Reflection

In statistics, it is important to recognize that there are different types of data: Quantitative (discrete and continuous), Categorical and ordinal. We can also define data as pieces of information that you collect through a study. For example: If you ask each of your friend how many candies to they have, the might give you this data set: 2,4,0,5,9. But, not all data are numbers, let’s say that instead of asking them how many candies to they have, we can ask them their gender, you will get the following data: male, female, female, male, male, female. Both types of data are used to measure information, in order to made an inference about it.

Most of the data falls into two groups: Categorical and Quantitative:

Categorical data is also called qualitative variables. It can be put into a countable number of categories or different groups. It can also represent characteristics such as a person’s gender, marital status, hometown, or the types of movies they like. Also, it may or may not have some logical order. For example: payment method, skittle colors, etc. For this type of data pie charts and bar graphs are the best types of graphs to use because they divide information in categories. This type of data also has a subdivision:

*Ordinal* data mixes numerical and categorical data. The data falls into categories, but the number placed on the categories have meaning. For example: rating a hotel on a scale from 0 (lowest) to 5 (highest), it starts given an ordinal data value. Ordinal data are usually treated as categorical, where the groups are arranged when graphs and charts are made. However, unlike categorical data, the information do have mathematical value. For example, if you survey 600 people and ask them to rate a bar on a scale from 0 to 4, taking the average of the 600 responses will have meaning. This would not be the case with categorical data.

Quantitative data have meaning and measurement. For example: weight of a cereal box, blood pressure, IQ, how many pages the newspaper has, etc. It can also be called Numerical Data. For this type of data, histograms, steam and leaf, line graphs, dot plots etc. are useful types of graphs because they organize information in their numerical values. It also has a subdivision of two types: Discrete and continuous.

* + *Discrete data* represent items that can be counted. It takes possible values that can be listed out. For example, the number of heads in 160 coin flips takes on values from 0 through 160, but the number of flips needed to get 160 heads takes on values from 160 (the fastest scenario) on up to infinity (if you never get to that 160th heads).
  + *Continuous data*represent measurements. These values cannot be counted and can only be described using intervals on the real number line. For example, the exact amount of gas purchased for cars. With 20-gallon tanks would be continuous data from 0 gallons to 20 gallons, represented by the interval [0, 20].