

SAT MOAR

Boosting SAT Participation Rates in North Dakota

Overview

1. Problem Statement
2. Univariate analysis
3. Bivariate analysis
4. Conclusion
5. Recommendations

Problem Statement

Boosting SAT participation in North Dakota

2%

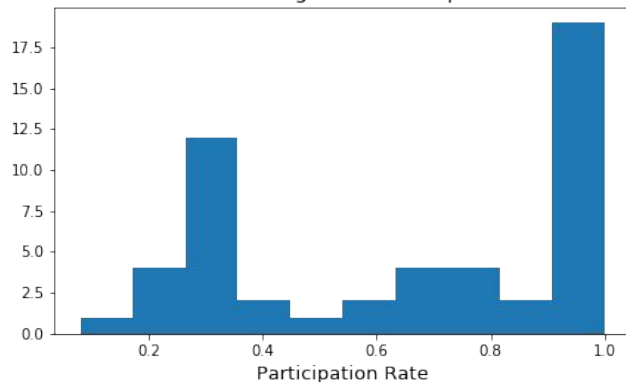
out of ~7000 high-school seniors
in North Dakota took the SAT examination

LOWEST

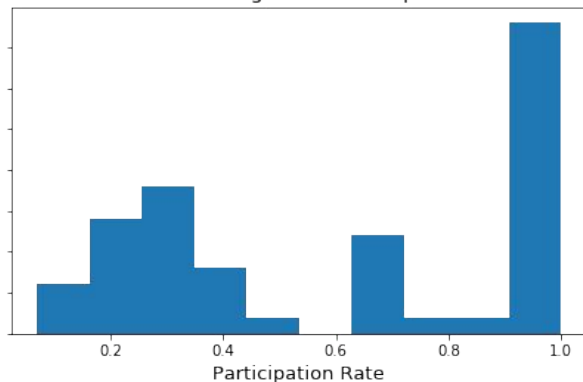
in 51 states

Univariate Analysis

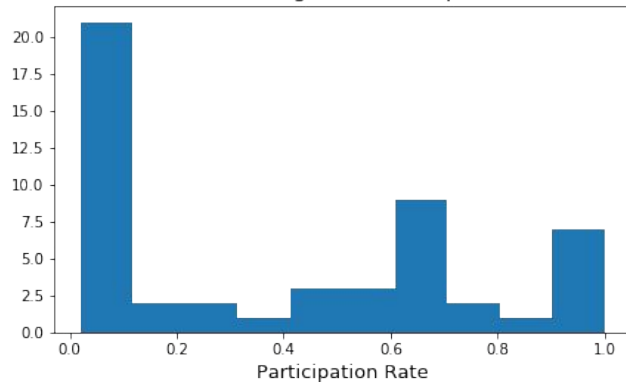
ACT 2017 — Histogram of Participation Rates



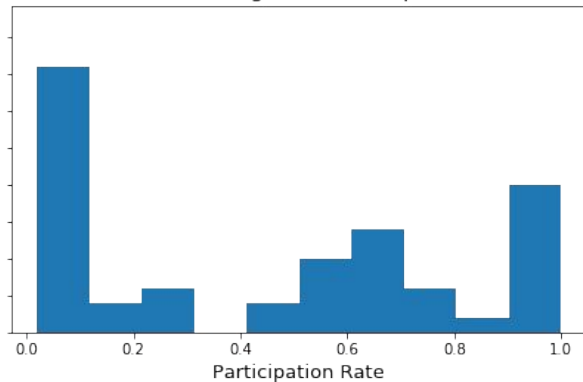
ACT 2018 — Histogram of Participation Rates



