**Happy Planet Index – Part II**

In an earlier activity, you investigated the relationship between Life Expectancy and Happiness for 143 countries.

In this activity, you will now test to see if the relationship is significant and if the conditions are met for the regression model.

**Research Question:** Is Life Expectancy a significant predictor of Happiness?

**Discuss the Following Questions**

* Open up the data set: *HappyPlanetIndex-Part-II.csv*.
* Use the statistical software of your choice (e.g., R, SAS, StatCrunch) to produce a least squares regression model to predict *Happiness* from *Life Expectancy*.

1. What is the null and alternative hypothesis for testing the slope coefficient?
2. What are the test statistic and the *p*-value for the test of the slope?
3. Based on the *p*-value reported in question 2, what is your conclusion of the test in the context of the problem?

Two of the conditions that must be met in order to use the least squares regression model is that the observations must be independent and the residuals must be normally distributed.

1. What are the three other conditions for the least squares regression model?
2. In order to check the normality of the residuals condition, create a Residuals vs Fitted Values Plot and a Histogram of Residuals graph. Use the plots to assess the conditions for doing inference on a regression line to predict *Happiness* from *Life Expectancy*.
3. What are your conclusions for each of the conditions assessed? Does each of the conditions seem reasonably met?