SAT participation rate analysis

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TOC

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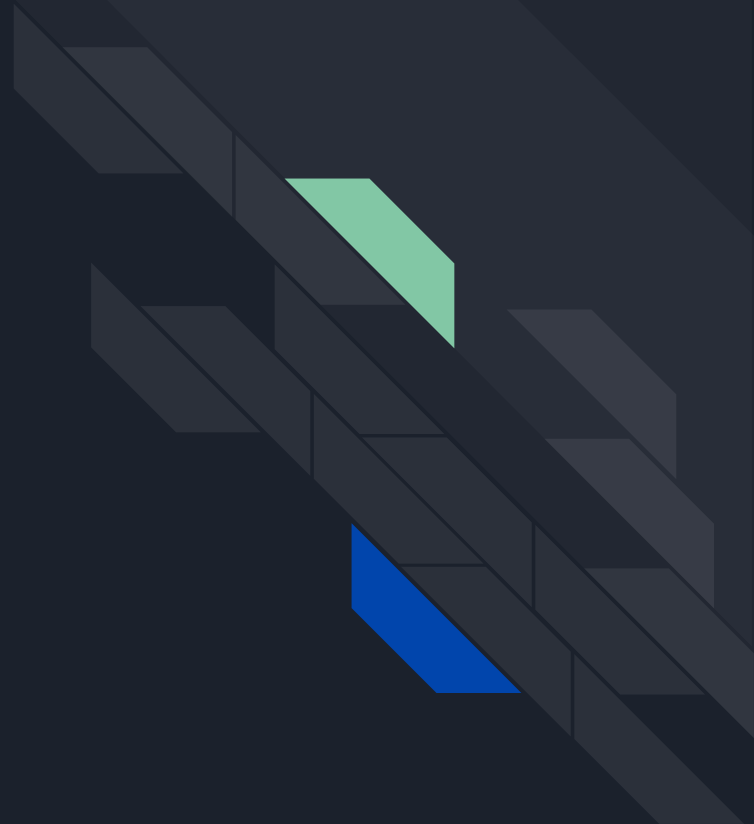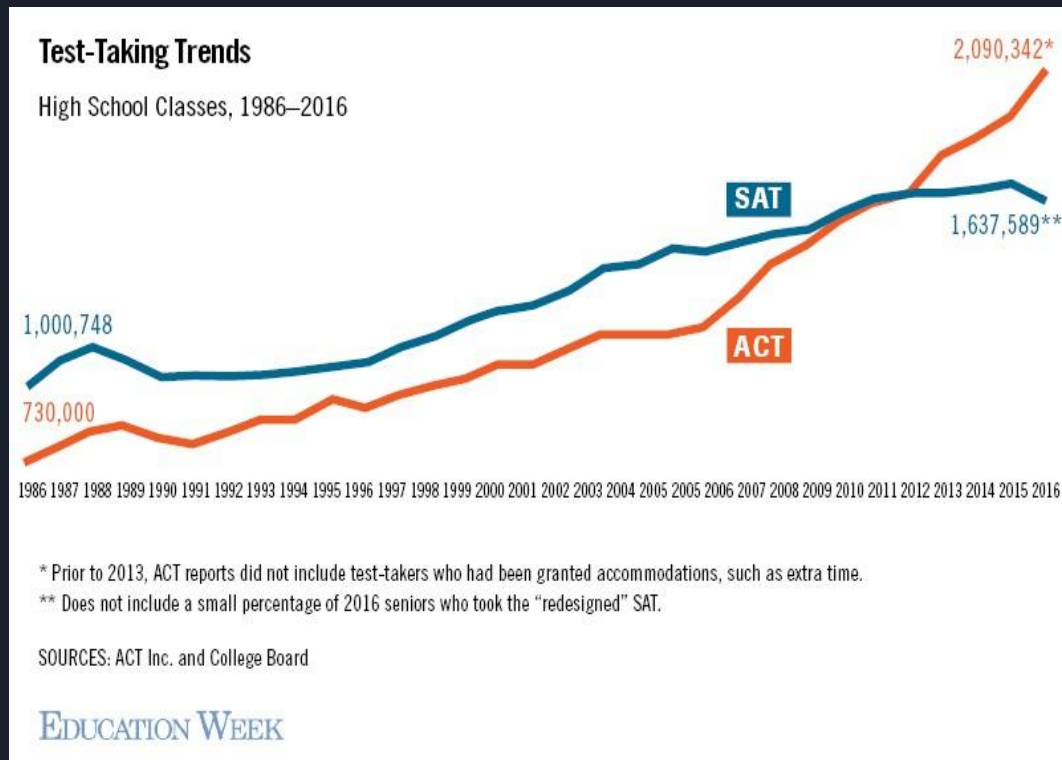
The SAT and ACT are standardized tests that many colleges and universities in the United States <u>require for their admissions process</u>. This score is used along with other materials such as grade point average (GPA) and essay responses to determine whether or not a potential student will be accepted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

