



Government funded for SAT and ACT

Project 1

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Agenda

01. Background

02. Objective

03. Analysis findings

04. Conclusions

05. Recommendations

Background

In United State, SAT and ACT are standardized tests in order to admittance to a US university along with others extracurricular activities, essays, athletics, and others.

The difference between SAT and ACT:

SAT has **two sections** of the test: Evidence-Based Reading and Writing and Mathematics.

ACT has **4 sections**: English, Mathematics, Reading, and Science, with an additional optional writing section.

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more®

SAT®

ACT®



Objective

As United State government, department of education's decided to fund ACT and SAT test for high school students in particular states with a limit budget in order to help student for higher education.

For the best outcome, which states should they funded for ACT and SAT?

Analysis Findings

State with free SAT/ACT and its overall trends

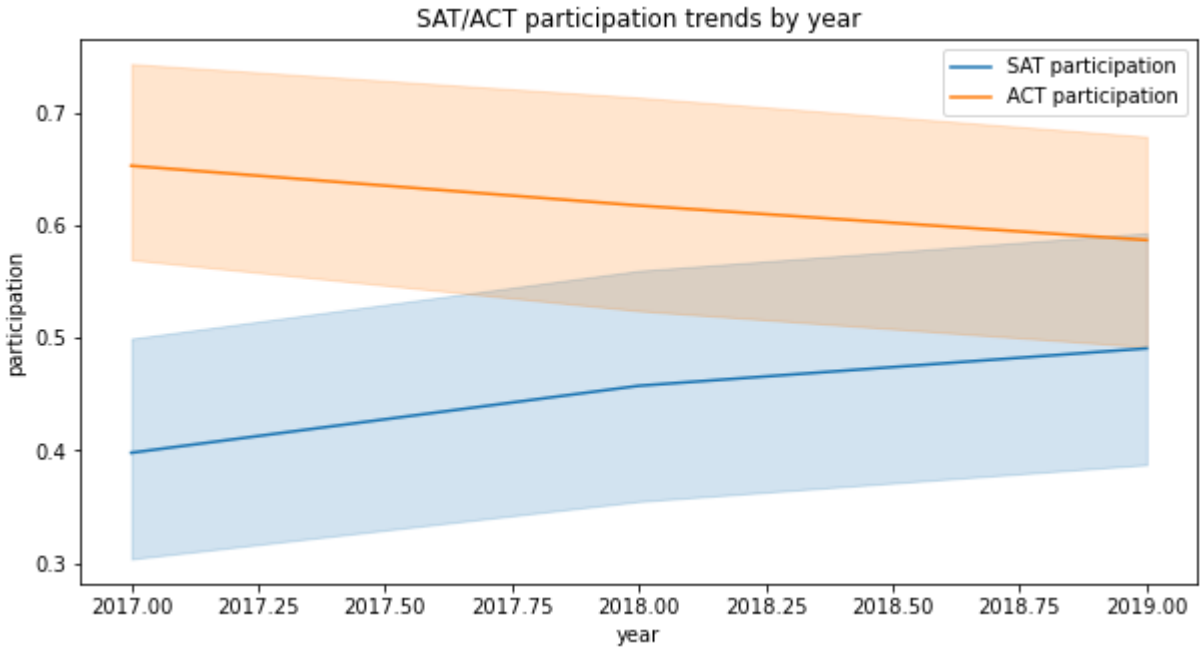
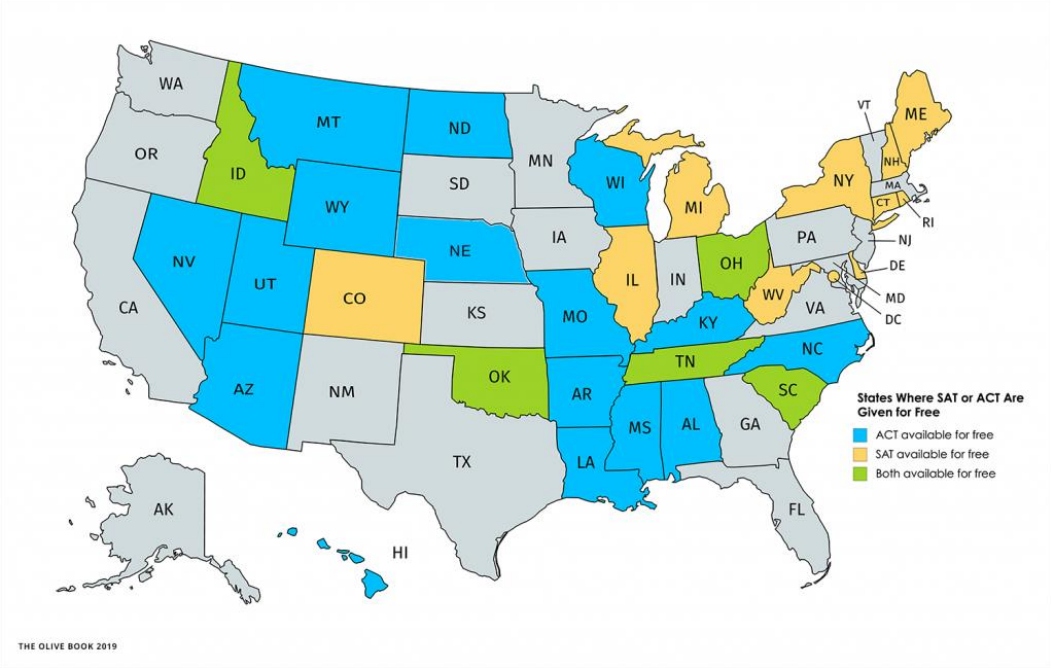
In 2017

