

# **SAT and ACT Data Analysis**

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General Assembly - DSI 18



**Harnessing Data Science to answer 1 key question -**

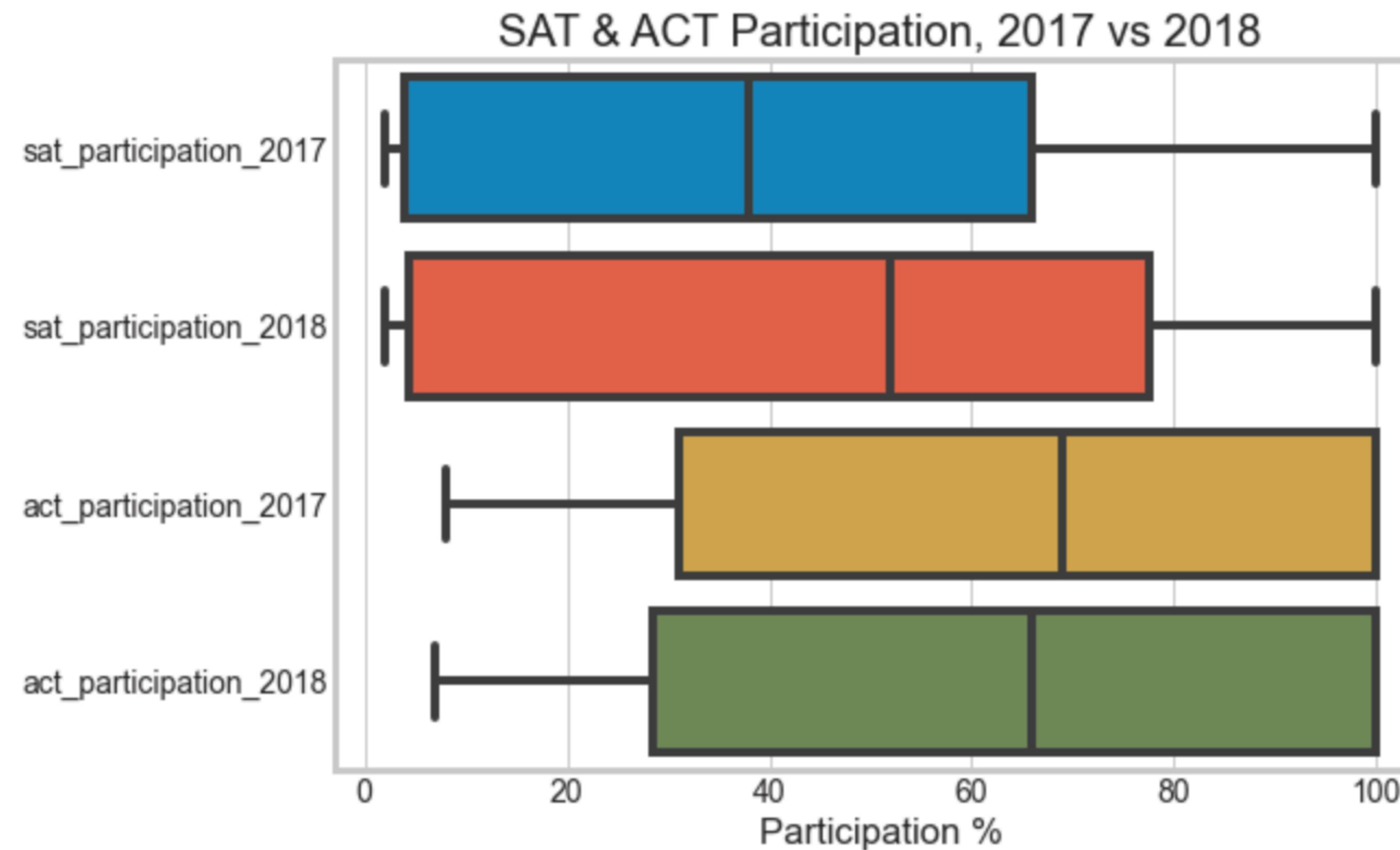
**How can the College Board increase participation rates in the US?**

