



# SAT participation rate analysis

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# What will be covered?

What is SAT and ACT?

Overview

Problem Statement

Dataset overview

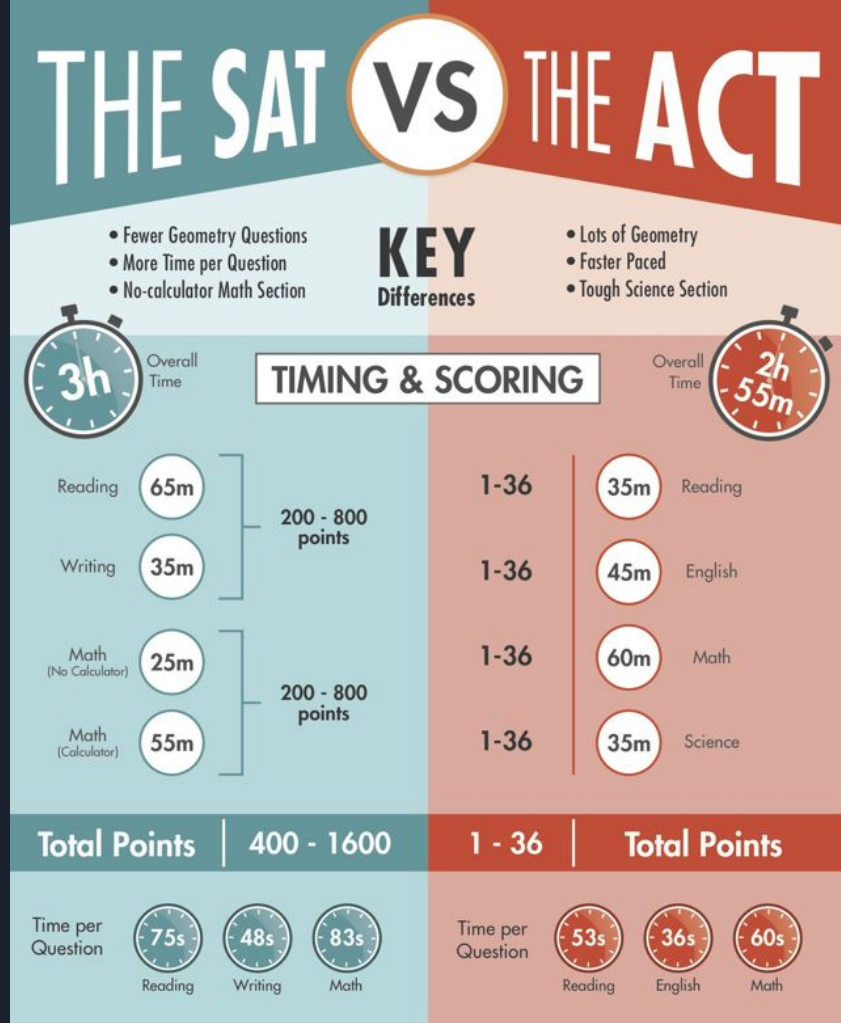
Preliminary findings

Conclusion & Suggestions

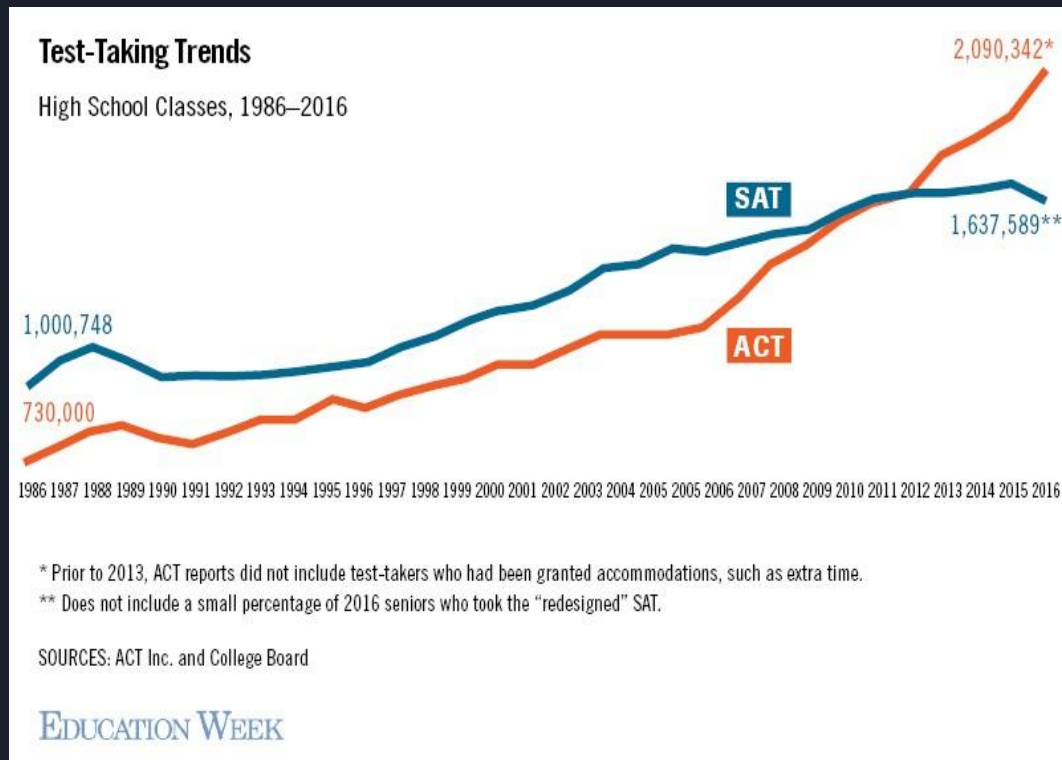


# What is SAT and CAT

The SAT and ACT are standardized tests that many colleges and universities in the United States require for their admissions process. This score is used along with other materials such as grade point average (GPA) and essay responses to determine whether or not a potential student will be accepted to the university.



# Overview



After introducing the original Scholastic Aptitude Test in 1926 (now simply the SAT), the New York City-based College Board owned the market for years

However, ACT was the early winner in recent battles for state and district testing contracts.



# Problem Statement

After leading the standardized test market for long times, SAT have lost its competitiveness and finally lose its position to ACT in 2012.

