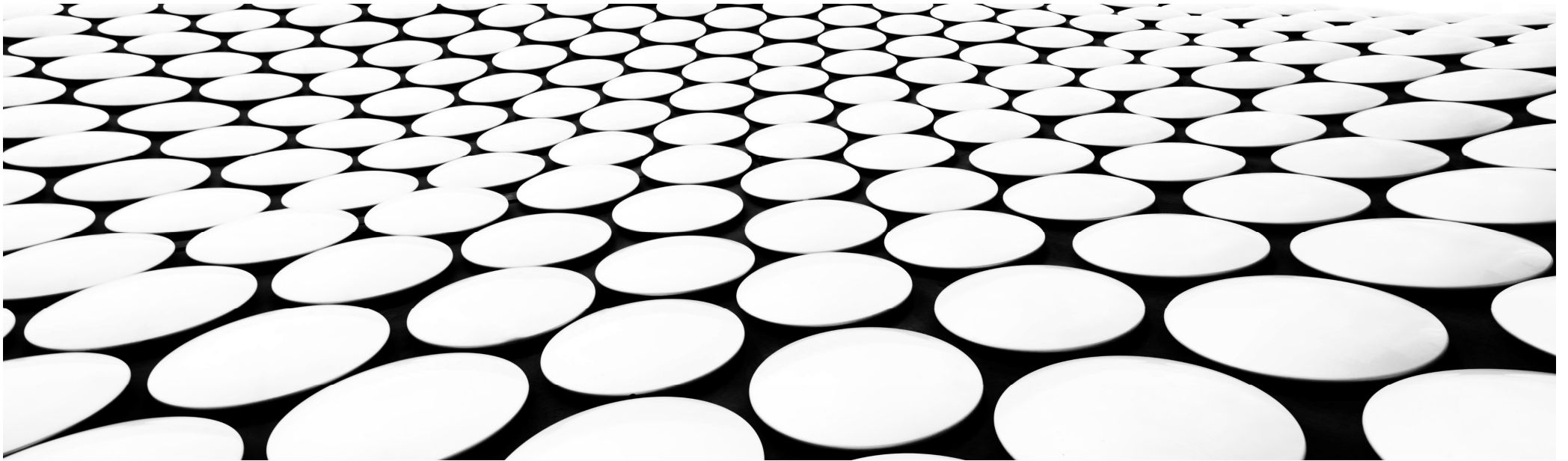


---

# SAT & ACT DATA ANALYSIS

CHRISTOPHER CHAN / JORDAN NALPON / STEVEN LEE



---

# **PROBLEM STATEMENT**

How to increase participation in future SAT tests based on past SAT and ACT results from 2017 and 2018

