

# Data Science Immersive Project 1

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DSI-25





# **ACT and SAT Examinations**



# Context for Problem Statement

You have been hired as a consultant to advise students and parents on the scores of ACT and SAT they should be aiming for, and advise locations for them to achieve their desired ACT/SAT results and get into college.



## **Problem Statement:**

What recommendations do we give students to maximise their chances of getting into college?



# Sources

1. ACT 2019 Scores by States
2. SAT 2019 Scores by States
3. ACT and SAT scores by college



# **Data Sources**



# ACT 2019 Scores by States

1. State: State where the exams were held
2. Participation Rate: Number of Eligible Students in the State who took the exam
3. Composite Score: The Mean Composite Score of all students in the respective state



# SAT 2019 Scores by States

1. State: State where the exams were held
2. Participation Rate: Number of Eligible Students in the State who took the exam
3. EBRW (Evidence-Based Reading and Writing) mean scores by state
4. Math mean scores by state
5. Total mean scores by state





# ACT and SAT scores by college

1. School: Name of the School
2. Test Optional
3. SAT 25th to 75th Percentile
4. ACT 25th to 75th Percentile
5. Acceptance Rate
6. Number of Applicants



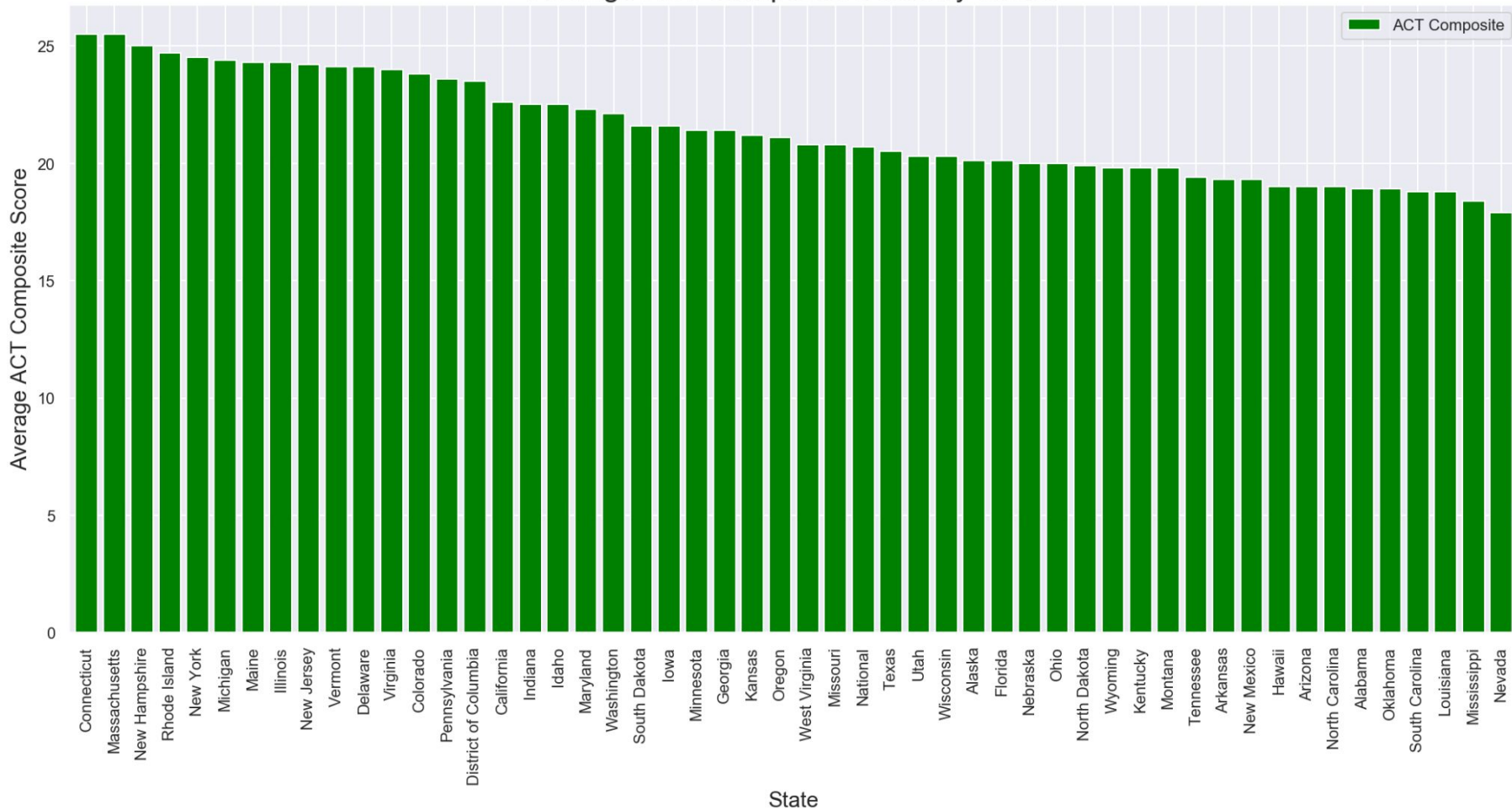
# ACT 2019 Findings

Connecticut, Massachusetts, New Hampshire, Rhode Island and New York are the 5 highest scoring states for ACT 2019

Nevada, Mississippi, Louisiana, South Carolina and Oklahoma are the 5 lowest scoring states in ACT 2019

