



# Standardised Tests

SAT and ACT

And why it matters to Oregon.

# Background

- SAT and ACT are standardised tests which quantifies a student's capabilities in their studies.
- Used by most colleges and universities for admissions processes.
- SAT comprises of Evidence Based Reading and Writing, and Math which adds up to a Total score.
- ACT comprises of English, Math, Reading and Science, which adds up to a Composite score.

# Problem Statement

Starts with the Ideal Outcome

- Standardised tests, by its very name, should be a standard made available to the whole student body.
- The tests should ideally be a fair representation of the capabilities of **all** high school students.

MAINE | NORTH DAKOTA | IOWA | **OREGON**

# Definitions

In our data sources:

- 1) Included District of Columbia (Washington DC) as a state
- 2) Excluded territories e.g. Puerto Rico

Variables:

- 1) Participation Rates
- 2) Total/Composite Scores
- 3) Median Household Income
- 4) Existing State Regulations
- 5) K12 and Postsecondary Funding per student
- 6) Federal and State Funding per student
- 7) Number of Universities within each state

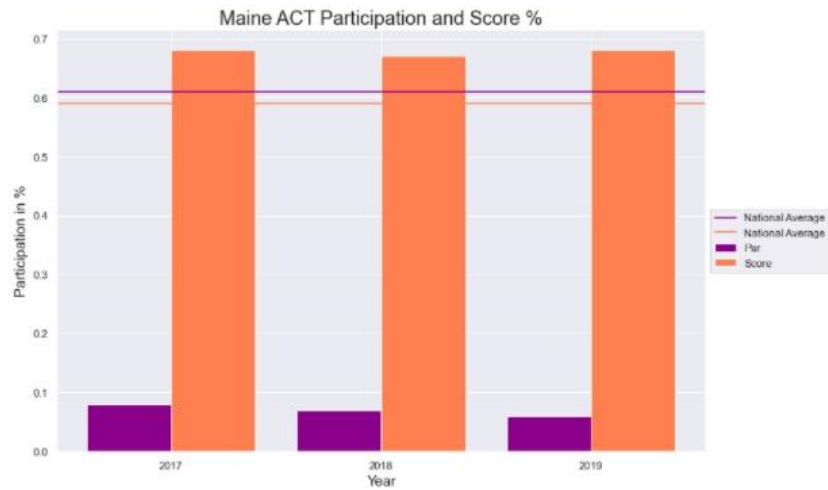
# Citations and References

## (Government and Official Sources)

- 1) <https://www.census.gov/data/tables/2017/econ/school-finances/secondary-education-finance.html>
- 2) <https://www.census.gov/data/tables/2018/econ/school-finances/secondary-education-finance.html>
- 3) <https://www.census.gov/data/tables/2019/econ/school-finances/secondary-education-finance.html>
- 4) <https://www.census.gov/programs-surveys/school-finances/data/tables.html>
- 5) <https://collegereadiness.collegeboard.org/sat/k12-educators/sat-school-day/about#:~:text=SAT%20School%20Day%20provides%20schools,widely%20accepted%20at%20U.S.%20colleges>
- 6) <http://www.higheredinfo.org/dbrowser/index.php?submeasure=63&year=2018&level=nation&mode=graph&state=>
- 7) <https://www.edweek.org/teaching-learning/sat-scores-see-slight-increase-as-test-taking-surges/2018/10>
- 8) <https://educationdata.org/public-education-spending-statistics>
- 9) <https://www.opb.org/news/article/oregon-standardized-test-scores-racial-gaps-2017/https://data.ed.gov/dataset/college-scorecard-all-data-files-through-6-2020/resources>
- 10) <https://www.governing.com/archive/state-education-spending-per-pupil-data.html>
- 11) [https://www.osba.org/Resources/Article/Budget\\_and\\_Finance/Comprehensive\\_Analysis\\_of\\_K-12\\_Education\\_Finance\\_in\\_Oregon.aspx](https://www.osba.org/Resources/Article/Budget_and_Finance/Comprehensive_Analysis_of_K-12_Education_Finance_in_Oregon.aspx)
- 12) <https://reports.collegeboard.org/archive/sat-suite-program-results/2017/class-2017-results>
- 13) <https://www.oregon.gov/ode/reports-and-data/taskcomm/Documents/QEMReports/QEC%20Short%20Paper%20Final%205-22-18%20v2.pdf>

