

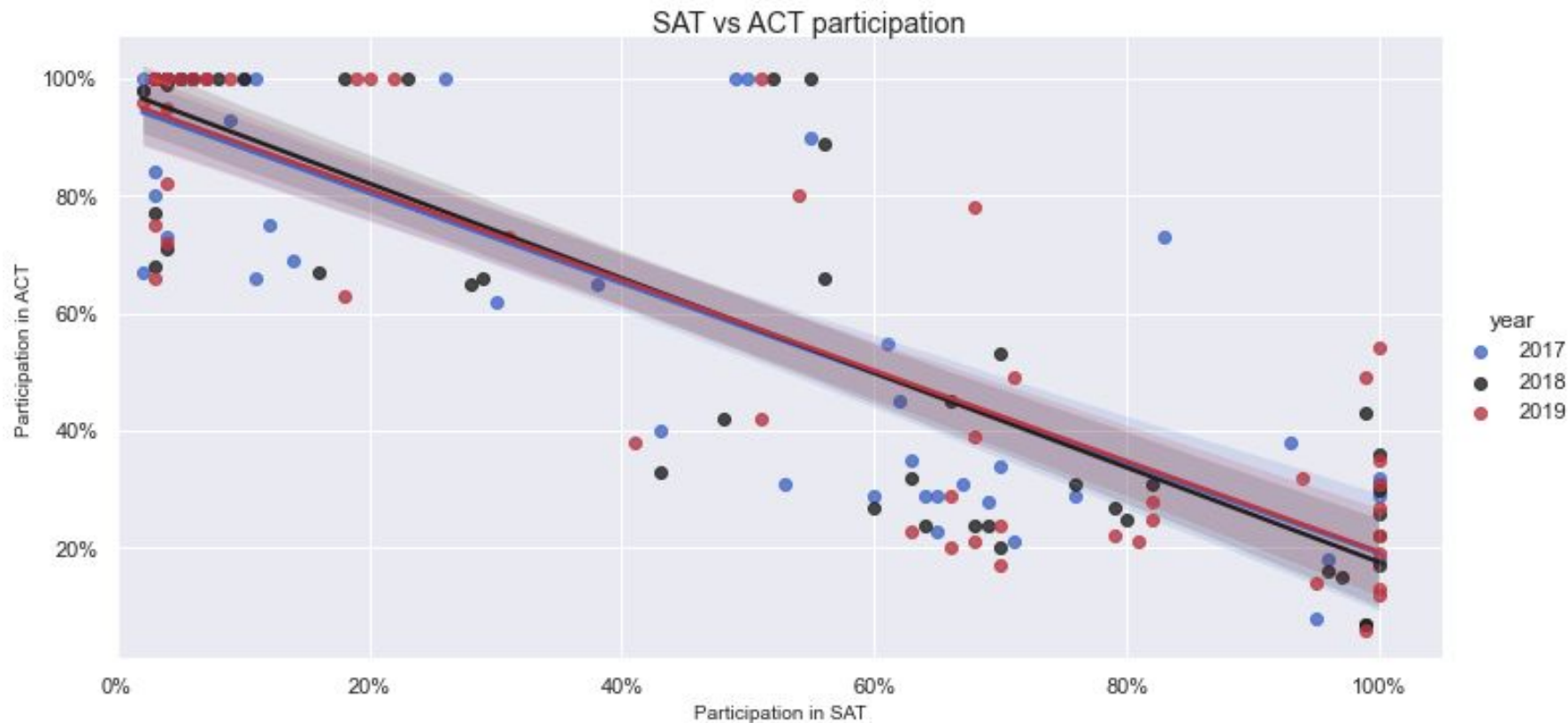
# **Analysis of SAT scores in California Counties as a Measure of Educational Outcomes**