# Background and Context

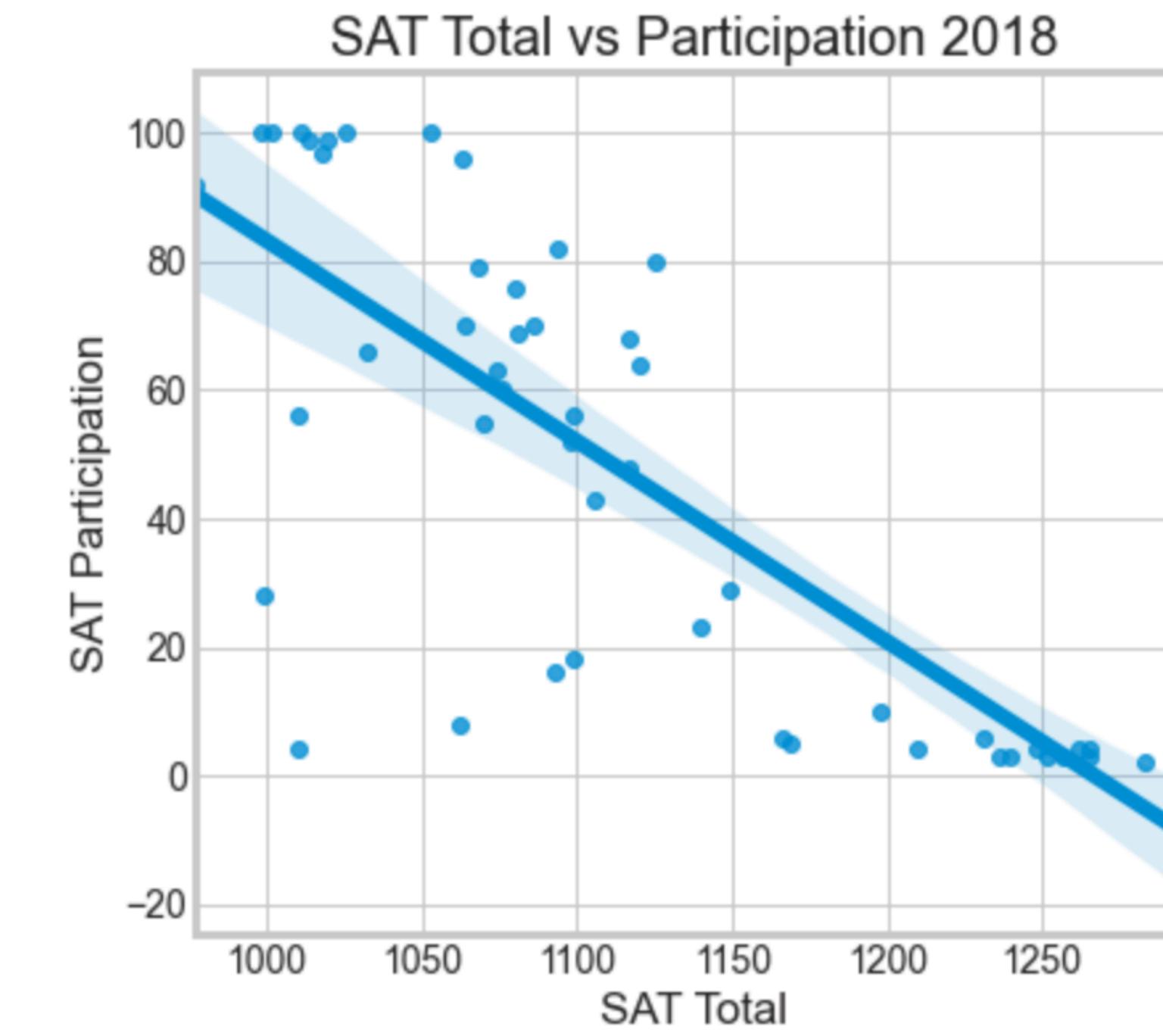