Average Composite Score for ACT 2019 is 21.45

Average ACT Composite Score by States





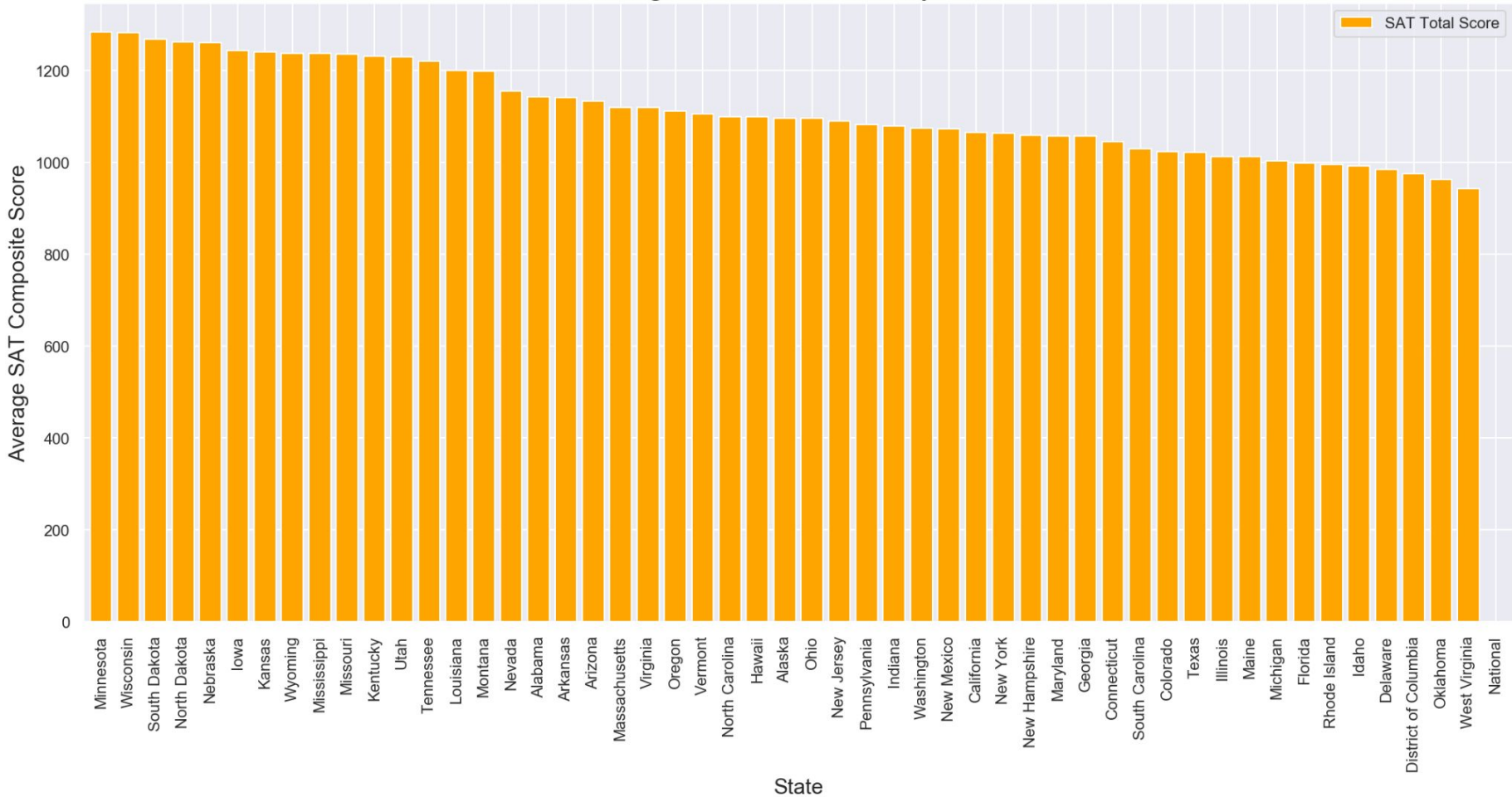
# **SAT 2019 Findings**

Minnesota, Wisconsin, South Dakota, North Dakota and Nebraska are the 5 highest scoring states for SAT 2019

West Virginia, Oklahoma, District of Columbia, Delaware and Idaho are the 5 lowest scoring states for SAT 2019

Average total score for SAT 2019 is 1107

# Average SAT Total Score by States





# Weighted Scores

Is a derived score from the maximum possible score of each exams

Combined both ACT and SAT scores as a percentage of their respective score

Get a clearer picture of the overall performance of each state regardless of which exam students took.