- 17 states funded for ACT
- 9 states funded for SAT

In 2019

- 20 states funded for ACT
- 15 states funded for SAT

The Average participation of student who take SAT is 40% in 2017 and increased to 50% in 2019
ACT is 65% in 2017 and decreased to 59% in 2019



Analysis Findings

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States which provide free SAT/ ACT test had an average **participation rates** at

>90%



But..

Analysis Findings

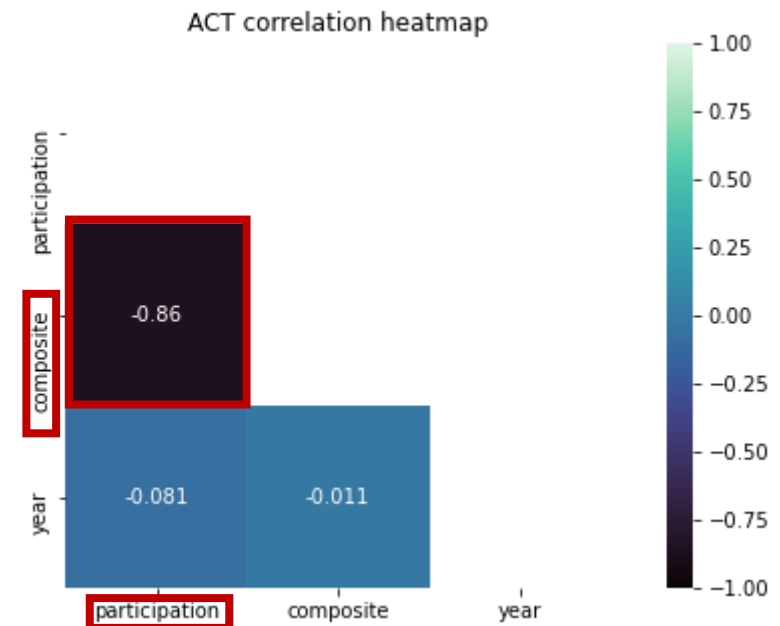
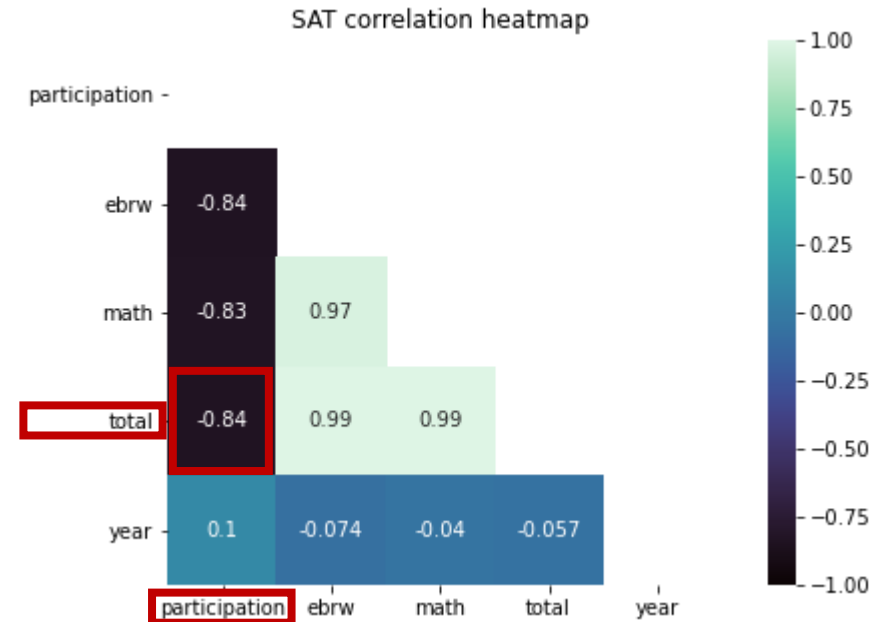
Relation between participation and average score