“ This project aims to explore trends in SAT and ACT participation across different states in the US and seeks to identify significant factors contributing to the participation rate to find appropriate strategies to regain SAT position to be the market leader again ”

# Datasets

Final SAT-ACT  
dataset

SAT+ACT Participation rate

SAT 2017- 2019

ACT 2017 - 2019

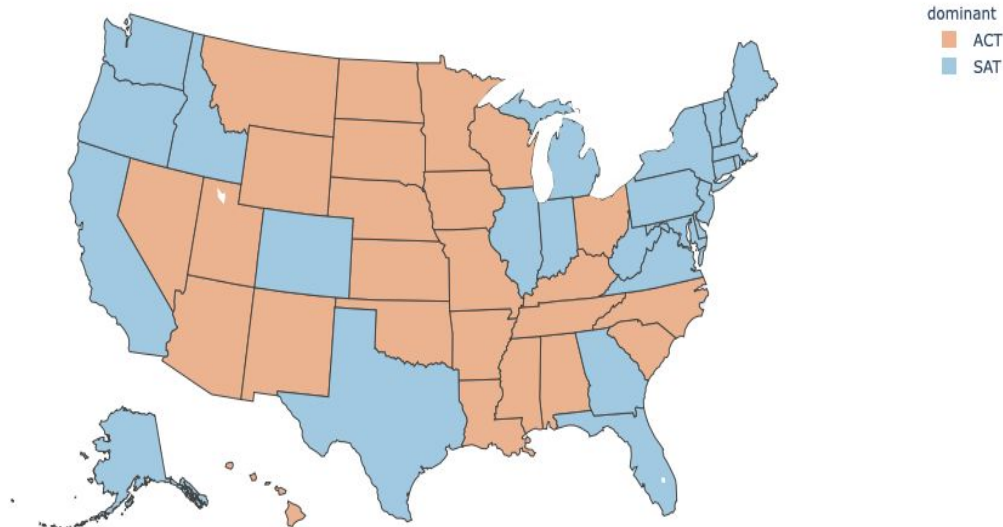
Web Scraping

US Government Census

All Topics	West Virginia	New York
Population estimates, July 1, 2019, (V2019)	1,792,147	19,453,561
PEOPLE		
Population		
Population estimates, July 1, 2019, (V2019)	1,792,147	19,453,561
Population estimates base, April 1, 2010, (V2019)	1,853,018	19,378,144
Population, percent change - April 1, 2010 (estimates base) to July 1, 2019, (V2019)	-3.3%	0.4%
Population, Census, April 1, 2010	1,852,994	19,378,102
Age and Sex		
Persons under 5 years, percent	5.2%	5.8%
Persons under 18 years, percent	20.1%	20.7%
Persons 65 years and over, percent	20.5%	16.9%
Female persons, percent	50.5%	51.4%

