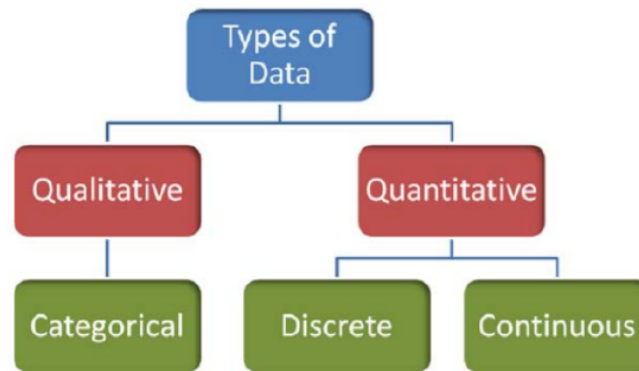


1.3.2: Types of Data

In Statistics, two important concepts are the **population** and the **sample**. If we are collecting data, the population refers to all data for the phenomena that is being studied, while the sample refers to a subset of that data. In statistics, we are almost always analyzing sample data. These concepts will be explored in greater detail in [Chapter 3](#). Until then, we will work with only sample data.

Sample data is a collection of information taken from a population for the purpose of analysis.



Quantitative data are measurements and numeric quantities that can be determined from the data. When describing quantitative data, we can look at the center, spread, shape and unusual features.

Qualitative data are non-numeric values that describe the data. Note that all quantitative data is numeric but some numbers without quantity (such as Zip Code or Social Security Number) are qualitative. When describing categorical data, we are limited to observing counts in each group and comparing the differences in percentages.

Categorical data are non-numeric values. Some examples of categorical data include eye color, gender, model of computer, and city.

Discrete data are quantitative natural numbers (0, 1, 2, 3, ...). Some examples of discrete data include number of siblings, friends on Facebook, bedrooms in a house. Discrete data are values that are counted, or answers to the question "How many?"

Continuous data are quantitative based on the real numbers. Some examples of continuous data include time to complete an exam, height, and weight. Continuous data are values that are measured, or answers to the question "How much?"

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