Room 1

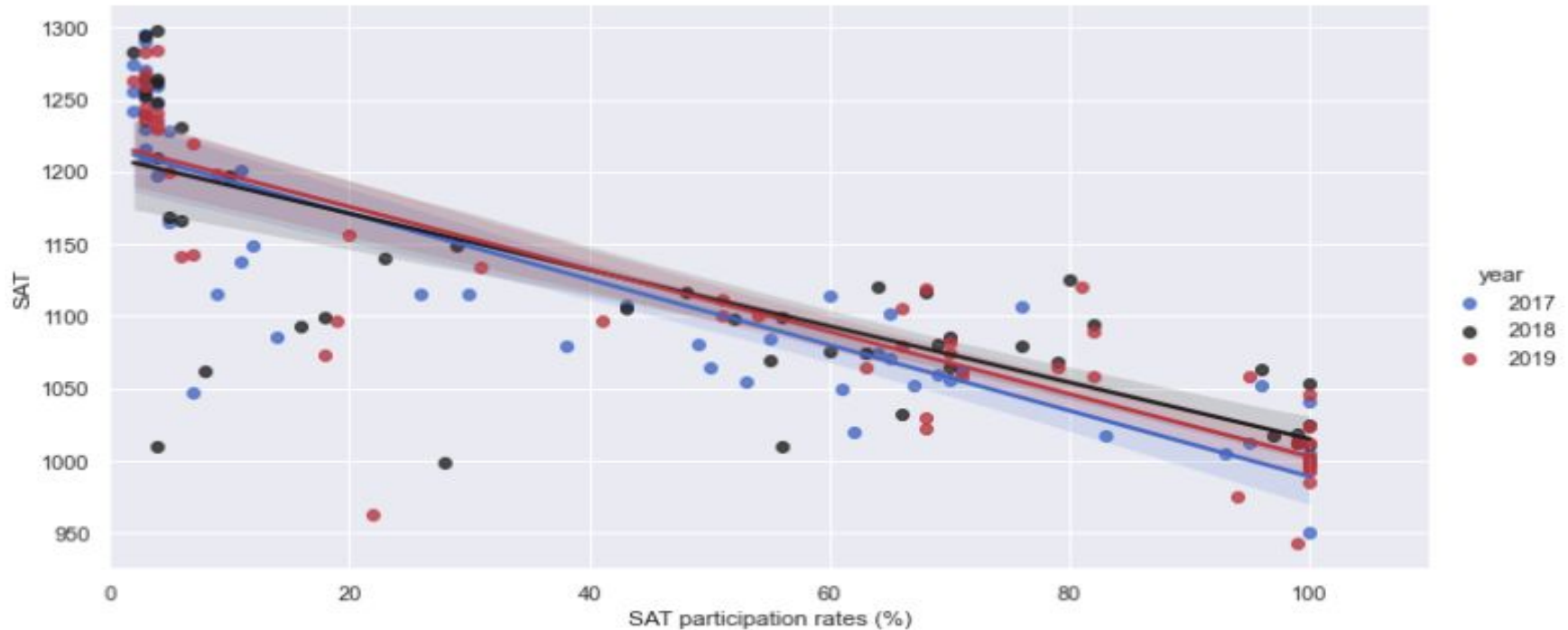
# Background

- The Scholastic Assessment Test (SAT) and the American College Test (ACT) are standardized tests widely used for college admissions in the United States.
- There are two components to the SAT- Evidence-based Reading & Writing (EBRW) and Mathematics.
- As of 2018, 18 states require the ACT while 11 require the SAT.
- Our goal is to analyse SAT scores to determine if educational standards in California are comparable with the nation and identify opportunities at the county level where resources can be focused to achieve better outcomes.
- While both tests are not a requirement in California, participation in the SAT has risen from 53% in 2017 to 63% in 2019.
- SAT participation has a strong negative correlation with ACT participation, which indicates that most students only take one test.
- As majority of students in California take the SATs, our analysis will primarily focus on SAT scores.