# Citations and References (News Sources)

- 1) <https://www.kaptest.com/act/act-test-dates>
- 2) <https://www.americashealthrankings.org/explore/annual/measure/Graduation/>
- 3) <https://www.chicagotribune.com/news/ct-illinois-chooses-sat-met-20160211-story.html> - replacing ACT with SAT
- 4) <https://www.oregonlive.com/education/2019/09/oregon-schools-deliver-worst-test-scores-in-5-years.html>
- 5) <https://www.businessgrants.org/2019/01/key-difference-between-federal-state-grants.html?m=1>
- 6) <https://blog.prepscholar.com/which-states-require-the-act-full-list-and-advice>
- 7) <https://www.collegeraptor.com/getting-in/articles/act-sat/states-act-sat-given-free/>

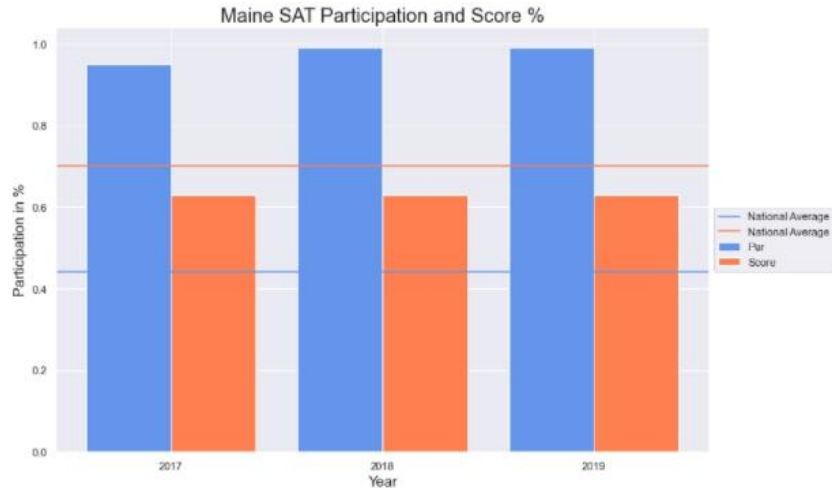


Maine has one of the lowest ACT participation rate for all 3 years. Lowest ACT participation at 8%, 7% and 6% for 2017, 2018 and 2019 respectively