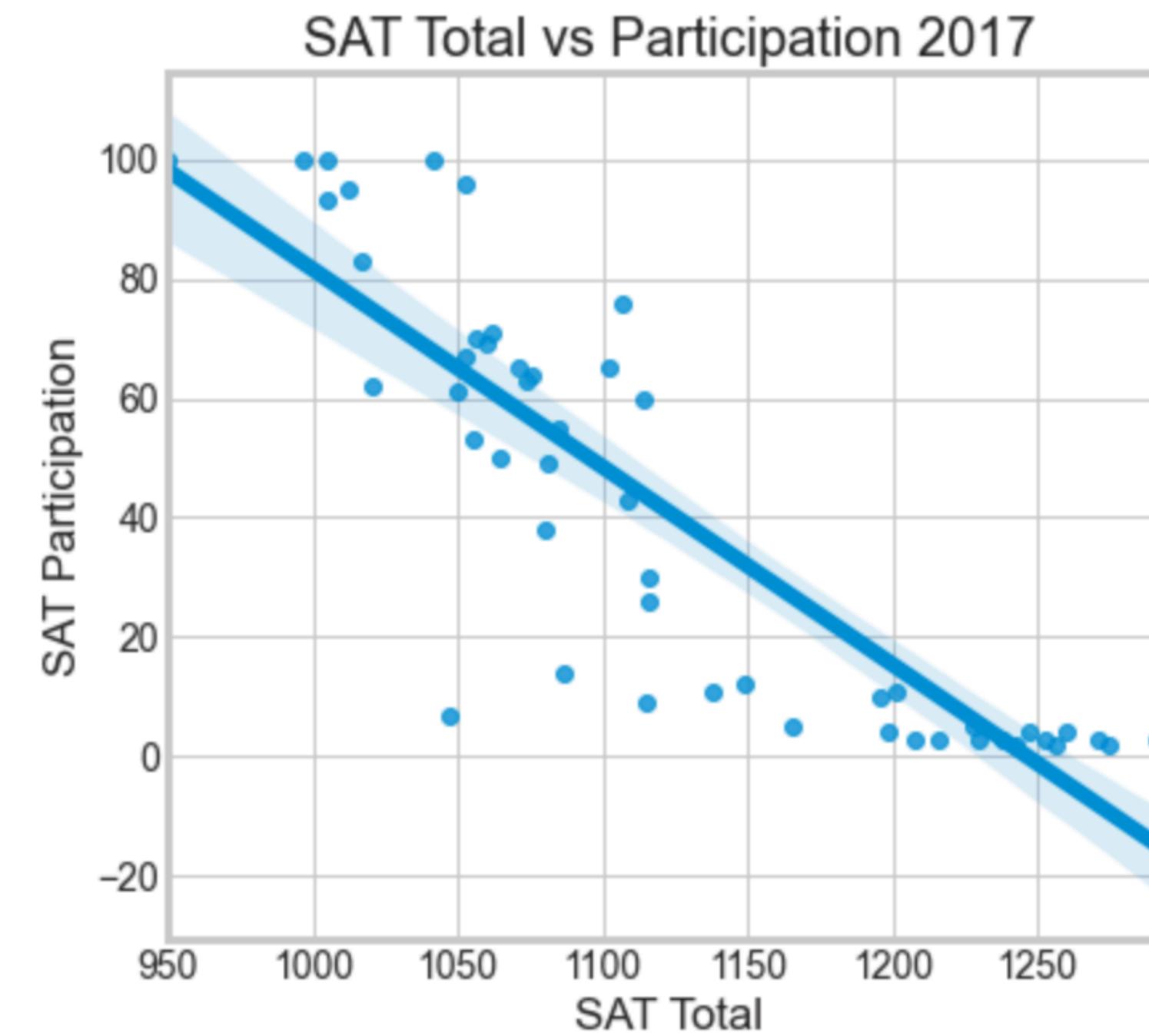
Why is this analysis even necessary and how was it done?

