

# Analyzing ACT & SAT Participation and Performance by State Policy

By

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# Problem Statement

- The South Carolina State Board of Education is reassessing its policy stance on high school standardized testing.
- State does not currently require the SAT or the ACT, but provides funding to make the test free.
- The State has hired me as a consultant to help inform their policy decision.

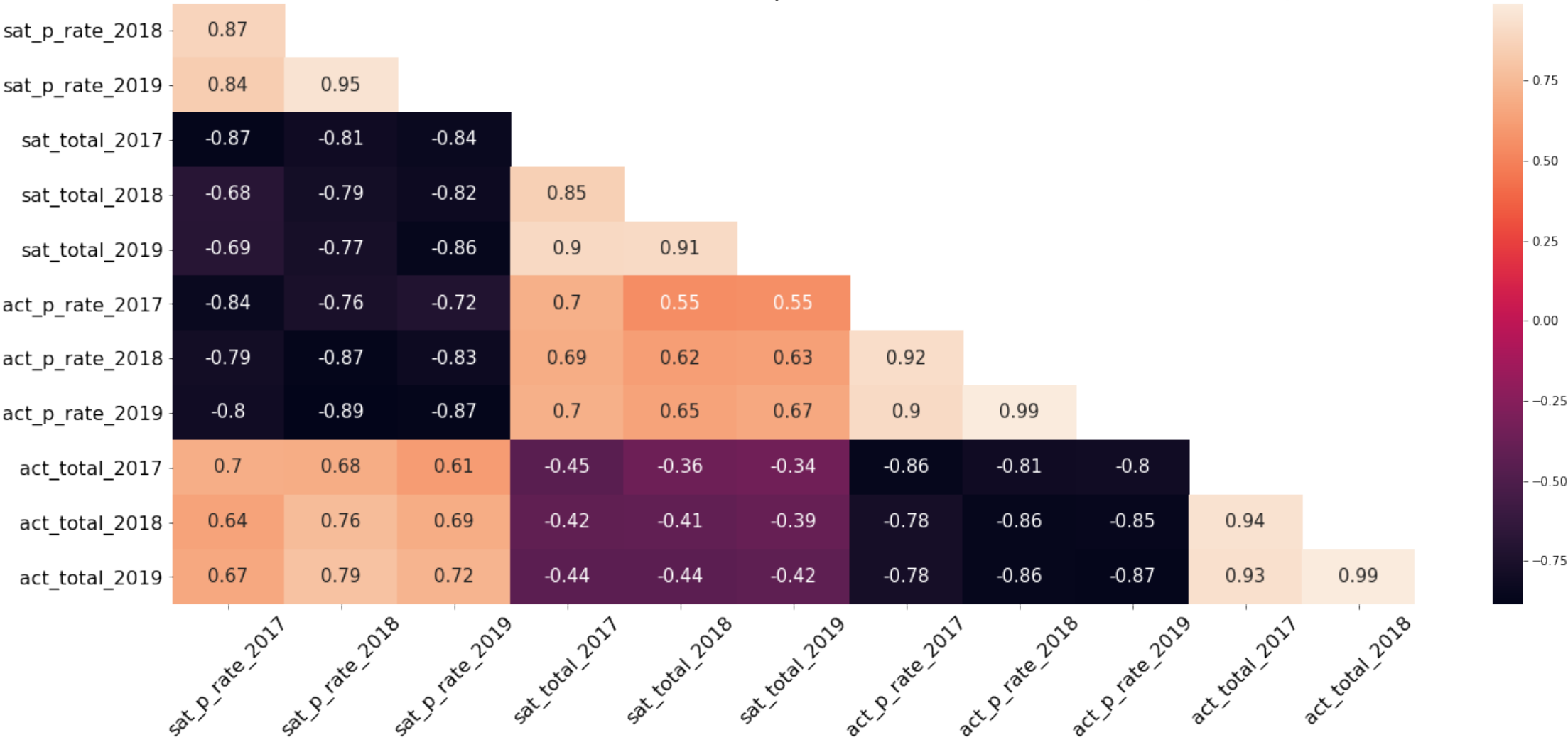


- **Will making the SAT or ACT mandatory have any effect on the State's average test scores?**

