

Journal

- Discuss the importance of the following when conducting Psychological Research: 1) Planning for Confounding Variables 2) Considering possible Ethical issues 3) Sample Size & Type.

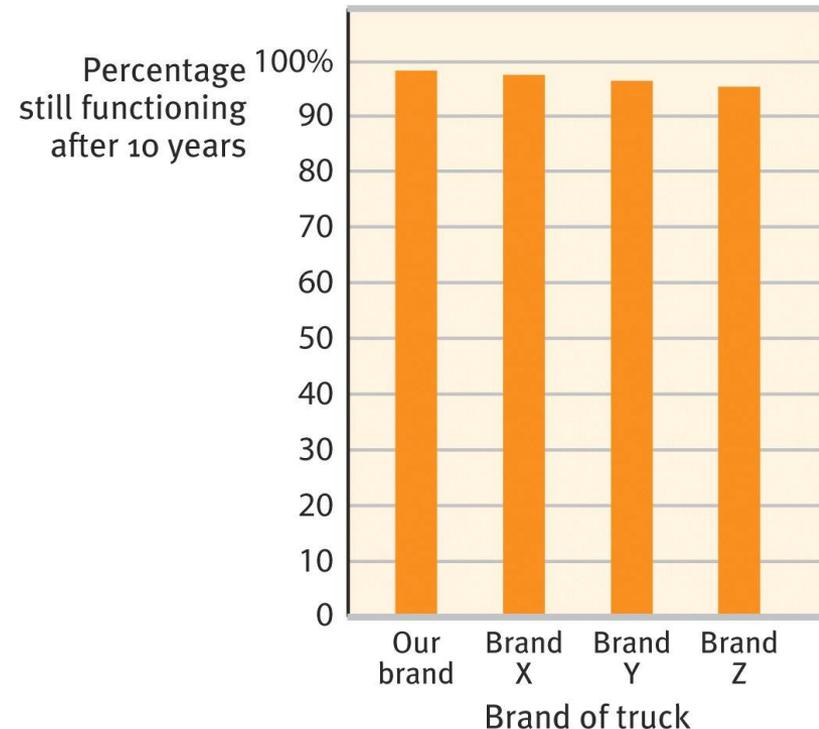
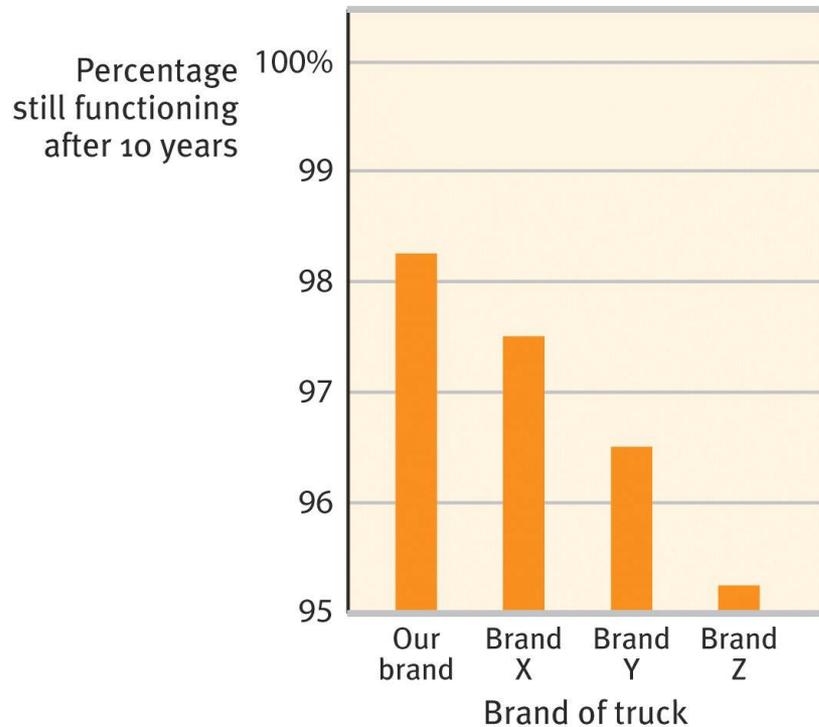
Descriptive Statistics