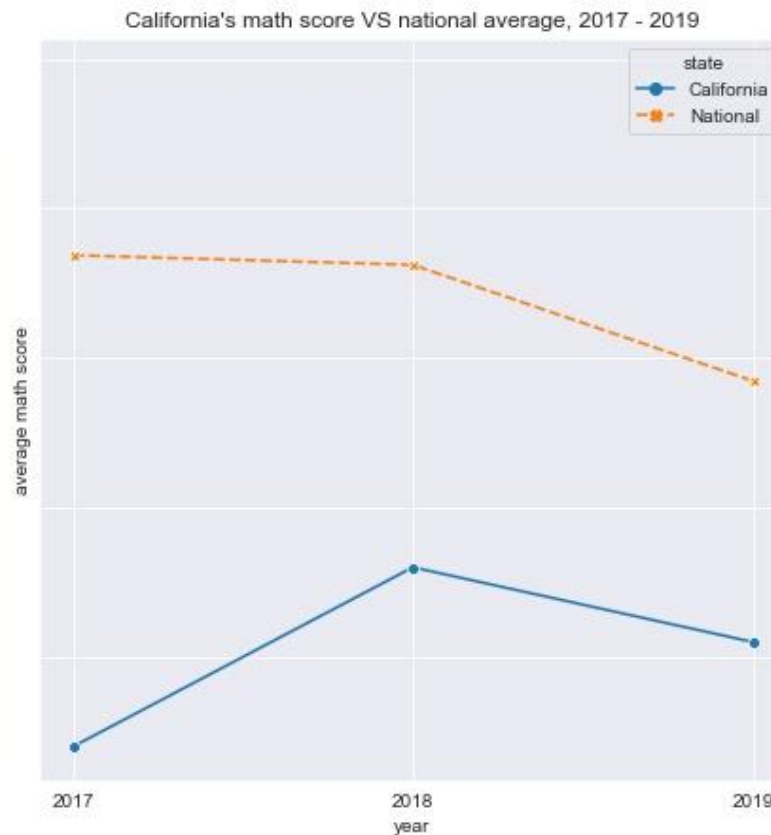
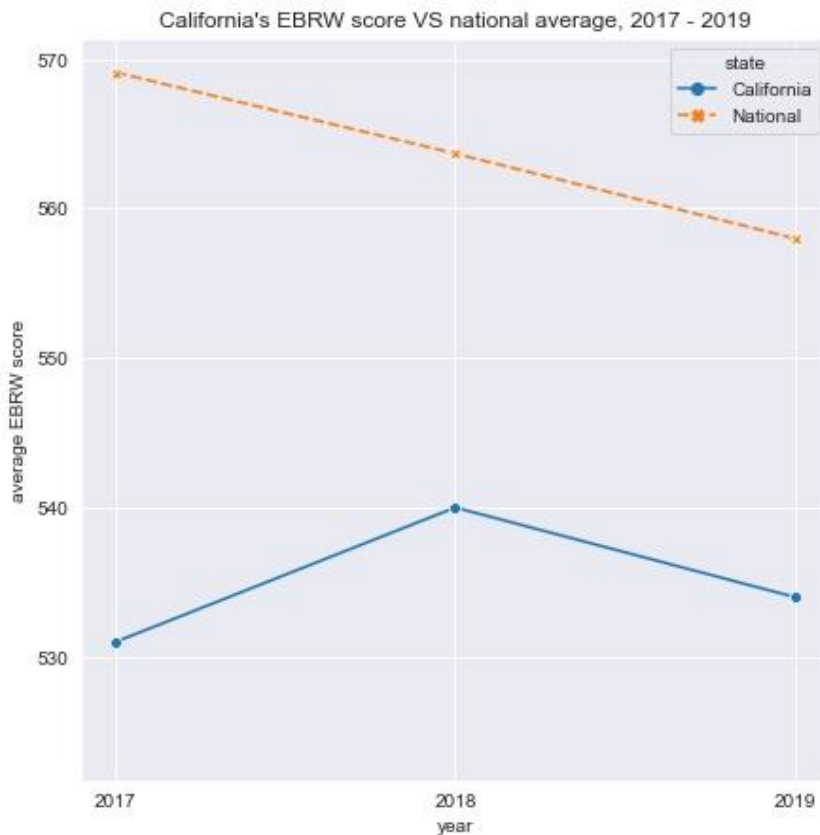
# Participation rate for SAT and ACT has a negative correlation