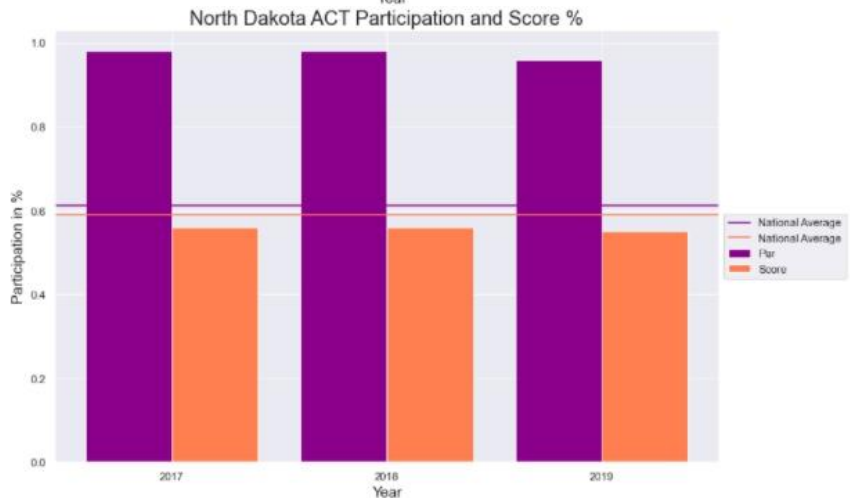
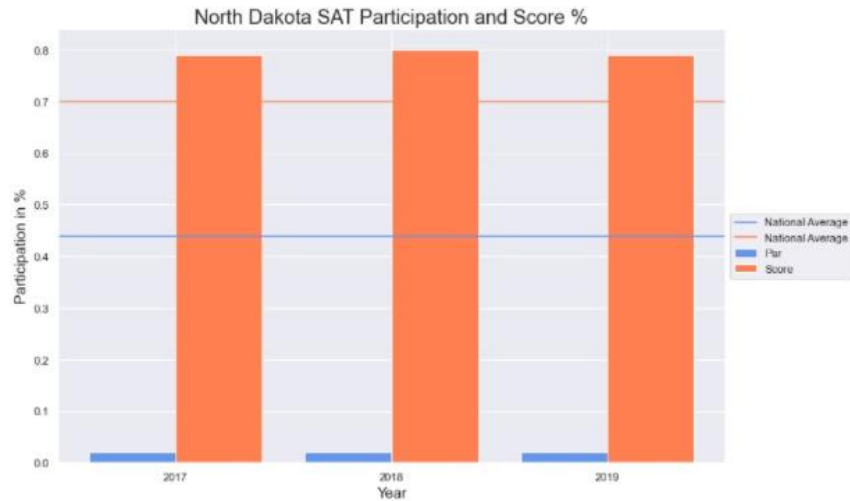
ACT average score above national average of 59%

High SAT participation at 95%, 99% and 99% for 2017, 2018 and 2019 respectively

SAT average score below national average of 70%





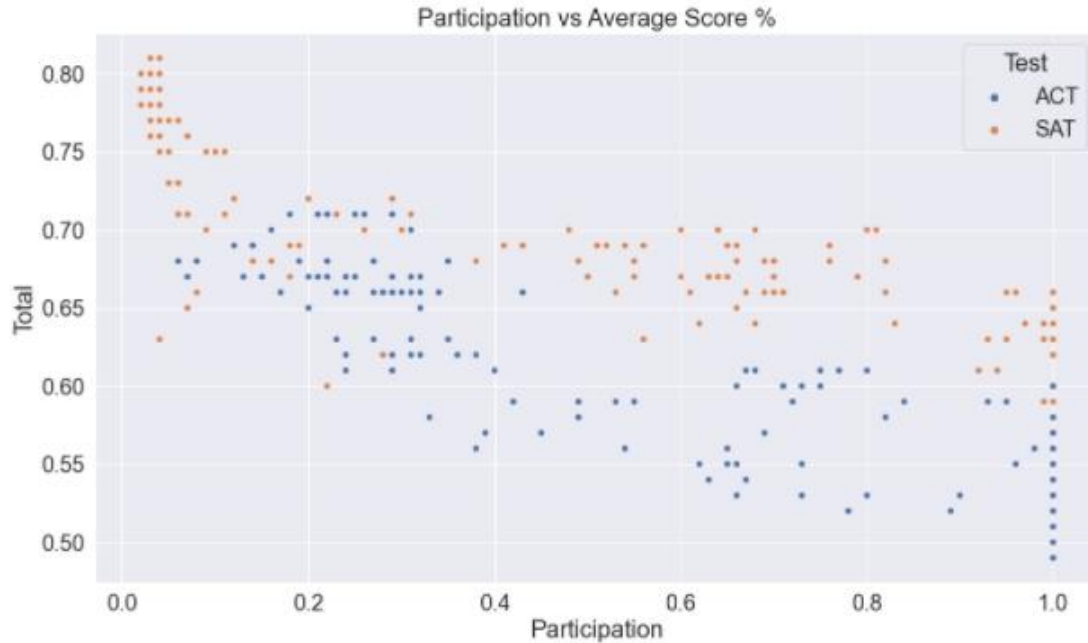


North Dakota has the lowest ACT participation rate for all 3 years. Lowest ACT participation at 2% for 2017, 2018 and 2019

