ACT Scores Across Minnesota’s Congressional Districts

Katie Moynihan
Faculty Mentor: Dr. Robert Krueger

Introduction

Standardized test scores such as the SAT and ACT have long been a staple in students’ college application portfolios. It has been used as a uniform method of assessing students through a standardized test (McNeish, 2015). Many colleges and universities rely heavily on these scores in their admissions process. The SAT and ACT provide data because they are composed of partial counties. The socio-economic status of the student is a factor that can influence their test scores. There are several states that sponsor one of these national College entrance exams are most often taken by college students to gain admission to higher education institutions. The state as a whole rather than only college students. The ACT suite of tests, the average composite scores for white and Asian students of 22.2 and 24.5 respectively compared to 19.8 for African American and Hispanic students. The suite of tests, the average composite scores for white and Asian students of 22.2 and 24.5 respectively compared to 19.8 for African American and Hispanic students. (McNeish, 2015). The lawsuit also claimed standardized tests have led to the creation of a test-prep industry. Test preparation has shown to increase a student’s score (McNeish, 2015). Therefore, students who come from higher income families that can afford tutors and other means of preparation perform better than students who are unable to receive the same help. FairTest, one of the advocacy groups a part of the lawsuit that calls for the end of standardized testing, these claims have found to be more of a measure of family background than academic readiness (McNeish, 2015).

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Other factors that were taken into consideration included the location of the congressional district and aspects of individual school districts. The location of the congressional districts compared urban to rural areas. The three largest districts by number of counties and are located on the outskirts of the state were designated by the smallest number by counties and are located near the capital and metro area were designated as metro. Individual school demographics that were analyzed included the graduation class size of the school district and the percentage of the class graduating. The average class size and average graduation percentage for each congressional district was determined. To analyze how the different congressional districts compared with each other, a series of ANOVA (independence) and 2-sample T-tests were used Minnesota. For the 2 sample T-tests, the average composite scores from the congressional districts with the highest and lowest percent or values for each category were used for analysis. All tests were done at a 5% level of significance.

Results

Data on ACT scores for all Minnesota public schools was acquired from the Minnesota Department of Education. The data set listed the average for each section, the average composite score, school district county, and grad class size for each public school and was also summarized for each school district. This was done for five grad classes, from 2014-2018. To narrow the scope of the data, the average composite scores of each school district for seniors graduating in the class of 2018 was analyzed. Since nearly every high school student in Minnesota takes the ACT, test results encompass the state as a whole rather than only college-bound individuals. Through this there is the ability to analyze if the areas of bias such as race and socioeconomic status present themselves in Minnesota test scores. In addition, there is the ability to see if other factors such as parents’ education level, location of the school district, and school characteristics play a role. Thus, the aim was to examine how ACT scores differ across Minnesota’s congressional districts and the impact of a district’s demographics.

Table 1. Average ACT scores across Minnesota’s congressional districts

<table>
<thead>
<tr>
<th>District</th>
<th>Grad Class</th>
<th>% Graduated</th>
<th>Average Composite Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>District 1</td>
<td>20.07</td>
<td>92.87</td>
<td>88.72</td>
</tr>
<tr>
<td>District 2</td>
<td>20.70</td>
<td>272.59</td>
<td>85.13</td>
</tr>
<tr>
<td>District 3</td>
<td>19.84</td>
<td>401.50</td>
<td>81.26</td>
</tr>
<tr>
<td>District 4</td>
<td>22.29</td>
<td>325.81</td>
<td>79.03</td>
</tr>
<tr>
<td>District 5</td>
<td>20.28</td>
<td>363.78</td>
<td>81.03</td>
</tr>
<tr>
<td>District 6</td>
<td>20.42</td>
<td>293.46</td>
<td>88.43</td>
</tr>
<tr>
<td>District 7</td>
<td>19.92</td>
<td>32.56</td>
<td>81.27</td>
</tr>
<tr>
<td>District 8</td>
<td>19.08</td>
<td>75.04</td>
<td>85.25</td>
</tr>
</tbody>
</table>

Average ACT composite scores, grad class sizes and graduation rates were found after school districts were organized into their congressional district and their values were averaged. Districts with the highest average/percentage are noted in green and districts with the lowest average/percentage are noted in red.

An ANOVA test for independence between Minnesota’s congressional districts into statistical difference between the average composite scores.

There is an evident range in average composite scores. A two-sample t-test was performed on the highest and lowest averages.

Discussion

Through the examination of ACT scores across Minnesota’s congressional districts, there were different demographics that proved to have statistical significance while others did not. Standardized test scores have been criticized for its disadvantage to students from lower socioeconomic families. There was found to be a statistical difference between the socio-economic state of a household and a student’s performance on the ACT. Families who live below the poverty line score lower than students from families who are above it. However, there was no statistical evidence to show that race has an impact. Other factors also found to have a difference on test results. While from a holistic standpoint, there is no statistical difference between the eight districts, the composite scores were found to be statistically significant. In addition, scores found between some of the metro and rural districts proved to be significant. However, other metro areas did not prove to have a statistical difference. There was no evidence to show the parental education level or school characteristics of graduation class size or graduation rate played a role in students’ success.

Conclusions

With some districts being consistently low or high across different demographics, further studies should be performed if these results are found to reflect together impact score outcomes. In addition, it would be interesting to find if different demographics when applied together have a greater positive or negative impact than another combination. While many colleges still look at standardized test results, there are other academic measures that are taken into account including high school grade point average, class rank, and high school coursework and respective graduation rate played a role in students’ success. Also, if there are different subject courses that are stronger predictors than others.

Future Research

With some districts being consistently low or high across different demographics, further studies should be performed if these results are found to reflect together impact score outcomes. In addition, it would be interesting to find if different demographics when applied together have a greater positive or negative impact than another combination. While many colleges still look at standardized test results, there are other academic measures that are taken into account including high school grade point average, class rank, and high school coursework and respective graduation rate played a role in students’ success. Also, if there are different subject courses that are stronger predictors than others.

References