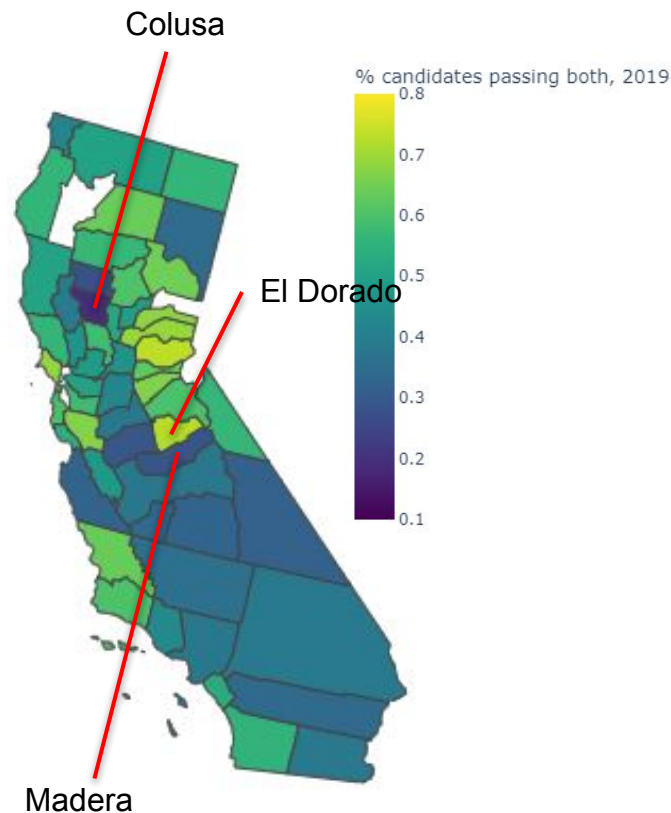
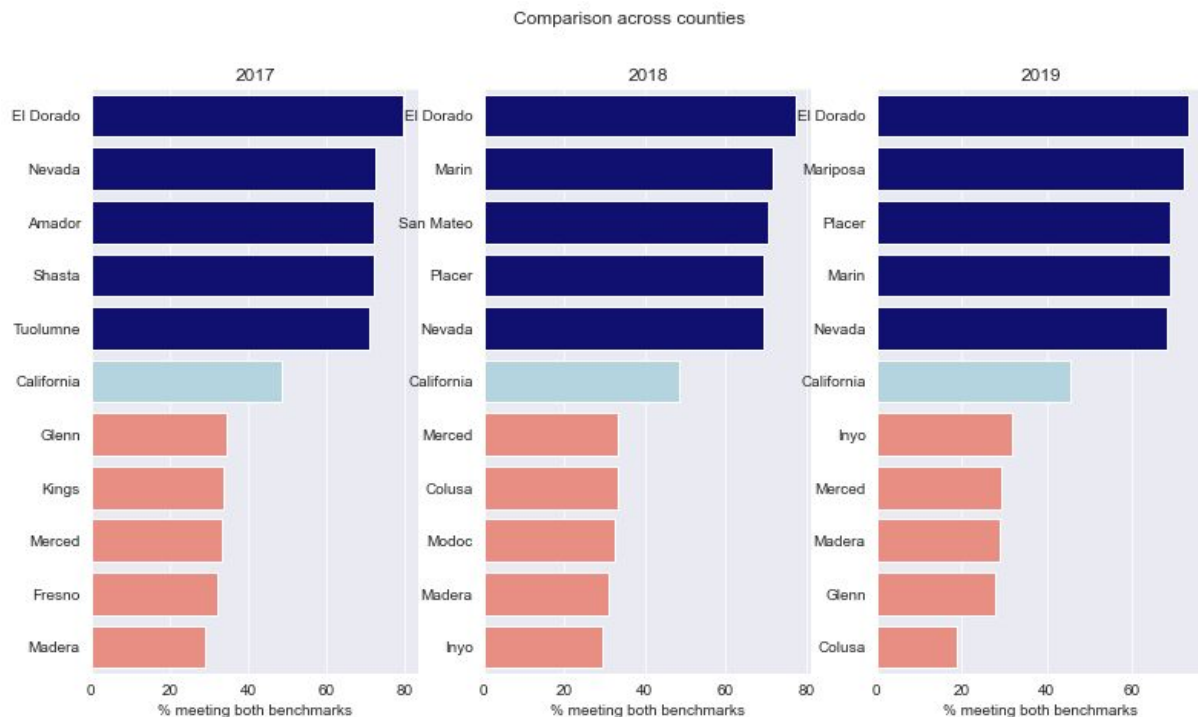
Notice the correlation of SAT participation rates (below 100%) and SAT scores are generally **-ve**