Overview

Test-Taking Trends

High School Classes, 1986–2016

2,090,342*

1,000,748

730,000

1,637,589**

SAT

ACT

1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016

* Prior to 2013, ACT reports did not include test-takers who had been granted accommodations, such as extra time.

** Does not include a small percentage of 2016 seniors who took the "redesigned" SAT.

SOURCES: ACT Inc. and College Board

EDUCATION WEEK

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

SAT 2017- 2019

SAT+ACT Participation rate

ACT 2017 - 2019

Final SAT-ACT dataset

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

dominant
- ACT
- SAT
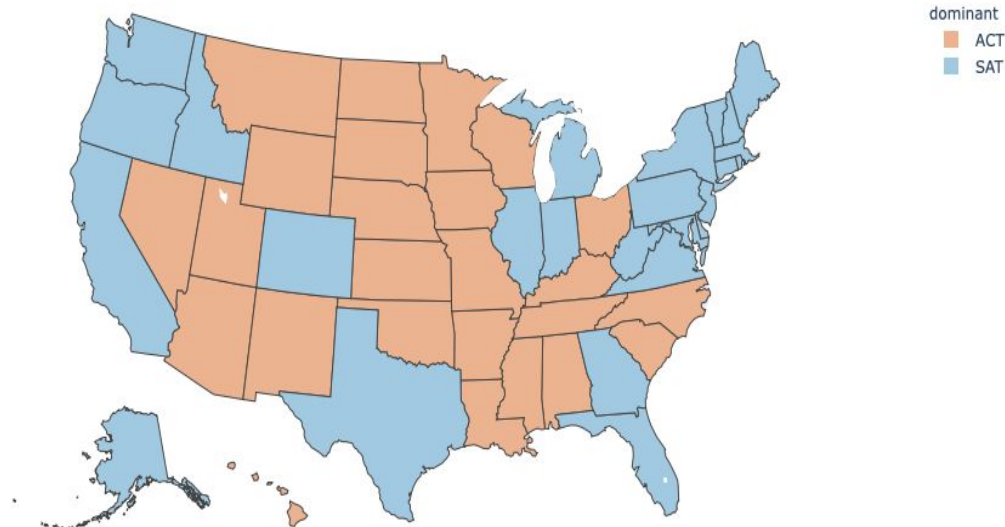
"Coastline states take SAT, Midland take ACT"