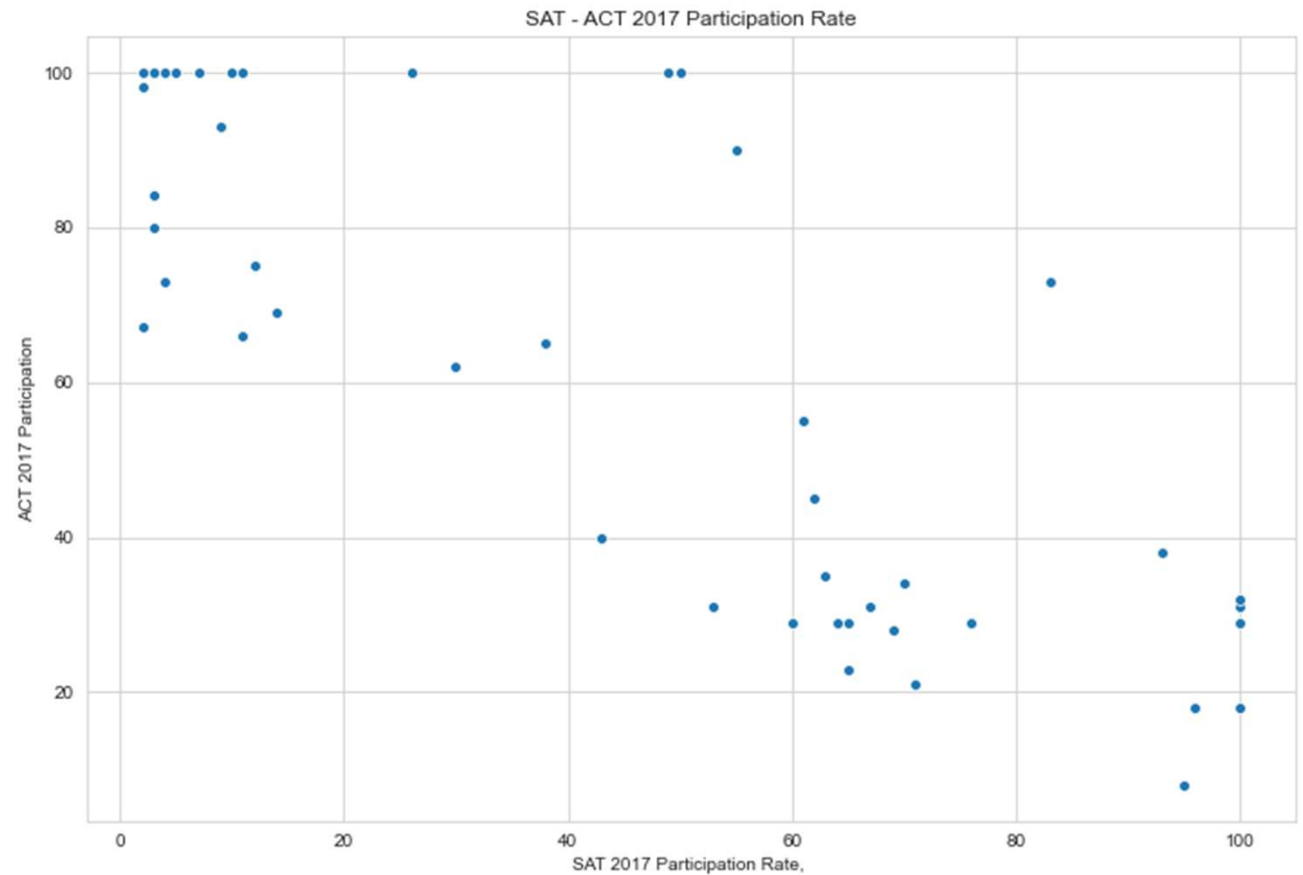
---

# SAT VS ACT

- Both are tests based in USA for high schoolers as a college entry measurement
- Both started in 1926 with 2.22 million graduates each
- Both cover topics like English, Math, Writing and ACT includes a Science paper in its test

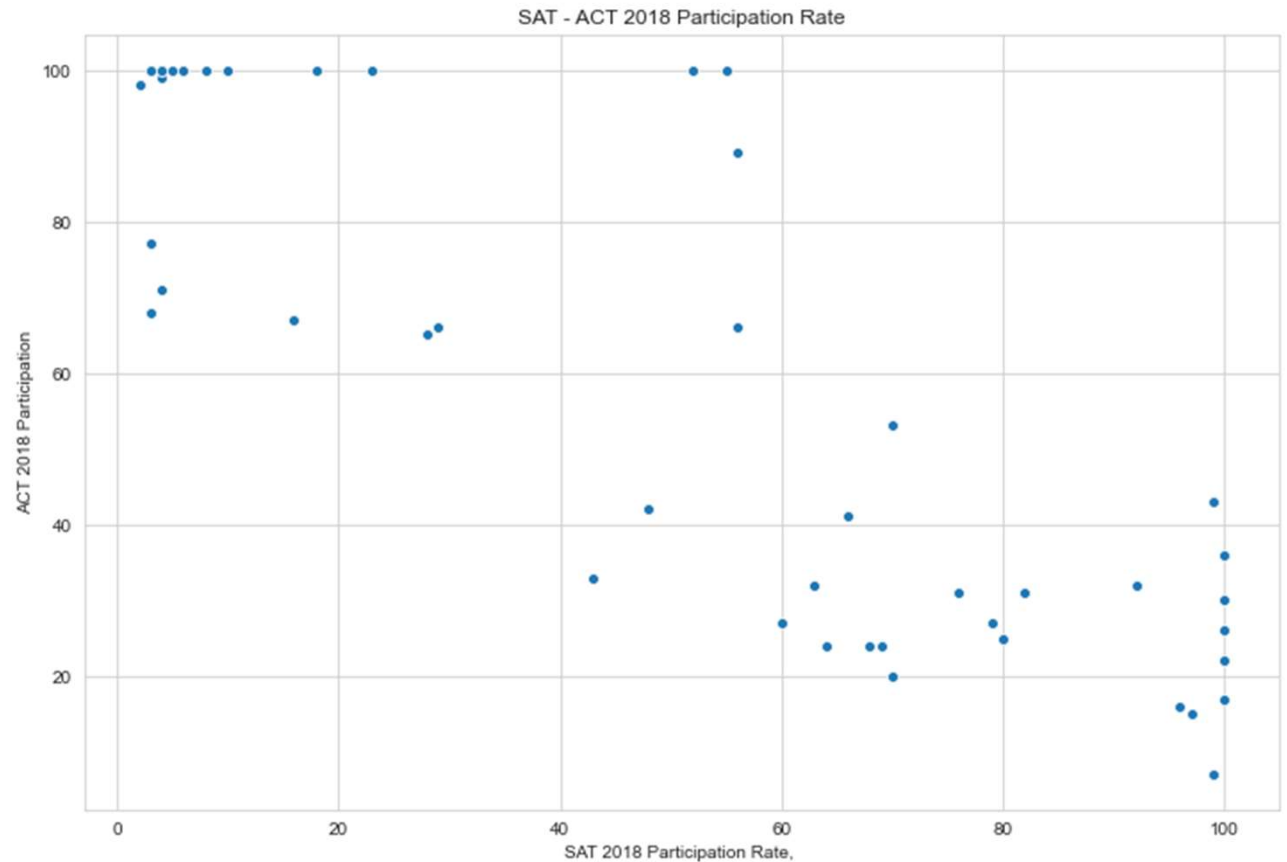
# PARTICIPATION RATES FOR SAT & ACT (2017)