# California has underperformed national averages in EBRW and Math

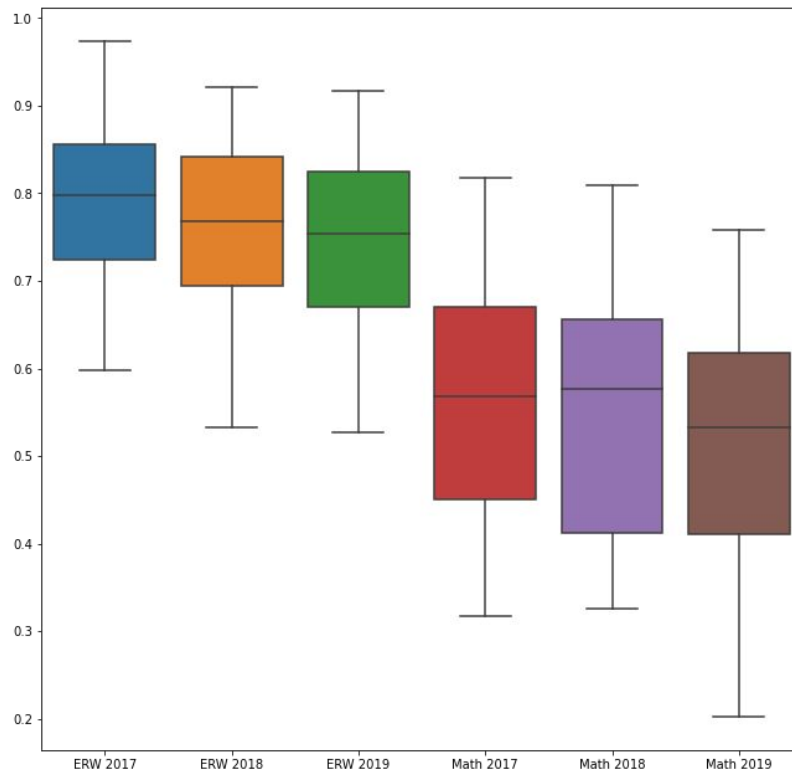
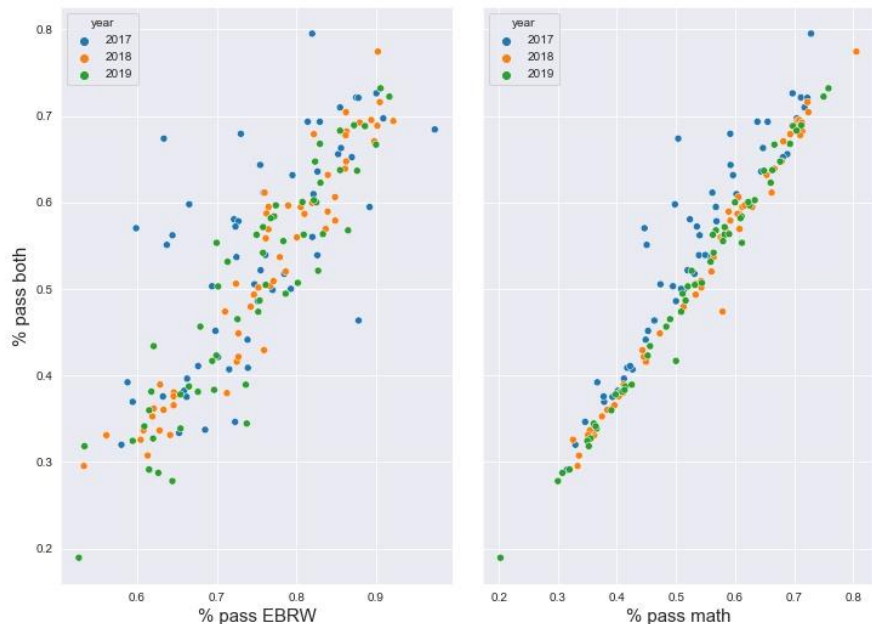