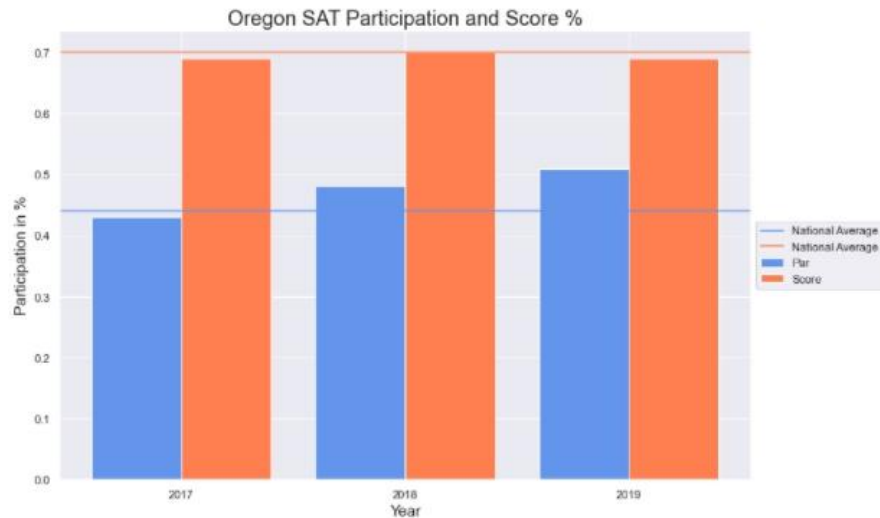
ACT score above national average of 59%

High SAT participation at 98%, 98% and 96% for 2017, 2018 and 2019 respectively

SAT score below national average of 70%



- Negative correlation between participation and average score.
- Mandated test
  - ACT compulsory
    - North Dakota, Wyoming, Mississippi
  - SAT compulsory
    - Maine, New Hampshire, Rhode Island
- State sponsored tests
  - ACT sponsored
    - Wyoming, Mississippi
  - SAT sponsored
    - Maine, New Hampshire, Rhode Island
- Other reasons



Oregon has one of the lowest participation rates in both ACT **and** SAT for all 3 years

SAT participation rate is around the national average

SAT scores are around national average

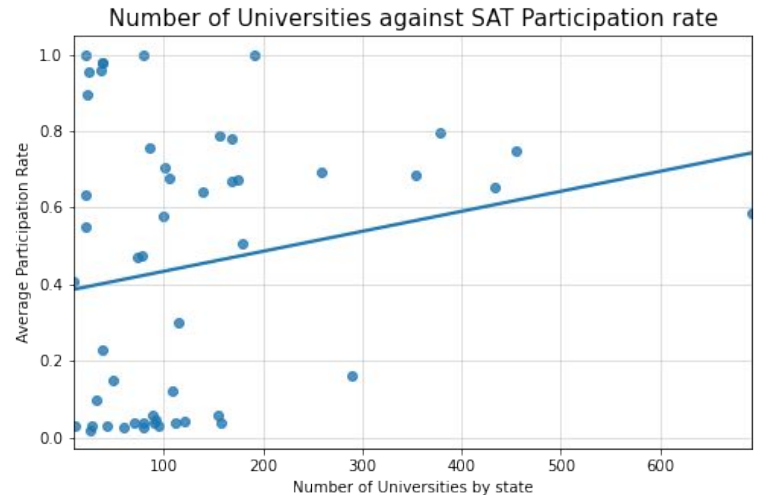
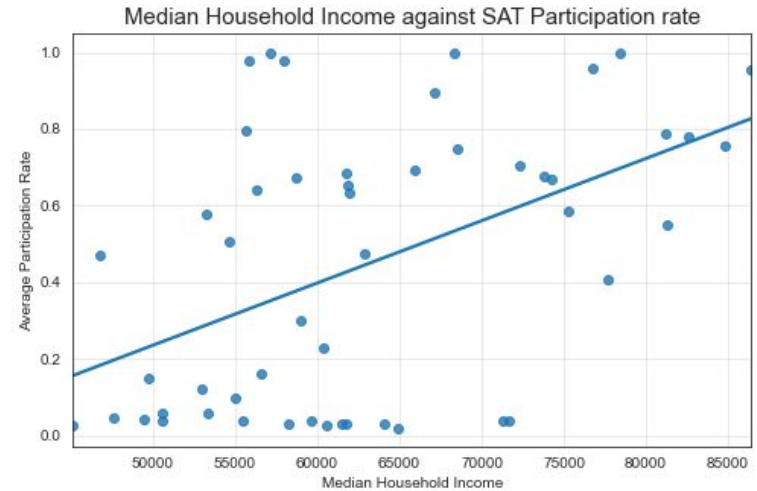
ACT participation rate is below the national average

