**Background**

As the recently hired Chief Data Scientist in my supposed city’s school district, I have analyzed the district-wide standardized test results. The results and findings seek to help the school board and mayor make strategic decisions regarding future school budgets and priorities.

**Topline Findings (A Summary of the Analysis)**

In the city's district, there are a total of 15 schools serving 39,170 students, with a combined budget of $24,649,428.00 for the academic year. The average math and reading scores across all schools are 78.99% and 81.88%, respectively. The pass rates for math and reading are 74.98% and 85.81%, respectively, resulting in an overall pass rate of 65.17% for both subjects combined.

Cabrera High School leads in overall pass rates with 91.33%, followed by Thomas High School (90.95%), Griffin High School (90.60%), Wilson High School (90.58%), and Pena High School (90.54%). Conversely, Rodriguez High School (52.99%), Figueroa High School (53.20%), Huang High School (53.51%), Hernandez High School (53.53%), and Johnson High School (53.54%) have the lowest overall pass rates. When analyzing mean math and reading scores by grade, freshmen (9th grade) achieved scores of 78.94% and 81.91%, respectively. Sophomores (10th grade) had similar scores of 78.94% and 81.87%. Juniors (11th grade) showed slightly improved scores of 79.08% and 81.89%, while seniors (12th grade) maintained scores of 78.99% and 81.82%, respectively. Examining overall passing rates by per capita budget reveals significant variations. Schools with per student spending below $585 achieved the highest overall pass rate at 90.37%. Spending between $585 and $630 per student achieved an overall pass rate of 81.42%. Meanwhile, schools spending $630 to $645 per student saw an overall pass rate of 62.86%, and those spending between $645 and $680 per student had the lowest overall pass rate at 53.53%. In terms of school size, those with fewer than 1000 students boasted overall passing rate of 89.88%. Schools with moderate enrollments of 1000 to 2000 students demonstrated an even higher overall passing rate of 90.62%. However, larger schools with 2000 to 5000 students had a lower overall passing rate of 58.29%. Charter schools significantly outperformed district schools, with an overall passing rate of 90.43% compared to the district's 53.67%.

**Two Conclusions or Comparisons from the Analysis**

* Schools that had a total student population of less than 2000 i.e. medium and smaller schools had over 50% times overall passing rates compared to large schools which had between 2000 – 5000 students. This was seen to go hand in hand with higher overall scores in maths and reading implying that the majority of the students achieved higher scores in their studies. These schools, which had fewer students than 2000, were more likely to be charter schools, and occupied four out of the five top slots of schools with the highest overall performance. The worst five performing schools were all large district schools. While math scores were a bit lower than the reading scores, the difference in performance did not appear to differ by grade considering the performance of freshmen, sophomore, junior, and senior years.
* The lower the budget per capita in a school, the higher the percentage of overall passing. The top five schools for instance had per capita budgets of less than $ 640 compared to the per capita budgets of the five schools with the lowest overall performance, most of which had larger than $ 640 costs per student. Higher costs per student were also associated with large district schools. This could be explained by the business model of charter schools in the dataset that far outperformed district schools and had smaller student populations.