# Background

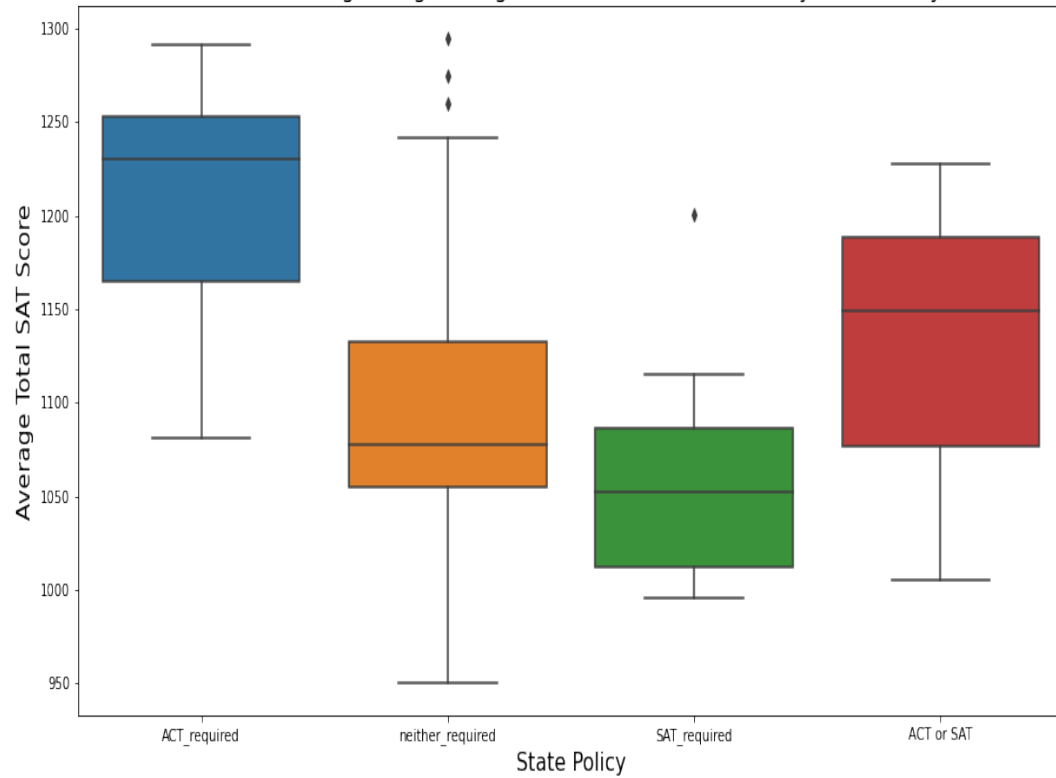
- Both tests are fundamentally similar in terms of aim/objective and difficulty level.
- Negative correlation between participation rate and average performance in both tests (Godfrey,2019; Dargan, 2020);
- Negative correlation between both tests (Godfrey,2019; Dargan, 2020);
- As at 2020, 9 states required the SAT, 14 states required the ACT, and 3 states- Ohio, Idaho and Tennessee required students to take either the ACT or the SAT.
- Washington D.C and South Carolina are examples of states where neither test is mandatory, but provided for free to interested students.

Correlation Matrix of SAT and ACT Participation Rates and Total Scores (2017-2019)

