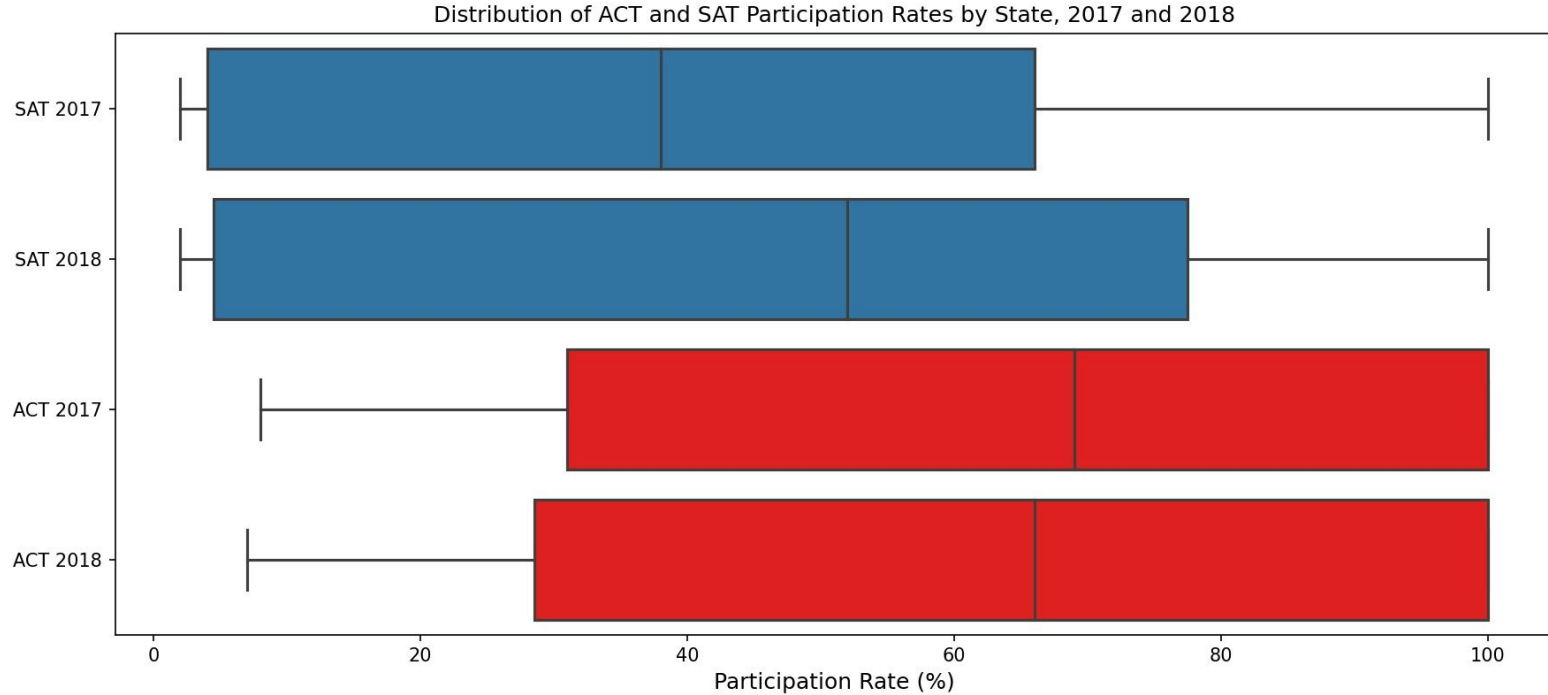
Current State



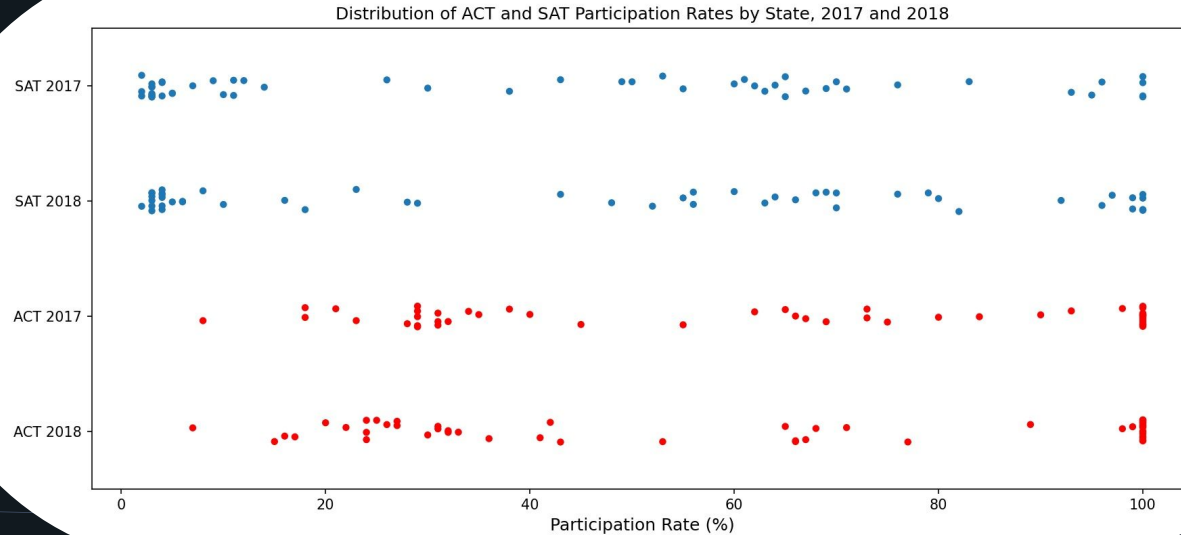
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SAT is less popular?



Distribution of Rates



- 1) uneven and asymmetric distribution of rates
- 2) states where ACT is compulsory have poor participation in SAT

