

ELEVATE 215

Beat the Odds Analysis

Explanation of multivariate ordinary least squares regression (OLS)

Multivariate ordinary least squares regression is a statistical method of analysis that estimates the relationship between independent variables and a dependent variable. For the Beat the Odds analysis, the dependent variable is academic growth and the independent variables are:

- % Low Income
- % LEP
- % Students with Disabilities
- % Black
- % Hispanic/ Latino
- % White
- Enrollment
- Urbanicity (Binary)

It is easiest to think of this in terms of a single independent variable and a single dependent variable. In the figure below, academic growth (dependent) is compared to the percent of students identified as low-income (independent) for all schools in the U.S. (blue dots). The horizontal yellow line is the best-fit line or the predicted growth. All schools above that line have higher growth rates than predicted. The top right quadrant shaded in green are examples of U.S. schools with student populations of 75% low-income or more and had actual growth above the predicted line. In this simplified regression model, these schools are considered beating the odds for students.

Academic Growth Predictions based on Percent Low-income Students

