

Predicting Average SAT Scores of School Districts

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Domain

The SAT test is used for college admissions and merit-based scholarships. SAT tests Reading, Writing, and Math. SAT tests are scored out of 1600 total points with 800 possible points from the Math sections and 800 from the Reading and Writing sections. There is also an optional essay that is graded separately. SAT test scores are just one piece of the college application and criteria to gain entrance into a college, but typically the higher one scores on the SAT test, the better colleges one can get into and more scholarship money one can receive.

Motivation

If SAT scores can be predicted using some set of variables, then resources can be allocated to the populations that need assistance so that they can have competitive applications for good schools and scholarships which can increase future earning potential.

MVP

An MVP will predict that average SAT scores for all School Districts in Texas in a specific school year based on data from the same school year. Later iterations could include additional states in the dataset.

Foreseen Difficulties

Merging all of the different data sources into one dataframe

Data

Variable	Data Type	Description
Average SAT Scores	numerical	Average SAT scores by School District
Funding per student	numerical	Annual funding per student by School District
Annual Dropout Rate	numerical	% of students who dropped out of either Grades 7-12
Free Lunch or other Economically Disadvantaged count	numerical	Economic status of students
Average Daily Attendance	numerical	Sum of attendance counts ÷ days of instruction
Student Sex percentage	Numerical (multiple cols)	Percent male and female
Student Race percentage	Numerical (multiple cols)	Percentage of students in different racial groups
Average Parental Income	numerical	Parental income
Parental Education Attainment	categorical	Parental education level
Poverty in the last 12 months	numerical	Percentage of people whose income in the past 12 Months is below poverty level
Student Enrollment	numerical	Total student enrollment
FTE Teacher Count	numerical	Total teacher count
Average Class Size	numerical	Student enrollment ÷ FTE teacher count

Data Sources

1. Scraping Texas School Districts:
https://ballotpedia.org/List_of_school_districts_in_the_United_States#Texas
2. Funding:
https://rptsvr1.tea.texas.gov/school.finance/forecasting/financial_reports/1415_FinActRep.html
3. Attendance:
https://tea.texas.gov/Finance_and_Grants/State_Funding/State_Funding_Reports_and_Data/Average_Daily_Attendance_and_Wealth_per_Average_Daily_Attendance
4. Student Demographic & Parental Data:
<https://nces.ed.gov/programs/edge/TableViewer/acsProfile/2014>

5. Annual Dropout Rate:
[https://tea.texas.gov/Reports and Data/School Performance/Accountability Research/Completion%2C Graduation%2C and Dropout/Annual Dropout Data%2C 2016-17](https://tea.texas.gov/Reports_and_Data/School_Performance/Accountability_Research/Completion%2C_Graduation%2C_and_Dropout/Annual_Dropout_Data%2C_2016-17)
6. Economically Disadvantaged: <https://rptsvr1.tea.texas.gov/adhocrpt/adstc.html>
7. Student Enrollment: <https://rptsvr1.tea.texas.gov/adhocrpt/adste.html>
8. Teacher Count: <https://rptsvr1.tea.texas.gov/adhocrpt/adfte.html>
9. SAT scores for Texas:
[https://tea.texas.gov/Reports and Data/School Performance/Accountability Research/College Admissions Testing SAT and ACT](https://tea.texas.gov/Reports_and_Data/School_Performance/Accountability_Research/College_Admissions_Testing_SAT_and_ACT)