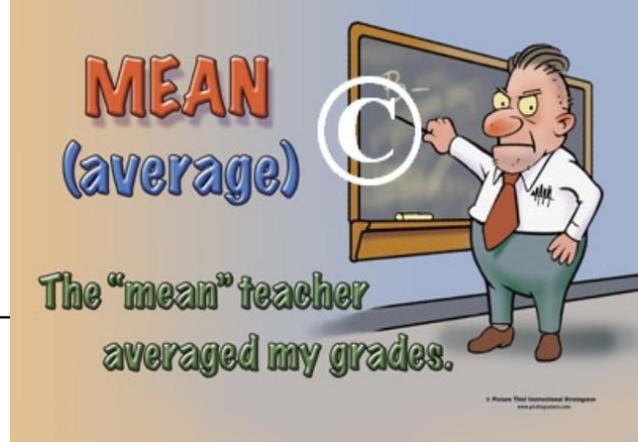
- Describes sets of data.
- You might create a frequency distribution.
- Frequency polygons or histograms.

Describing Data

A meaningful description of data is important in research. Misrepresentation may lead to incorrect conclusions.



Measures of Central Tendency



Mean: The arithmetic average of scores in a distribution obtained by adding the scores and then dividing by the number of scores that were added together.

DID YOU KNOW?
The average person has one ovary and one testicle.

Mode: The most frequently occurring score in a distribution.

Median: The middle score in a rank-ordered distribution.



Central Tendency

Watch out for extreme scores or outliers.

Let's look at the salaries of the employees at Dunder Mifflin Paper in Scranton:

\$25,000 - Pam
\$25,000 - Kevin
\$25,000 - Angela
\$100,000 - Andy
\$100,000 - Dwight
\$200,000 - Jim
\$300,000 - Michael

The median salary looks good at \$100,000.

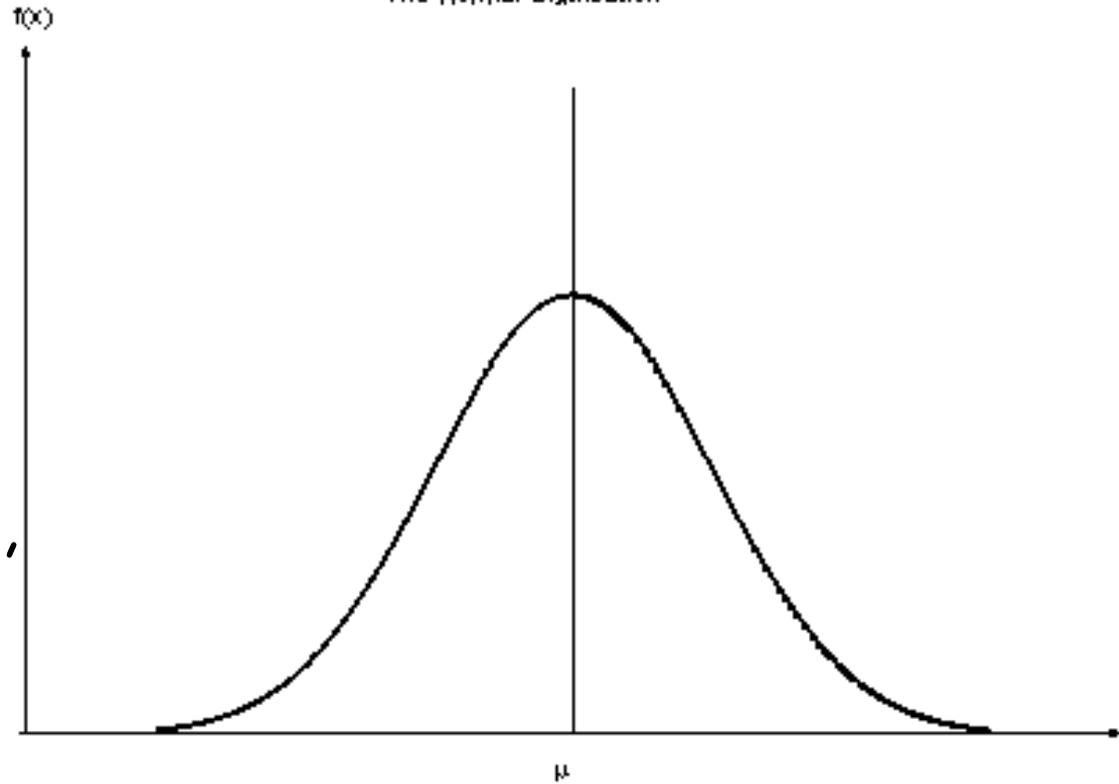
The mean salary also looks good at about \$110,000.

