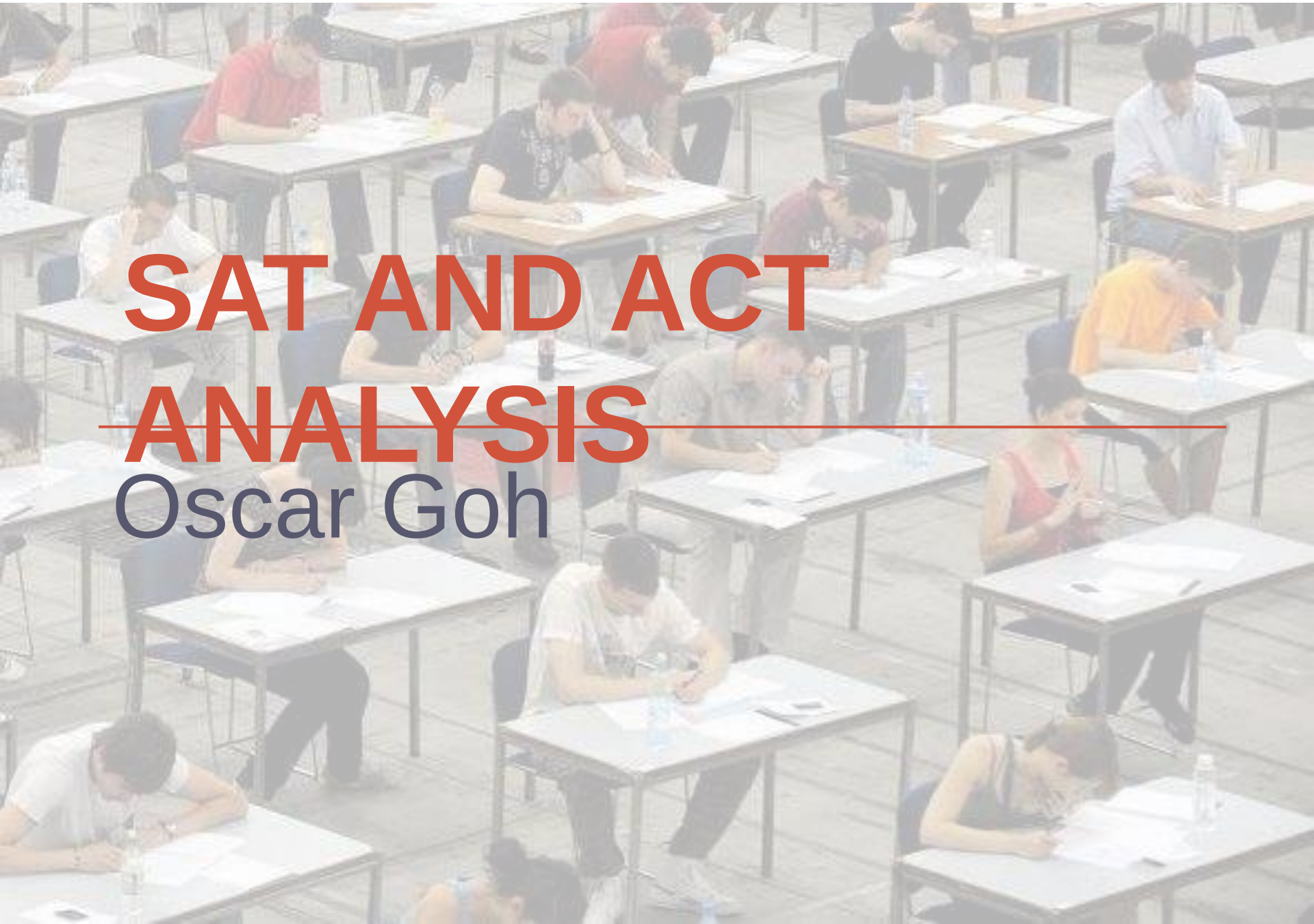

SAT AND ACT ANALYSIS

Oscar Goh

BACKGROUND

The ACT was created by an education professor at the University of Iowa named Everett Franklin Lindquist in 1959 as a competition to SAT. It was administered to 75460 students in the first year it was created. It gained popularity and grew the number to over a million in 1972.