Big Change

	SAT	ACT
Colorado	+89 %	- 70.0
Illinois	+90 %	- 50.0

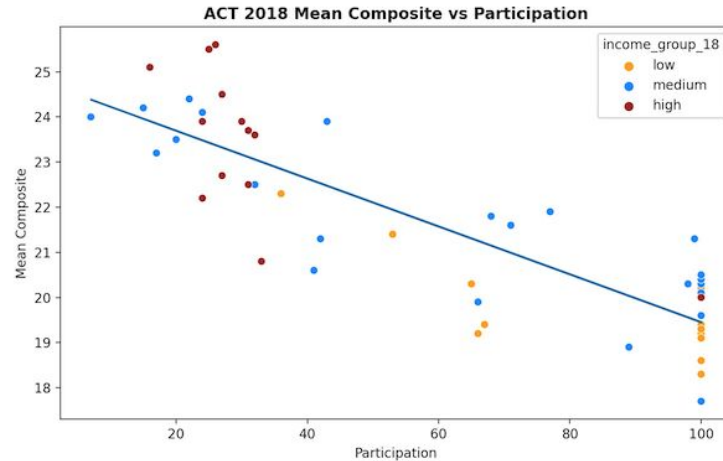
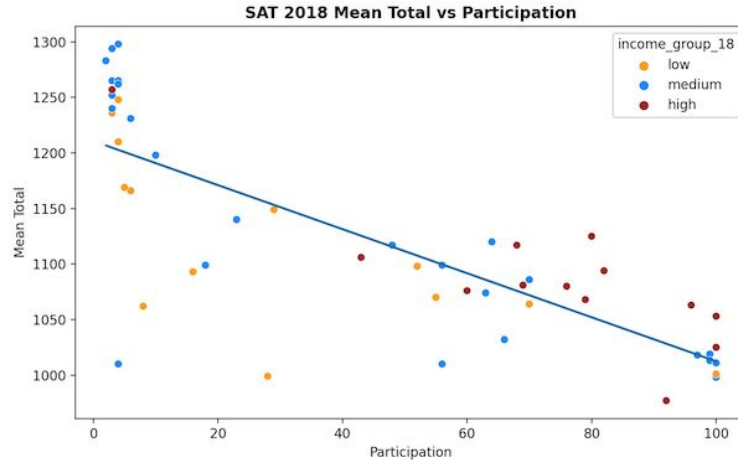
Colorado

"redesigned SAT measures the skills and knowledge that evidence shows is critical for college and career readiness, including critical thinking and analytical reasoning."

