

# ACT & Public Universities ACT Percentile Range

Initial study for college prep program to prepare  
their students applying to their local public schools





# Problem Statement

A national college preparatory program wanted to investigate if public schools are generally accepting the students with ACT scores at that national average. Since the program has no budget for the project they are asking to see if this is a line of questioning worthy of pursuing.

- Is there enough of a relationship to pursue this further?

Purpose:

- Inform students that plan to apply in their own state If they should expect their scores to be advantages for public schools.



# Background

When ACT was asked about changes to the test:

- *"ACT continues to measure college and career readiness in a way that is consistent with the past. The ACT is designed to reflect the knowledge and skills that are taught in schools and deemed necessary for success in first-year college courses and workforce training courses. When those skills and constructs become more complicated and difficult over time, the ACT reflects that. **Those changes tend to occur very gradually, however, not usually within a two to three year span.** So we would disagree with the statement that the ACT has been slowly and steadily changing the difficulty level of the test over the past two to three years."*

Year	Source	Average ACT Composite Score
2017	ACT.Org <a href="#">Source</a>	21.0
2018	ACT.Org <a href="#">Source</a>	20.8
2019	ACT.Org <a href="#">Source</a>	20.7
2020	ACT.Org <a href="#">Source</a>	20.6
2021	ACT.Org <a href="#">Source</a>	20.7



# Background

**States that require all students to take the ACT below (as of 2021):**

- “The number of four-year universities and colleges with **test-optional policies** has **nearly doubled** from 713 to 1,350 since **spring 2020**.”
- “**Forty-seven percent**, or 299, of the **institutions** that adopted test-optional policies during the pandemic **are public institutions.**”

**States that require all students to take the ACT below (as of 2021):**

- Alabama
- Hawaii
- Montana
- Nebraska
- Nevada
- North Carolina
- North Dakota
- Utah
- Wisconsin



# Chosen Data

- **act\_2017.csv:** These are the ACT Scores by State for 2017
- **act\_2018.csv:** These are the ACT Scores by State for 2018
- **act\_2019.csv:** These are the ACT Scores by State for 2019
- **sat\_act\_by\_college.csv:** Ranges of Accepted ACT & SAT Student Scores by Colleges for 2022
- **public\_universities\_by\_state.xlsx:** List of Public Universities (manually Web Scrapped...)



