



# Government funded for SAT and ACT

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## Project 1

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# Agenda

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**01. Background**

**02. Objective**

**03. Analysis findings**

**04. Conclusions**

**05. Recommendations**

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# Background

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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.

achieve  
more®

SAT®

ACT®



# Objective

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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

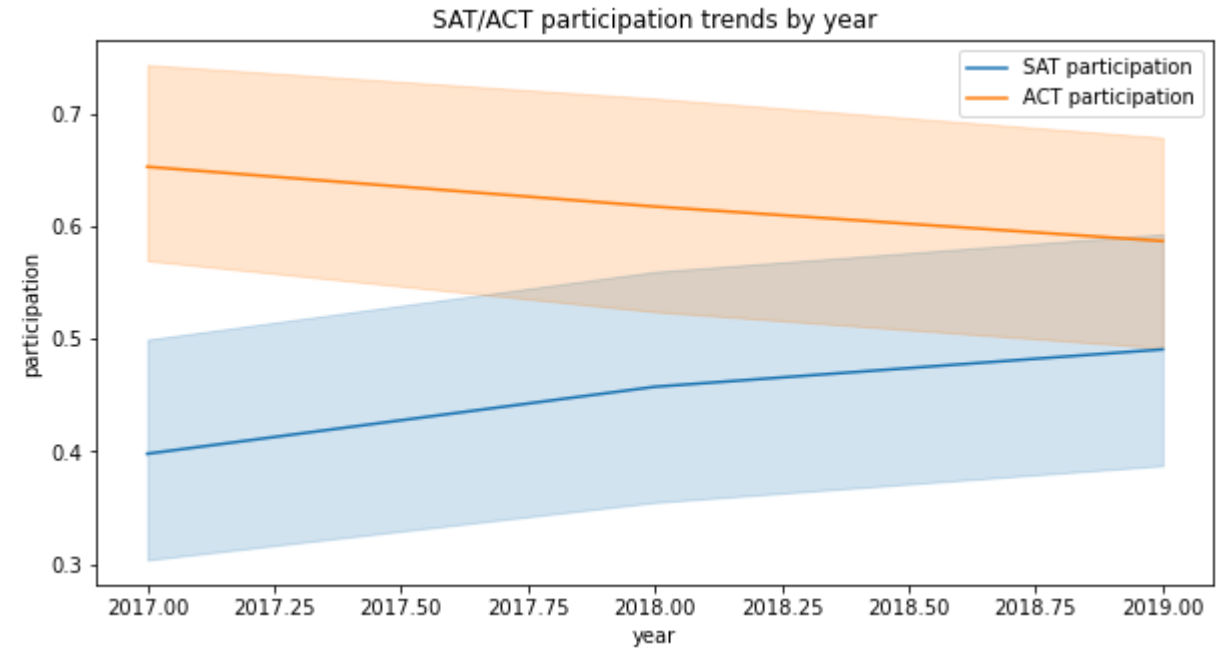
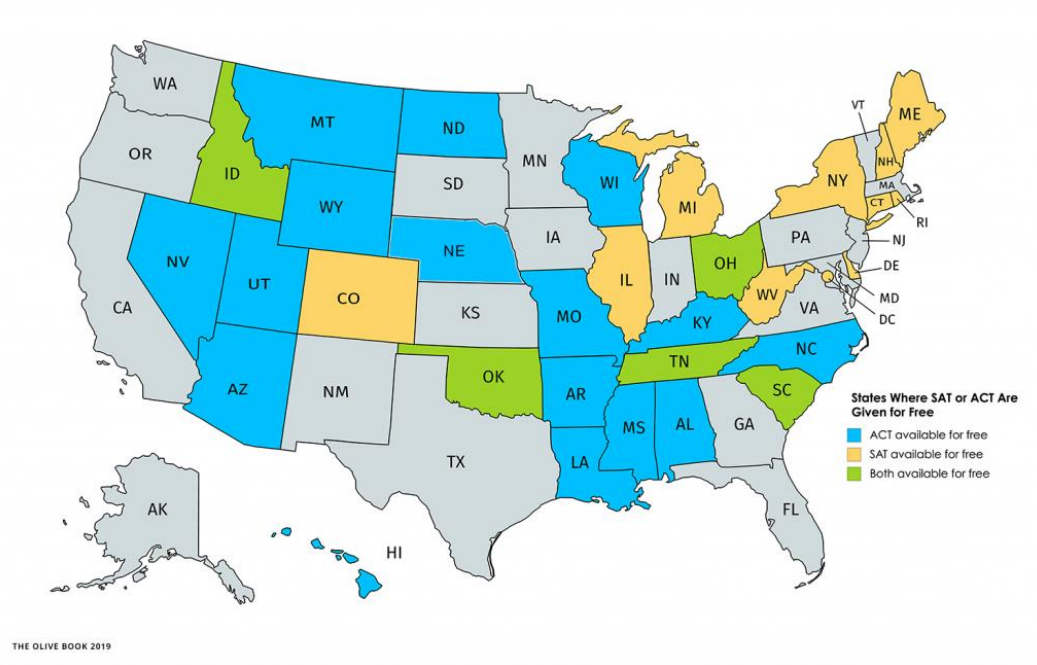
In 2017