- 1) Most states tend to choose either or for SAT and ACT
- 2) There are more states in the ACT cluster than the SAT cluster
- 3) States that do both are more inclined towards SAT



# PARTICIPATION RATES FOR SAT & ACT (2018)

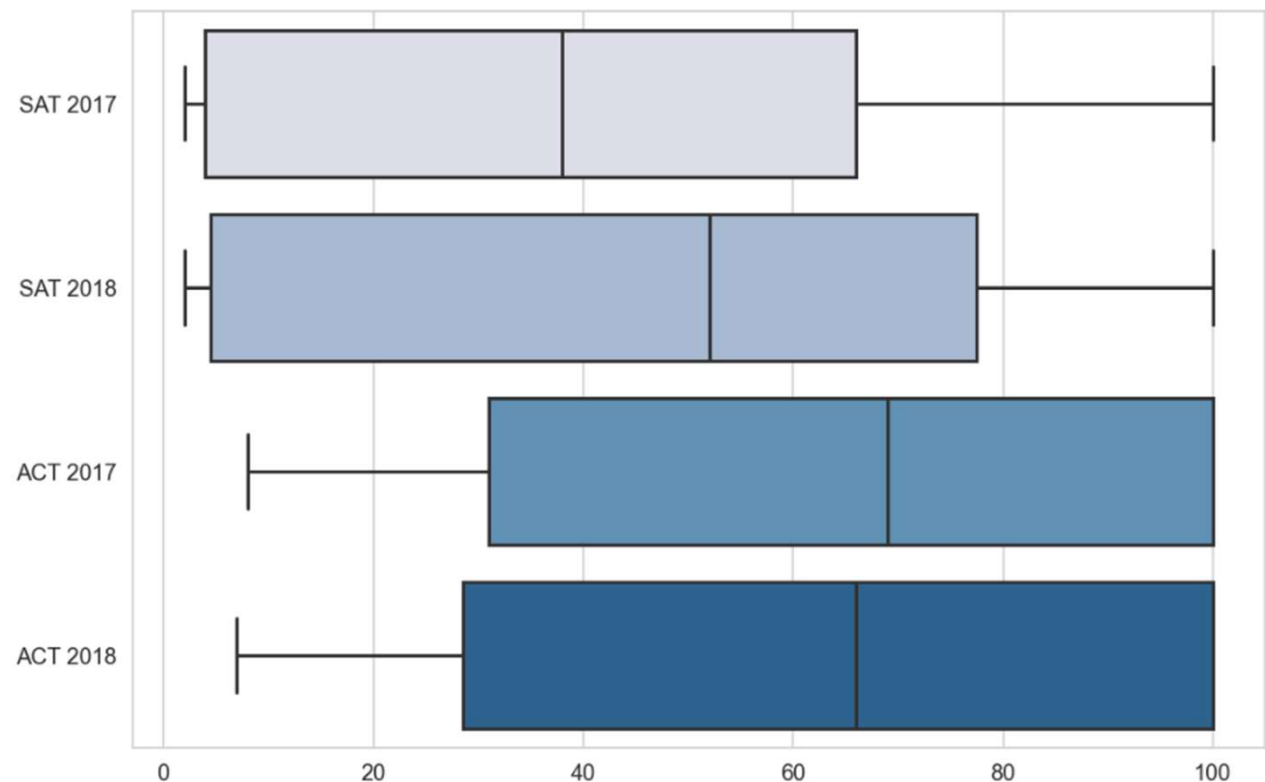
- 1) More states in the 100% ACT rates
- 2) The middle cluster remains about the same
- 3) There is a shift from the 100% SAT participation towards ACT