- Given the new format for the SAT (released in March 2016), there is a need to understand participation across the US.
- 4 datasets were analysed using Python\* (comprising of participation rates, total and subject scores) -
  - SAT 2017 + SAT 2018
  - ACT 2017 + ACT 2018
- Insights in this report have been found using statistics, database manipulation, exploratory data analysis and visualisations.

On average, ACT has higher participation % than SAT across the US. However, we have seen a 6% increase in SAT participation from 2017 to 2018, and an equivalent 4% decrease for ACT participation.



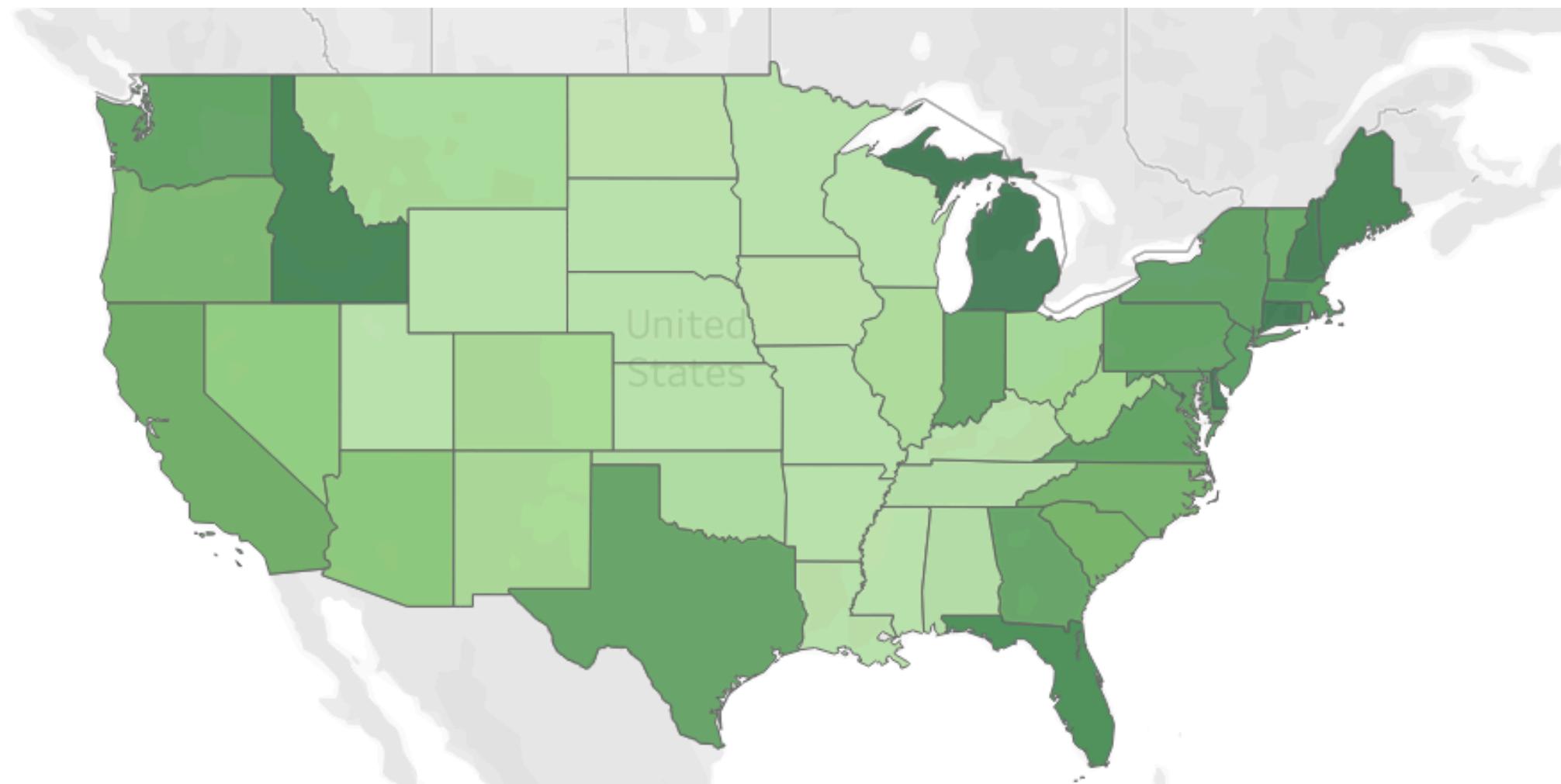
There appears to be an inverse relation between average State scores and participation, however this hypothesis was not validated and could be attributed to selection bias\*.