Correlation between participation and total/composite score is inverse relationship.

As participation rate **get higher**

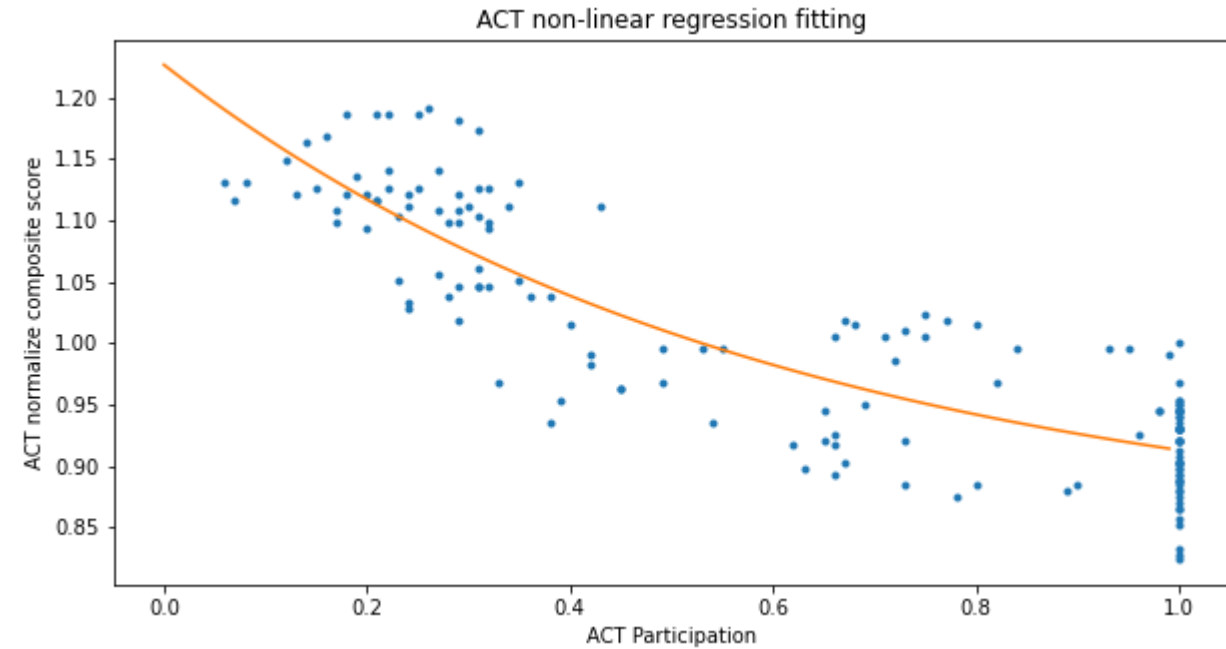
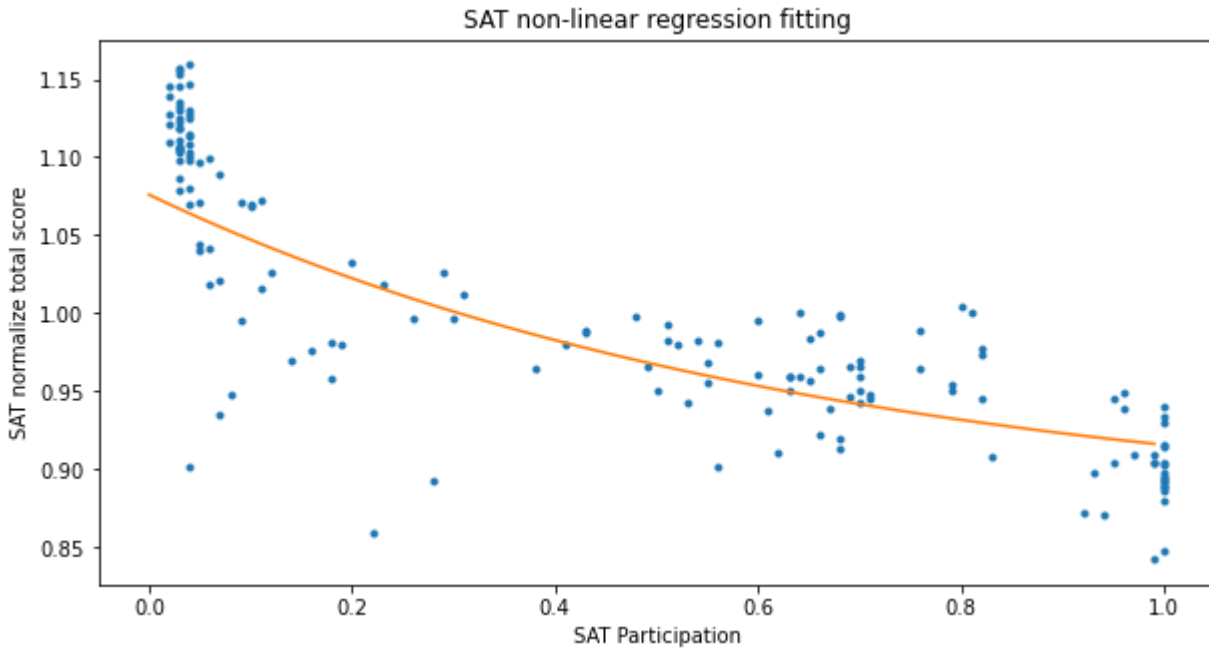
the average total of SAT and average composite of ACT are **get lower**.