ACT scores are around national average



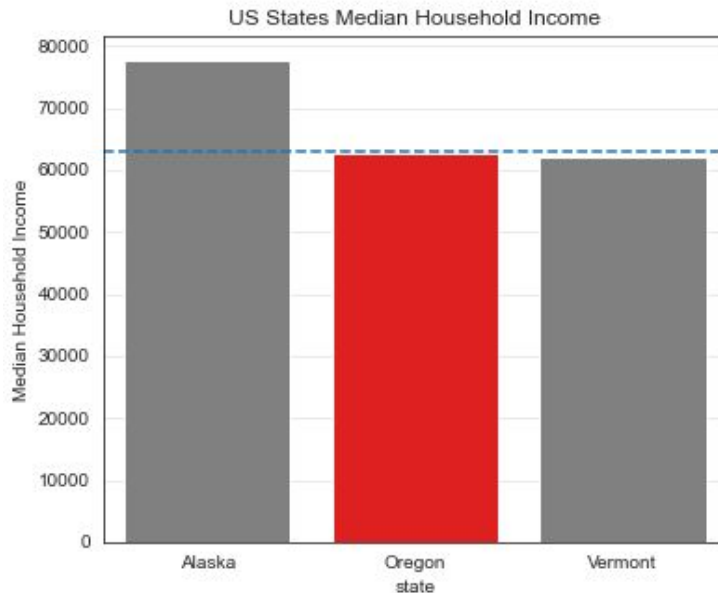
## Median Household Income & Number of Universities

- Chart 1 shows that the **Median Household Income** having moderate correlations with the participation rate with Pearson's correlation coefficient shows 0.49
- The higher the median household income of the states tend to have *higher* participation rate
- Chart 2 shows there is some forms of weak correlations between **Number of Universities** and participation rate with Pearson's correlation coefficient shows only 0.19