- 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..**

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# Analysis Findings

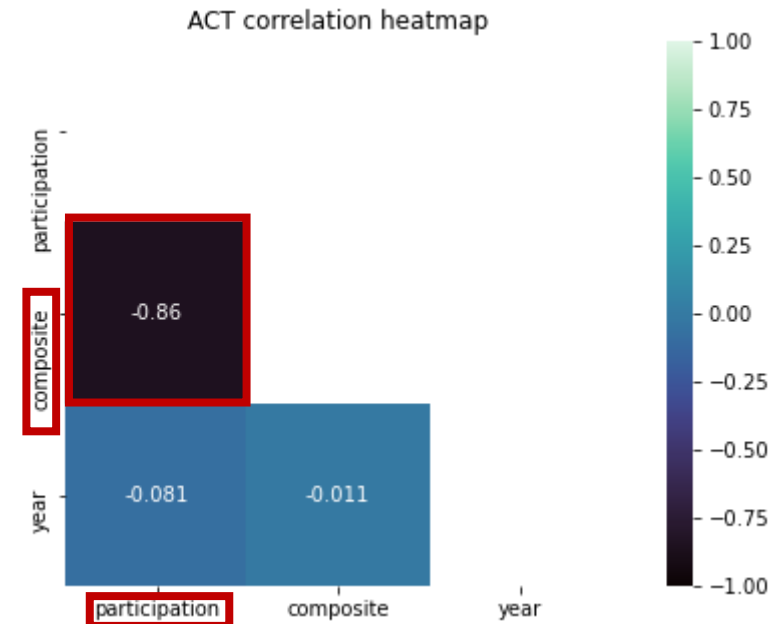
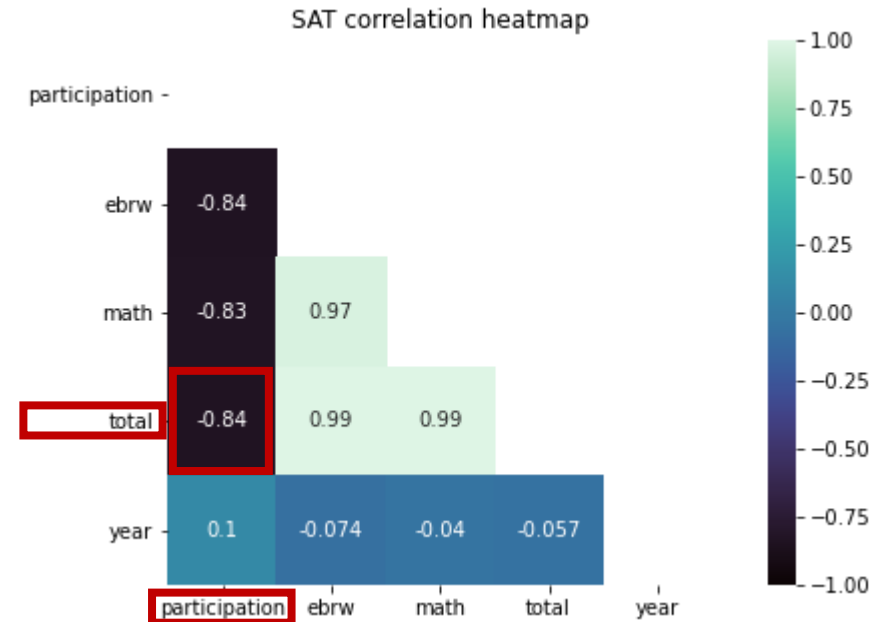
## Relation between participation and average score