SAT 2017 — Histogram of Participation Rates

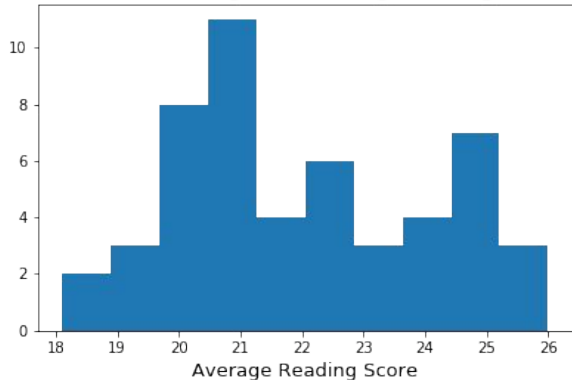


SAT 2018 — Histogram of Participation Rates

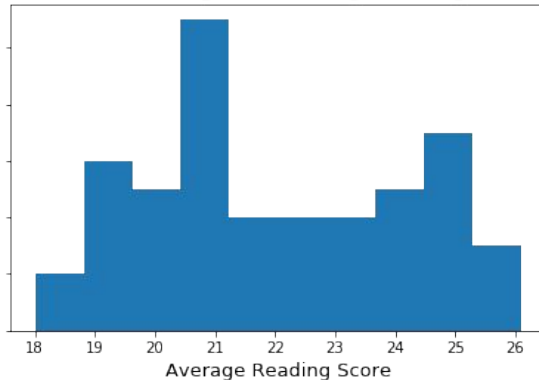


Univariate Analysis

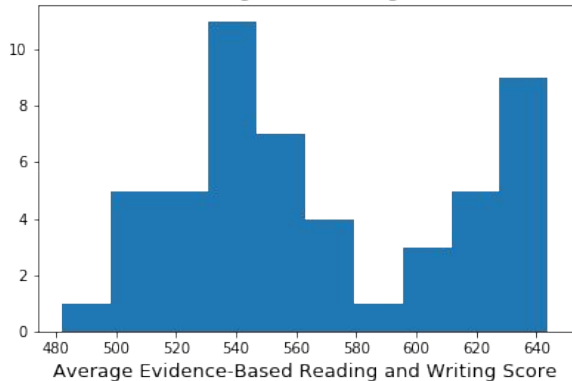
ACT 2017 — Histogram of Average Reading Scores



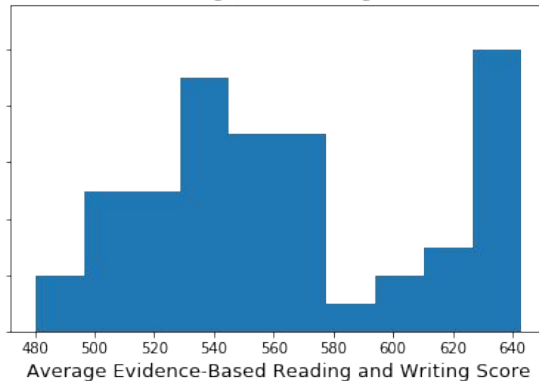
ACT 2018 — Histogram of Average Reading Scores