## SAT & ACT PARTICIPATION RATES COMPARISON

- Overall, the ACT participation rates are higher
- There are more states with 100 percent ACT participation levels than there are states with 100 percent SAT participation levels
- “ACT is winning the race”

ACT and SAT Participation Rates for 2017 and 2018

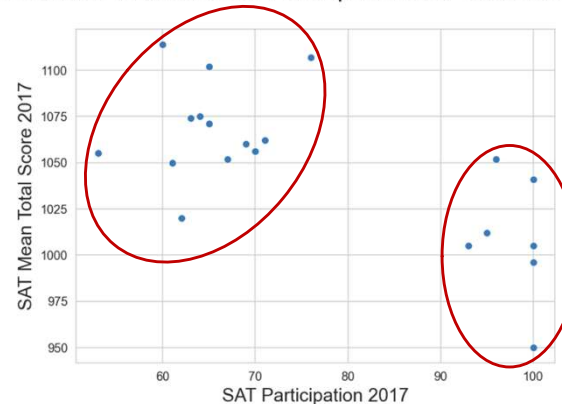


# CORRELATION BETWEEN PARTICIPATION RATE AND TOTAL SCORE

- There is negative correlation between participation levels and mean total/composition scores
- As the level of participation increases the average total/composition scores lower
- States with the highest participation rates have the lowest average total/composite scores

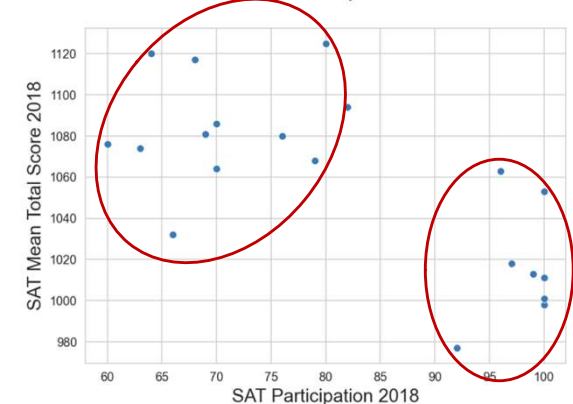
2017

Correlation Between SAT Participation and Total Score 2017

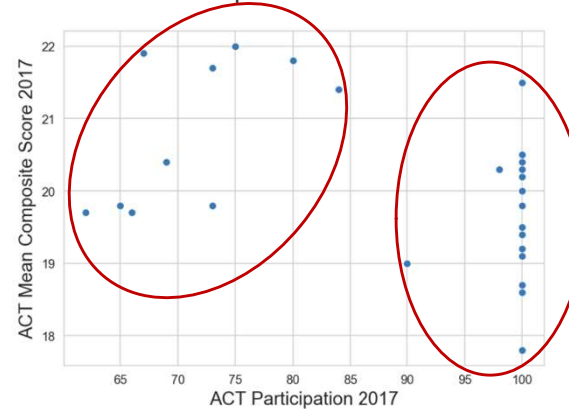


2018

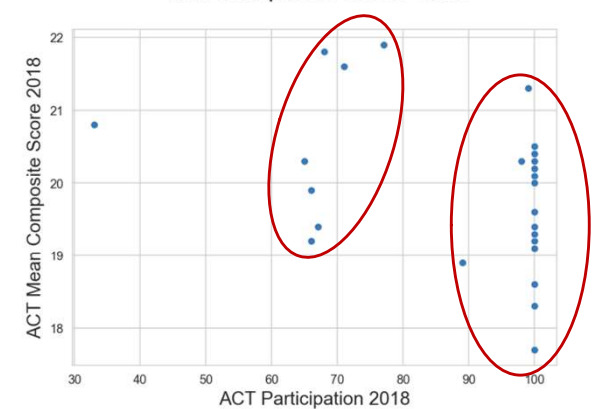
Correlation Between SAT Participation and Total Score 2018



