Due to the global pandemic of 2020, many higher educational institutions decided to offer a test-optional admissions policy for the Fall 2021 admissions class.

Historically, test scores add 15% predictive power in determining students' college performance.

Our goal was to create an admissions rating model that will allow SMU to predict students’ college performance with or without the presence of standardized test scores.
Original Linear Regression Model

• Predicting SMU GPA
• Dataset: all application factors and academic interest categories (STEM, Business, Social Sciences, Arts & Language, Audition Required, and other)

Step Model

• Insignificant variables removed
• Significant variables include:
  • Sex
  • GPA rating
  • Cumulative GPA
  • Standardized Test Scores
  • Percentage of college degrees by zipcode
  • Projected Business major
  • Ratio of # AP courses offered versus # taken
  • Student media interest
  • Academic honor program interest

Residual standard error: 0.1219 on 742 degrees of freedom
Multiple R-squared: 0.8942, Adjusted R-squared: 0.8914
F-statistic: 313.6 on 20 and 742 DF, p-value: < 0.0000000000000022

Step Model Without Test Scores

• Significant variables include:
  • Sex
  • GPA rating
  • Cumulative GPA
  • Percentage of college degrees by zipcode
  • Projected Business major
  • Ratio of # AP courses offered versus # taken
  • Student media interest
  • Academic honor program interest

Residual standard error: 0.1226 on 743 degrees of freedom
Multiple R-squared: 0.8927, Adjusted R-squared: 0.89
F-statistic: 325.3 on 19 and 743 DF, p-value: < 0.0000000000000022
Key Takeaways

Box Plot of High School vs College Performance by Major

Marginal Density Plot between High School and College Performance by Major