El Dorado has consistently topped the state while Madera ranks near the bottom from 2017 - 2019



Californian candidates are significantly stronger in EBRW than in Math, which is reflective of the wider US candidates too

Correlation between % of candidates passing both and EBRW/math in California counties, 2017-2019



Other than counties which performed badly, those which show worrying trends should also be flagged

### Trends in SAT performance of every California county, 2017-2019



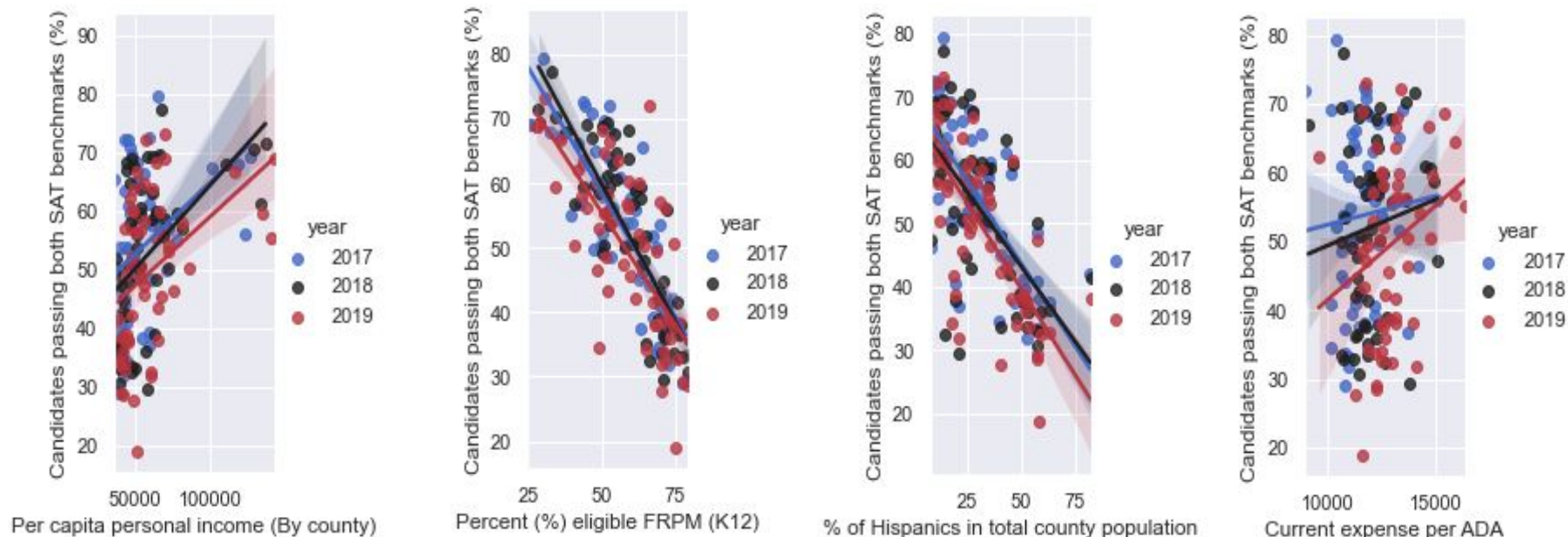
Suggestion to group counties into 3 tiers:

- **Red tier** - Counties which appeared in bottom 3 consecutively across 2017-2019 OR counties which appeared in bottom 3 at least once and show decreasing trends\*
- **Orange tier** - Counties which show decreasing trends, excluding those which are above state average as at 2019
- **Green tier** - Remaining counties

*\*defined as those which have consecutive decreases and at least one decrease  $\geq 3$  percentage points*<sup>8</sup>



FRPM eligibility and % of Hispanics in a given county appear to be correlated to overall SAT passing rates (%)



