

Levels of Measurement

- **Nominal:** The lowest level of measurement. An example is colors: red, blue, and green. We can assign numbers to represent these colors, and it doesn't matter which numbers are assignment to which color.
 - Names: Data is represented by names (labels)-Yes
 - Order: Order of the labels matters-No
 - Distance: Distance between labels is meaningful-No
 - Zero-Zero is meaningful, beyond being a number. It is truly the absence of something.-No
 - Use the mode.
- **Dummy or Dichotomous:** A special type of nominal variable with only two possible attributes (labels)-ex. Gender is represented by the attributes male and female. When coded into 0 and 1, it doesn't matter whether 0 is male or female or 1 is male or female.
 - Use the mode.
- **Ordinal:** With ordinal variables, the order in which numbers are assigned to the attributes matters. The attributes can be ordered based on the degree to which the attribute is present, but the distance between the attributes is not exact, unequal, or unknown. Level of education would be an example (less than high school, high school diploma, some college, college degree).
 - Names: Data is represented by names (labels)-Yes
 - Order: Order of the labels matters-Yes
 - Distance: Distance between labels is meaningful-No
 - Zero-Zero is meaningful, beyond being a number. It is truly the absence of something.-No
 - Use the median and the mode.
- **Interval:** Not only does the order of the attributes matter (and the numbers ascribed to the attributes), but the distance also matters. For example, a feeling thermometer typically ranges from 0-100. The distance between 40 and 50 is the same as the distance between 65 and 75. However, 80 on this scale is not twice as much as 40 on this scale. However, notice that the scale's starting point (0) is trivial. We could just as easily relocate this scale such that it goes from -50 to 50. Also, note that 0 on this scale does not actually mean the absence of something.
 - Names: Data is represented by names (labels)-Yes
 - Order: Order of the labels matters-Yes
 - Distance: Distance between labels is meaningful-Yes
 - Zero-Zero is meaningful, beyond being a number. It is truly the absence of something.-No
 - Mean, median, and mode can be used.
 - Include Likert scales in this category
 - Likert scales

- Ratio: The highest level of measurement. The order, distance, and zero are meaningful. An example is the amount of money you have. If you have 0 dollars, you actually have an absence of money. Likewise, \$1 is more than \$0 (order matters) and \$4 is twice as much as \$2.
 - Names: Data is represented by names (labels)-Yes
 - Order: Order of the labels matters-Yes
 - Distance: Distance between labels is meaningful-Yes
 - Zero-Zero is meaningful, beyond being a number. It is truly the absence of something.-Yes
 - Mean, median, and mode can be used.