SAT/CAT Participation Rate Overview

2019 SAT Participation   2019 ACT Participation

Free SAT

Free ACT
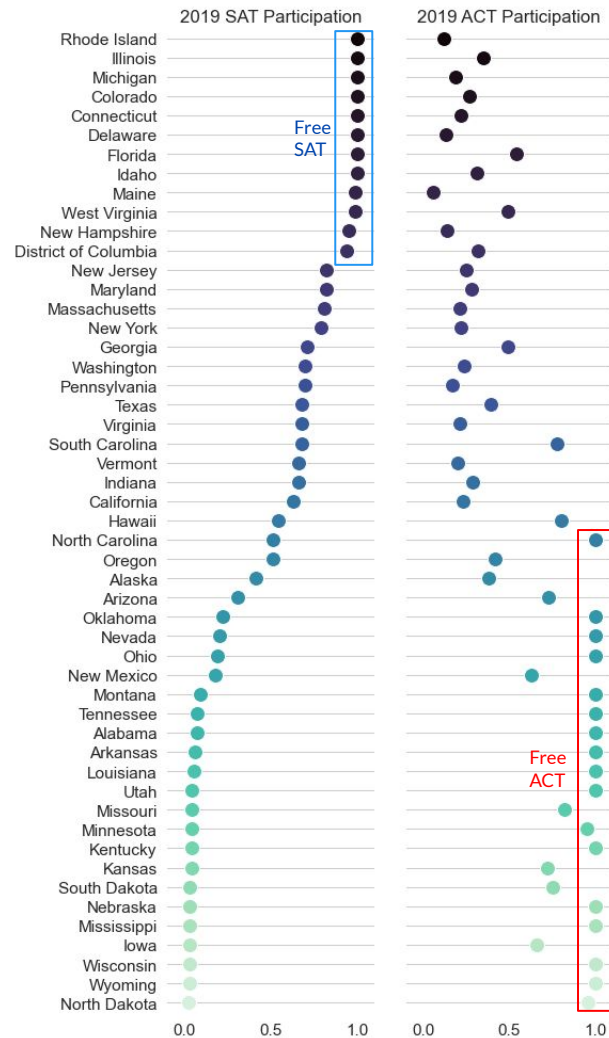
Preliminary Finding

➔ 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 change of SAT participation from 2017 to 2019

Distribution of SAT and ACT rate of participation changed
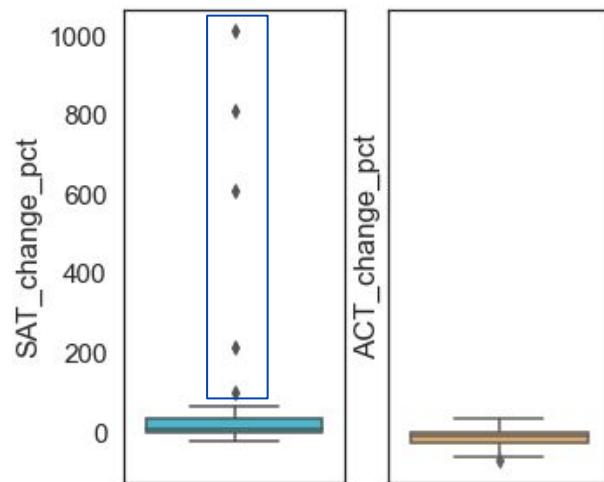
Preliminary Finding

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

STUDENT & SCHOOL PERFORMANCE

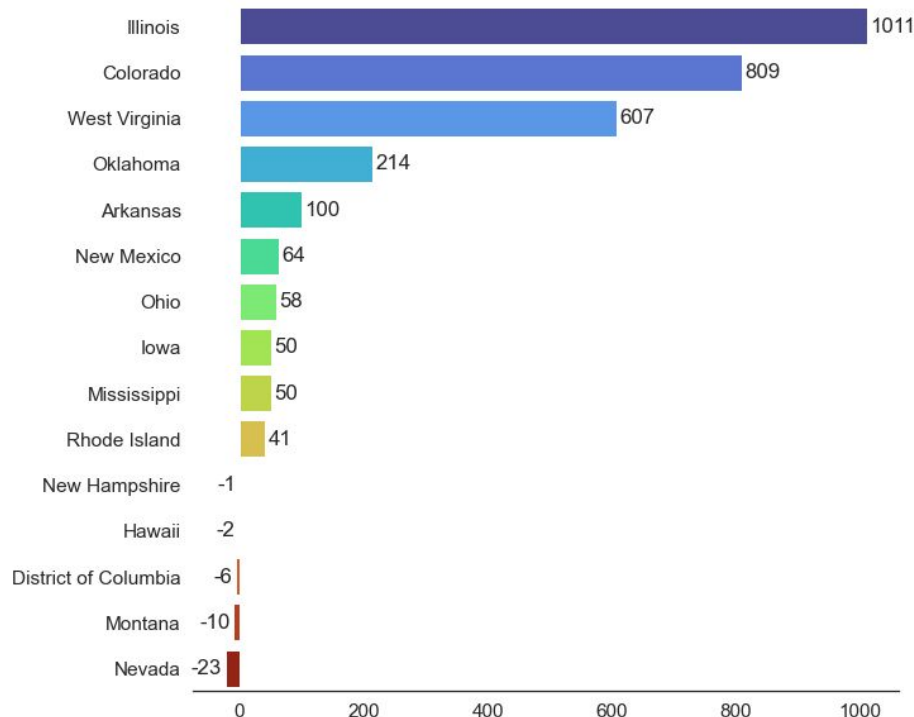**Goodbye ACT, hello SAT: a significant change for Colorado high schoolers**