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**.

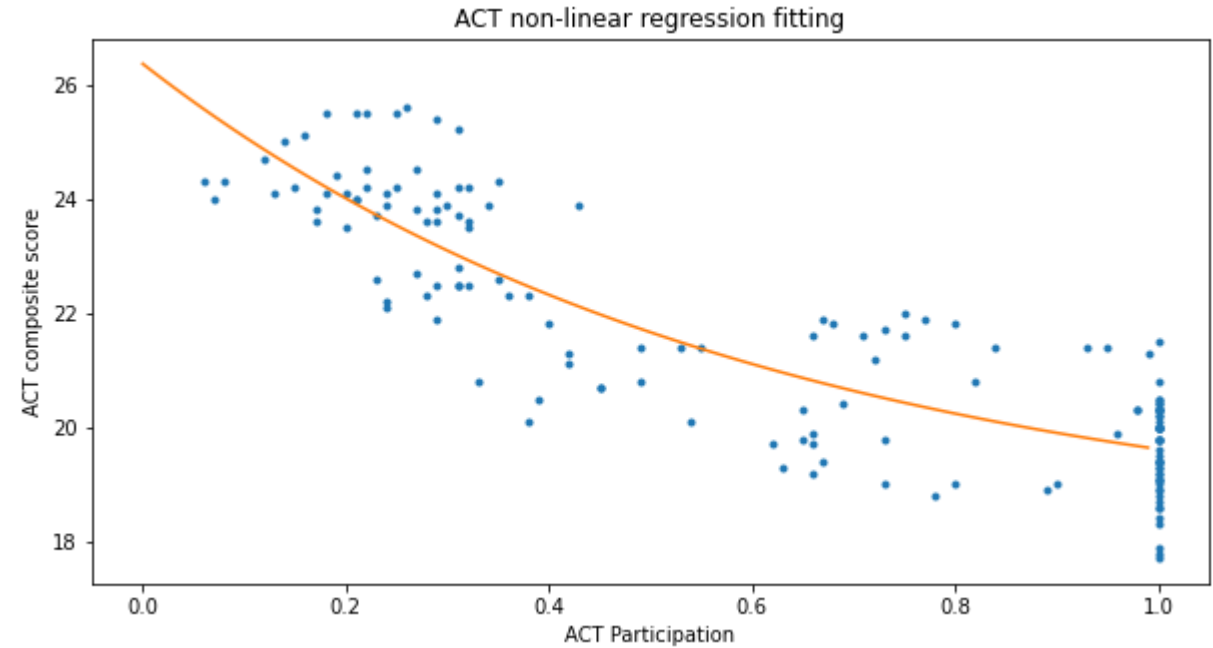
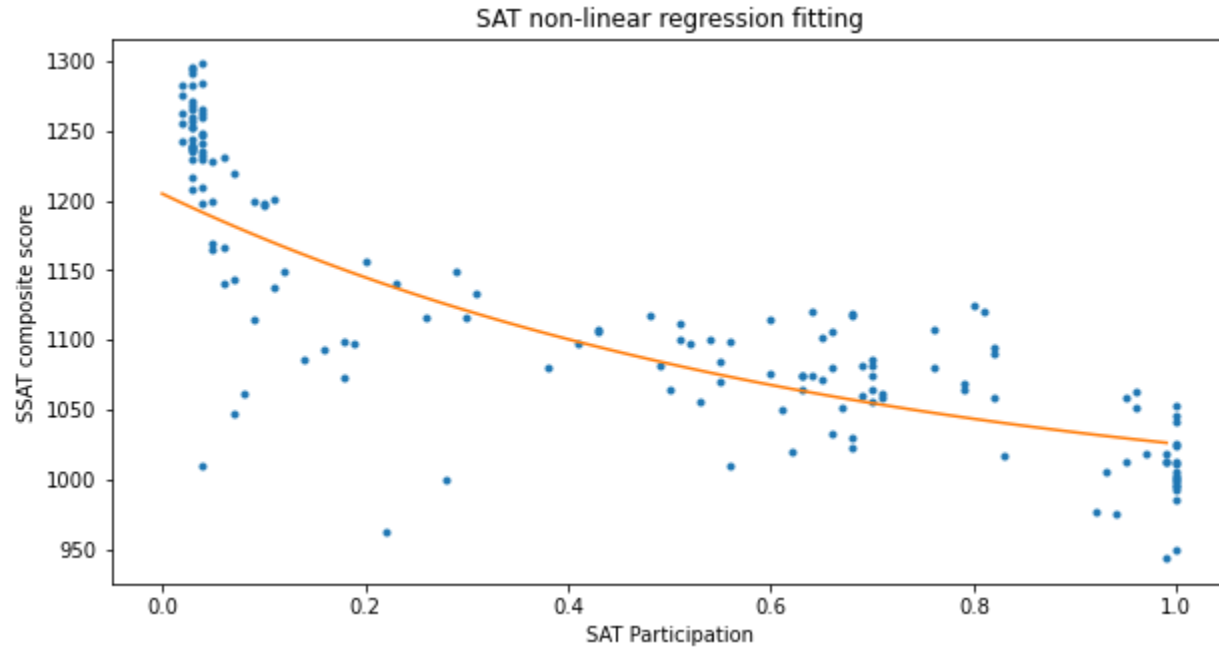
Therefore, in order to funded government need to make sure that the particular state can have high average total/composite score when participation rate is nearly 100%.





