



# Project 1: Standardized Test Analysis

Nolan Arendt

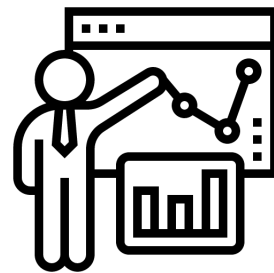
# Intro

Analyze SAT scores from 2017, 2018, 2019.

Identify schools with the best scores on each category.

Identify, analyze, and explain scoring trends.

Represent valuable findings with visualizations.



# Problem Statement

As participation rate increases, SAT scores decrease.

Identify schools with above average participation rate, and above average total score.

Analyze states education plan.



# SAT Participation and Score 2017-2019

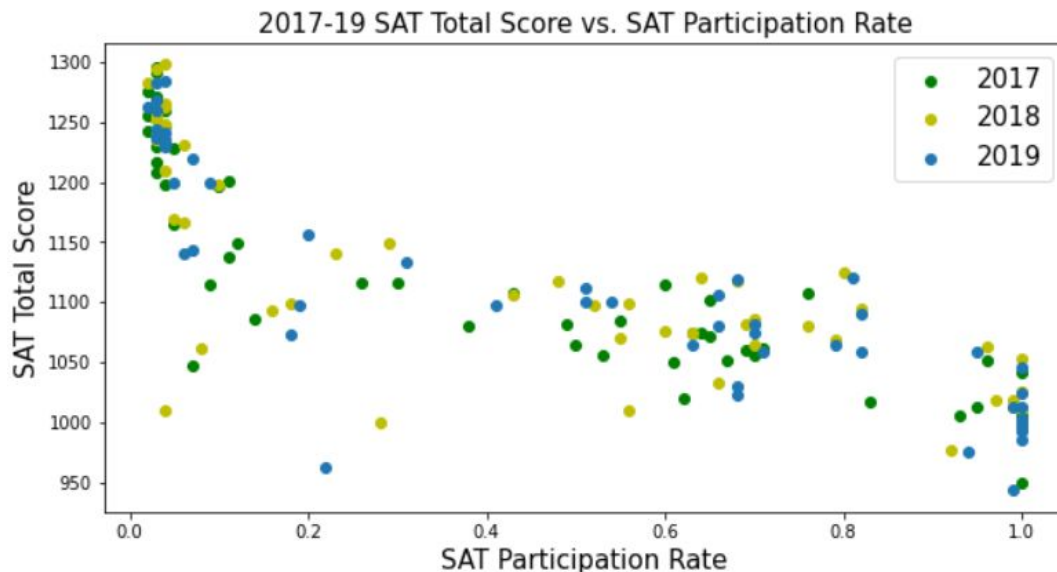
PARTICIPATION

**+9.25%**

\*EBRW **-1.46%**

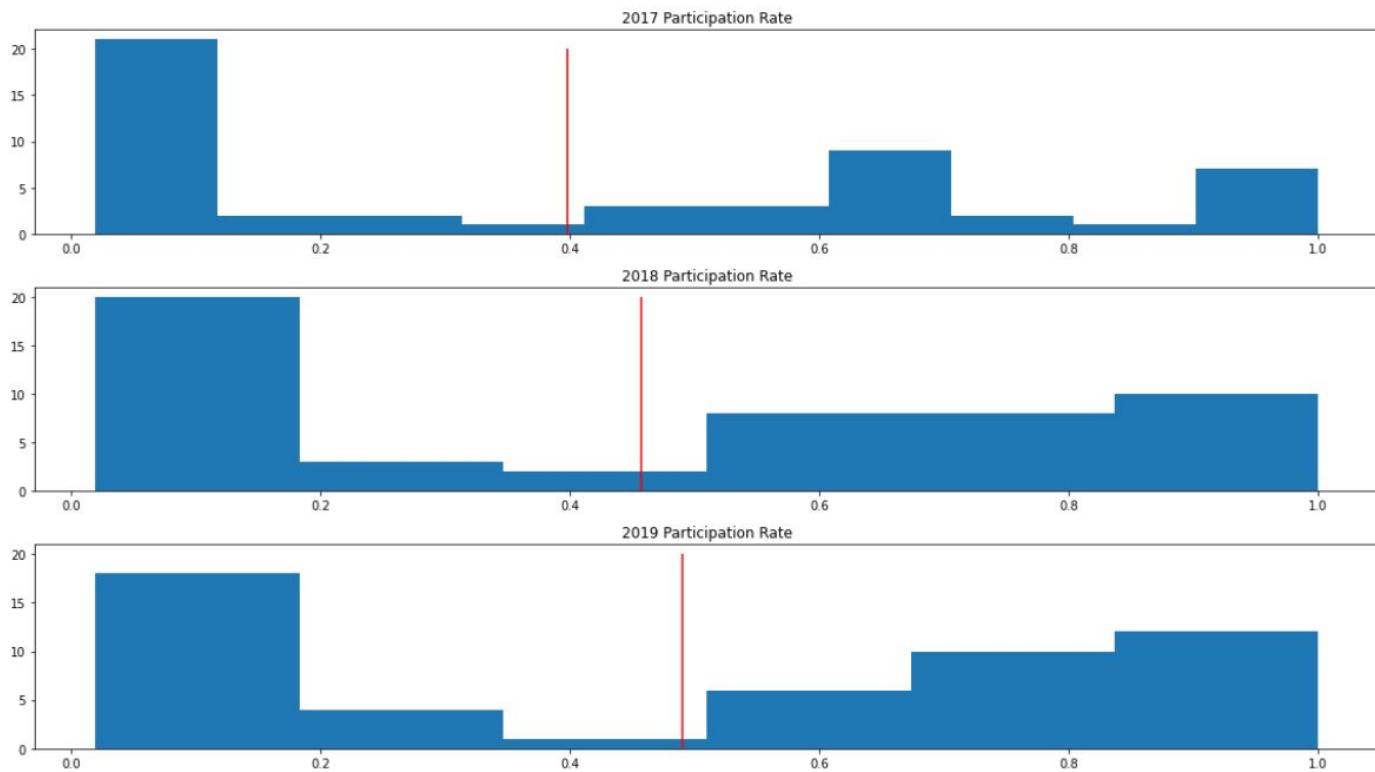
MATH **+0.83%**

TOTAL SCORE **-1.15%**

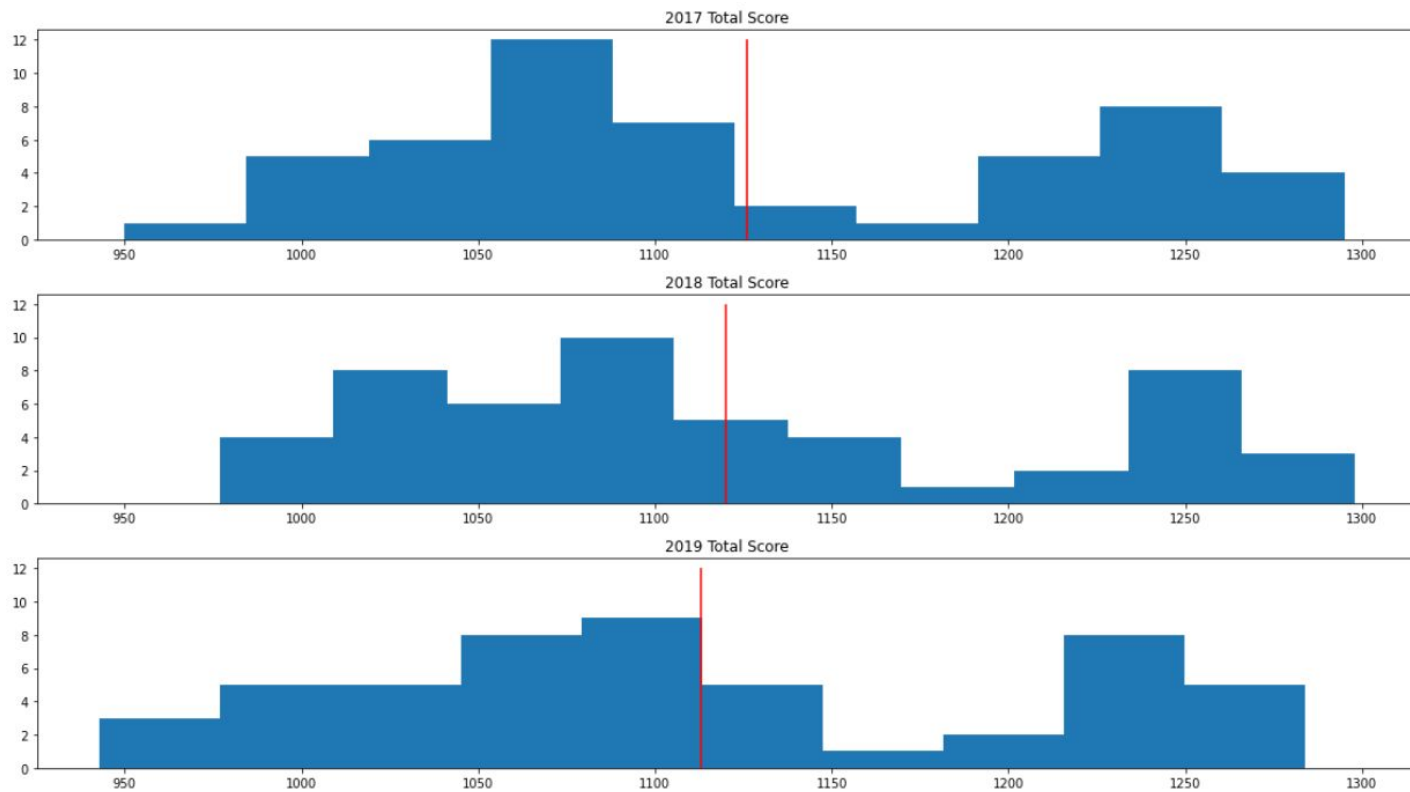


\*EBRW: Evidence Based Reading and Writing

# SAT Participation Changes



# SAT Score Changes



# SAT Average Participation, Average Score

2018: Average Participation **45.74%** Average Score **1120**