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

| State	Value
Illinois	1011
Colorado	809
West Virginia	607
Oklahoma	214
Arkansas	100
New Mexico	64
Ohio	58
Iowa	50
Mississippi	50
Rhode Island	41
New Hampshire	-1
Hawaii	-2
District of Columbia	-6
Montana	-10
Nevada	-23

Preliminary Finding

Positive Correlation:

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

Negative Correlation:

- Poverty percentage

Pearson Correlation Matrix of SAT related attributes
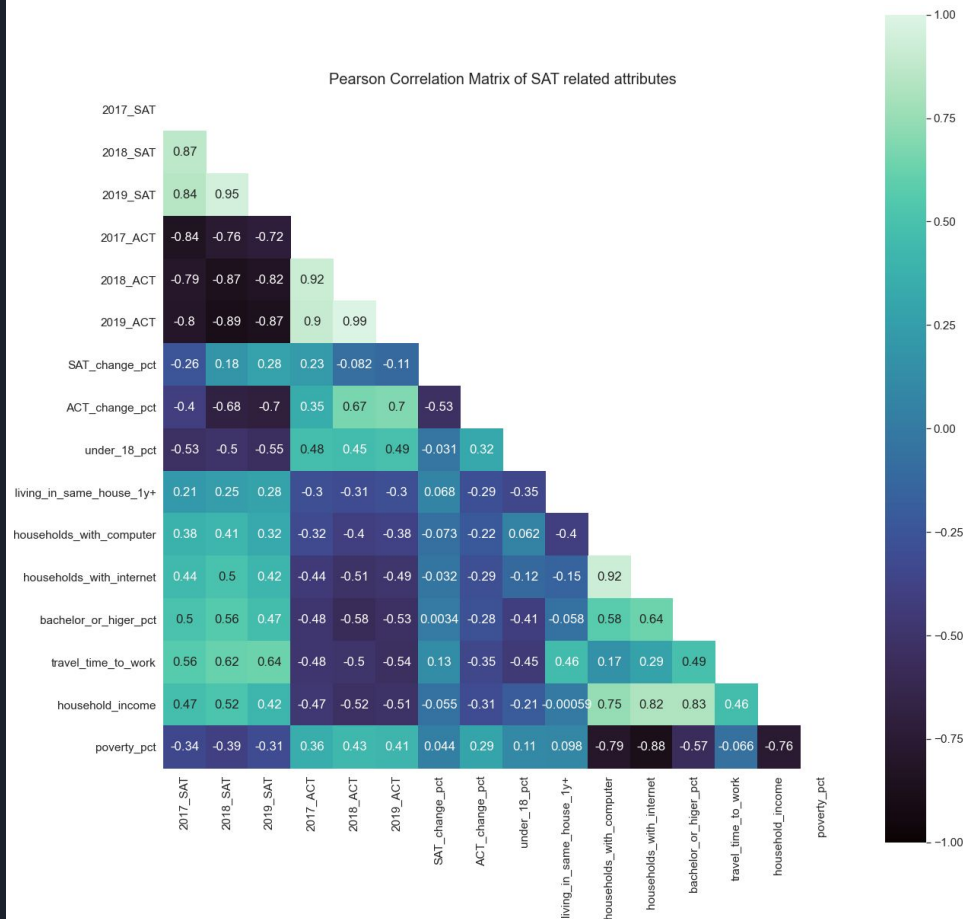
Preliminary Finding