# Analysis Findings

## Relation between participation and average score

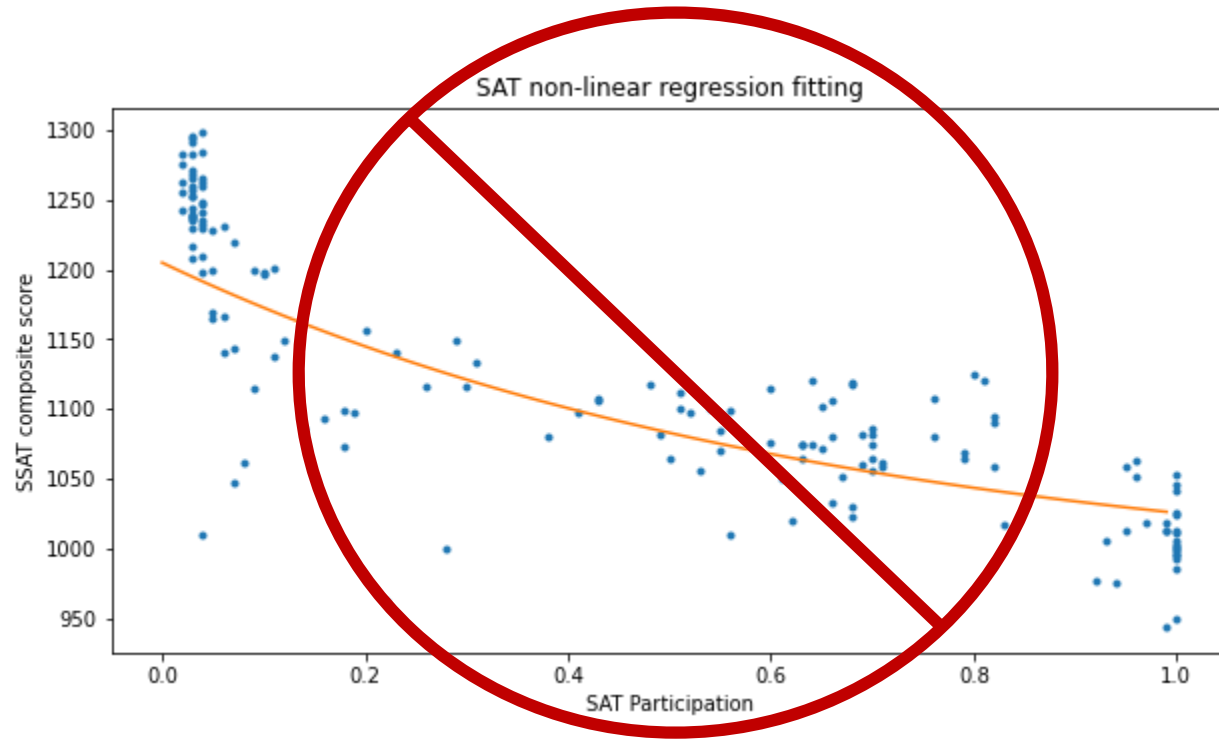


Non-linear regression