**Project 1 Summary**

**Team Members:** Steve Bark, Xiaodi Lin, Jeff Eickholt

**Topic:** Analysis of 2019 Texas Assessment of Academic Readiness (STAAR) Math Results

**Summary:** The state of Texas administers standardized tests to all Public and Charter schools each year to evaluate student readiness to move to the next grade level. The tests cover several topics, but our team chose to focus on the math results in grade 3, 4, and 5. The questions proposed were the following: 1) Do test results differ from Pubic to Charter School? 2) Are there geographical differences in test results? 3) Does proximity to higher education affect results?

**Data:** The results of the tests for all schools by grade are available on a public website in csv formats. This file includes data on over 4,500 schools across the state. The file has results for all students, but also contains a breakdown by several demographic and economic categories.

A second csv file was found that contained information on the school type, as well as the address of the school. The address allowed us to access the Google Geocode API to gather geographical coordinates, which were then used with the Google Places API to determine if schools were near universities. Having the zip code would have also allowed us to bring in Census data to look at other demographics. However, we ran short on time and were not able to bring this data in.

**Analysis:** Each team member focused on a particular area of the analysis. Steve focused on the analysis of charter vs public schools overall and by several demographic categories. Jeff focused comparing results across different regions of the state, as well as examining whether proximity to a university affects results. Xiaodi focused on using school zip codes to incorporate Census data.

**Results:** Evaluation of Independent ISD school and public Charter school performance was evaluated quantitatively and statistically for Grades 3-5 in global analysis (all students), demographic analysis based on ethnicity (White, Black, Hispanic, and Asian students), and economically disadvantaged students. These data indicate a small but statistically significant advantage for ISD schools compared to Charter schools at global level, and no statistically significant differences observed in respect to ethnicity and economic disadvantaged status. This last point is particularly relevant for study because Charter schools are supposed to provide an alternative school choice in lower-income geographical locations. The failure to observe any enhancement of performance in the educationally disadvantaged student population calls this assumption into question.

Although formal statistical tests were not used for geographical analysis, these data found that there were no obvious differences in success rates across different regions. The proximity to a university did have a statistically significant difference, but the actual difference was still small. It is also not clear that the difference is caused by the proximity to a university.

**Future Studies:** While these data answered the focused questions presented in this study, these results raised several important questions. First, while differences between Independent and Charter schools was not evident in large-scale analyses, are there actual differences when considering focused areas (i.e. Rural versus Urban)? Second, are there geographical correlations for school performance considering socioeconomic factors (i.e. lower income areas versus more affluent areas)? Third, we have only considered data from the 2019 STAAR Test, would analysis of multiple years find trends.