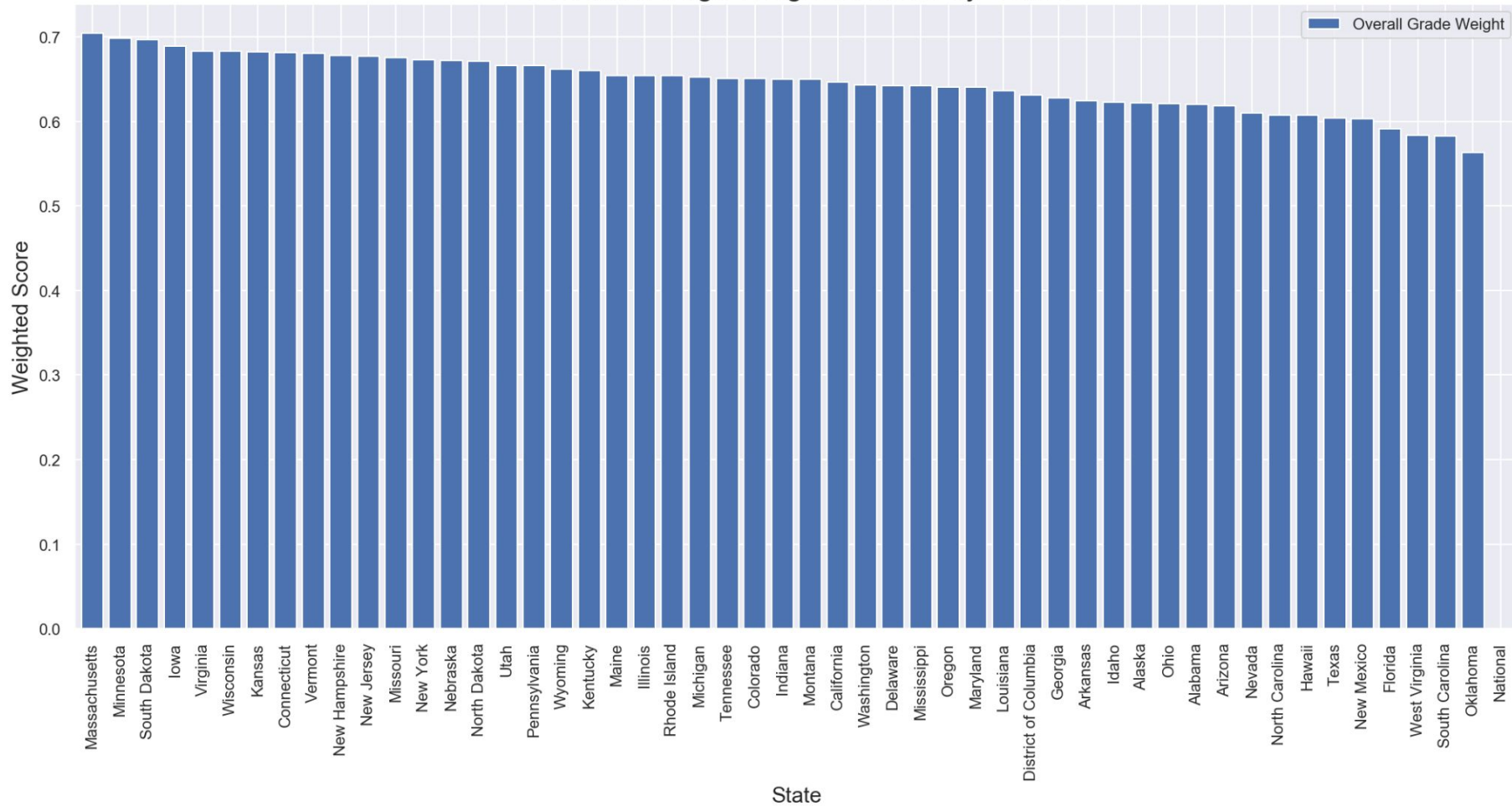


# Findings from Weighted Scores

Massachusetts, Minnesota, South Dakota, Iowa and Virginia are the 5 highest overall weighted scores.

Oklahoma, South Carolina, West Virginia, Florida and New Mexico are the 5 lowest overall weighted scores.