# **Insights from ACT Composite Scores from 2017-2019**





# Low and High ACT Participation of States

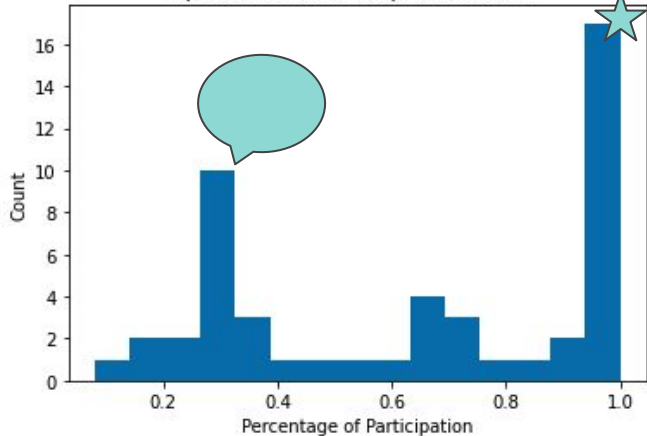


Less than 30% Participation

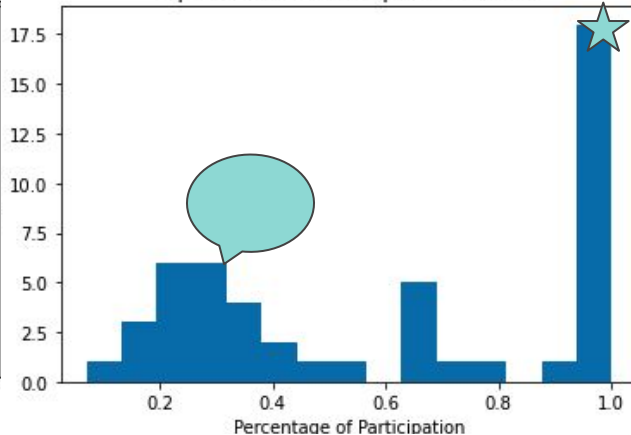


100% Participation

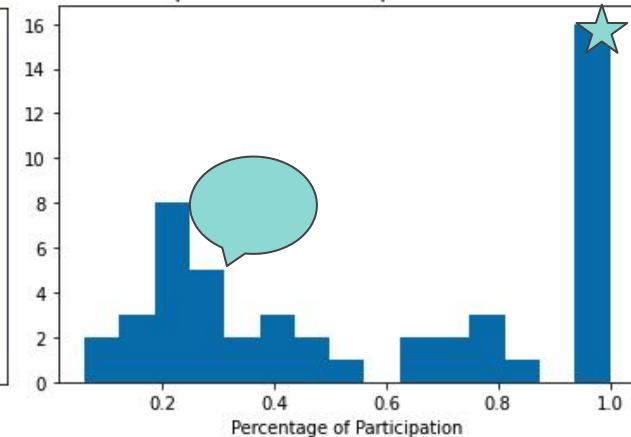
Spread of ACT Participation In 2017



Spread of ACT Participation In 2018



Spread of ACT Participation In 2019





# What states were they?

## Less than 30% Participation

Delaware, Maine, Massachusetts,  
New Hampshire, Pennsylvania, Rhode Island,  
Washington, Vermont, Virginia, Michigan`

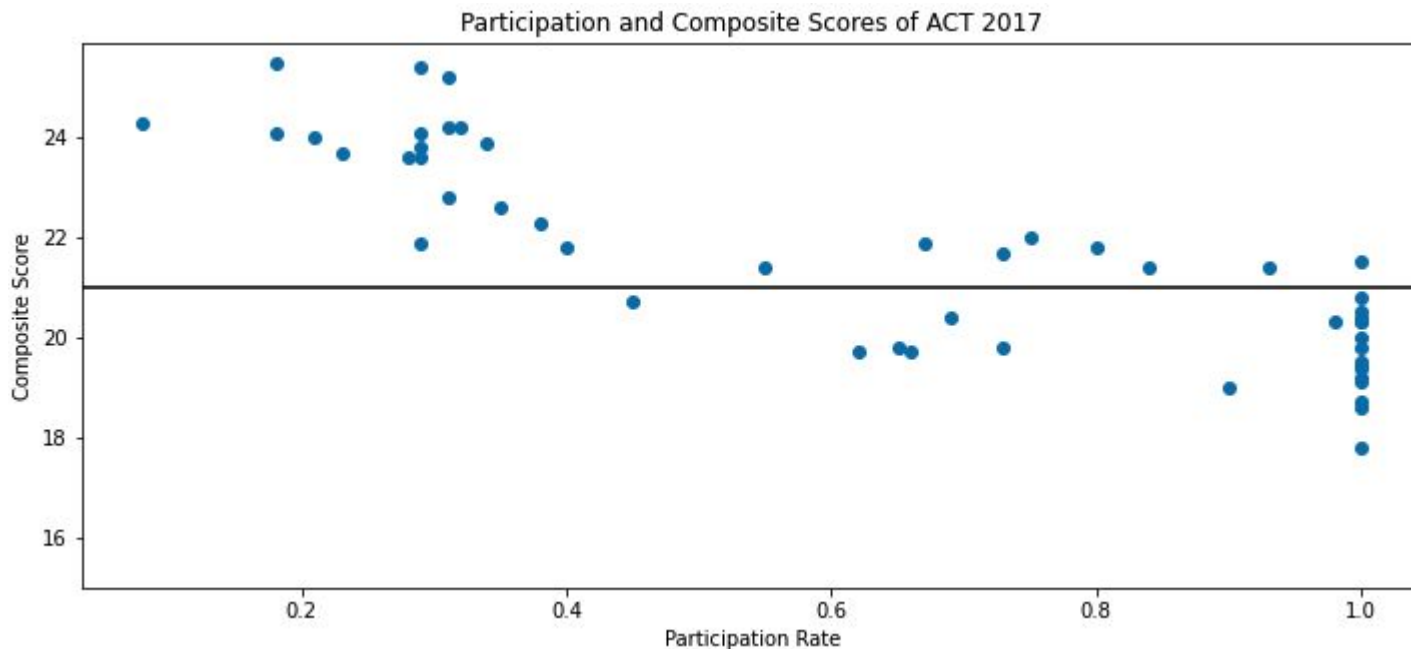
## 100% Participation (2017-2019)