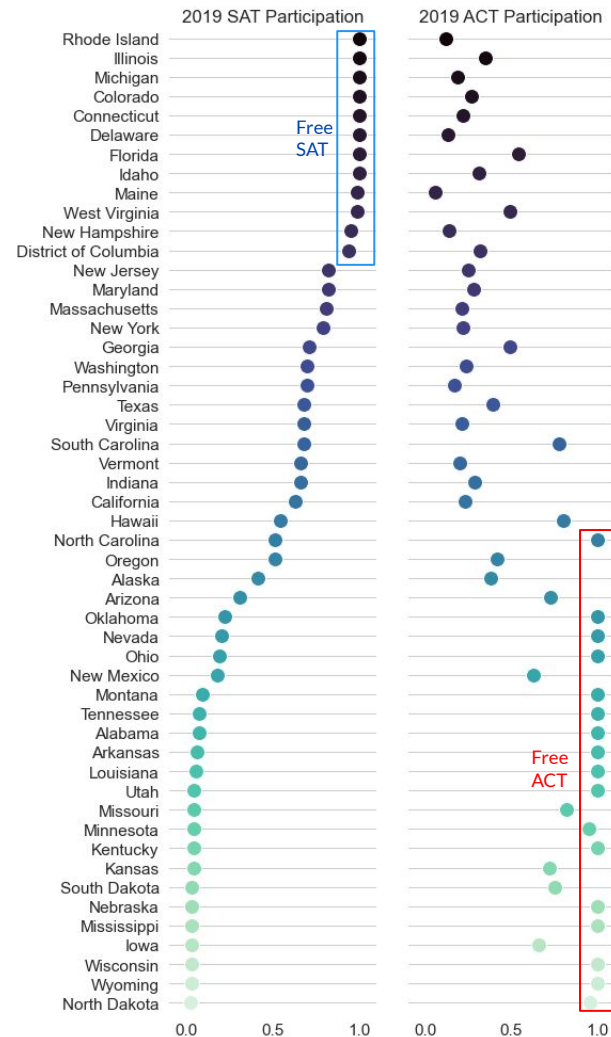
# Preliminary Finding

SAT/ACT Dominant by State



“Coastline states take SAT, Midland take ACT”

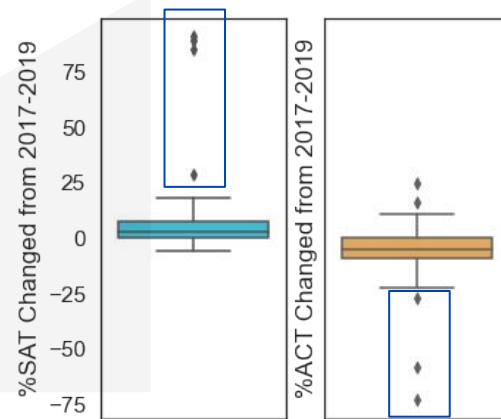
SAT/CAT Participation Rate Overview



# Preliminary Finding

- ACT's rate of change were broader than SAT (more dynamic)
- There might be a major shift from ACT to SAT in some states since there is significant outliers in positive side of change of SAT, and negative side of ACT