fitting by least squares method

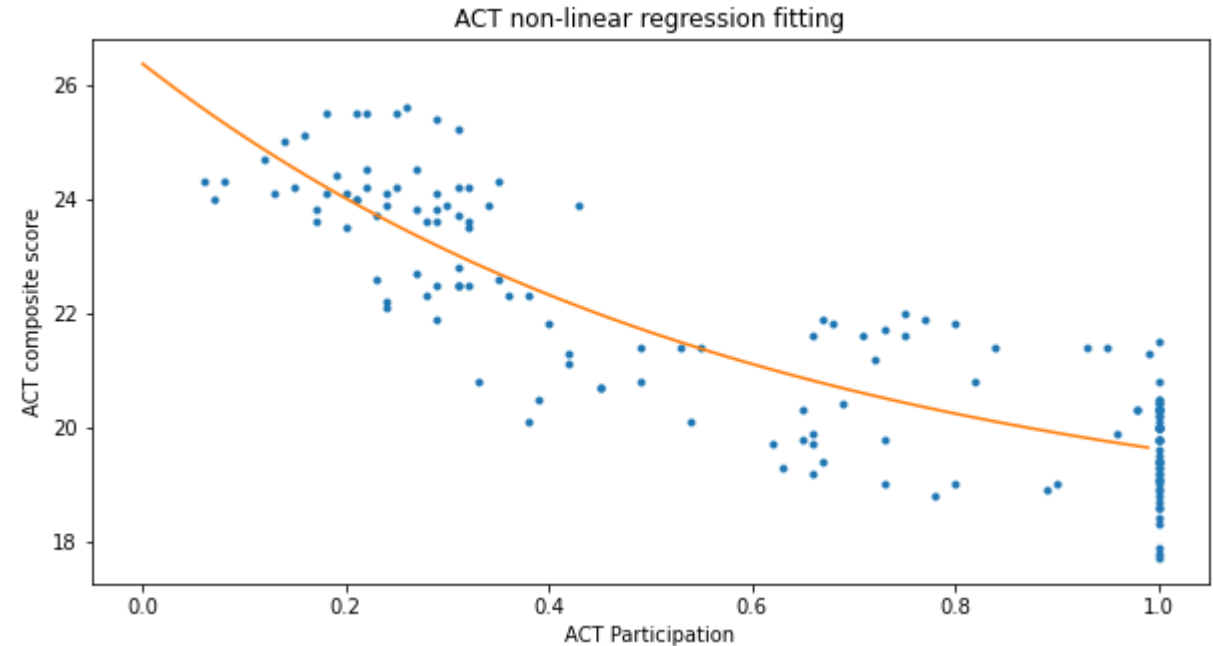
For score prediction of particular state when participation is 100%