Alabama, Arkansas  
Kentucky, Louisiana  
Mississippi, Montana  
Nevada, North Carolina  
Oklahoma, Tennessee  
Utah, Wisconsin



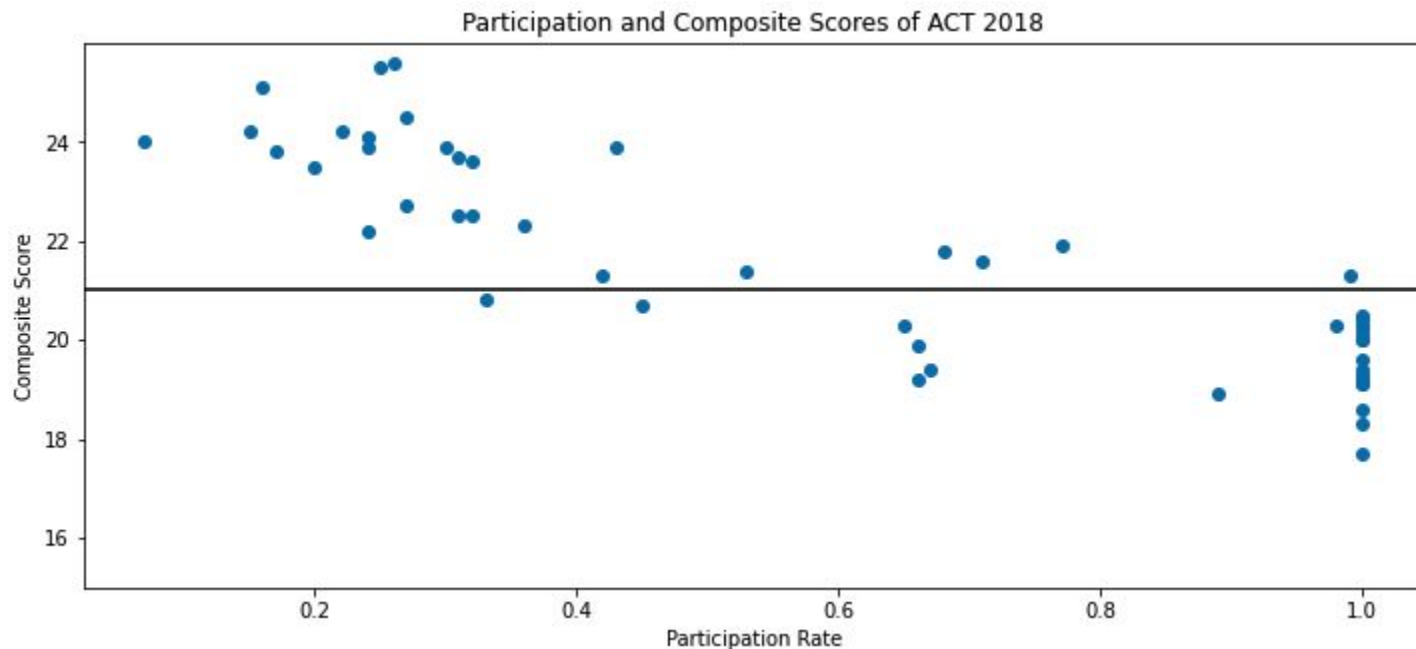


# Interesting Results from Participation Rates