	state_2018	participation_2018	evi_based_read_write_2018	math_2018	total_2018
21	Massachusetts	0.8	562	563	1125

2019: Average Participation **49.05%** Average Score **1113**

	state_2019	participation_2019	evi_based_read_write_2019	math_2019	total_2019
21	Massachusetts	0.81	559	561	1120
46	Virginia	0.68	567	551	1119

# Highest Scoring State Math : Massachusetts

Average Math Score 2017 = **547**

Average Math Score 2018 = **556**

Average Math Score 2019 = **552**

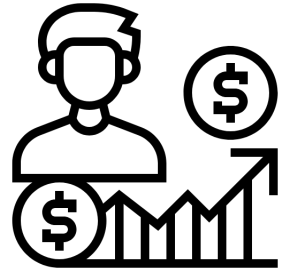
Massachusetts above  
average math score  
each year.

Massachusetts	
math_2017	551
math_2018	563
math_2019	561



# Massachusetts Background Research

- Massachusetts Education Reform Act of 1993 (M.E.R.A.)
- 1993-2003 school budgets have increased by roughly \$5,000,000 annually.
- Implement Massachusetts Comprehensive Assessment System (M.C.A.S.)
  - Tested in grade 4, 8, 10



# Highest Scoring State EBRW : Virginia

Average EBRW Score 2017 = 569

Average EBRW Score 2018 = 563

Average EBRW Score 2019 = 560

**Only one year where  
Virginia was not above  
average EBRW score.**



	Virginia
evi_based_read_write_2017	561
evi_based_read_write_2018	567
evi_based_read_write_2019	567

\*EBRW: Evidence Based Reading and Writing

# Virginia Background Research

- Ninth grade students eligible to take PSAT 8/9 for free.
  - Preliminary SAT
- “SAT School Day” in 2017-18
  - Ability to take SAT for free.



# Recommendations

1. Increase accessibility
  - a. More students that actually want to take the SAT opposed to forcing students.
2. Increase government funding
  - a. Attract teachers, fund programs, equal access, outcome-based accountability.
3. Advanced Placement opportunities

# Sources

1. [Building on 20 Year of Massachusetts Education Reform](#)
2. [Education Reform: Ten Years after the Massachusetts Education Reform Act of 1993](#)
3. [SAT scores rise in Virginia and locally, as national and state participation declines](#)
4. [VDOE :: News: October 25 - Virginia Students Top Nation on SAT](#)