But the mode salary is only \$25,000. Maybe not the best place to work. Then again living in Scranton is kind of cheap.



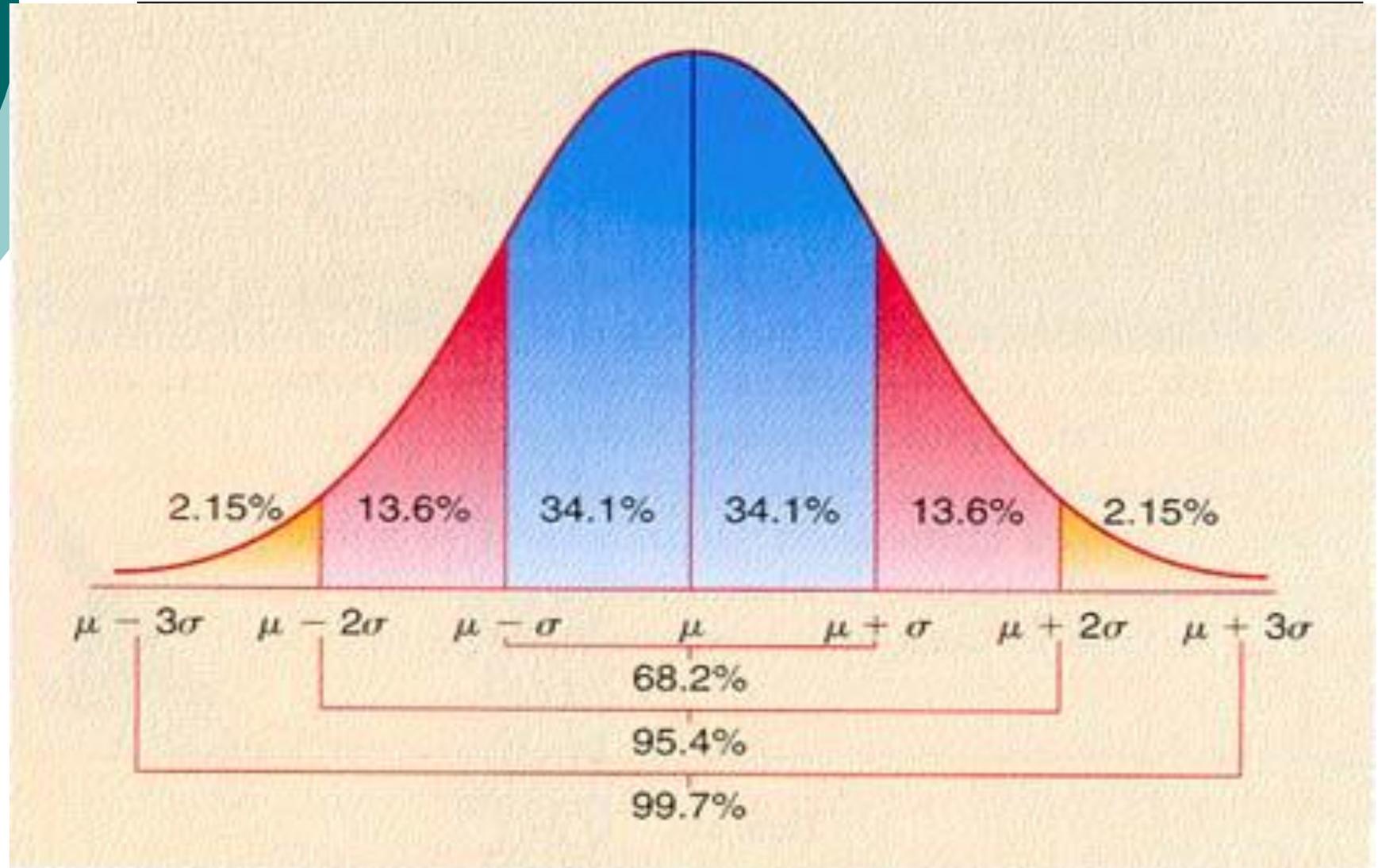
Normal Distribution

The Normal Distribution



- In a normal distribution, the mean, median and mode are all the same.

