Pandas Challenge Written Report

The data frames created from the Pandas Challenge create multiple data frames of 15 different public schools. In the District Summary Data Frame, there was a summary of the total number of students, total budget, average reading and math scores, and percentages of students passing math/reading and both math and reading of all 15 schools.

The School Summary Data Frame was more descriptive and broke down the school type, total budget, per student budget, average reading/math scores, percentage of students passing math/reading/both math and reading by school. The School Summary is helpful in comparing results across all 15 different schools.

After sorting the School Summary based on the overall passing percentage, the data showed that schools Rodriguez (52.99%), Figueroa (53.20%), Huang (53.51%), Hernandez (53.53%), and Johnson (53.54%) had the lowest overall passing rate. Cabrera (91.33%), Thomas (90.05%), Griffin (90.60%), Wilson (90.58%), and Pena (90.54%) had the highest overall passing rate. The top 5 schools were all Charter Schools, while the schools with the lowest overall passing rate were all District Schools. When grouping the schools by type, the overall percentage rate of passing was much higher in Charter (90.43%) Schools than District (54.67%) schools. When grouping the School Sizes and overall passing rate, the data showed that schools that were considered small or medium had a similar overall passing percentage of 89.88% and 90.62% respectively, while schools with a larger size had an overall passing rate of 58.28%. When grouping the schools by Spending Ranges (Per Student), the data shows that the lower the spending range, the higher the percentage of overall passing students (<$585: 90.37%, $585-630:81.42%, $630-645:62.86%, $645-680:53.53%).

The data shows that Charter Schools have a higher overall passing rate when compared to District Schools. The data with the school sizes and the spending ranges can give insight into why this may be the case. Charter Schools tended to have lower school sizes (small or medium) whereas District schools had larger school sizes. This suggests a better student-to-teacher ratio where faculty can better invest in their students, leading to a higher passing rate. The large school sizes of District Schools may also contribute to lower passing percentages because of greater variability and outliers. There are more students and a higher range of grades which can bring down the overall passing percentage. When looking into the spending ranges of each school, Charter Schools tended to spend less per student than District Schools. This suggests a more efficient allocation of resources. Such resources could be invested in prioritizing student learning and interventions that could explain the higher rates of passing scores. Overall, spending ranges and school sizes are both important in understanding what may have led to a trend of higher scores in Charter Schools vs District Schools and understanding this data can help improve education and curriculum across the city.