# Analysis Findings

## Relation between participation and average score



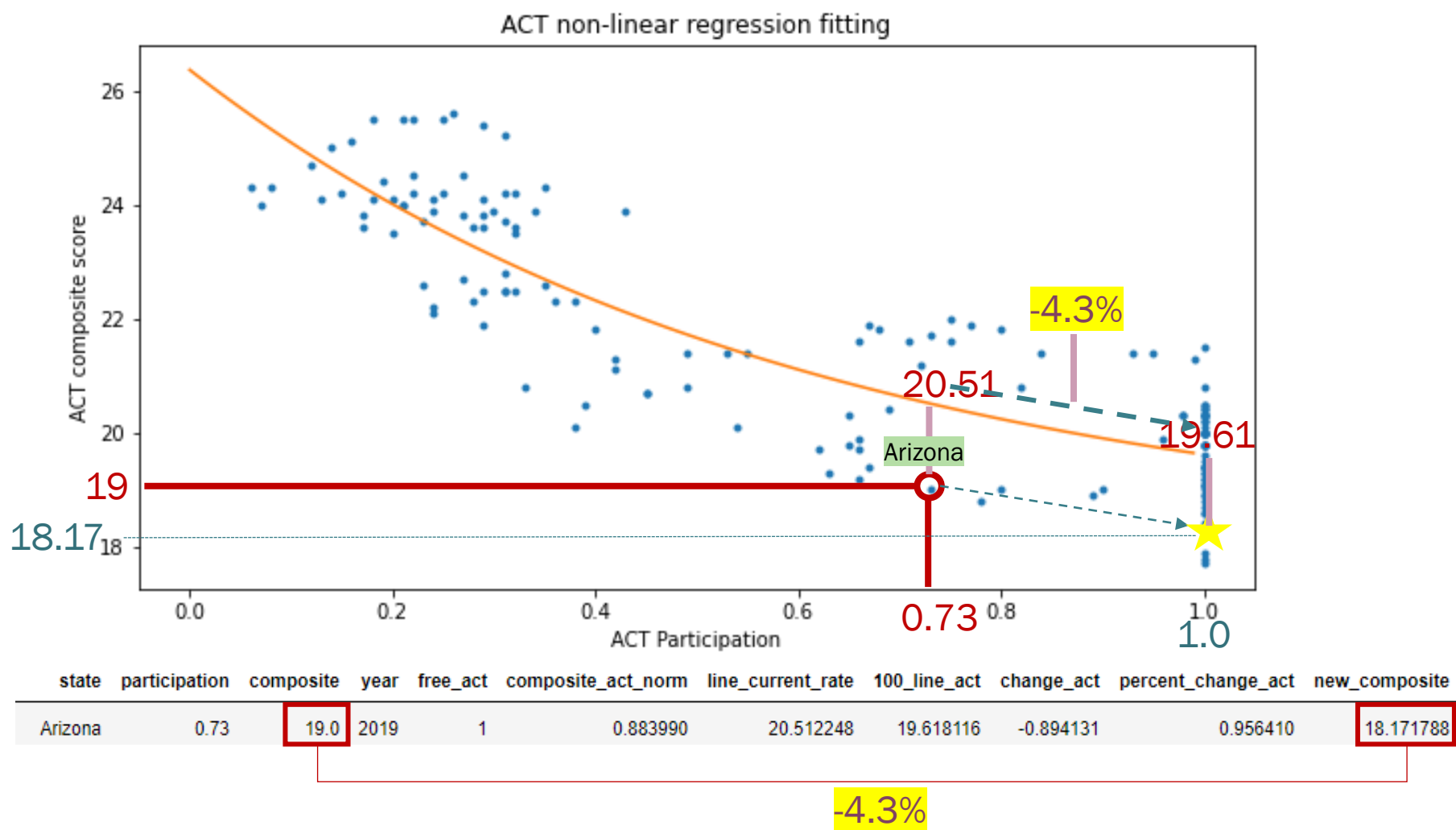
With p value between line and total score is more than 0.05, So we cannot assure that fitting line is align in the same way as composite score.



With p value between line and composite score is less than 0.05, So More than 95% confidence that fitting line is align in the same way as composite score.