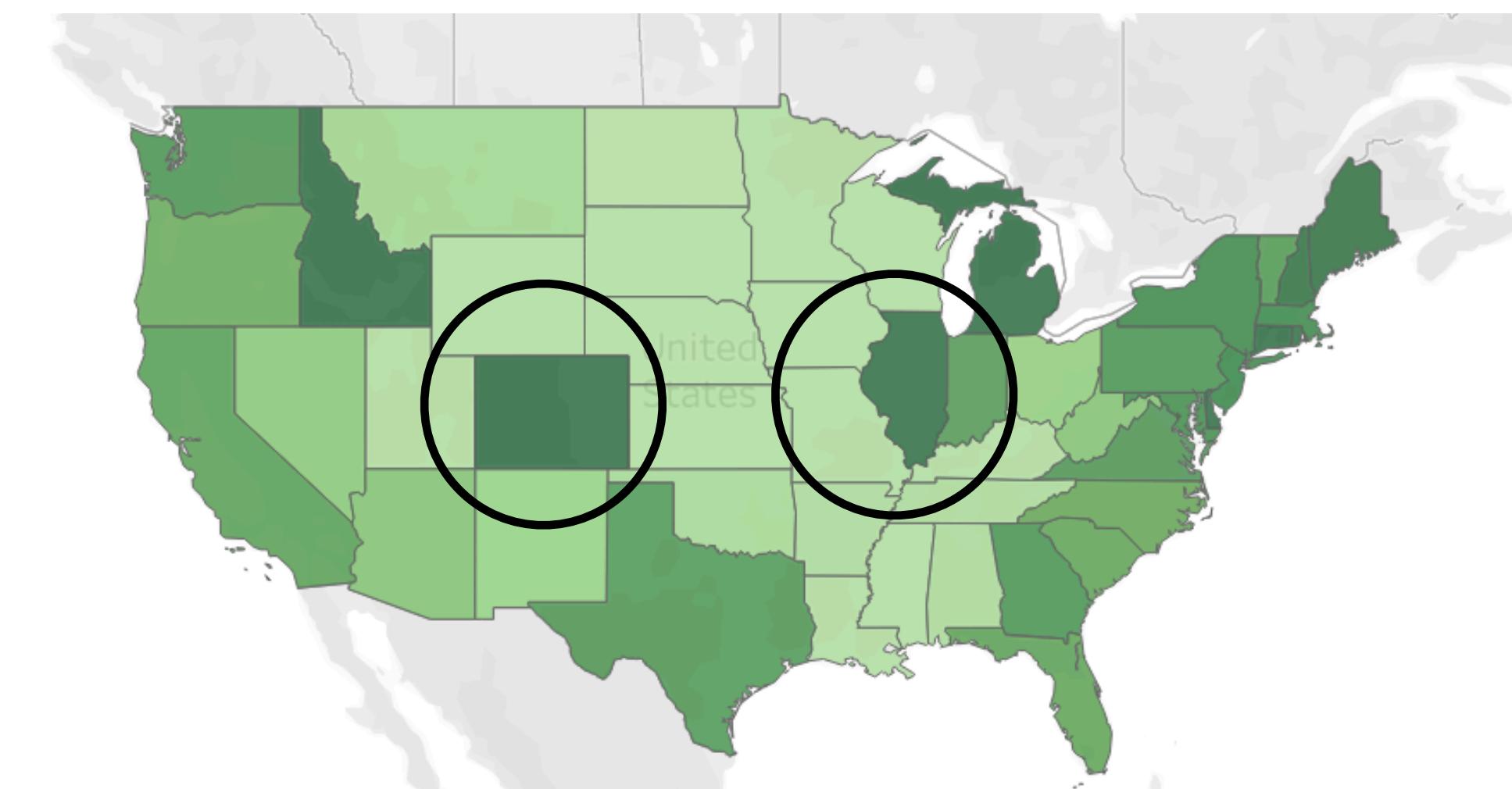
\*Source:

<https://eml.berkeley.edu/~jrothst/publications/clark-rothstein-schanzenbach-EER2009.pdf>

**As a result of SAT being made mandatory\*,  
Colorado and Illinois both saw ~90% increases in  
SAT participation from 2017 to 2018**