Illinois

"weighed the attributes of both exams and decided the SAT was better aligned with standards for what students should know in Illinois".

How are scores affected by **participation rate**?

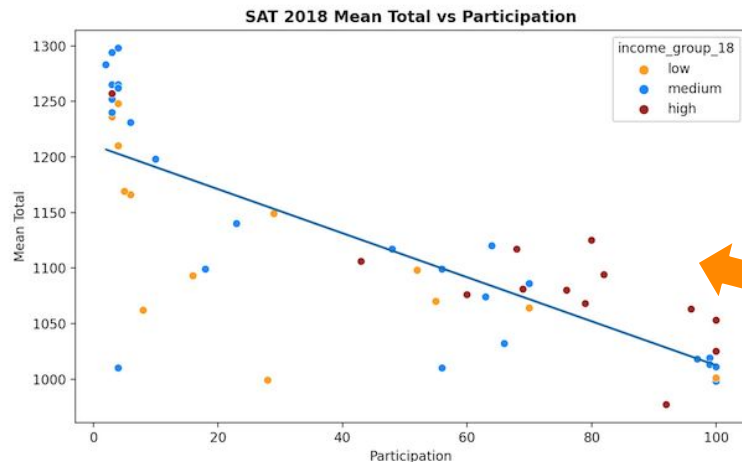


$-0.87 < \text{correlations} < -0.79$

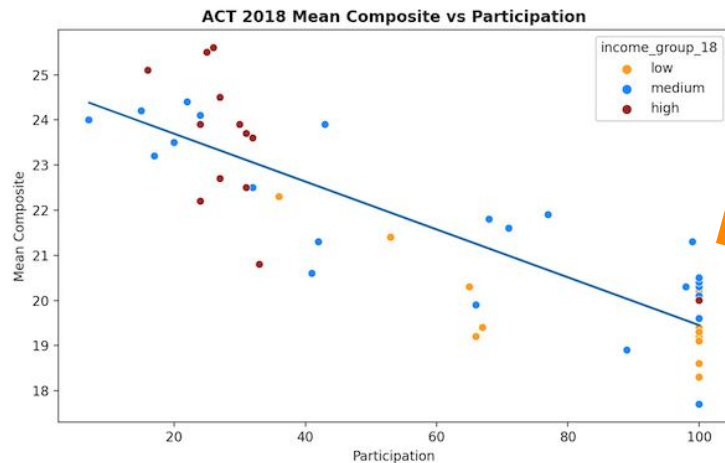
The higher the participation,
the lower the scores.

‘selection bias’

How are scores affected by **income**?



'high' income : SAT



'low' and 'medium' income : ACT

Estimating National Mean

total score: 1126

2017

total score: 1120

2018

**no significant change
in performance**

statistically methods: bootstrap sampling and z-test

Conclusions

- 1) Strong negative correlation between the participation rates and performance in scores suggests some form of selection bias in which states with lower participation results in higher performance.
- 2) Majority of wealthier states, with some exceptions, favour SAT over ACT. Most states that mandate compulsory testing using ACT fall in the 'medium' and 'low' income group by states.

Conclusions

- 3) No significant change in SAT performance from 2017 to 2018 across the nation.
- 4) Colorado and Illinois were revealed to have implemented switch from ACT to SAT and state intervention was the key.

Recommendations



- 1) Target **Florida** as the state does not show preference for any test.
- 2) Florida showed **drop** in rates for both tests from 2017 to 2018.
- 3) Use **Colorado** and **Illinois** as marketing cases.

Strategies

- 1) Put forth strong case for compulsory testing as **graduation requirement**, thus improving students' prospect.
- 2) Convince state authority to cover **fees** for candidates, removing **financial barrier** for the disadvantaged students.
- 3) **Redesign curriculum** to include preparation for SAT.



Thank you.

The background features a series of thin, light blue lines that curve upwards from the bottom, creating a sense of depth and movement. A small, short orange horizontal dash is positioned below the 'Thank you.' text on the left side.