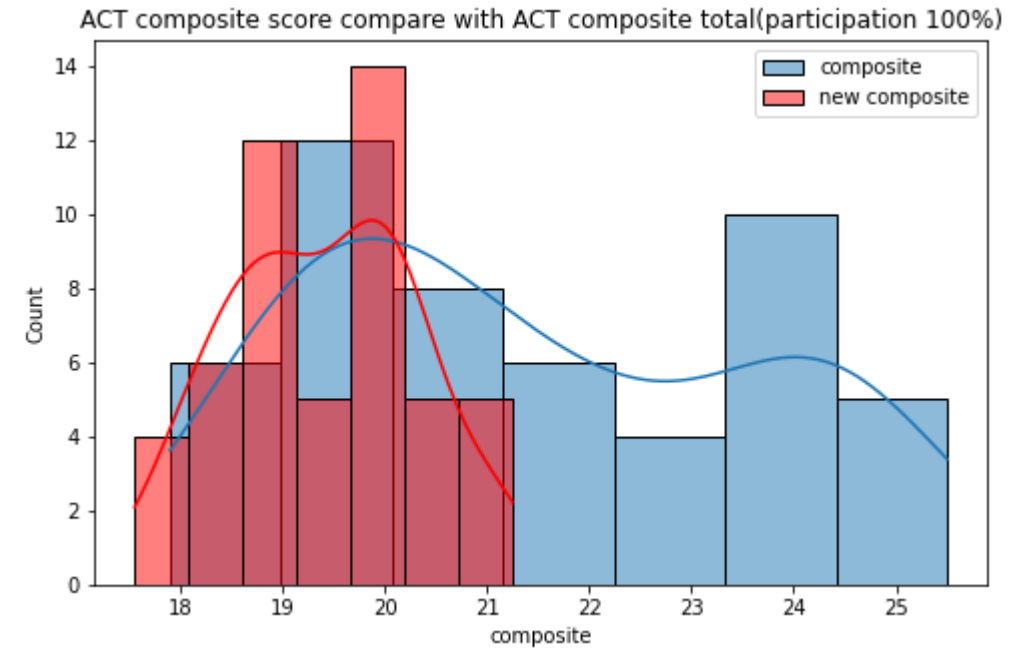
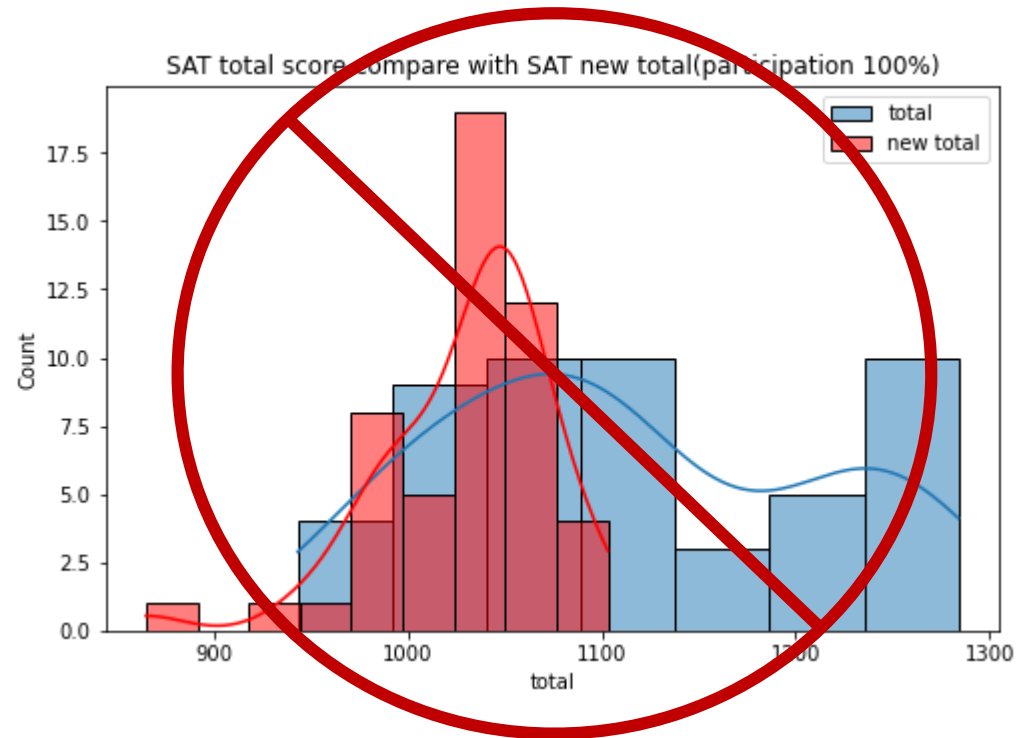
# Analysis Findings