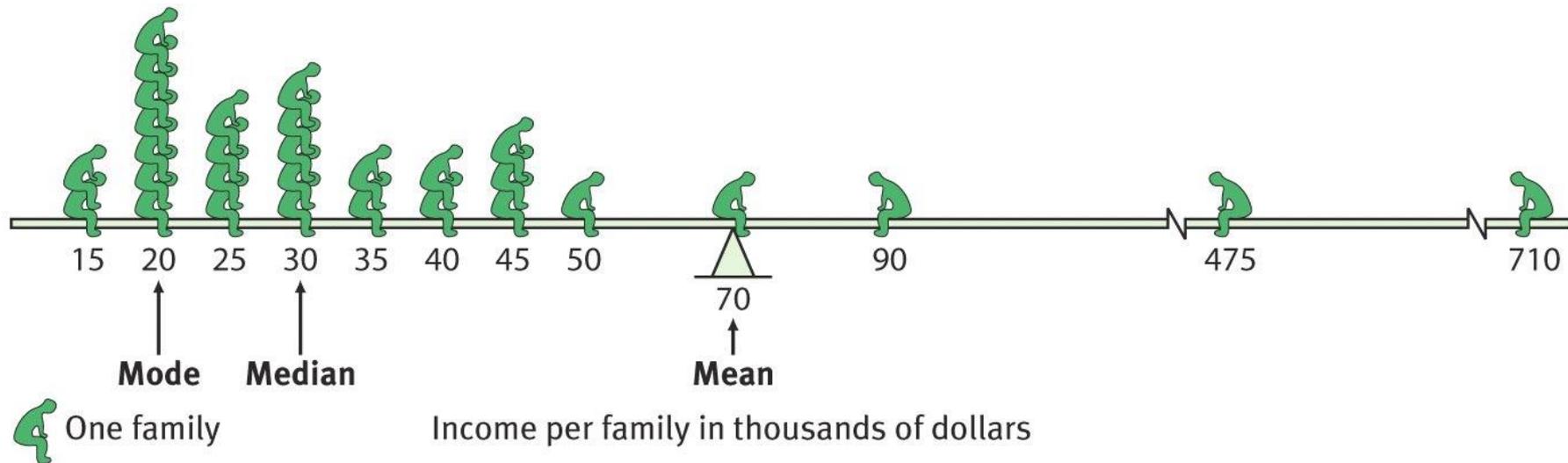
Normal Distribution



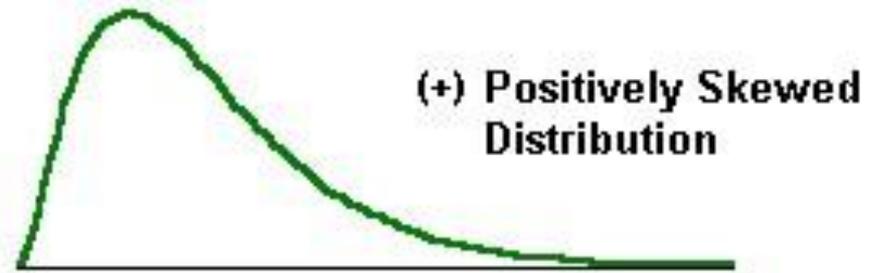
Measures of Central Tendency

What if our mode, mean, and median aren't all the same? Then we have a

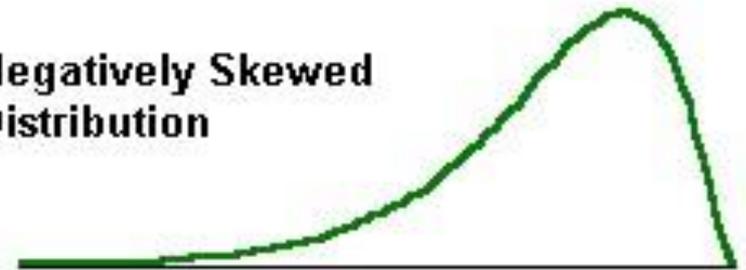
Skewed Distribution



Distributions



(-) Negatively Skewed Distribution



- Outliers skew distributions.
- If group has one high score, the curve has a positive skew (contains more low scores)
- If a group has a low outlier, the curve has a negative skew (contains more high scores)