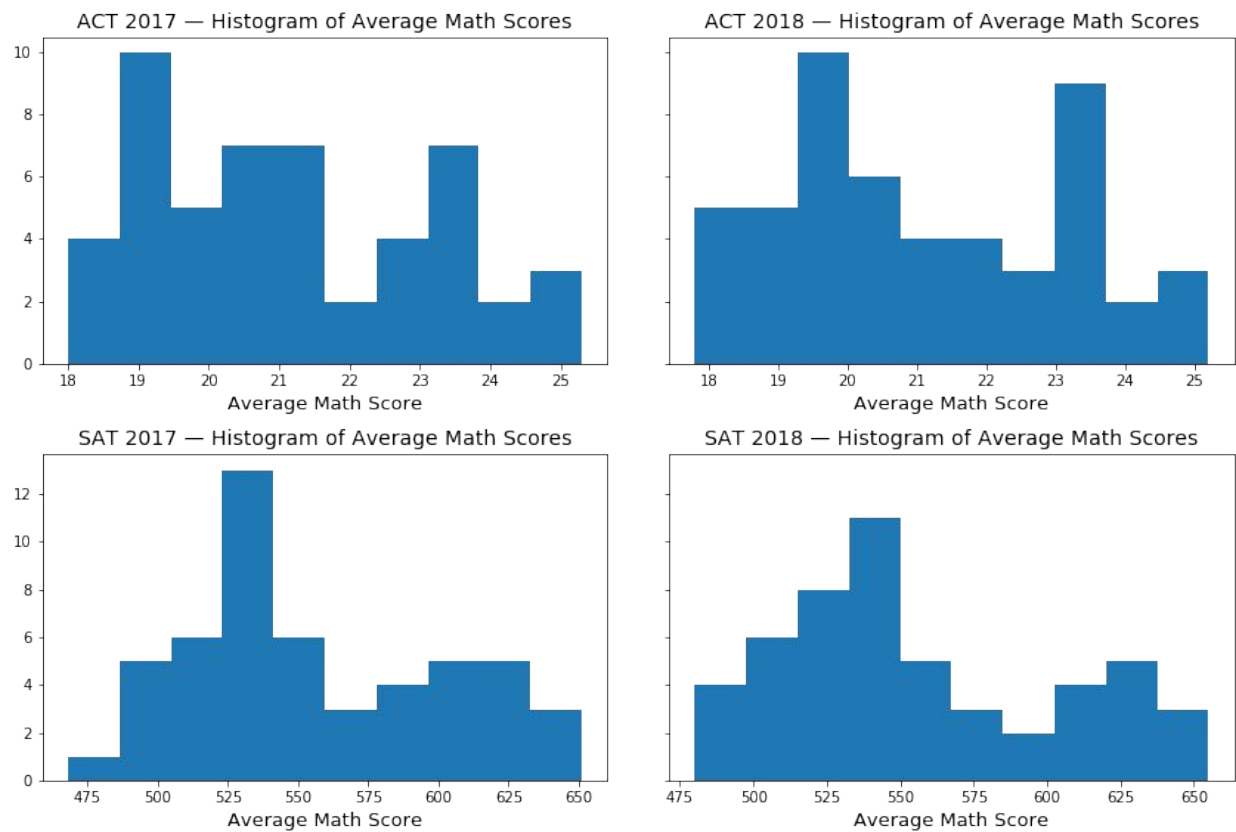
SAT 2017 — Histogram of Average EBRW Scores



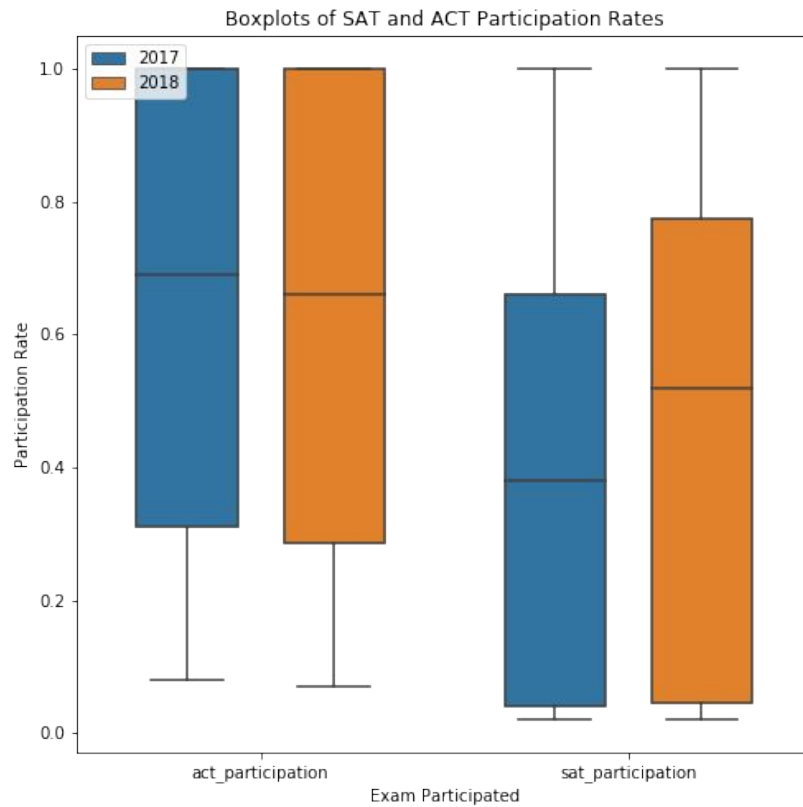
SAT 2018 — Histogram of Average EBRW Scores