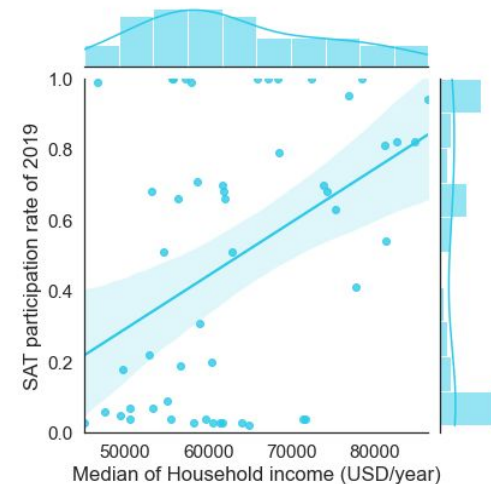"Income = Biggest Barrier"
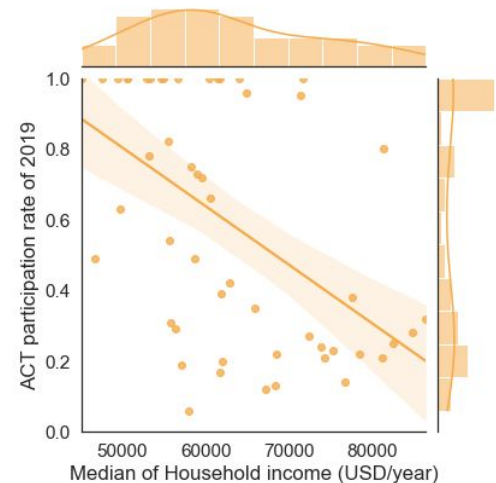
"Lower income choose ACT!"

Could be potentially solved by

Financial Aid

Free Preparation Courses

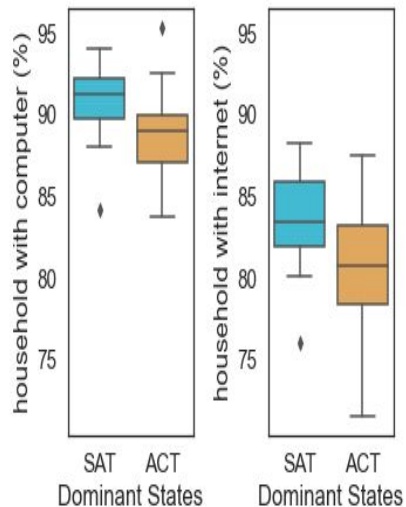Relationship between household income and SAT participation rate

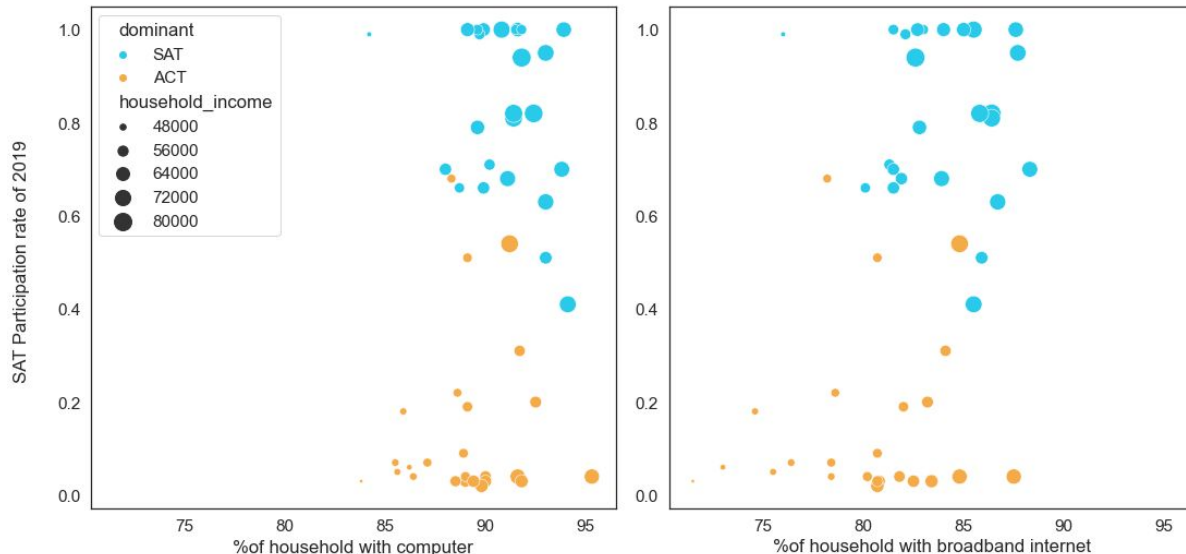Relationship between household income and ACT participation rate