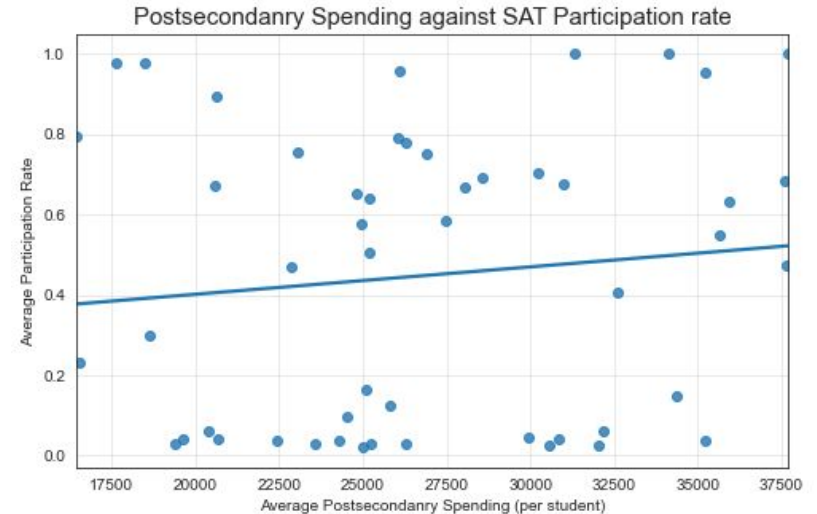
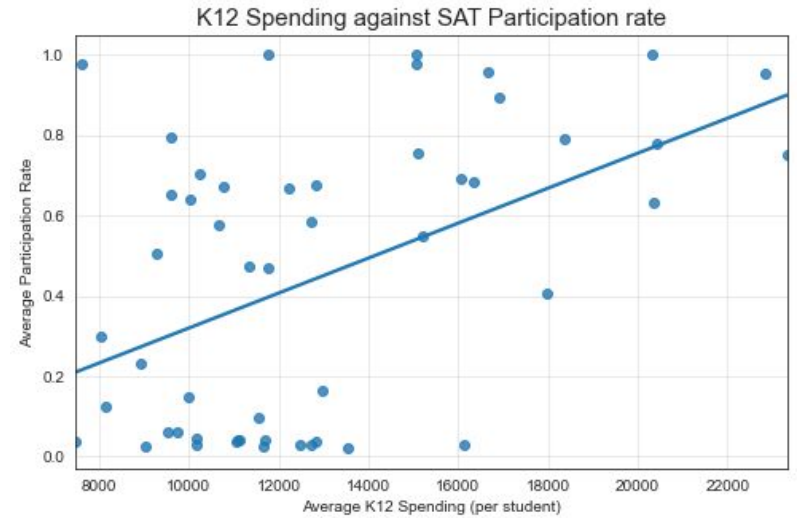
## US States with Bottom 10 College-Going Rate and without ACT or SAT Test Mandate - *Median Household Income*

- Oregon rank **21st** in **Median Household income** nationwide
- Average Median Household Income of **\$62,818**, while National Average Median Household Income at **\$63,097.86**
- *Alaska, Vermont and Oregon* are the only 3 out of 10 states that having **bottom 10** college-going rate and **without** having Standardized Test Mandate
- **Oregon Median Household Income** below **National Average**



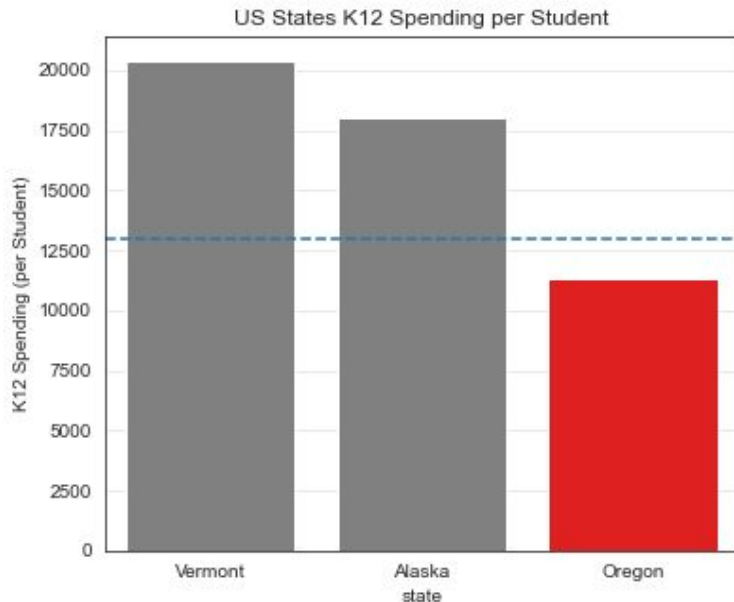
## K12 Spending & Postsecondary Spending

- Chart 1 shows the **K12 spending per student** with the participation rate tend to have *upwards* regression line
- That is moderate correlations with Pearson's correlation coefficient shows 0.48
- **Postsecondary spending per student** shows weak correlations with participation rate with Pearson's correlation coefficient shows only 0.11