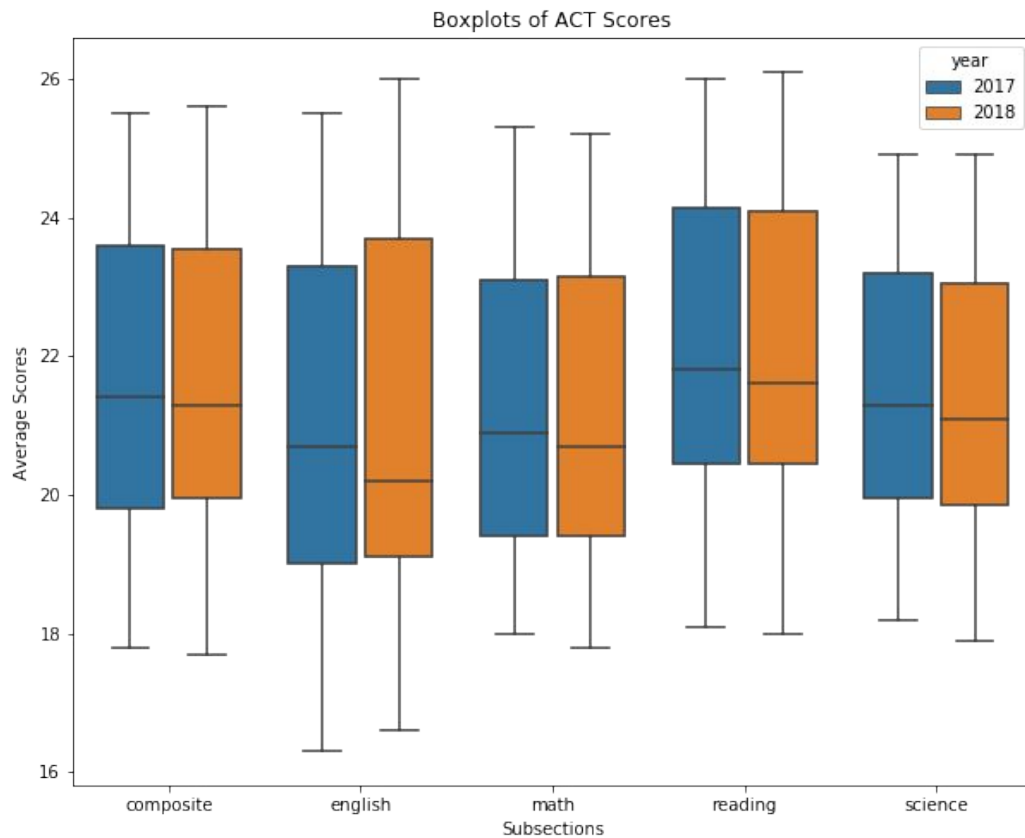
Univariate Analysis



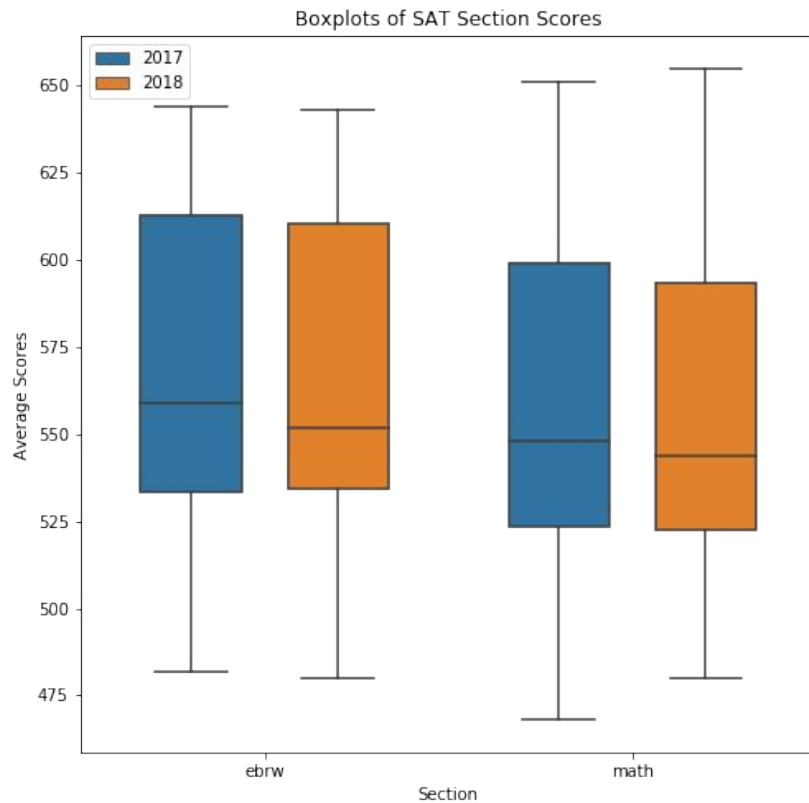
Univariate Analysis