and Composite Scores '17



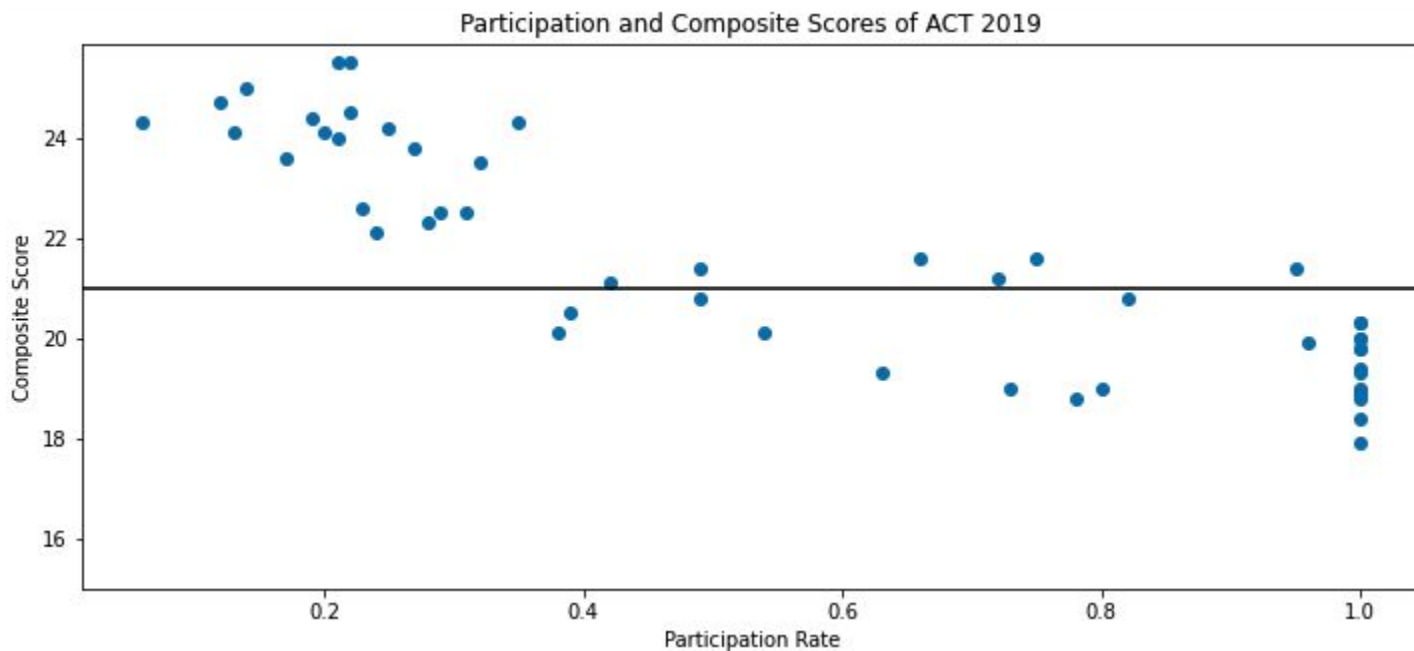


# Interesting Results from Participation Rates and Composite Scores '18





# Interesting Results from Participation Rates and Composite Scores '19