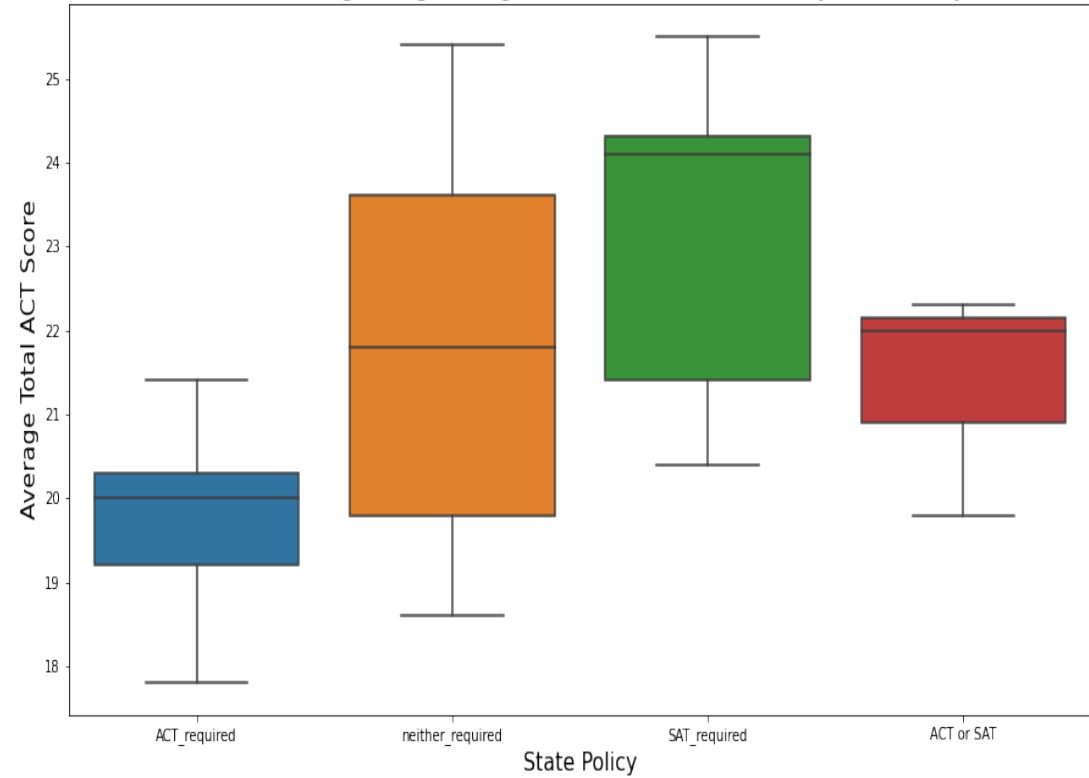


# Categorical Comparisons (2017)

Box Plot Categorizing Average Total SAT Scores (2017) by State Policy