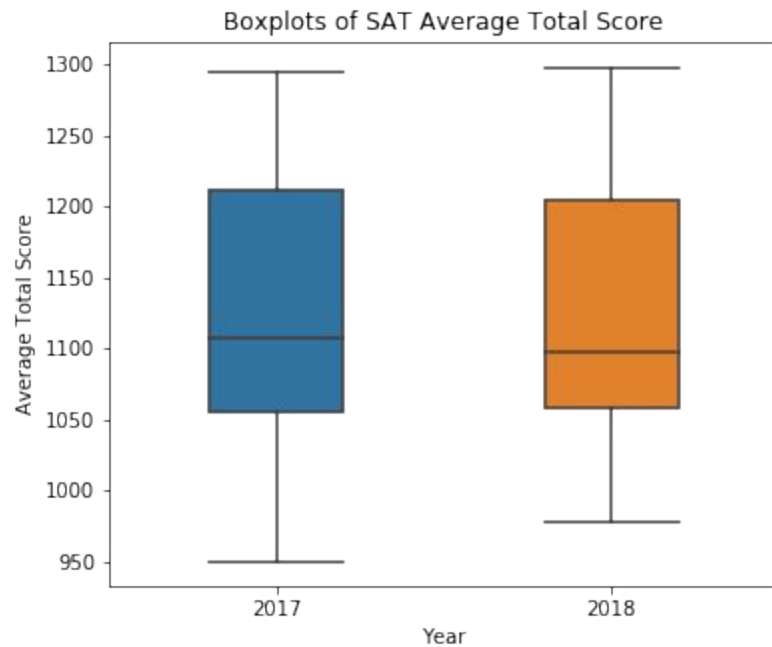
Univariate Analysis



Univariate Analysis

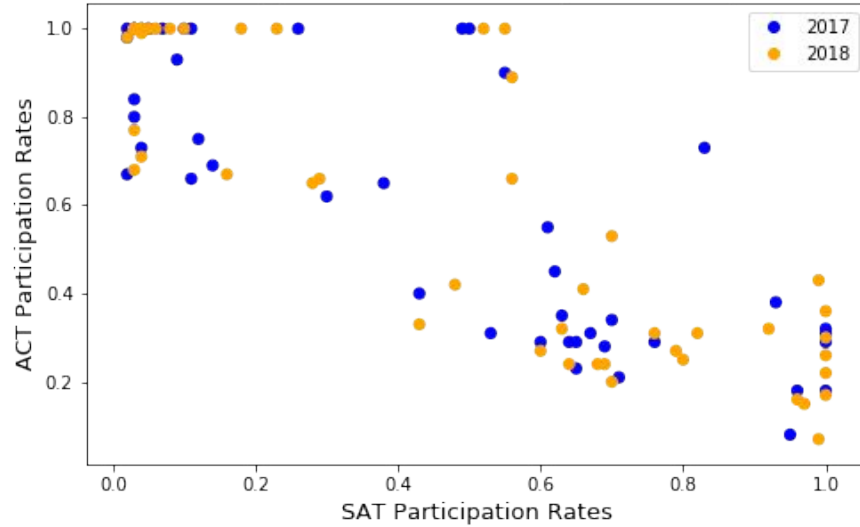


Univariate Analysis