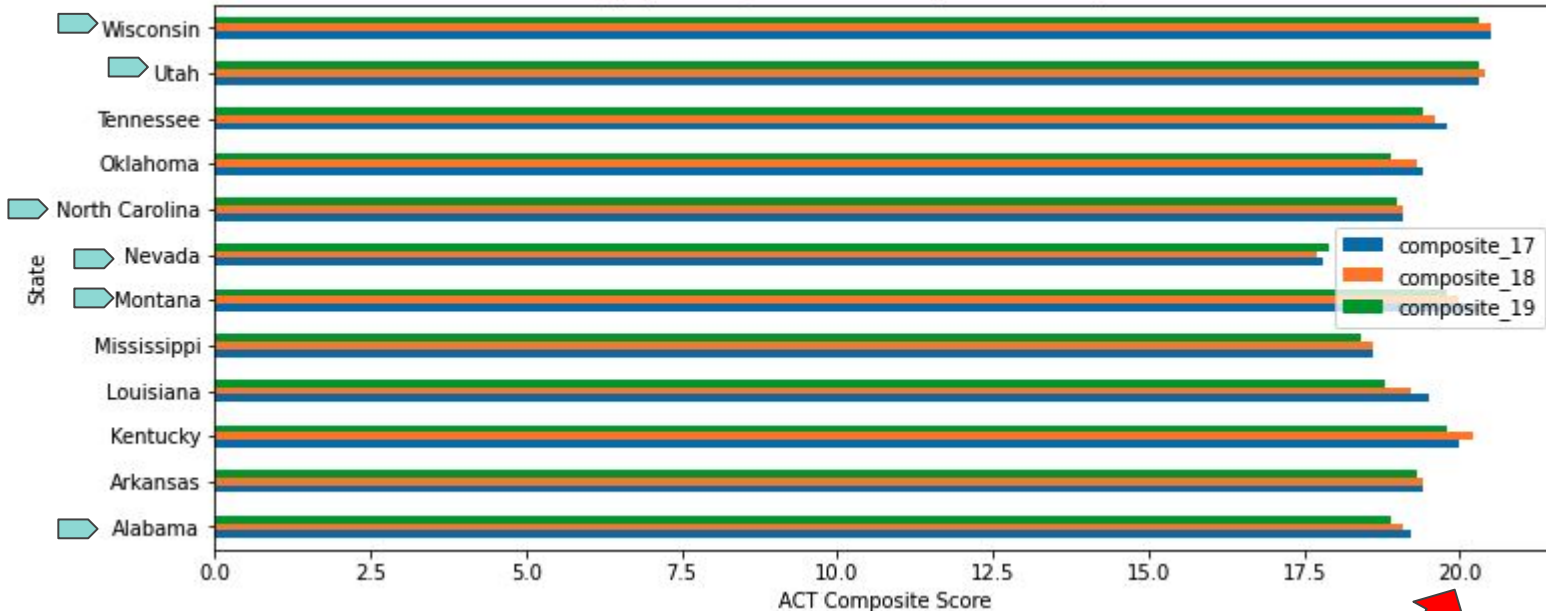


# Composite Score Changes of High Participative States 2017-2019

100%

ACT REQ

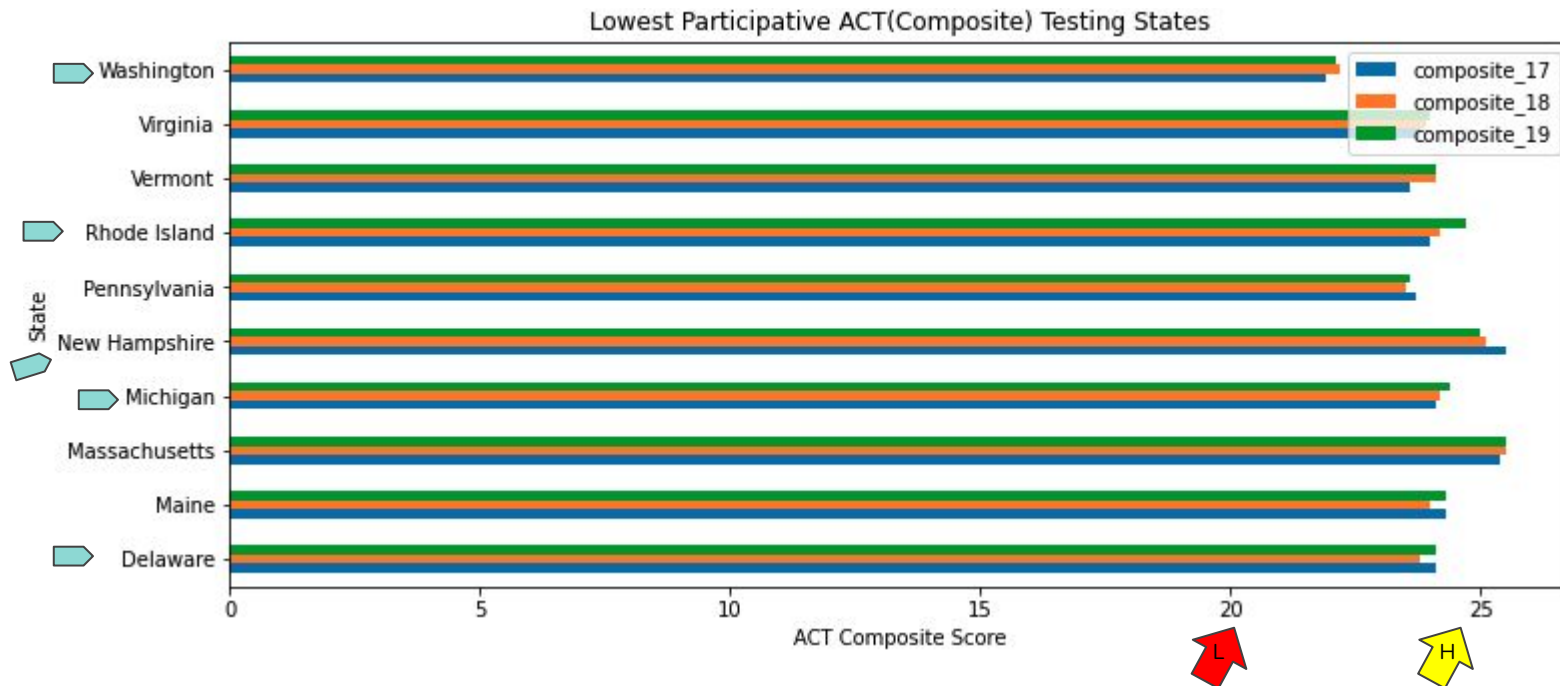
Highly Participative ACT(Composite) Testing States



