Sahar Alaei

Analiza Asuncion

Ben Pollock

Ana Saavedra

Eric Wetzel

**K-12 Spending and Success: An Analysis**

Our group project focuses on the relationship between funding and outcomes in our nation’s public education system. We sought answers to the following questions:

* Do students in states with high education expenditures per student perform well on standardized tests?
* Do students in states with high education expenditures graduate at high rates?
* Is there a correlation between the size of a school district and its expenditures?
* Is there a spending “sweet spot,” a point beyond which additional investments in education do not affect student performance?

To begin answering these questions, we first gathered data from the U.S. Census Bureau, the National Center for Educational Statistics (NCES), the National Assessment of Educational Progress (NAEP), and the U.S. Department of Education. Data types included expenditure reports, enrollment figures, test scores, and graduation rates, from both state and district levels.

We then used Microsoft Excel, Python, and Pandas to cleanse, group, and merge our targeted data. We removed null values, computed medians for numerical ranges, and validated our findings using outside documentation.

The visualizations we developed from the above data include bar charts, scatter plots, regression analyses, and hexagonal binning. They explore the relationships between values like expenditures and graduation rates, expenditures and test scores, expenditures and enrollment, and more.

We concluded the following:

* There is a weak positive relationship between a state’s per-pupil expenditures and its standardized test scores.
* There is no discernable relationship between a state’s per-pupil expenditures and its graduation rates.
* There is no discernable relationship between a school district’s size and its expenditures.
* There is, in fact, a spending sweet spot: $16,500 per pupil per year for fourth graders, and $17,500 per pupil per year for eighth graders.