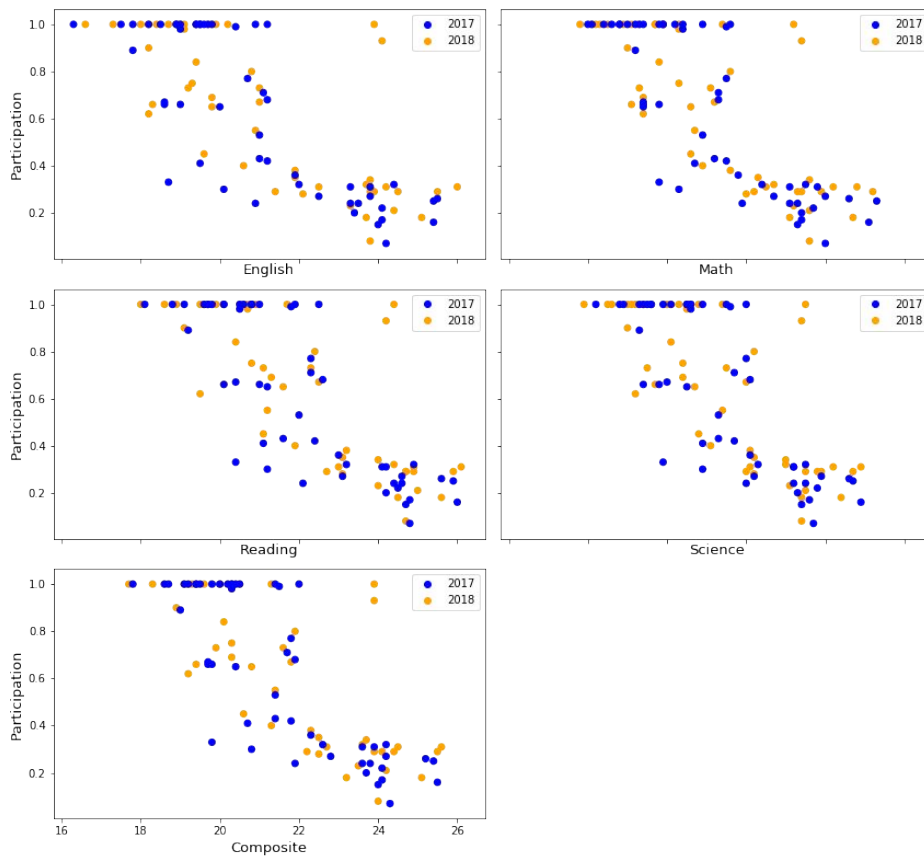
Bivariate Analysis

Scatterplot of SAT Participation Rates vs. ACT Participation Rates in year 2017 and 2018