# Composite Score Changes of Low Participative States 2017-2019

<30%

SAT REQ





# Important Notes from EDA

- Average composite score does not vary much from year to year
  - Cautiously assume presume that from 2017 to 2021 (averaged 20.7)
- Composite scores do not vary widely within states grouped by high or low participation rates



# **Insights from Public University ACT Composite Acceptance Ranges**





# Public University Percentiles and Acceptance Rate

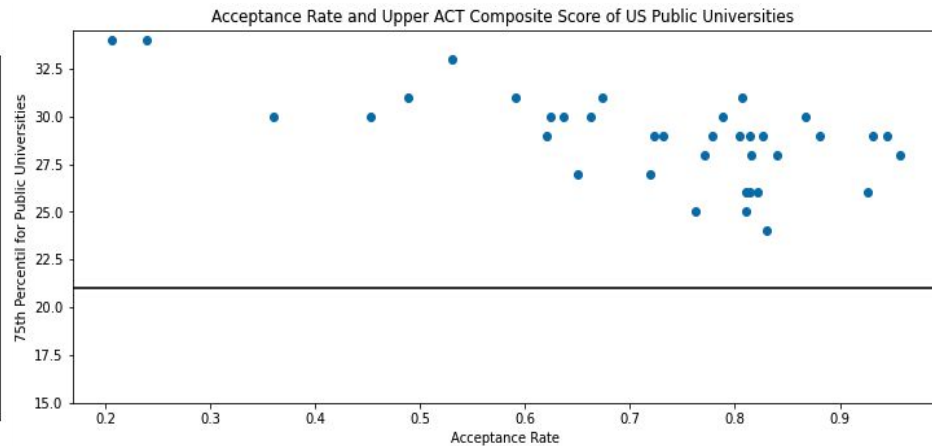
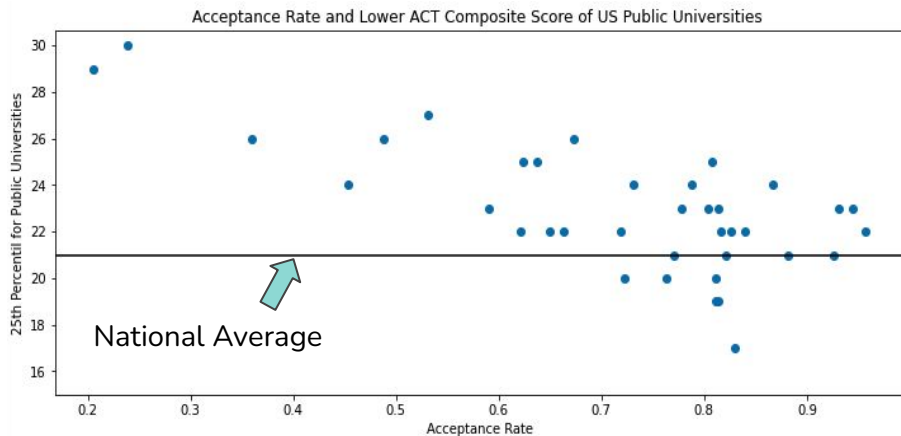
National Average = 21.5