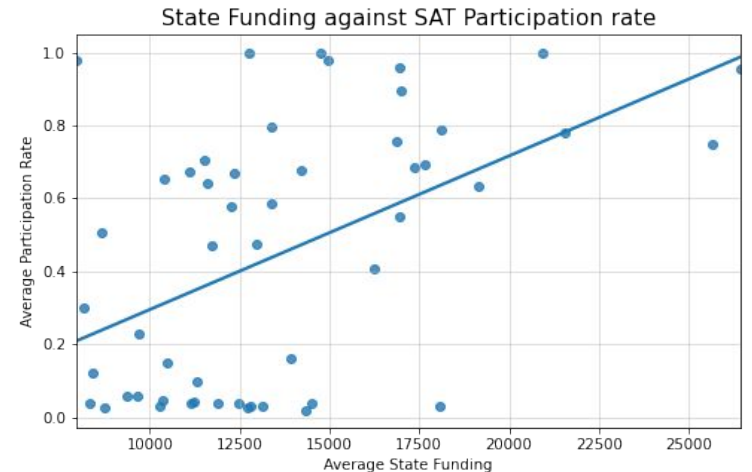
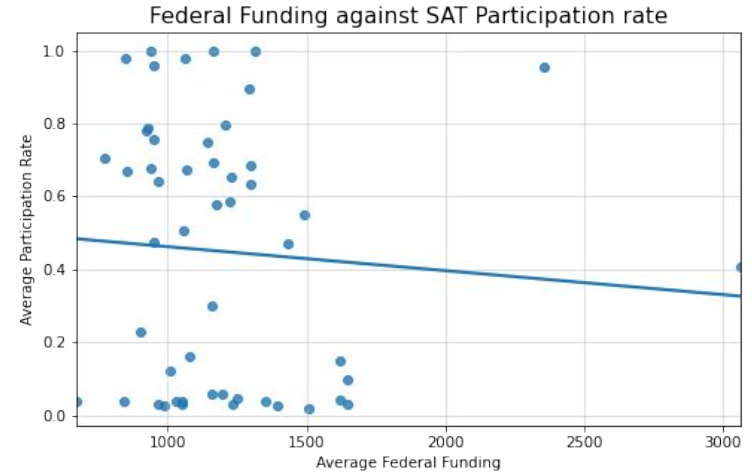
## US States with Bottom 10 College-Going Rate and without ACT or SAT Test Mandate - K12 Spending per Student

- Oregon rank **30th** in **K12 Spending per Student** nationwide
- Average K12 Spending per student of **\$11,340**, while National Average K12 Spending at **\$12,953.35**
- **Oregon** have the *lowest* K12 Spending per student out of Alaska, Vermont and Oregon.



## Federal Funding & State Funding

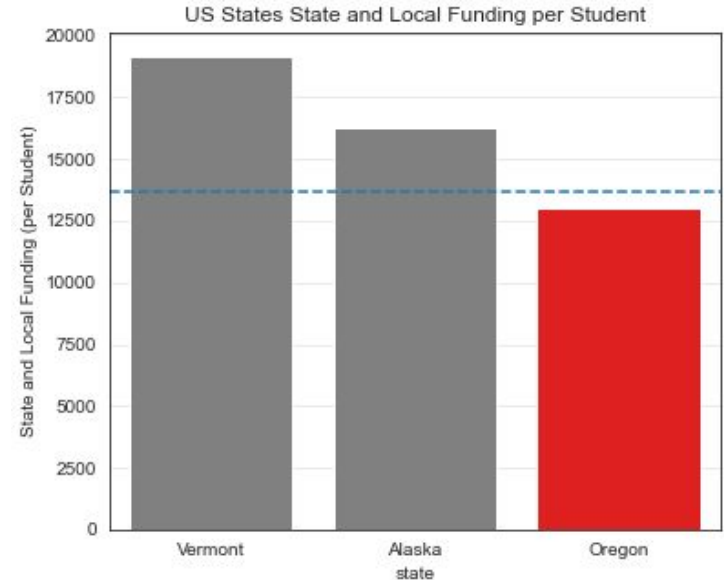
- **Federal funding per student** shows weak negative correlation with participation rate with Pearson's correlation coefficient shows only **- 0.072**
- Chart 2 shows the **state funding per student** tend to have *upwards* regression line
- There is moderate correlations shows between state funding per student and participation rate with participation rate with Pearson's correlation coefficient shows **0.5**