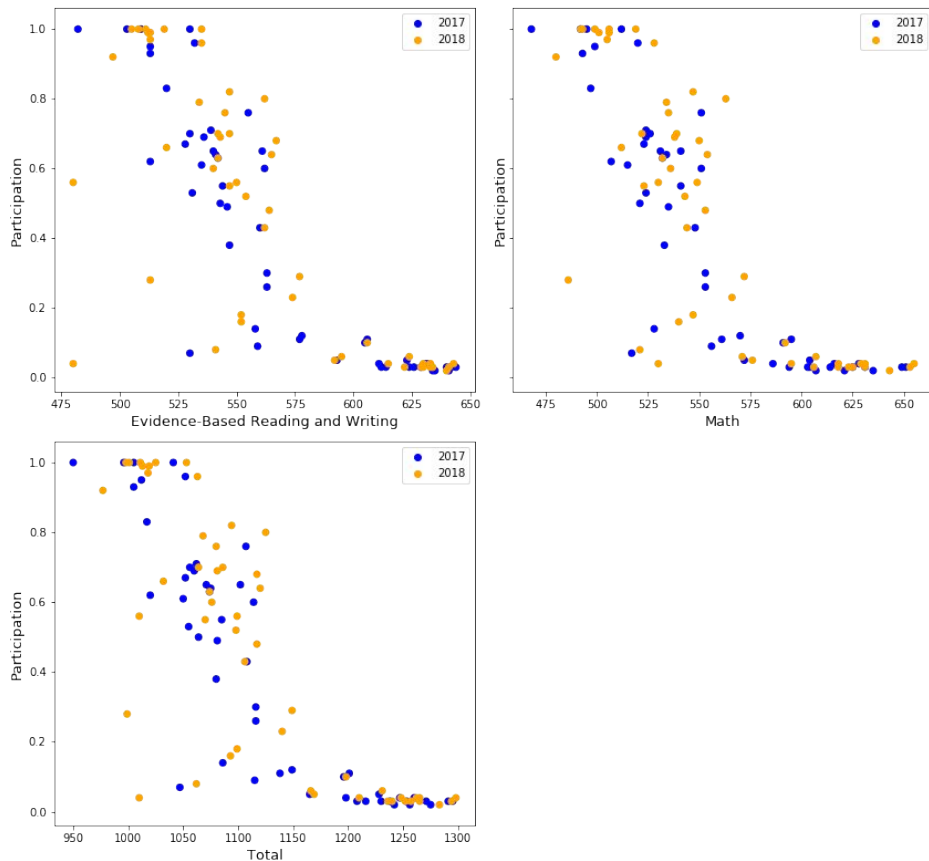
Bivariate Analysis

Scatterplots of ACT Participation Rates vs. each ACT section scores in year 2017 and 2018



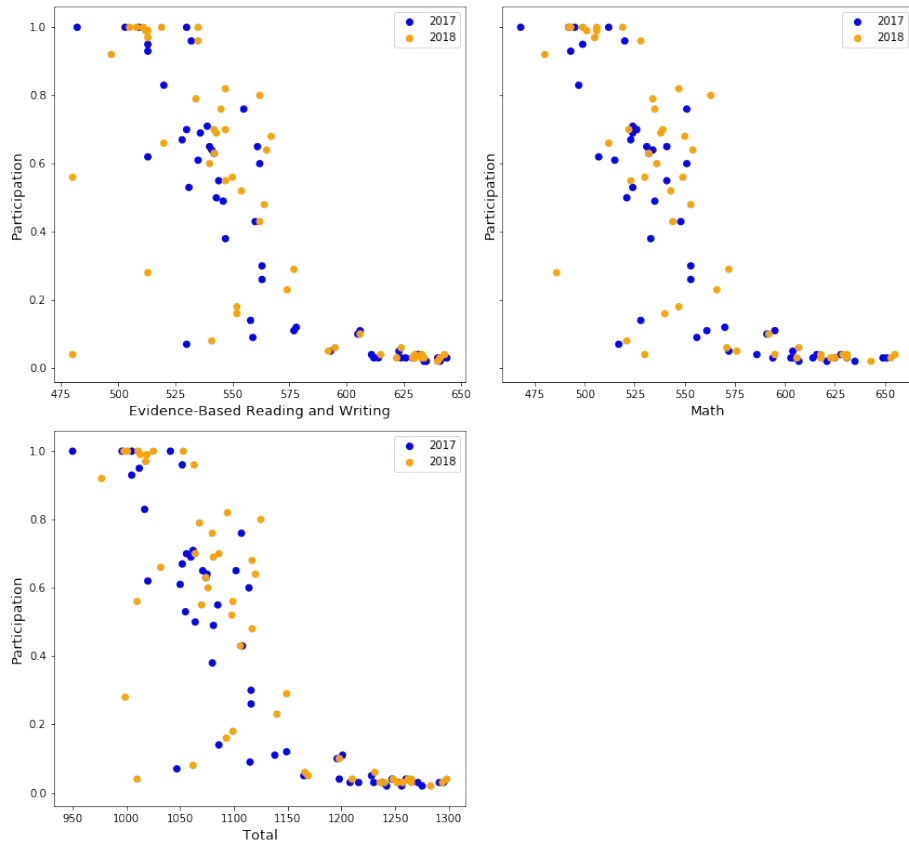
Bivariate Analysis

Scatterplots of SAT Participation Rates vs. each SAT section scores in year 2017 and 2018