Percentage of household having accessed to computer and internet

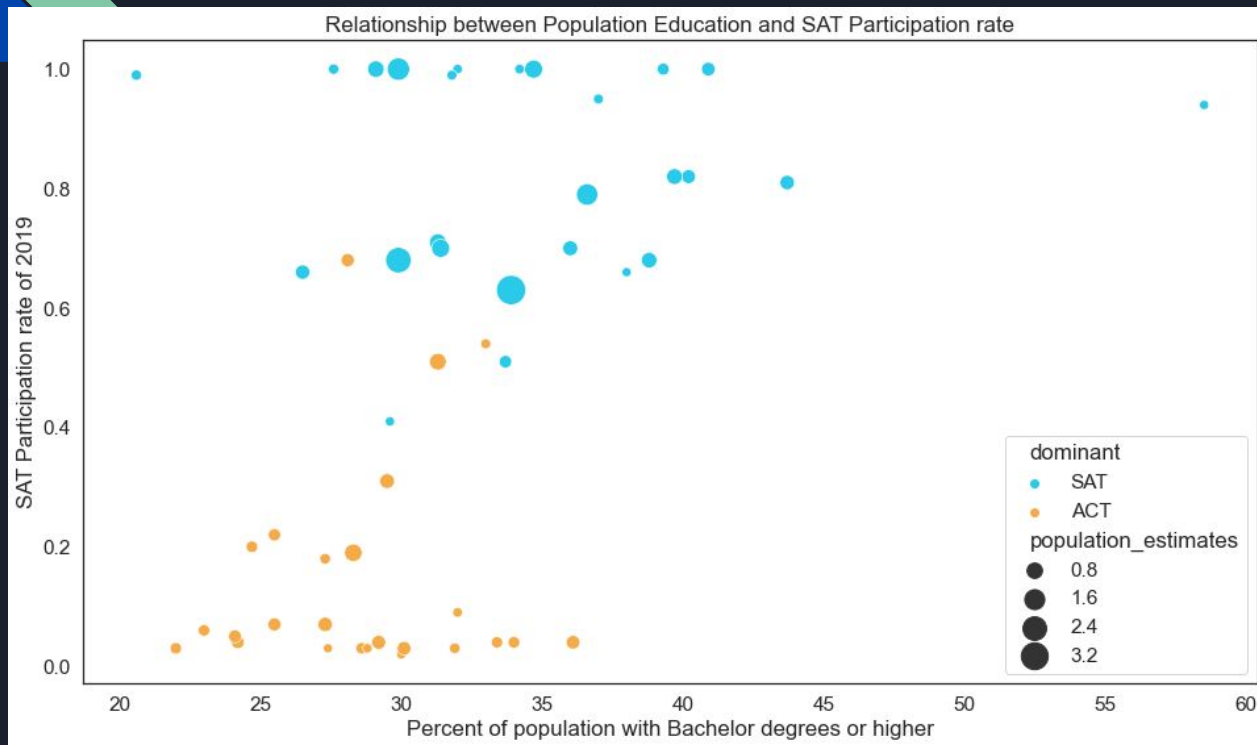SAT2019 Participation rate vs access to computer and internet

SAT taker = financial advantage + well-equipped with facilities

Seamless transition to computer-based test

Preliminary Finding

Relationship between Population Education and SAT Participation rate

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