Therefore, in order to funded government need to make sure that the particular state can have high average total/composite score when participation rate is nearly 100%.



Analysis Findings

Relation between participation and average score

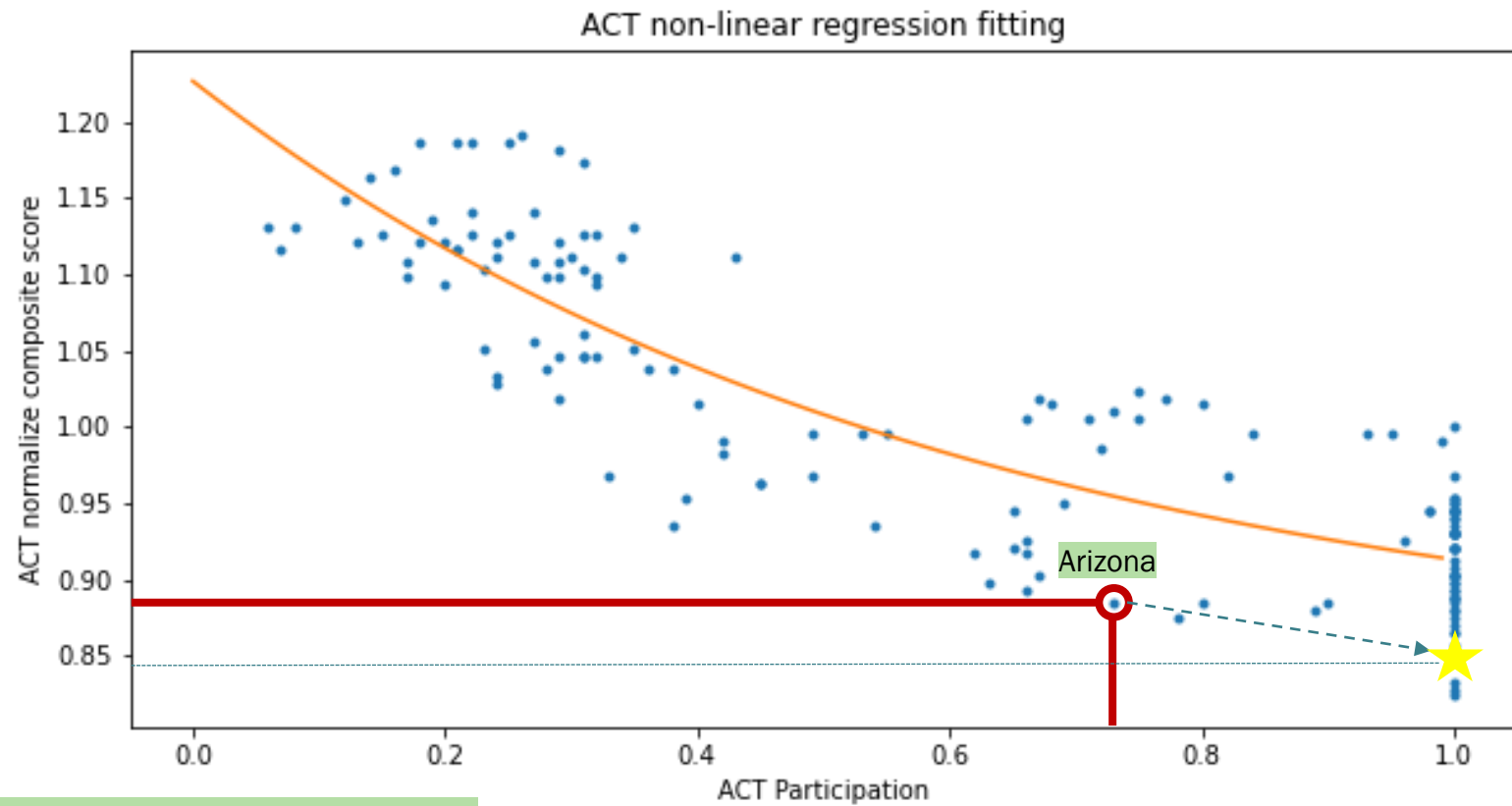


Non-linear regression fitting by least squares method

For score prediction of particular state when participation is 100%

Analysis Findings

Relation between participation and average score

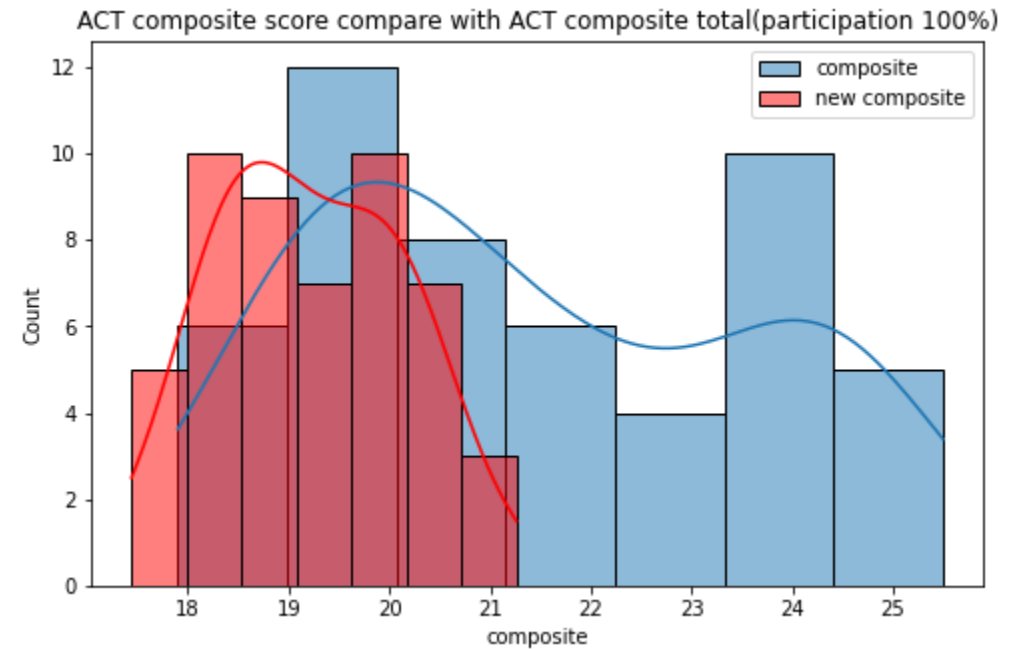
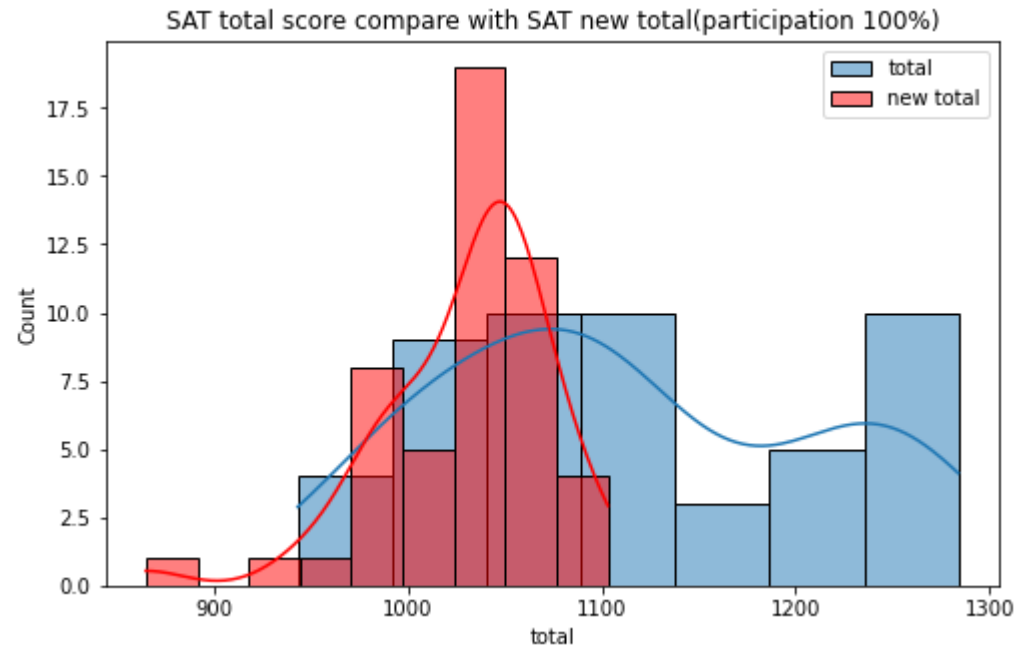


Non-linear regression fitting by least squares method

For score prediction of particular state when participation is 100%

Analysis Findings

New total/composite score with participation is 100%



Conclusions

Based on the data, major movements in participation rates are depended to the state policies.

If a state were funded for all students to take SAT/ACT, the participation rate would increased to nearly 100%.

And participation rates also related with average total/composite score in negative way.

Therefore, prediction of new total/composite score when participation rate is 100%, is the way to ranked a states with high ability of student regardless to the differs of participation rate.

Recommendations

As the result, the government should make funded to which states that have prediction of high average total/composite score while the participation rate is to 100% which are:

- SAT funded for Massachusetts, Minnesota, Wisconsin, Virginia and South Dakota etc.
- ACT funded for Connecticut, Massachusetts, New Hampshire, Michigan and Illinois etc.

	state	total	new_total
123	Massachusetts	1120	1103.051081
125	Minnesota	1284	1093.640687
151	Wisconsin	1283	1089.012904
148	Virginia	1119	1087.349141
143	South Dakota	1268	1076.280874

	state	composite	new_composite
125	Minnesota	21.4	21.263804
115	Illinois	24.3	20.826814
144	South Dakota	21.6	20.782708
108	Connecticut	25.5	20.524192
123	Massachusetts	25.5	20.409383



Thank you