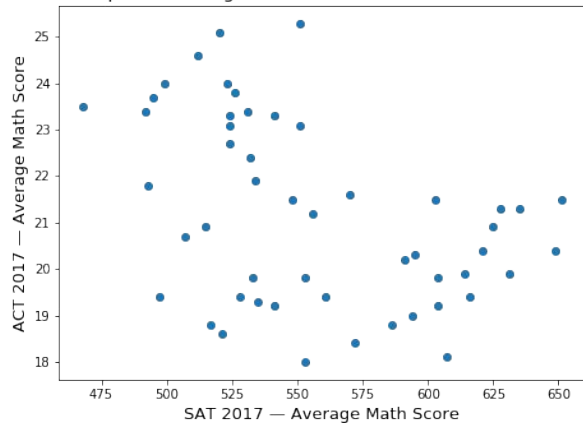
Bivariate Analysis

Scatterplots of SAT Participation Rates vs. each SAT section scores in year 2017 and 2018

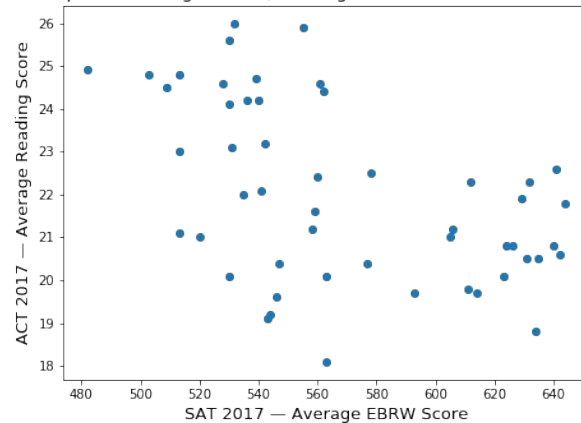


Bivariate Analysis

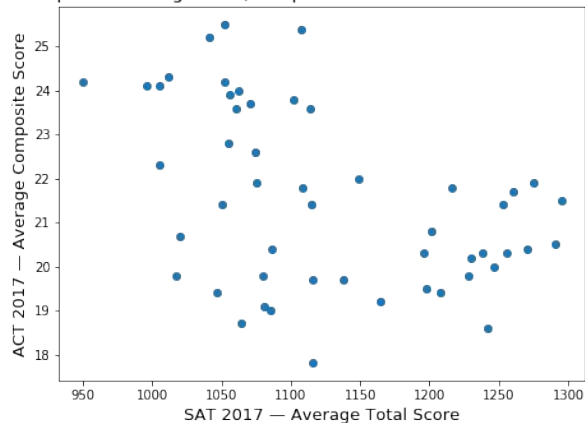
Scatterplot of Average Math Scores — SAT 2017 vs. ACT 2017



Scatterplot of Average Verbal/Reading Scores — SAT 2017 vs. ACT 2017



Scatterplot of Average Total/Composite Scores — SAT 2017 vs. ACT 2017



Conclusion

- Most variables seem to exhibit multi-modality, are not normally distributed, and are right-skewed.
- The participation rate of the SAT and that of the ACT are negatively correlated. Suggests a possible zero-sum game scenario.
- The participation rate of the SAT and the scores of each section of the SAT are negatively correlated. Further research show that states which mandate SAT examinations have higher participation rates but lower test scores.

Recommendations

- Lobby the state of North Dakota to adopt the SAT as the state's compulsory examination for high-schoolers, perhaps even sponsor the test
- Additional data such as the universities within each state and the ranking of the universities throughout the U.S. might provide additional insight