

# Assignment

[Science](#), [Statistics](#)



The analysis in this report is conducted on the basis of descriptive statistical analysis using SPSS of the data for Public and Private Schools. For the simplicity of the interpretation, we would prefer to ignore 8 schools that did not declare their status. With this 36.8% of the total schools fall in status of public schools while remaining 63.2% in category of private schools.

#### Mean Score Given By Peers

The mean score given by the peers for public schools has an average of 2.84 which is slightly less than the mean score of 2.91 for private schools. Apparently, it appears that average of mean score given by peers to students from private schools is higher than that of students from public schools as far as values are concerned. However, further comments can only be made after application of advanced statistical tools like hypothesis testing which may help to reveal if there is any significant statistical difference between the average score from two populations (public and private schools). According to Jain and Sandhu, skewness is the measure of asymmetry in the distribution of population and tells if the mean, mode and median are equal and quartiles are at equal distance from median (3.2). The distribution pattern of the data as seen from the histogram revealed that scores given by peers to both the public schools and private schools are moderately positively skewed having skewness of 0.934 and 0.754 respectively. This suggests that the data is not evenly distributed on both sides of the mean for both public and private schools. The positive skewness confirmed that majority of the students both from public and private schools were given mean score by peers less than or on the average score and very few were given scores higher than the average. Looking at the distribution

pattern between the two histograms, we see that number of students that scored higher than average score is greater for private schools than the public schools.

The box plot for the mean score given by peers revealed that there were four outliers for public schools and three outliers from private schools towards the upper side of box plot. This suggested that nearly equal number of students from public and private were given outstanding score by peers (closer to 5).

#### First Quartile SAT (Combined)

According to Cook and Upton, median divide the order population data into two groups whereas quartiles divide the population into four groups with first quartile (lowest 25%), second quartile (lowest 50%) and third quartile indicating lowest 75% of the population group (53).

In this section, statistical comparison of the first quartile of SAT Combined score for students from public and private schools is carried out. We see that the mean for SATQ1 for public and private schools is 943.39 and 1000.4 respectively. Again, as far as the values are concerned it appears that the students in first quartile of population from private schools scored better on SAT (Combined) than those from public schools. However, advanced tools like hypothesis testing can be used to see if there is significant statistical difference between the average score of two populations.

Also we see that data distribution for both public and private schools has skewness values of 0.418 and 0.449 respectively. A values of skewness between -0.5 and +0.5 suggests distribution to be approximately symmetric (TC3.com). Also the variance for public and private schools is 13140.55 and 26215.29 respectively. These values indicate that the data

for private schools has more wide spread than that for public schools. Based on this two deductions can be made; firstly, there are slightly less number of students in first quartile from both public and private schools who scored on SAT (Combined) higher than the mean value, secondly, the data of SATQ1 for private schools has higher spread from mean value than the data of SATQ1 for public schools. Although positively skewed, the scores of SAT (Combined) from public schools remained closer to its mean value of 943. 39 as compared to scores from private schools.

Also box plot for SATQ1 scores revealed two outliers each on upper side of boxplot for both public and private schools. This suggests that there were two students each in first quartile of public and private schools that score extraordinarily than the other students in their population.

#### Works cited

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Jain, T and A Sandhu. Quantitative Methods. New Delhi: VK Publications, 2010. 3. 2-3. 3. Print.

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