<

Average lower 25th Percentile = 22.9

<

Average upper 75th Percentile = 28.89

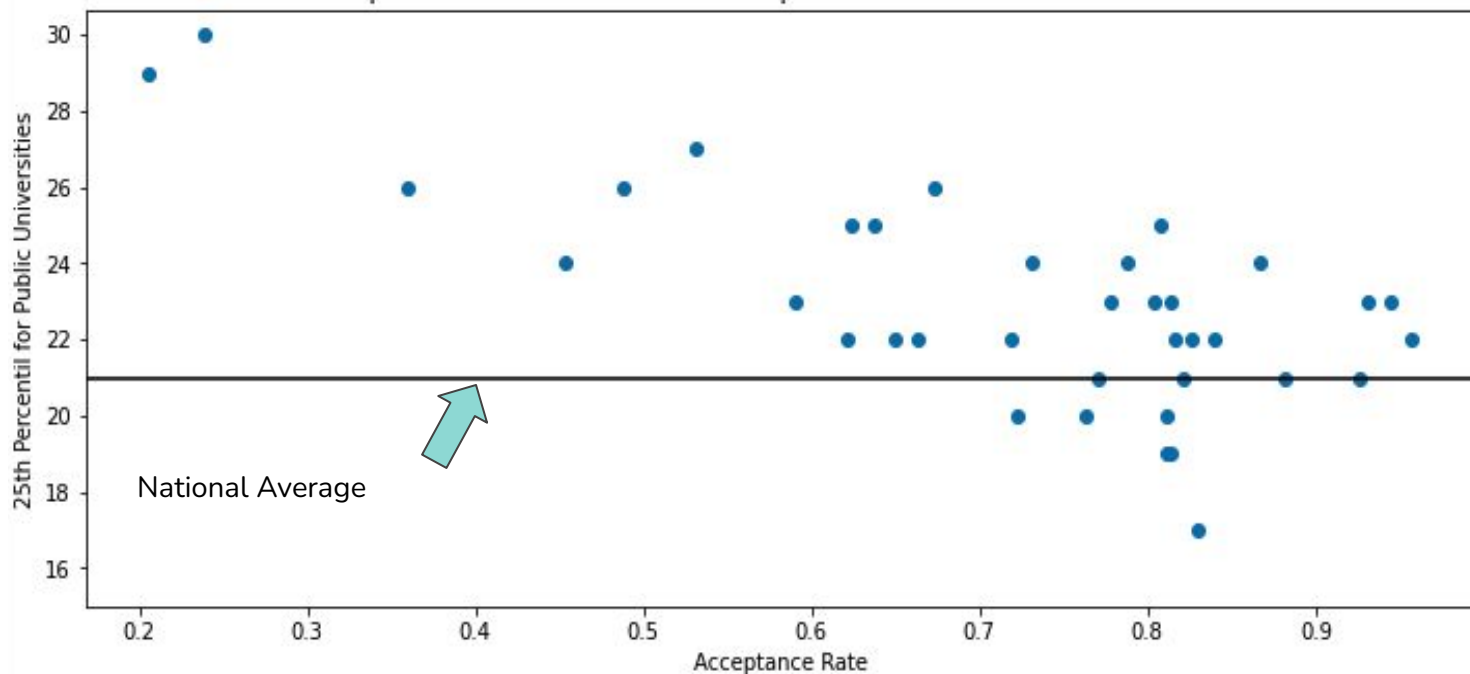




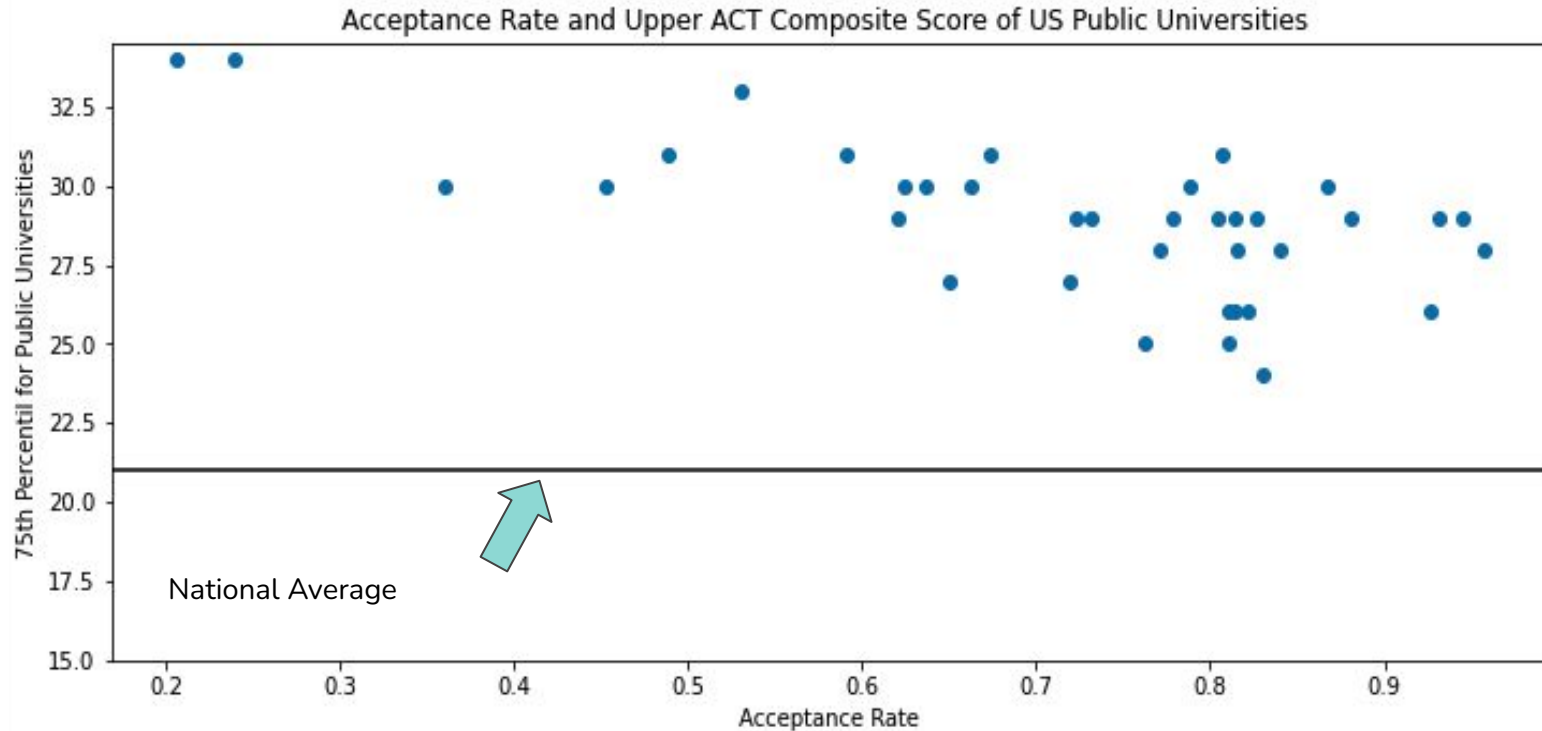


# Public University Percentiles and Acceptance Rate

Acceptance Rate and Lower ACT Composite Score of US Public Universities



# Public University Percentiles and Acceptance Rate





# Conclusions/Recommendations

- The lower average percentile range is above to national average could pursue with larger dataset
- There are a fair amount of potential relationships to explore more as well
  - Is the SAT scores be more appropriate for lower participative states would?
  - Explore the relationship of participation on the state levels and their respective university

## Recommendations:

- Include more data specifically from public universities preferably average 50th percentile to make a more accurate comparison



**Questions?**



# Link Sources for List of SAT Required for Graduation High School Graduation as of 2021

Colorado

Connecticut

[Delaware](#)

[District of Columbia](#)

[Idaho](#)

[Illinois](#)

[Indiana](#)

Michigan

[New Hampshire](#)

[Ohio](#)

[Oklahoma](#)

[Rhode Island](#)

[South Carolina](#)

[Tennessee](#)

[West Virginia](#)



## Highest Participation Rate

	state	composite_17	composite_18	composite_19
0	Alabama	19.2	19.1	18.9
3	Arkansas	19.4	19.4	19.3
17	Kentucky	20.0	20.2	19.8
18	Louisiana	19.5	19.2	18.8
24	Mississippi	18.6	18.6	18.4
26	Montana	20.3	20.0	19.8
28	Nevada	17.8	17.7	17.9
33	North Carolina	19.1	19.1	19.0
36	Oklahoma	19.4	19.3	18.9
42	Tennessee	19.8	19.6	19.4
44	Utah	20.3	20.4	20.3
49	Wisconsin	20.5	20.5	20.3