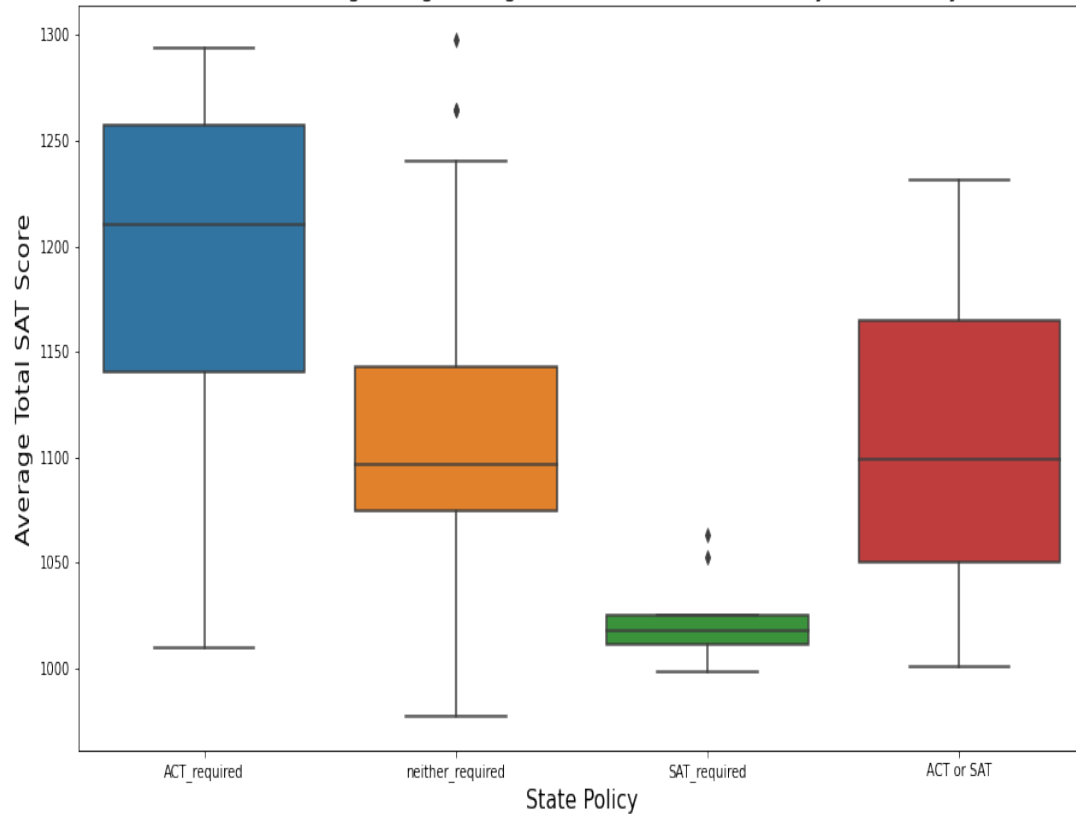


Box Plot Categorizing Average Total ACT Scores (2017) by State Policy

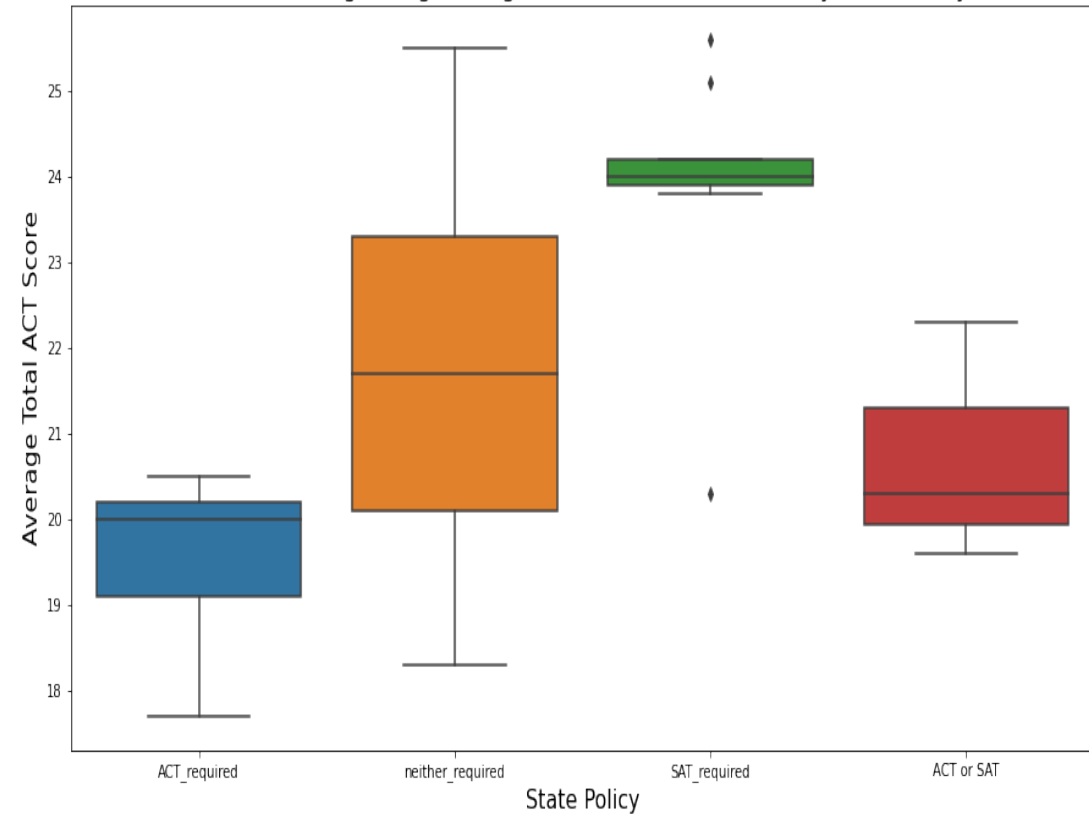


