Independent T-Test Analysis

As part of our analysis we decided to perform two independent T-Test with Test#1 comparing the total number of medals won in higher versus lower population countries. Test #2 comparing the total number of medals won in countries with higher versus lower gross domestic product (GDP).

High Population versus Low Population

* Group 3’s **HYPOTHESIS**

These samples came from different distributions - THERE IS a SIGNIFICANT difference in means.

* **NULL HYPOTHESIS**

These samples came from the SAME distribution - THERE IS NOT a difference in means.

So the average number of medals for the higher population countries is 112.5 and the lower population countries is 24.7 with a significant difference of 87.8.

The variance between the numbers of medals in the higher population versus lower population isn’t equal and is substantially different. There is more variance in the country’s medal count with the higher population.

With a p-value so close to zero and much less than the alpha level of .05(95%) certainty there is no ambiguity. We FAIL to reject the null with enough evidence to do so, claiming that there is a significant difference in the means and the samples came from different distributions.

High GDP versus Low GDP

* Group 3’s **HYPOTHESIS**

These samples came from different distributions - THERE IS a SIGNIFICANT difference in means.

* **NULL HYPOTHESIS**

These samples came from the SAME distribution - THERE IS NOT a difference in means.

So the average number of medals for the countries with the higher GDP is 125.8 and the countries with the lower GDP is 24.7 with a significant difference of 15.6.

The variance between the numbers of medals for the countries with the higher GDP versus the countries with the lower GDP isn’t equal and is substantially different also. There is more variance in the country’s medal count with the higher GDP.

With a p-value so close to zero and much less than the alpha level of .05 there is no ambiguity. We FAIL to reject the null with enough evidence to do so, claiming that there is a significant difference in the means and the samples came from different distributions.