SAT Participation 2017



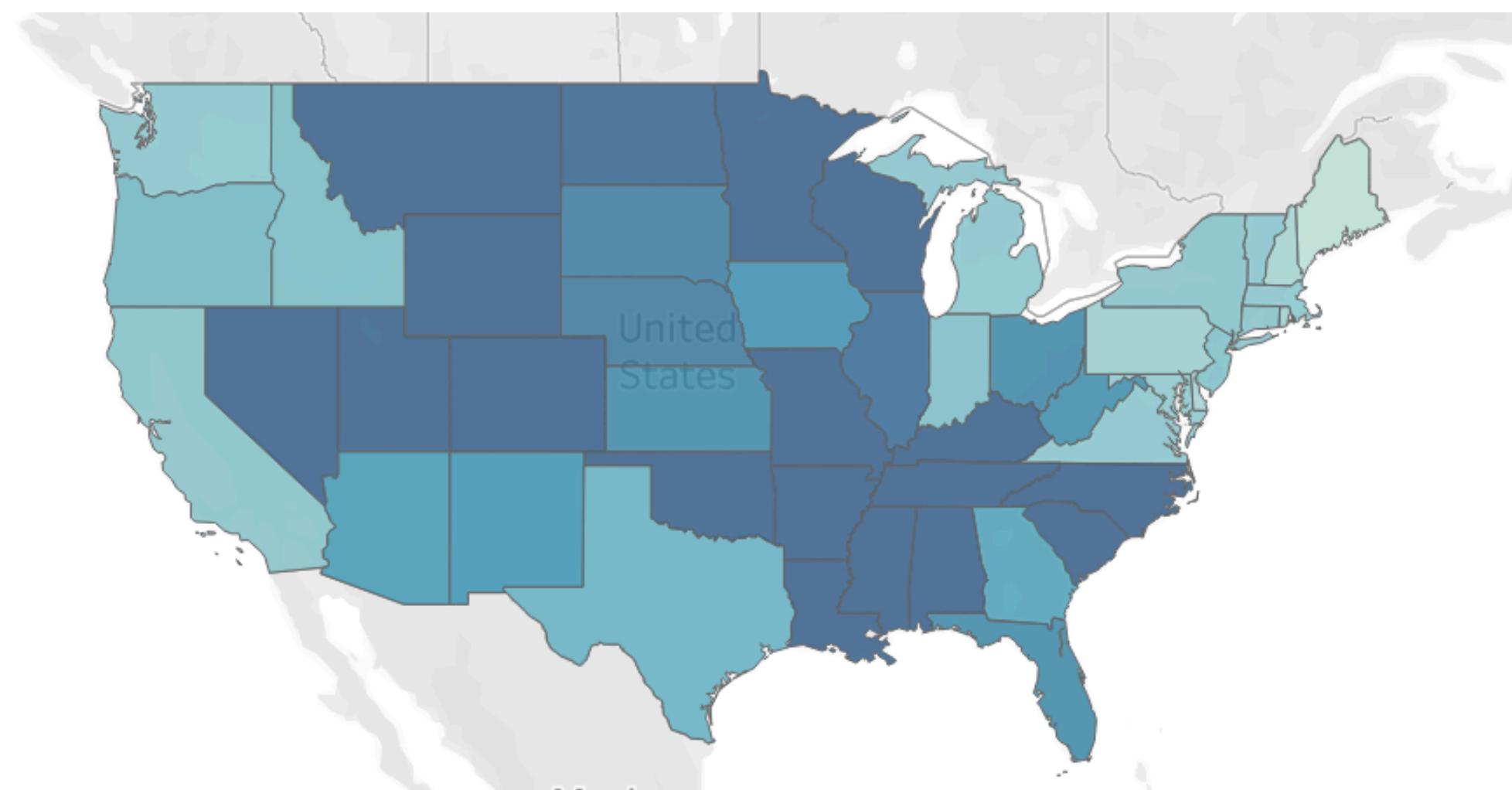
SAT Participation 2018

\*Sources:

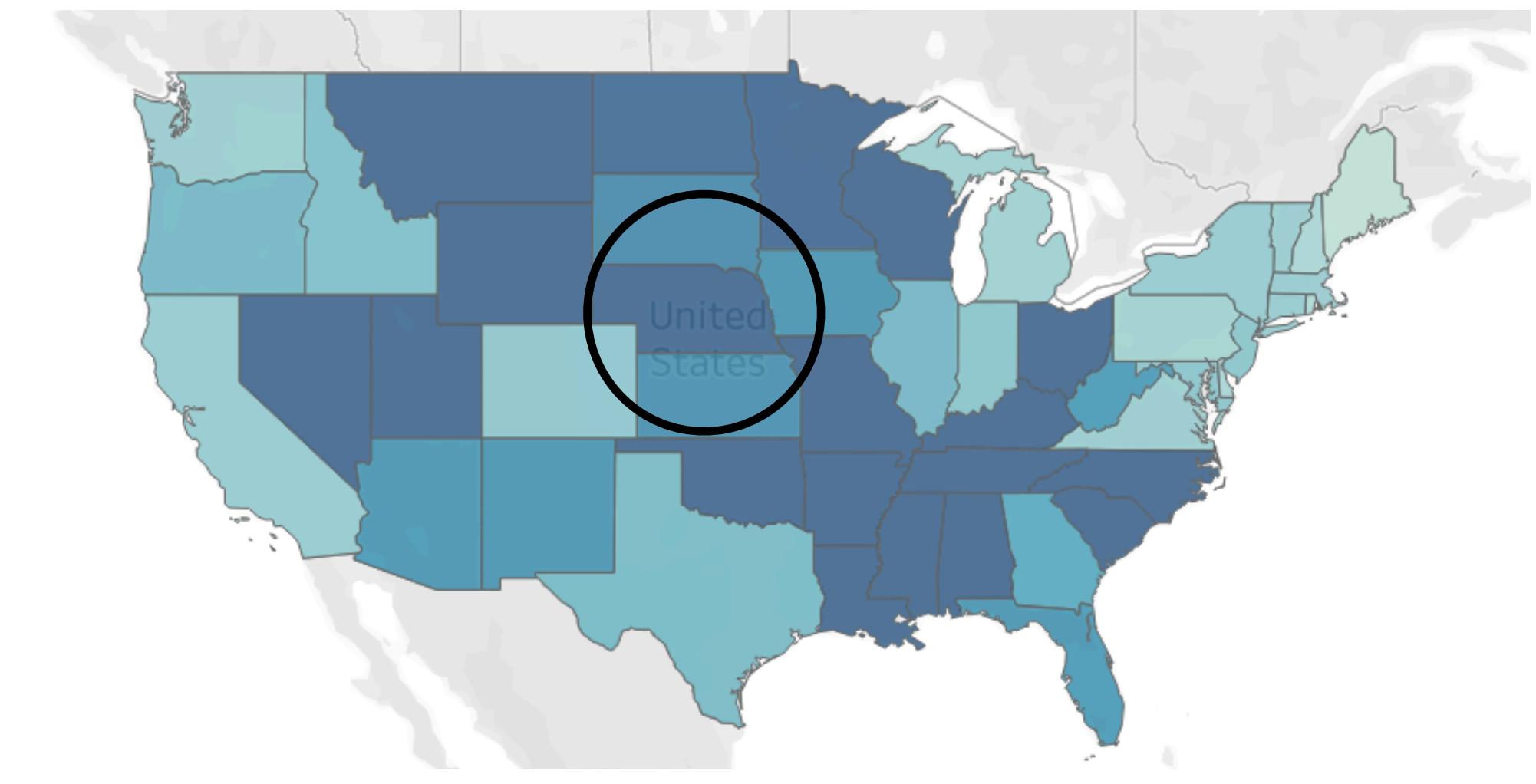
<https://www.testive.com/colorado-sat-change-2017/>

<https://www.chicagotribune.com/news/ct-illinois-chooses-sat-met-20160211-story.html>

**Similarly, Ohio has also seen a 25% increase in ACT participation after it was made mandatory\* in 2017.**



ACT Participation 2017



ACT Participation 2018

\*Source:

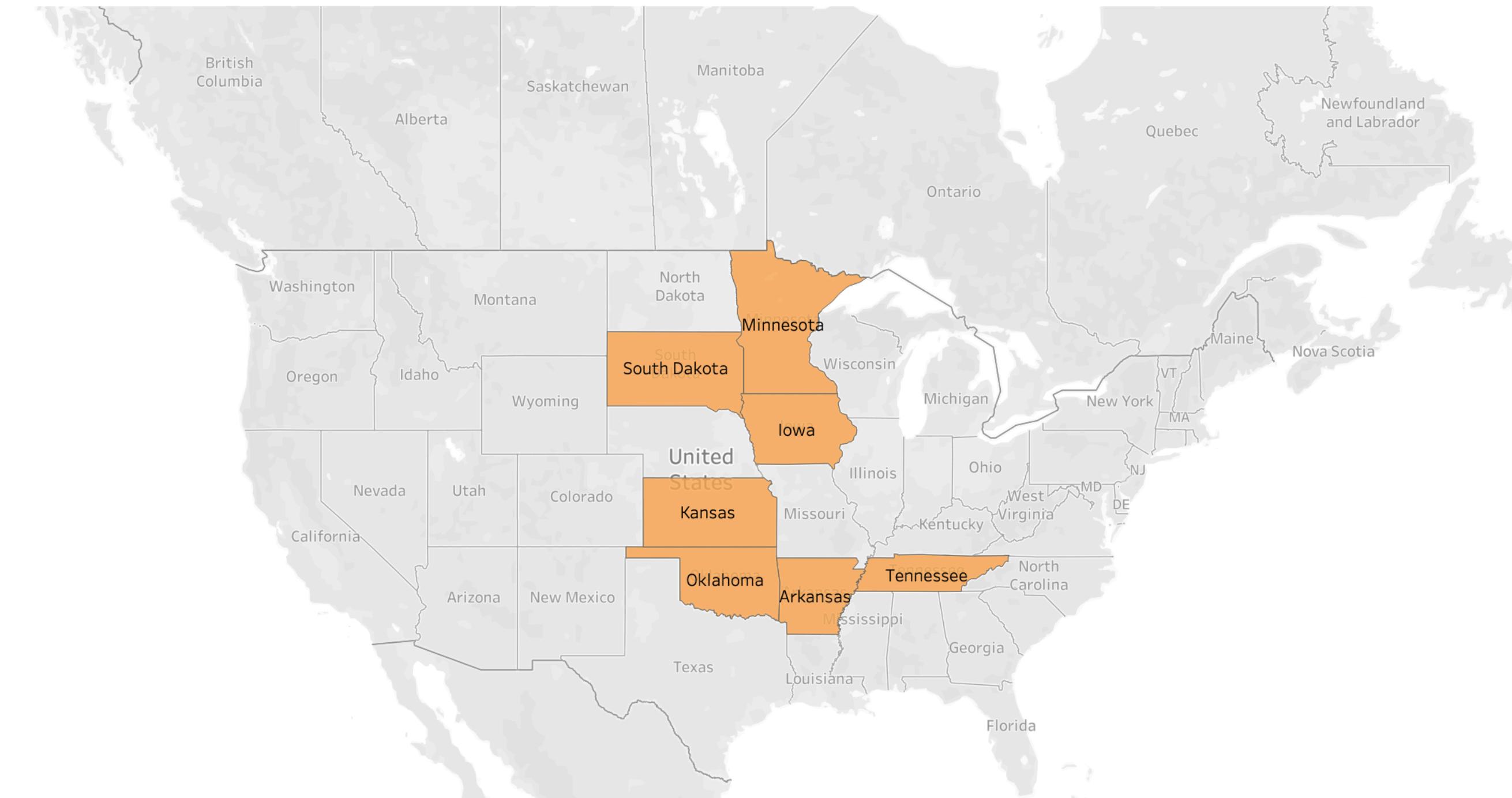
<https://www.daytondailynews.com/news/historically-low-act-scores-red-flag-for-our-country/djfx9Urp719WyEaMfykxL/>

# So what?

It is evident that **state-wide incentives** drive higher participation rates for both exams, and lead to a decrease in participation for the other.

This may be a worthwhile strategy to pursue for the College Board.

Based on this analysis, 7 target states have been identified - with an average of 4% participation and no existing tie-ups\* with either SAT or ACT.



\*Source:

<https://magoosh.com/hs/act/2017/states-that-require-the-act-or-sat/>

# 400,000 students\*

Potential increase in SAT participation if we focus our efforts to achieve maximum participation in the target states.

It is recommended to lobby the respective boards of education in order to provide state-level funding for the SAT to provide students for free, or even require it to be mandatory. Based on data across the nation as well as external evidence, providing such incentives can drive participation across the states.

\*Source:

[https://nces.ed.gov/programs/digest/d16/tables/dt16\\_219.20.asp](https://nces.ed.gov/programs/digest/d16/tables/dt16_219.20.asp)