# Categorical Comparisons 2018

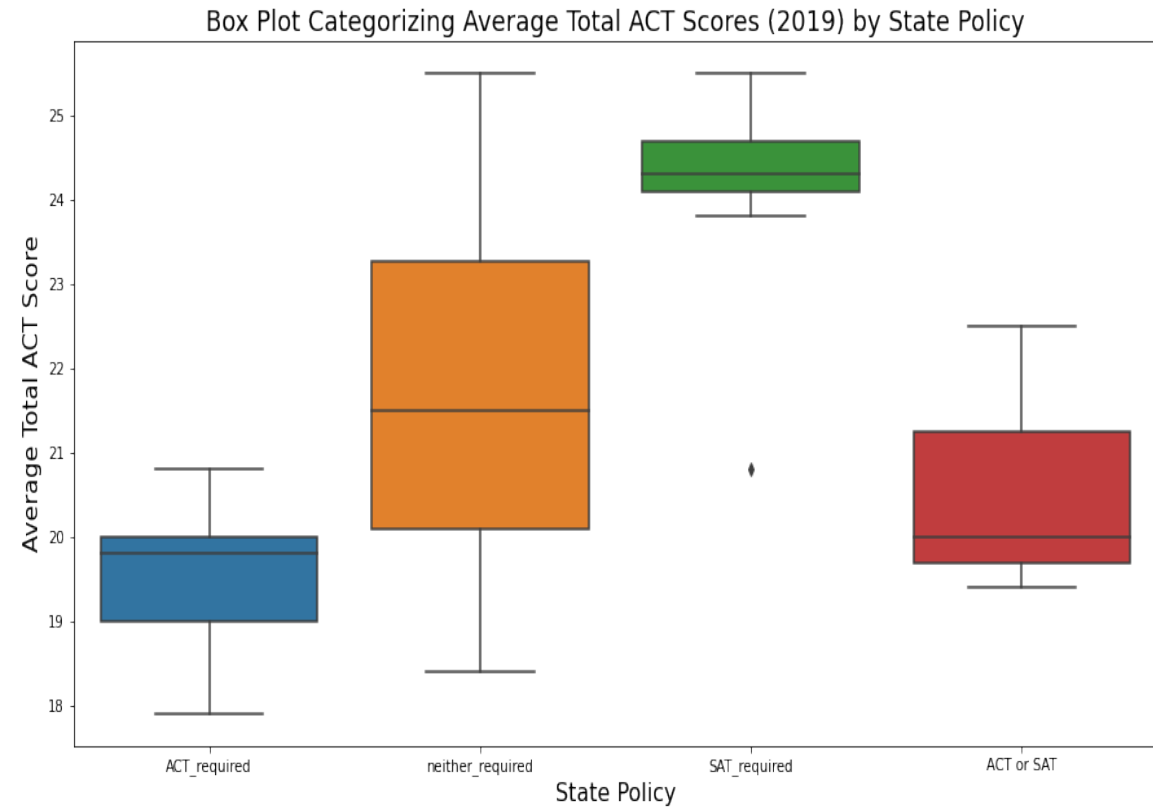
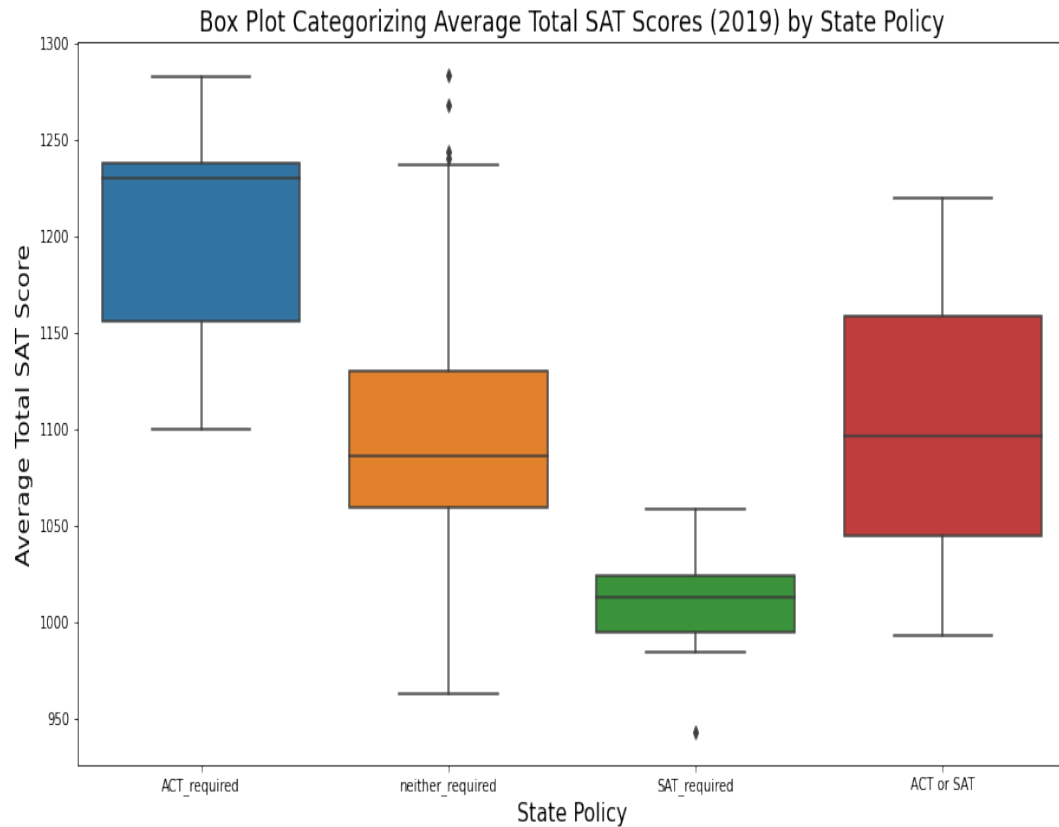
Box Plot Categorizing Average Total SAT Scores (2018) by State Policy