By 2015, ACT has surpassed SAT as the most popular college admissions test.

In 2016, a new format of SAT with less confusing question phrasing and trigonometry in the math section was released.

PROBLEM STATEMENT

To make recommendation of a State to the College Board to increase the participation rate in SAT.

DATA

Data of SAT and ACT in years 2017 and 2018 are used for this analysis.

Feature	Type	Dataset	Description
state	object	final	State name
participation_sat2017	int	final	Participation rate of the State in 2017 in %
read_write2017	int	final	Average Evidence-based reading and writing score of the State in 2017
math_sat2017	int	final	Average Math score of the State in 2017
total_sat2017	int	final	Average total score of the State in 2017
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participation_act2017	int	final	Participation rate of the State in 2017 in %
english_2017	float	final	Average English score of the State in 2017
math_act2017	float	final	Average Math score of the State in 2017
reading_2017	float	final	Average Reading score of the State in 2017
science_2017	float	final	Average Science score of the State in 2017
composite_2017	float	final	Average Composite score of the State in 2017
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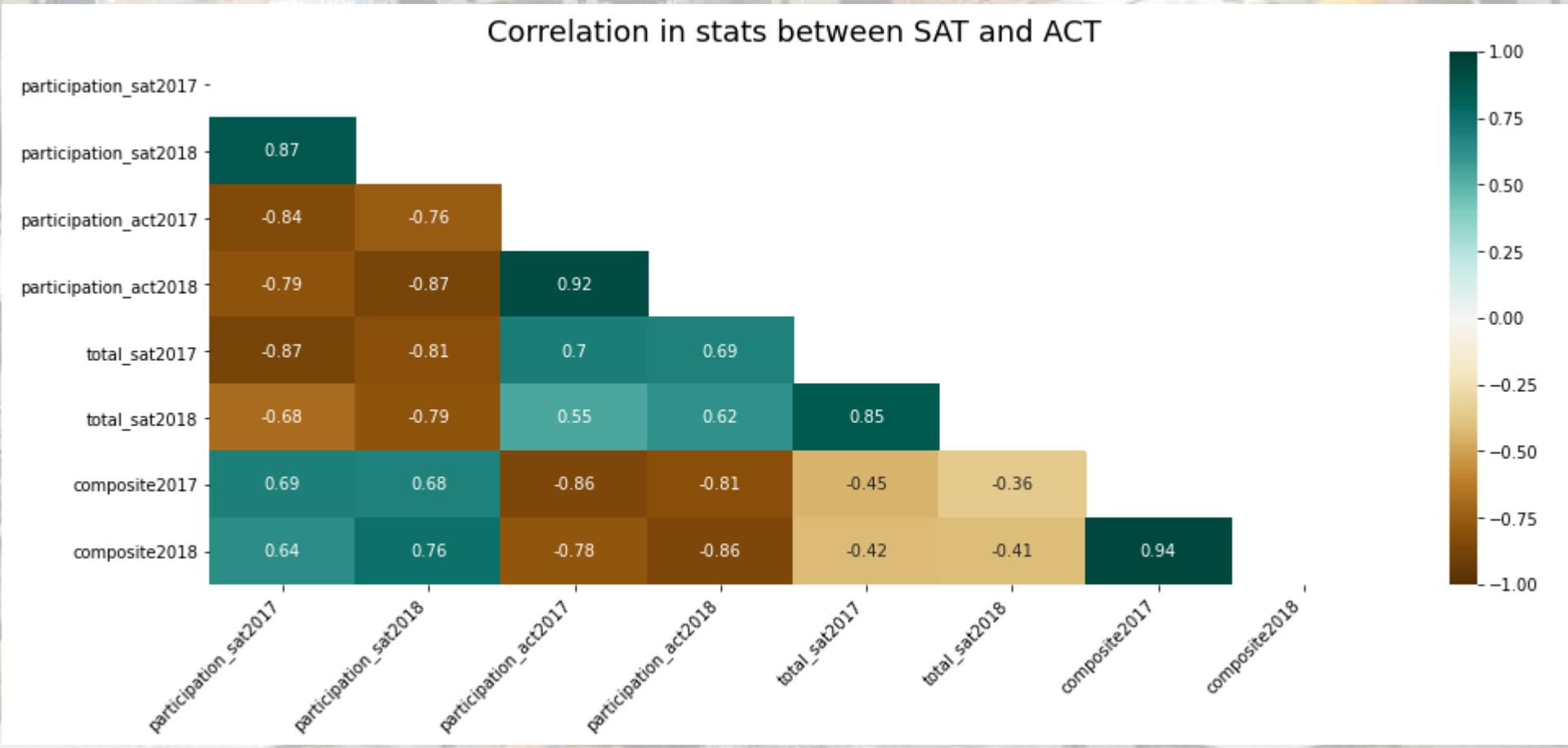
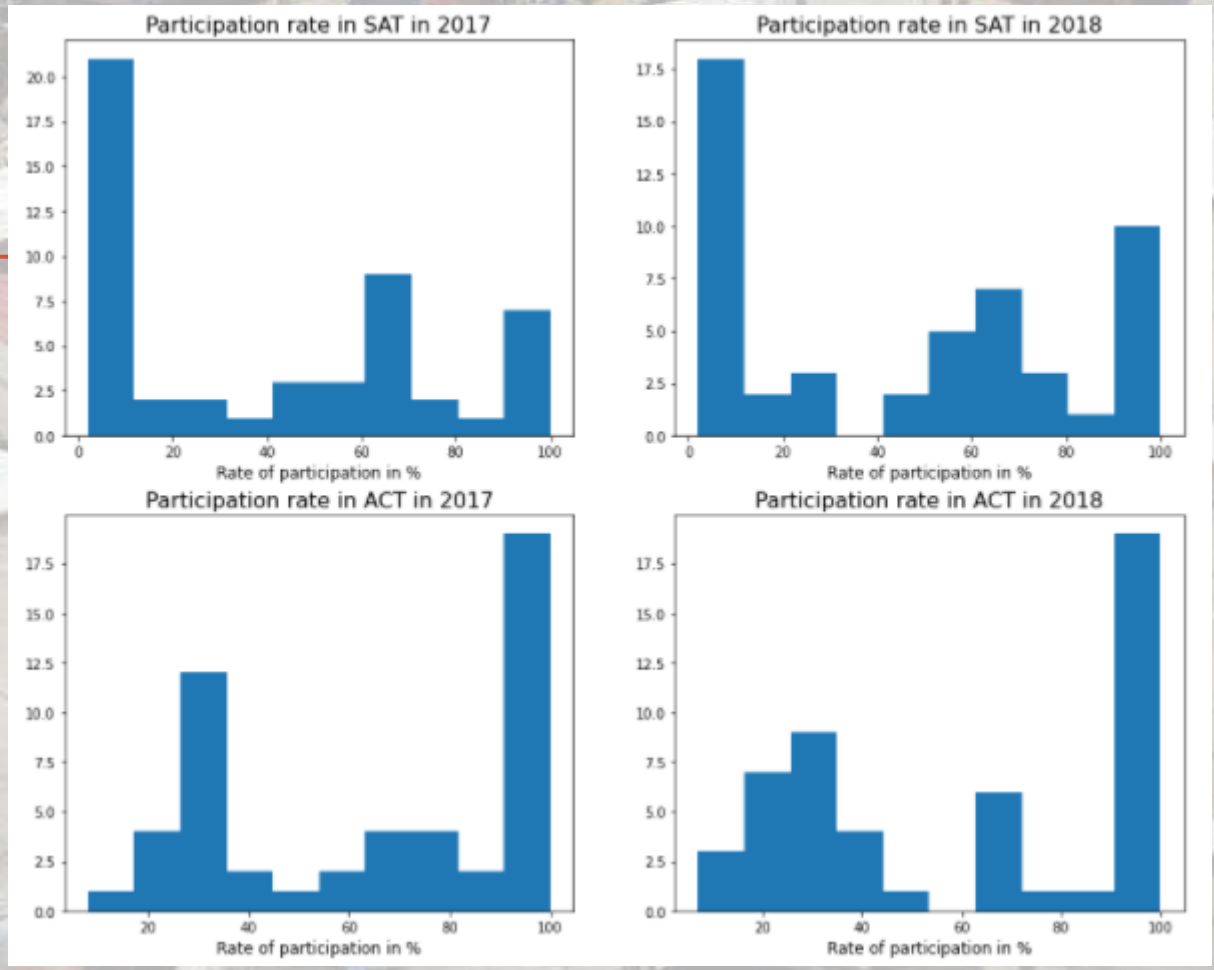
participation_sat2018	int	final	Participation rate of the State in 2018 in %
read_write2018	int	final	Average Evidence-based reading and writing score of the State in 2018
math_sat2018	int	final	Average Math score of the State in 2018
total_sat2018	int	final	Average total score of the State in 2018
---	---	---	---
participation_act2018	int	final	Participation rate of the State in 2018 in %
english_2018	float	final	Average English score of the State in 2018
math_act2018	float	final	Average Math score of the State in 2018
reading_2018	float	final	Average Reading score of the State in 2018
science_2018	float	final	Average Science score of the State in 2018
composite_2018	float	final	Average Composite score of the State in 2018