# Our correlation matrix

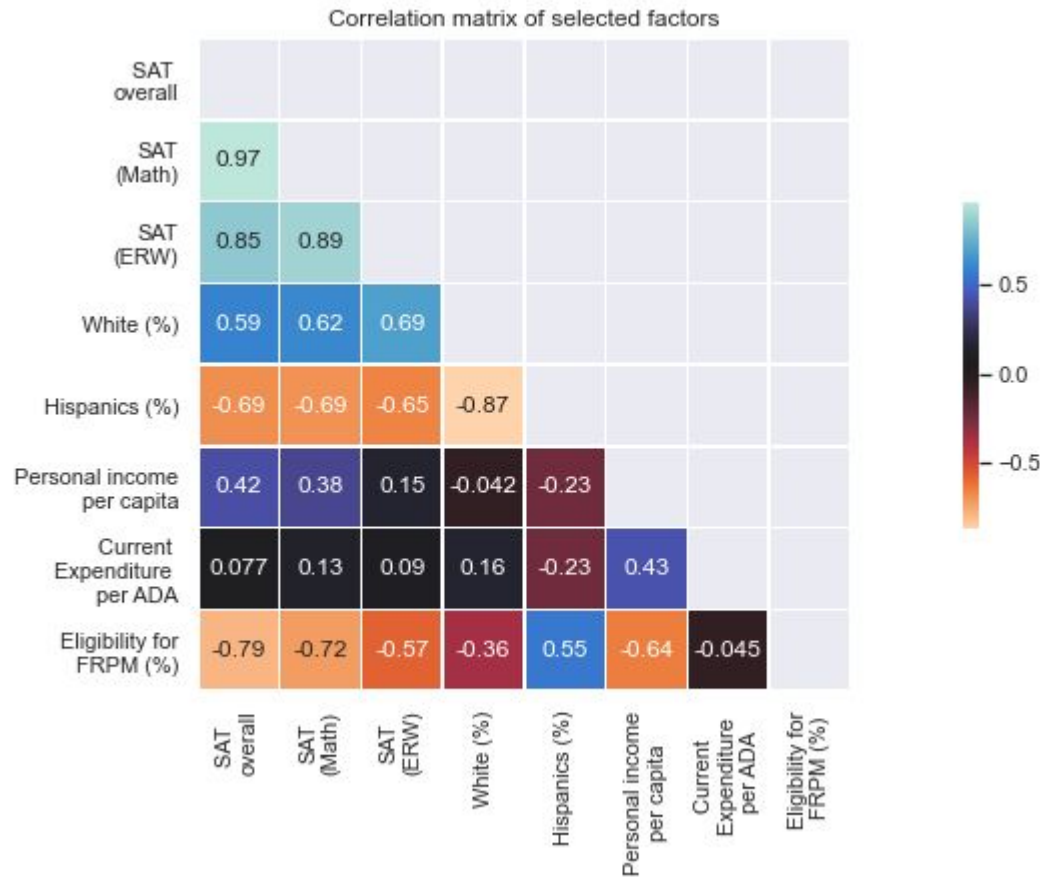
## Our findings:

High (but negative) correlations of overall SAT performance (%) with Hispanics

High (but negative) correlations of overall SAT performance (%) with student eligibility for free and reduced price meals (% of K-12 students)

## What surprised us:

Weak correlations between current expenditure per average daily attendance (ADA) and overall SAT performance (%)



# Recommendations

- At the school level, educators could identify students receiving FRPM to regularly engage them and ensure that they are not deprived of educational resources or conducive learning environments.
- Educators should also pay notice to students' mathematical standards, since improvements in math also correlates with improvements in other subjects.
- At the county level, efforts should be made to engage county administrators in the red and orange tiers to identify systematic issues, with more resources dedicated to red tier counties. Allocating more resources may not necessarily be helpful if the county/district/school administrator does not use them well.
- Organize learning journeys, seminars or workshops for educators to learn strategies and best practices from other counties or districts such as El Dorado, which has consistently performed very well in the SAT.
- At the state level, resources could be invested in educational research to develop new strategies to improve pedagogies in math. Collaborate with academics from states which have similar profiles but do better.

**Q&A**