Box Plot Categorizing Average Total ACT Scores (2018) by State Policy

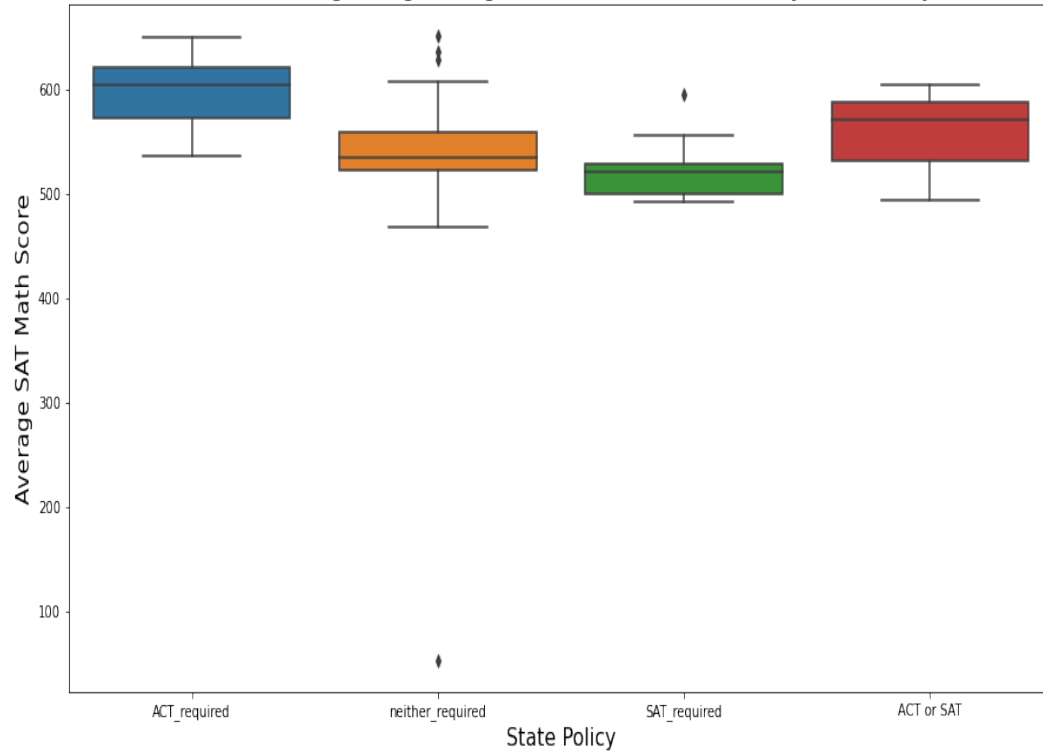


# Categorical Comparisons 2019

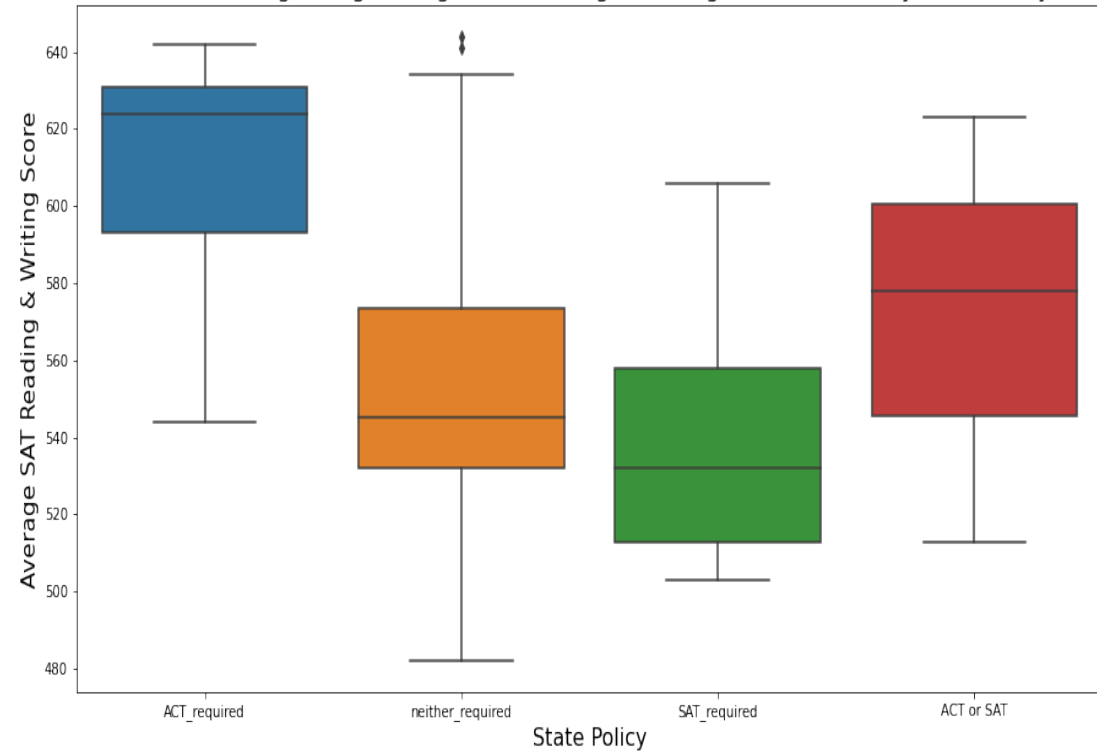


# SAT Sectional Scores 2017

Box Plot Categorizing Average SAT Math Scores (2017) by State Policy



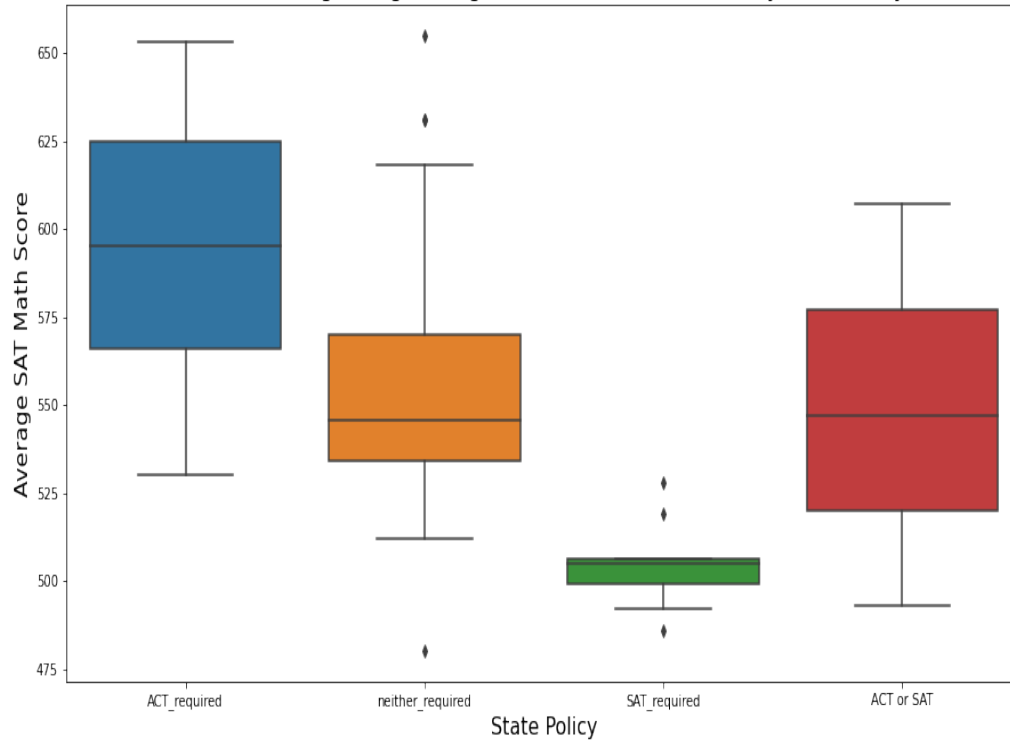
Box Plot Categorizing Average SAT Reading & Writing Scores(2017) by State Policy