## US States with Bottom 10 College-Going Rate and without ACT or SAT Test Mandate - *State Funding per Student*

- Oregon rank **24th** in **State Funding per Student** nationwide
- Average State Funding per student of **\$12,981**, while National Average State Funding per student at **\$13,641.51**
- **Oregon** have the *lowest* State Funding per student out of Alaska, Vermont and Oregon



Observation	Insight	Recommendation
<p>States usually have high Participation Rates in 1 of the 2 tests. Since only 1 of the 2 tests is needed for university admission, there is no need for students to pay to take both tests.</p>	<p><b>Pearson Correlation Coefficient</b> of the 2 test Participation Rates across the 3 years is <u>-0.87</u>, a significant negative correlation.</p>	<p>Oregon state has low Participation Rates across both tests and all 3 years → To decide on 1 test and focus efforts to increase Participation Rate of the chosen test</p>
<p>Some states have mandated 1 of the 2 tests</p>	<p>Mandating tests have seen much higher Participation Rates across the 3 years. <b>SAT:</b> <u>85%</u> vs 36% <b>ACT:</b> <u>98%</u> vs 54%</p>	<p>Oregon state should negotiate with College Board and ACT Inc., the nonprofit organizations behind the 2 standardized tests. → Based on the terms, Oregon state can decide on the test to mandate.</p>
<p>Some states have allowed students to take tests for free</p>	<p>Making tests free has also seen much higher Participation Rates across the 3 years. <b>SAT:</b> <u>92%</u> vs 33% <b>ACT:</b> <u>95%</u> vs 47%</p>	<p>Depending on the state budget, Oregon state should aim to provide the chosen test for free. Or at the very least, subsidize it.</p>

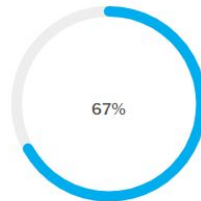
Observation	Insight	Recommendation
<p>There is significant correlation between some funding categories and test participation rate.</p>	<p>Since the participation rates of the 2 tests have a significant negative correlation, we will be looking only at the SAT participation rate for illustration purposes.</p> <p><b>Pearson Correlation Coefficient</b> of the following categories and SAT Participation Rate over the 3 years show a significant positive correlation:</p> <ul style="list-style-type: none"> <li>• State Funding per Student: <u>+0.5</u></li> <li>• Median Household Income: <u>+0.49</u></li> <li>• K12 Spending per Student: <u>+0.48</u></li> </ul>	<p>Oregon state's values for all 3 categories are below the national average.</p> <p>We recommend the state to consider allocating more funding towards supporting the students taking the chosen test.</p> <p>Other than funding test subsidies, the funds can also be used to provide more resources for test preparation, scholarships and other financial aids to encourage students to get a college education.</p>

# Working with State Initiatives



MORE JOBS

6 out of 10 jobs in Oregon require education or training beyond high school to be competitive.



MORE MONEY

College graduates with a Bachelor's degree earn two-thirds more than high school graduates.

- We believe the increased funding can be funneled into initiatives such as Oregon goes to College
- The portal collates information on everything a student needs to know for college application
  - The new chosen standardized test and subsidies can be broadcasted there as well
- The state realizes the importance of a college education and has set a target to have 80% of the state's adult population complete a college degree by 2025
  - We believe increasing standardized test participation rate is an important step in achieving this goal