# Overall Average Weighted Score by States



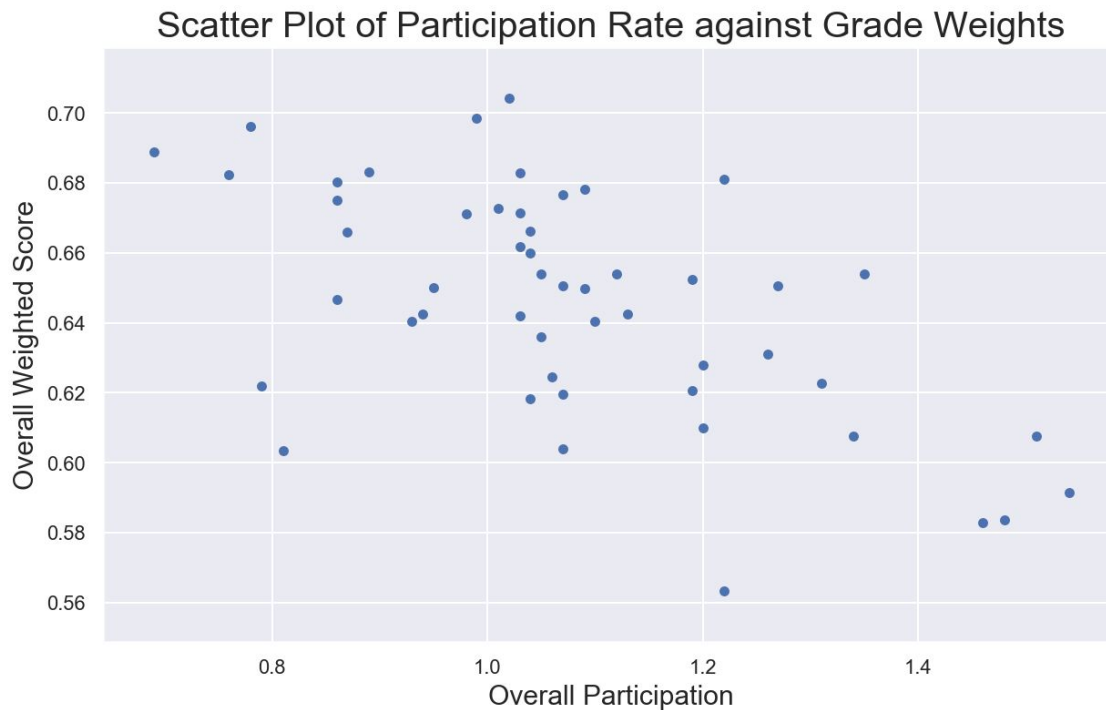




# **Interesting Trends between data**



Higher Participation between states yielded lower overall weighted scores





Participation Rates in some states exceeds 1

Some students may be taking both ACT and SAT tests

Taking **both** test is **not** recommended



# Findings from College Admission data

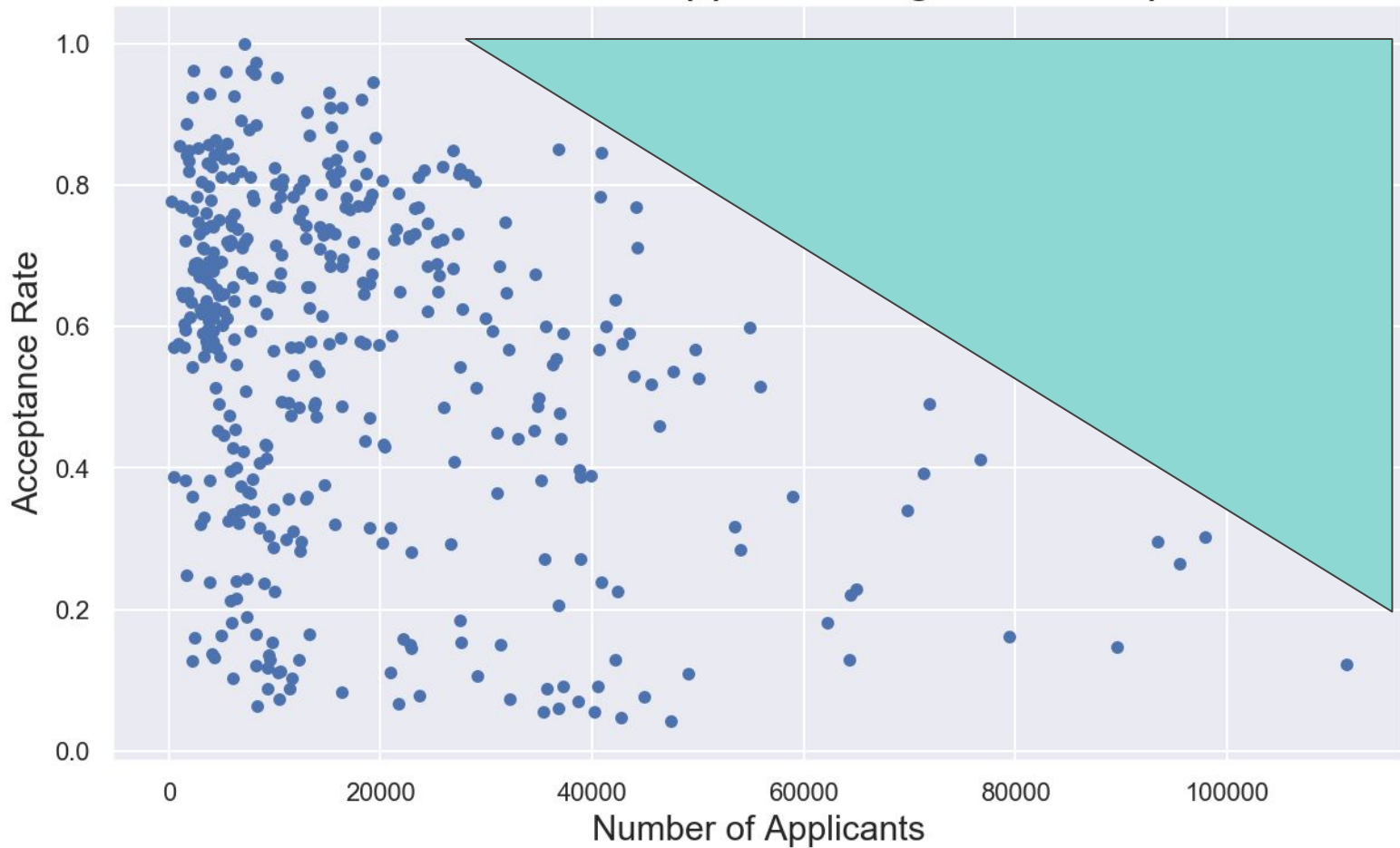
24.7 to 30.6 for ACT and 1167 to 1359 for SAT is the average percentile from 25th to 75th which a college accept students.

About 55% of all applicants are accepted into college annually



## **Another Interesting Trend**

# Scatter Plot of Number of Applicants against Acceptance Rate





The higher the number of applicants to a certain college, the lower the chances of acceptance.

Advisable to apply for a college with less applicants to maximise your chances of acceptance.



# Recommendation

Score a ACT Composite Score of at least 24.7

Score a SAT Total Score of at least 1167

Moving to nearer to Ivy League Colleges may help increase your ACT/SAT scores

Aim for one exam instead of taking both

Universities may not be considering ACT/SAT results as a requirement





**Thank You!**