EXPLORING THE CORRELATION IN PARTICIPATION RATES AND TEST SCORES BETWEEN SAT AND ACT



EXPLORING THE CORRELATION IN PARTICIPATION RATES IN 2017 AND 2018 BETWEEN SAT AND ACT

Distributions are bimodal with high distribution in both extremes



HIGHEST IMPROVEMENTS IN PARTICIPATION RATE IN SAT

Bigger increment in participation rate possible in States with lower participation rate

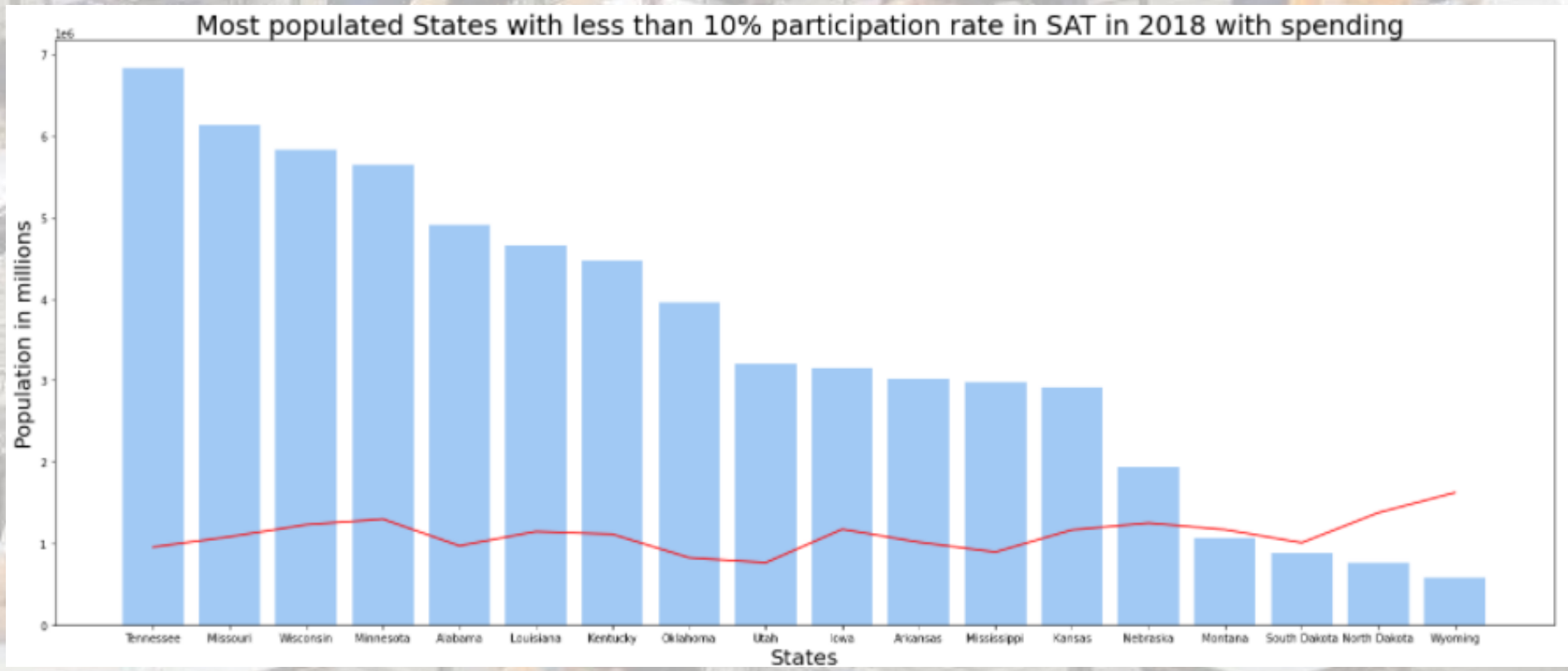
	state	participation_sat2017	participation_sat2018	diff_participation_sat
13	Illinois	9	99	90
5	Colorado	11	100	89
39	Rhode Island	71	97	26
48	West Virginia	14	28	14
30	New Jersey	70	82	12
32	New York	67	79	12
10	Georgia	61	70	9
12	Idaho	93	100	7
20	Maryland	69	76	7
4	California	53	60	7

PARTICIPATION RATE, POPULATION, SPENDING PER PUPIL

Exploring key factors leading to final choice of State

	state	participation_sat2018	diff_participation_sat	diff_participation_act	population	spend
42	Tennessee	6	1	0	6829174	9544
25	Missouri	4	1	0	6137428	10810
49	Wisconsin	3	0	0	5822434	12285
23	Minnesota	4	1	-1	5639632	12975
0	Alabama	6	1	0	4903185	9696
18	Louisiana	4	0	0	4648794	11452
17	Kentucky	4	0	0	4467673	11110
36	Oklahoma	8	1	0	3956971	8239
44	Utah	4	1	0	3205958	7628
15	Iowa	3	1	1	3155070	11732
3	Arkansas	5	2	0	3017804	10139
24	Mississippi	3	1	0	2976149	8935
16	Kansas	4	0	-2	2913314	11653
27	Nebraska	3	0	16	1934408	12491
26	Montana	10	0	0	1068778	11680
41	South Dakota	3	0	-3	884659	10073
34	North Dakota	2	0	0	762062	13758
50	Wyoming	3	0	0	578759	16224

PARTICIPATION RATE, POPULATION, SPENDING PER PUPIL



CONCLUSION AND RECOMMENDATION

State of choice: **Minnesota**

- States with lower participation rate in SAT so growth potential is higher as there will be more room for conversion.
- States with relatively higher population. Higher population equates to a wider target audience.
- States with higher spending budget allocated per pupil implies the level of importance a State places on academic.