## Relation between participation and average score



# 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%.

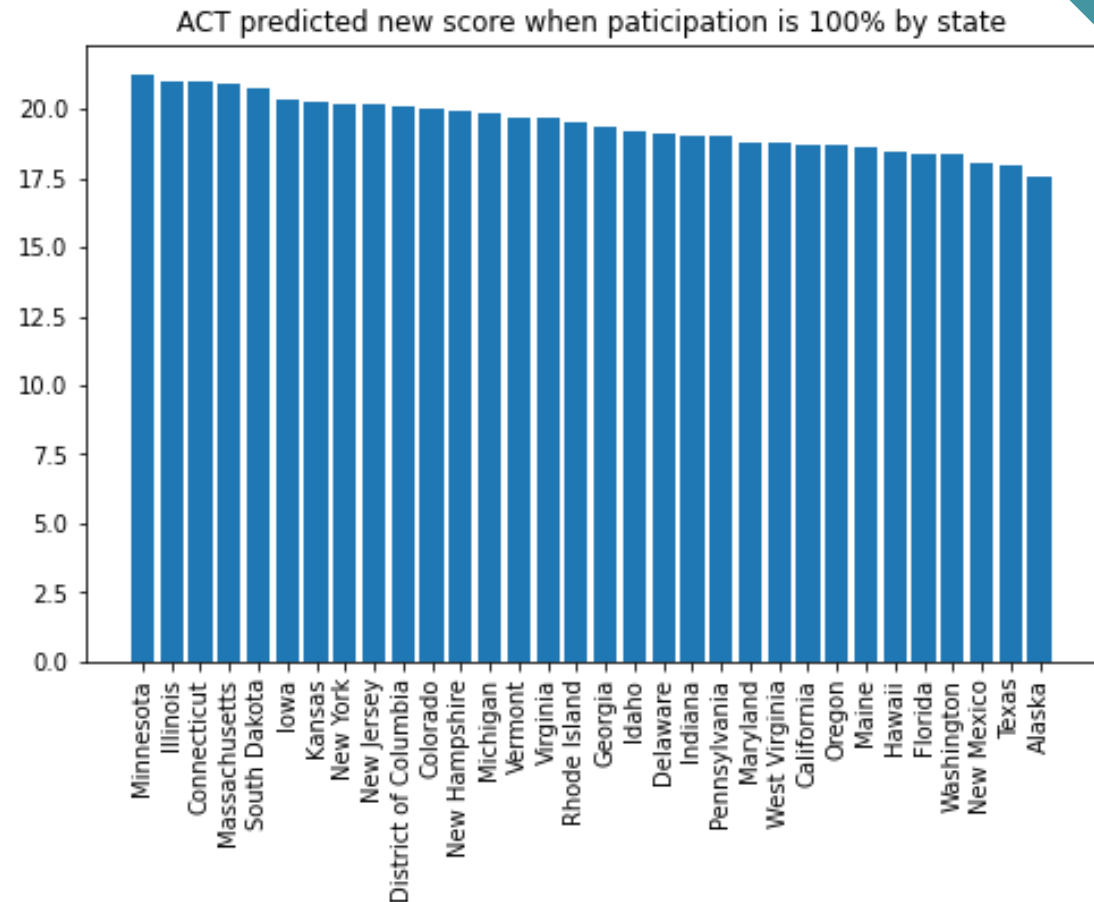
And participation rates also related with average total/composite score in negative way.

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:

- ACT funded Minnesota, Illinois, Connecticut, Massachusetts, South Dakota and so on.





**Thank you**

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