Distribution of SAT and ACT rate of participation changed from 2017-2019





# Preliminary Finding

NEWS

Illinois shifts gears on college entrance exams, chooses SAT over ACT

STUDENT & SCHOOL PERFORMANCE

**Goodbye ACT, hello SAT: a significant change for Colorado high schoolers**

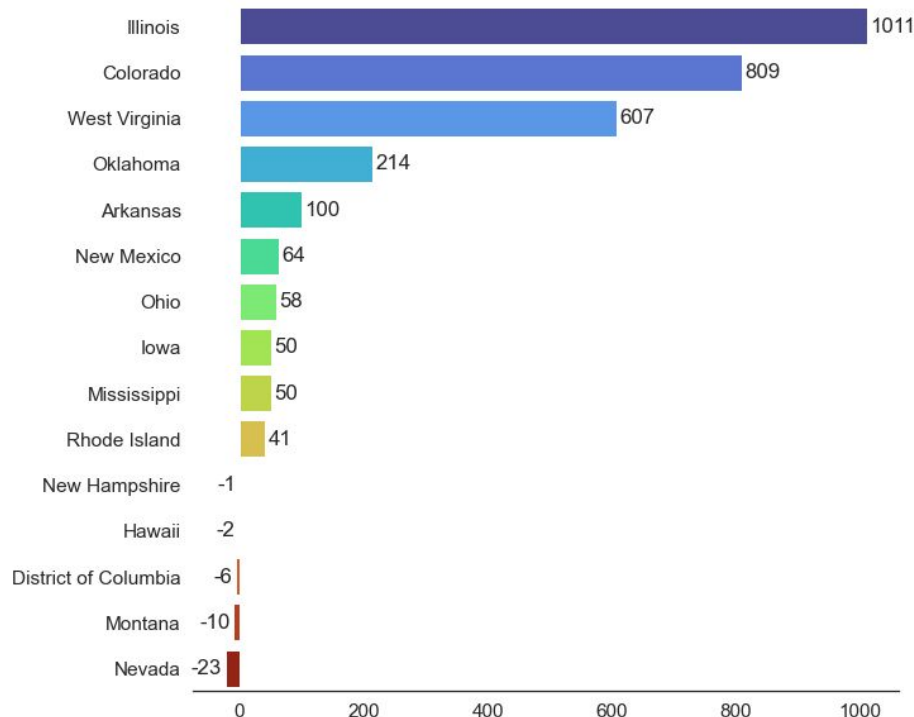
WV chooses SAT as new high school standardized test for juniors

Entering into testing contracts  
with states education  
department

=

Best short term strategy

Percentage of SAT takers changed from 2017-2019

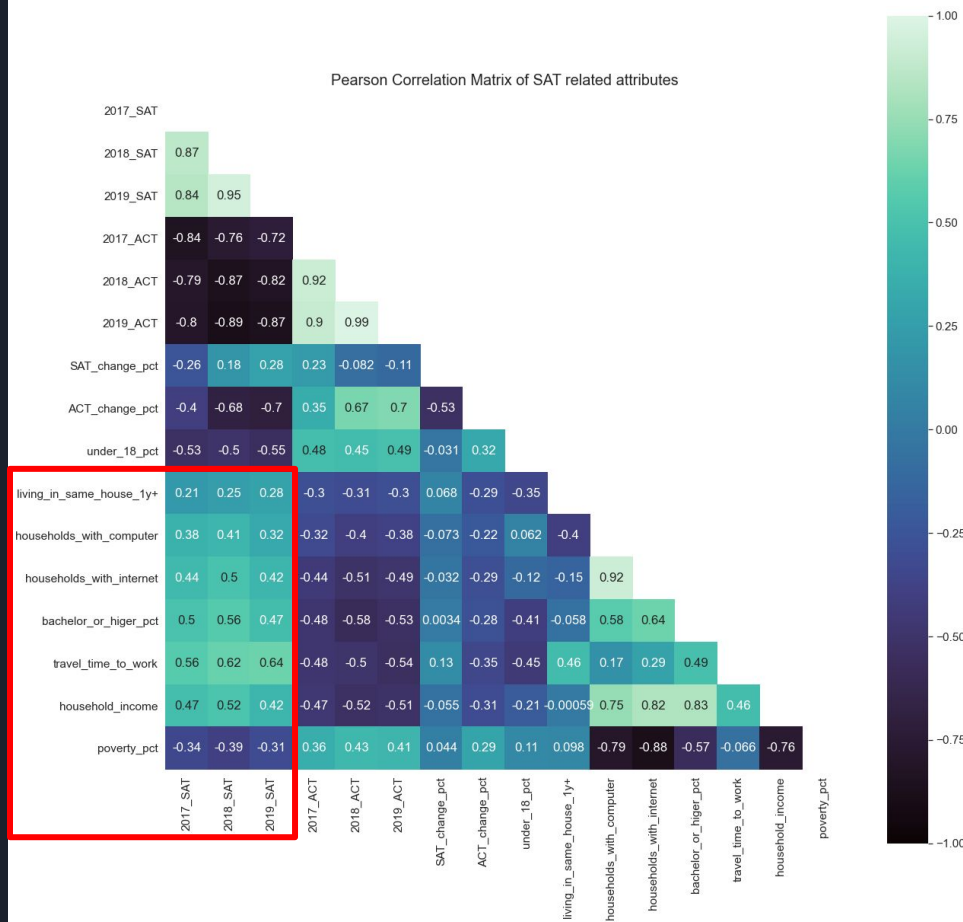


## Positive Correlation:

- Household incomes
- Access to computer and internet
- Population Education

## Negative Correlation:

- Poverty percentage



# Preliminary Finding

“Income = Biggest Barrier”

“Lower income choose ACT!”