Correlation Between ACT Participation and Composite Score 2017



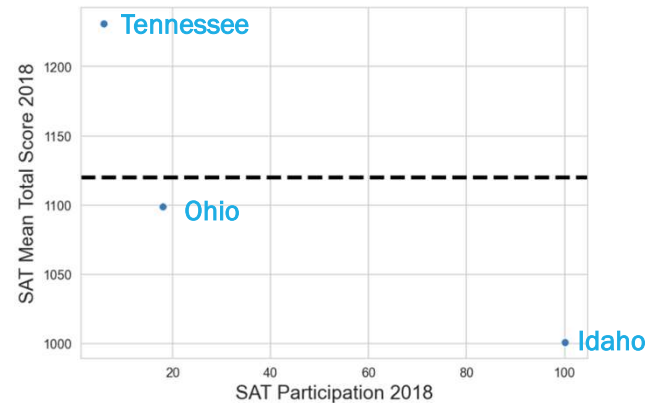
Correlation Between ACT Participation and Composite Score 2018



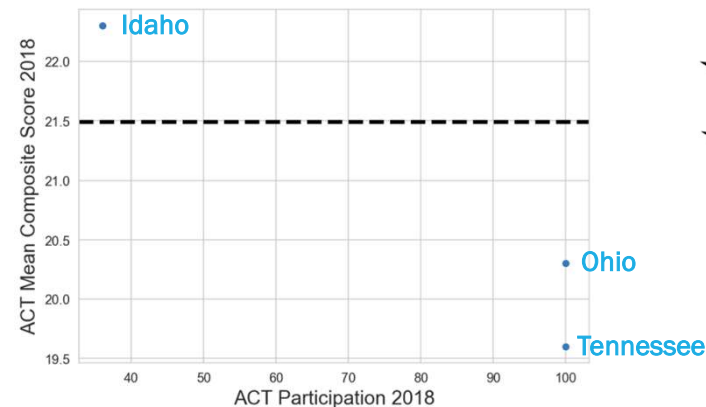
# BOTH SAT & ACT MADE MANDATORY IN SOME STATES

- Despite having both SAT & ACT made mandatory, the correlation pattern seem to apply

Correlation Between SAT Participation and Total Score 2018



Correlation Between ACT Participation and Composite Score 2018



## States that require the ACT:

- Alabama
- Hawaii
- ➔ • Idaho
- Kentucky
- Louisiana
- Mississippi
- Missouri
- Montana
- Nebraska
- Nevada
- North Carolina
- North Dakota
- ➔ • Ohio
- South Carolina
- ➔ • Tennessee
- Utah
- Wisconsin
- Wyoming

## States that require the SAT:

- Colorado
- Connecticut
- Delaware
- District of Columbia
- ➔ • Idaho
- Illinois
- Maine
- Michigan
- New Hampshire
- ➔ • Ohio
- ➔ • Tennessee



## RECOMMENDATIONS

- Most effective: Work with states to make SAT mandatory
- Which state?
- Iowa

	state	part_sat_2017	part_act_2017	part_sat_2018	part_act_2018	overall_part
31	New Mexico	11	66	16	67	40.3
16	Kansas	4	73	4	71	37.9
15	Iowa	2	67	3	68	35.1

## RECOMMENDATIONS

- Provide sufficient test preparation for students

	participation_sat_2017	participation_sat_2018	participation_act_2017	participation_act_2018
state				
Colorado	11.0	100.0	100.0	30.0

- Switch ACT with SAT as their main test giver
- Focused on preparation of the test
- Khan Academy, Testive
- College board reporting system

## RECOMMENDATION

- Why not take both ACT and SAT?

SCHOOL	% FROSH ENROLLED IN FALL 2017 THAT SUBMITTED ACT AND SAT SCORES
The University of North Carolina at Chapel Hill	49%
The University of Texas at Austin	38%
Stanford University	28%
University of Virginia	26%
MIT	26%
University of Michigan—Ann Arbor	26%
Cal Tech	21%
Harvard College	20%
Princeton University	19%
Yale University	18%
Brown University	16%

Princeton University's dean of admissions –

*“more information is always better. If students choose one or the other, that’s fine, because both tests have value. But if they submit both, that generally gives us a little more information.”*

---

## ONLINE REFERENCES

<https://blog.prepscholar.com/act-scores-by-state-averages-highs-and-lows>

<https://blog.collegevine.com/here-are-the-average-sat-scores-by-state/>

<https://blog.collegevine.com/here-are-the-average-sat-scores-by-state/>

<https://www.denverpost.com/2017/03/06/colorado-juniors-sat-college-exam/>

<https://www.princetonreview.com/college-advice/5-reasons-to-take-both-sat-and-act#:~:text=Most%20colleges%20require%20either%20the,both%20tests%20when%20they%20apply.>