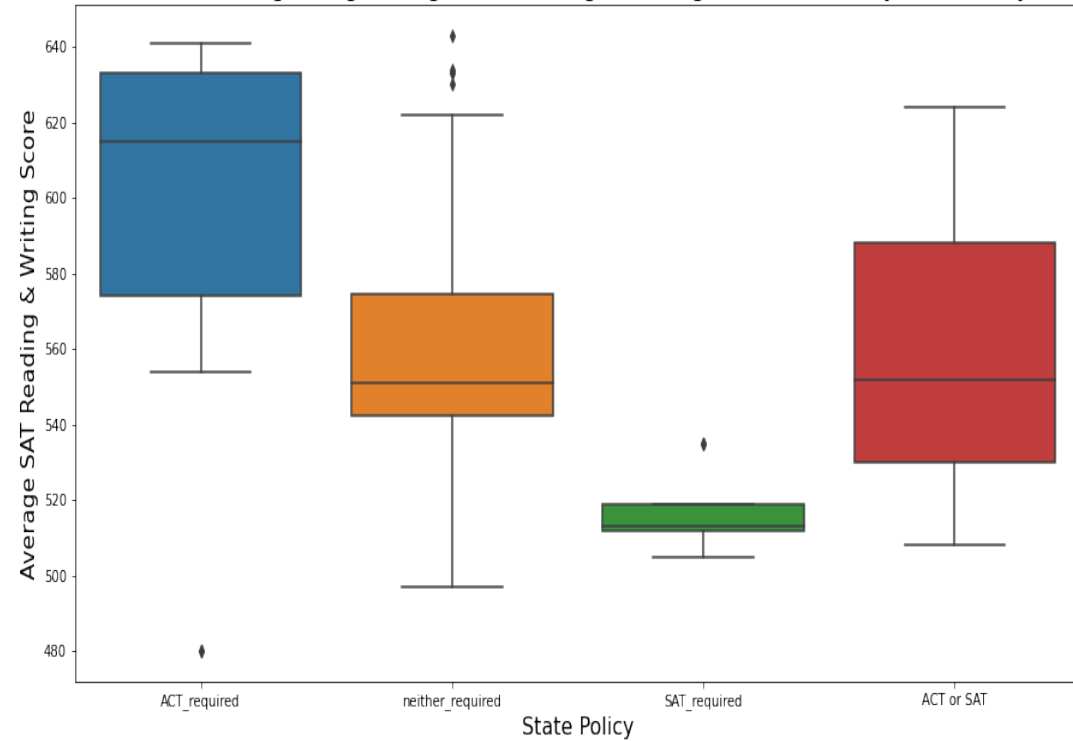


# SAT Sectional Scores 2018

Box Plot Categorizing Average SAT Math Scores (2018) by State Policy

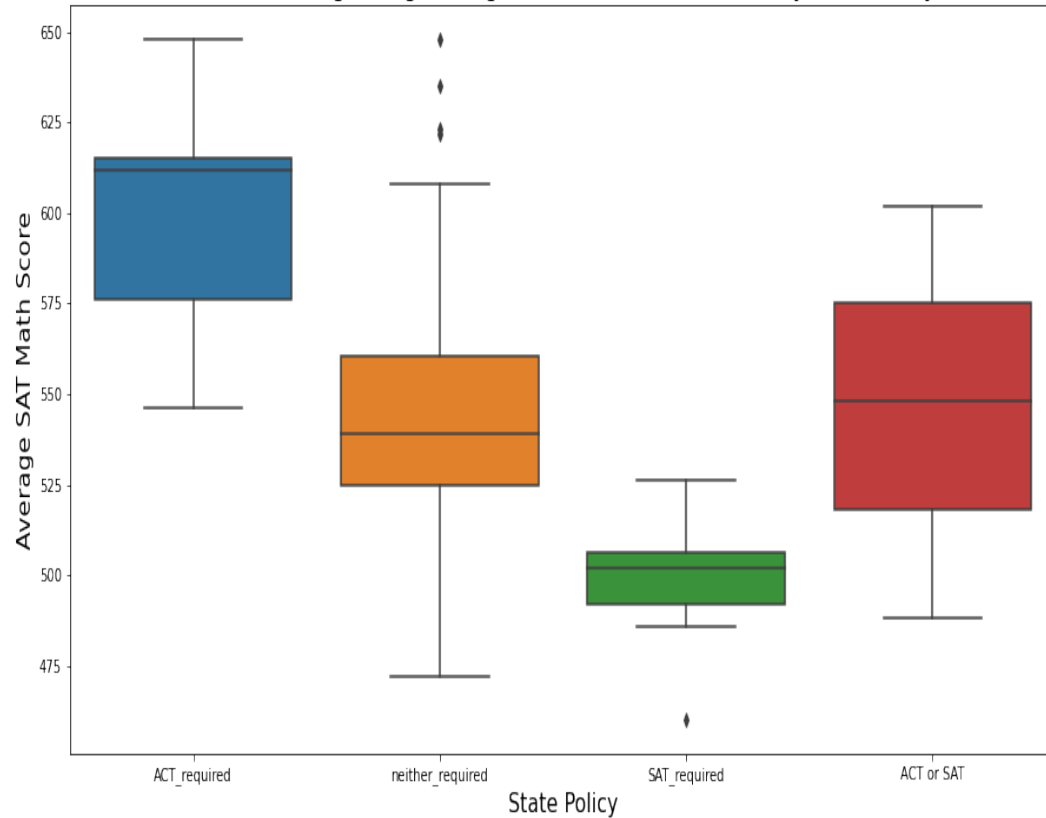


Box Plot Categorizing Average SAT Reading & Writing Scores (2018) by State Policy

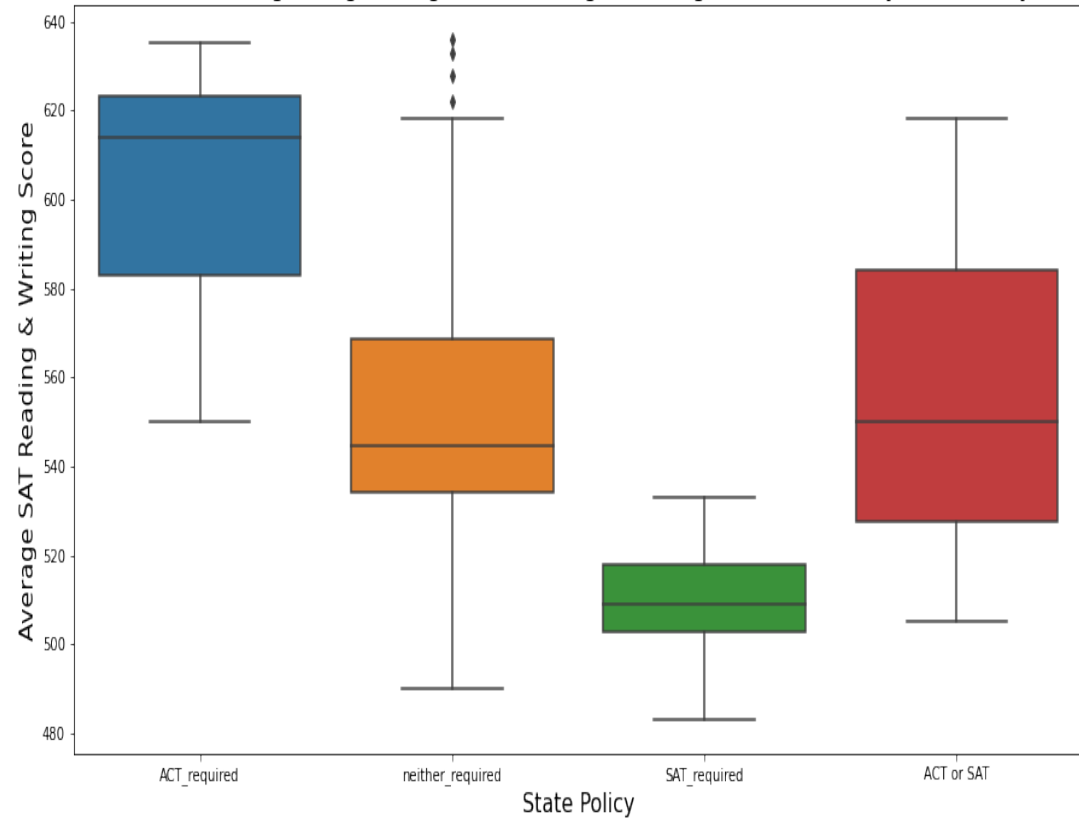


# SAT Sectional Scores 2019

Box Plot Categorizing Average SAT Math Scores (2019) by State Policy



Box Plot Categorizing Average SAT Reading & Writing Scores (2019) by State Policy



# Conclusion: Yes, adopting a “test mandatory” policy stance will likely impact scores negatively.

- Average test scores of a test are lowest in states where that test is mandatory and highest in states where the alternative test is mandatory.
- States that do not require either of the tests generally outperform states that require students to take at least one of them.
- In some cases, states with an "either or" policy recorded higher median SAT sectional scores than "test optional" states.
- It is possible to record over 50% participation in both tests even when one of the tests is mandatory in the state. Surprisingly, none of the states which require either the SAT or the ACT met this criteria.
- Despite having a "test optional" policy stance and providing both exams for free to interested students, the state of South Carolina scored below the national average in both the ACT and SAT across the three years studied.
- A strong, positive correlation was observed between average scores on the SAT Math and Evidence-Based Reading and Writing Sections.

# Recommendations:

- The State should retain its current policy stance.
- There is need for deeper analysis to ascertain the reason for below average test scores in the State.
- The positive correlation observed between the two sections on the SAT suggest that efforts to increase average test scores need to be holistic, and not necessarily targeted to specific sections of the test.

# References

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