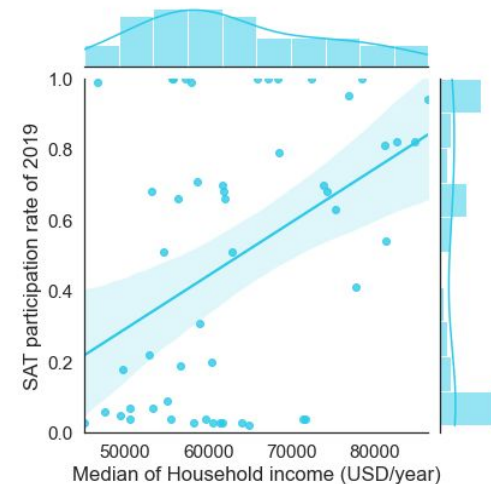


Could be potentially solved by

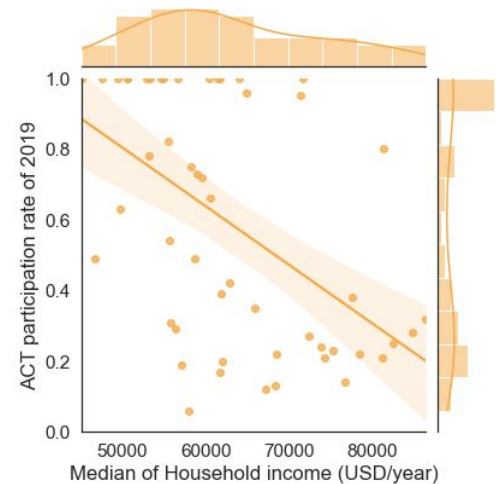
Financial Aid

Free Preparation Courses

Relationship between household income and SAT participation rate

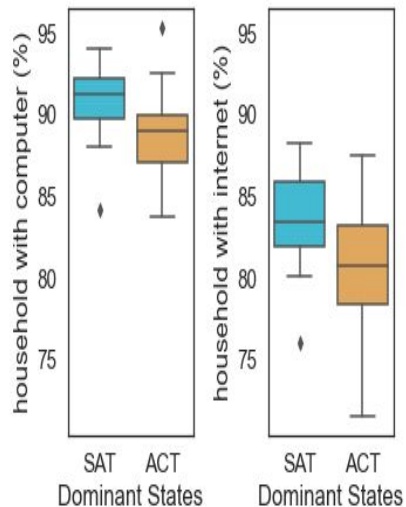


Relationship between household income and ACT participation rate

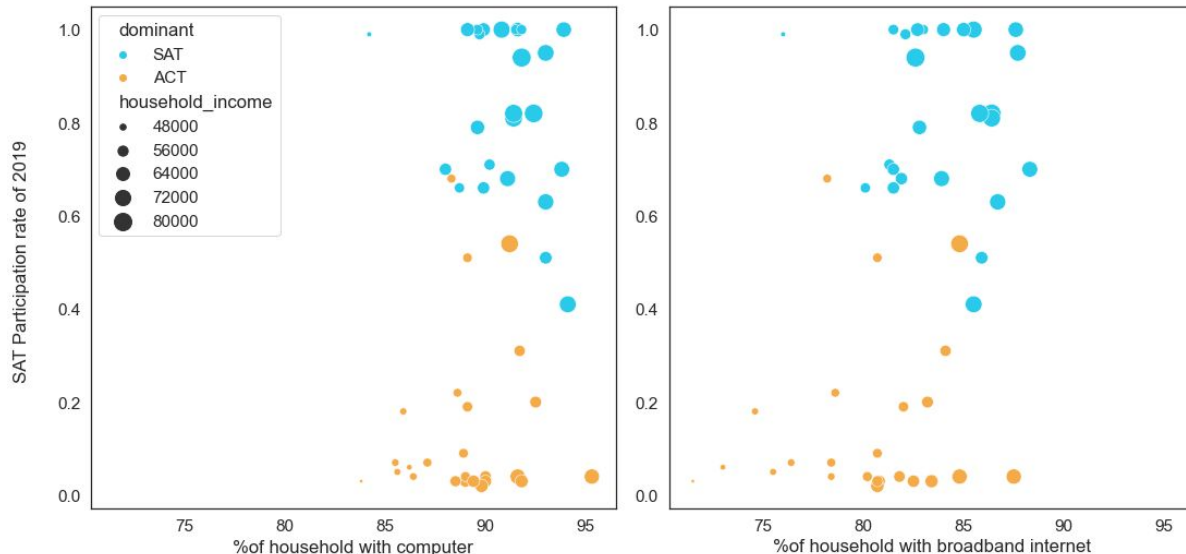


# Preliminary Finding

Percentage of household having accessed to computer and internet



SAT2019 Participation rate vs access to computer and internet

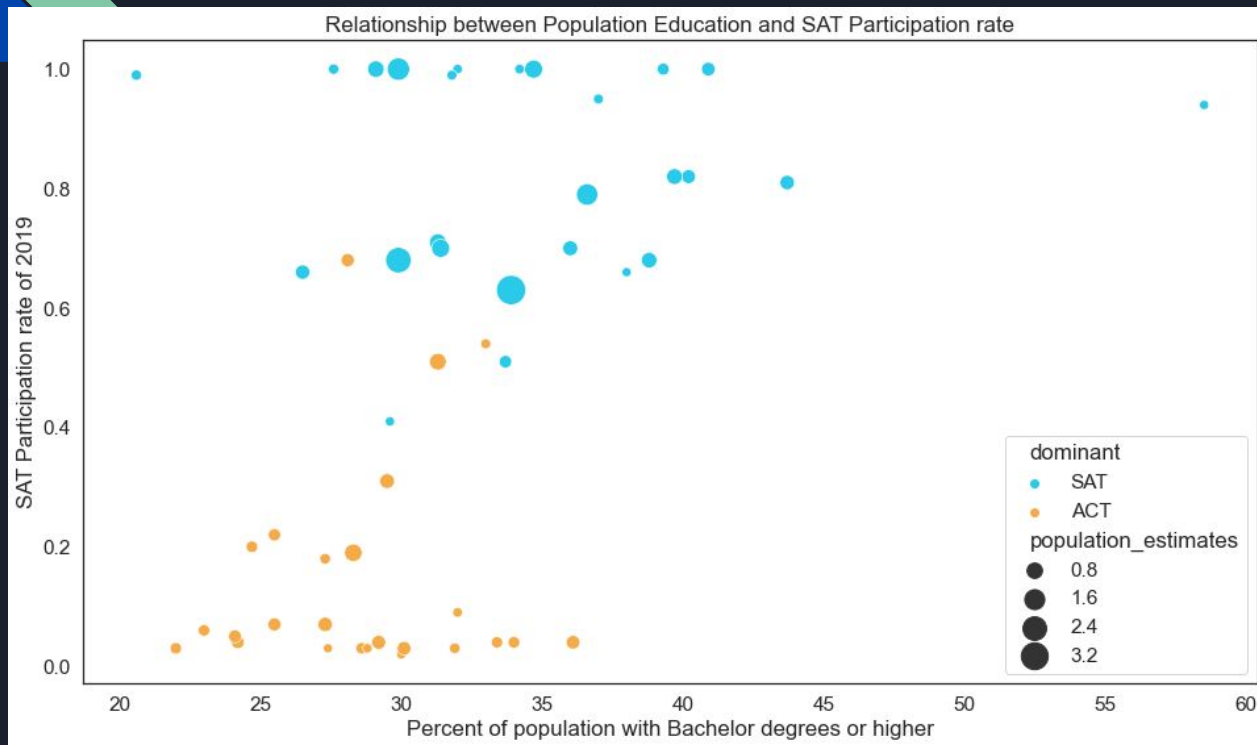


SAT taker = financial advantage + well-equipped with facilities



Seamless transition to computer-based test


# Preliminary Finding



ACT dominated  
in lower  
education states



Giving **SAT** scholarship  
to promote aspiration  
for higher education



# Conclusion & Suggestion

Several factors affecting SAT participation rate was discovered and discussed. While some of them required further study, there are some quick-win strategies that could be implemented to boost the participation rate

- Establish **an agreement** with Department of Education of each states
- Provide a **fee waiver/ financial aids** and/or a free subscription to preparation courses
- Develop **computer delivery test** to accommodate for the restriction due to COVID-19, and increase accessibility in some states with minimal number of test center
- Arrange a computer-based test in addition to the regularly organized SAT School day
- Sponsor the **scholarships** to promote aspiration for higher education