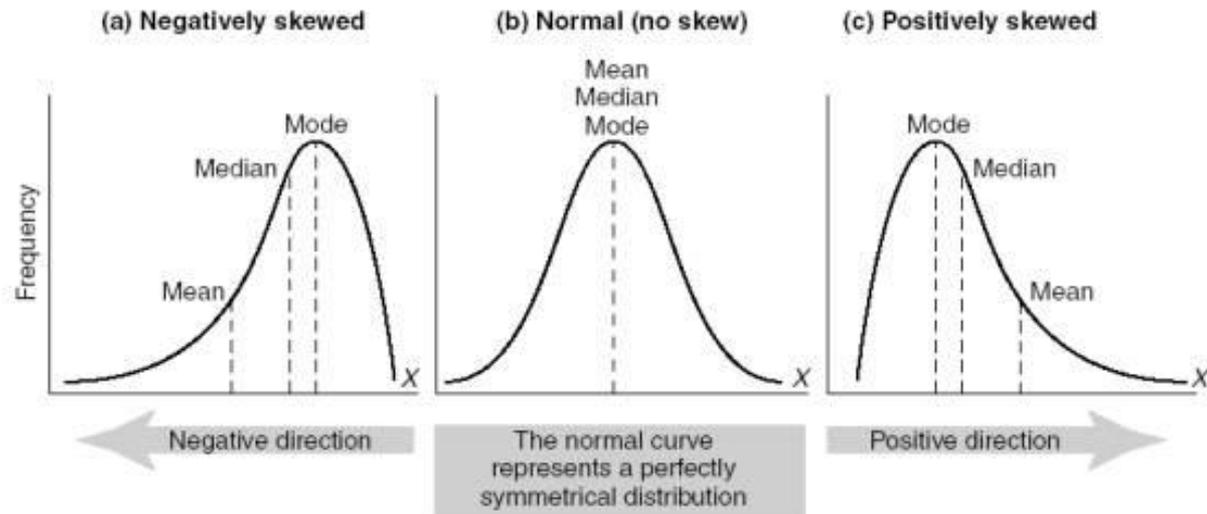


FIGURE 15.6 Examples of normal and skewed distributions

Measures of Variation

Range: The difference between the highest and lowest scores in a distribution.

- *Sometimes can be misleading, though. Look at these scoring charts:*

20 pts. 47 pts.

48 pts. 49 pts.

49 pts. 49 pts.

50 pts. 50 pts.

50 pts. 50 pts.

20 pts. 21 pts.

21 pts. 22 pts.

23 pts. 24 pts.

24 pts. 25 pts.

26 pts. 50 pts.

Would you agree they have the same range?

But the data sets are actually quite different.



LeBron James



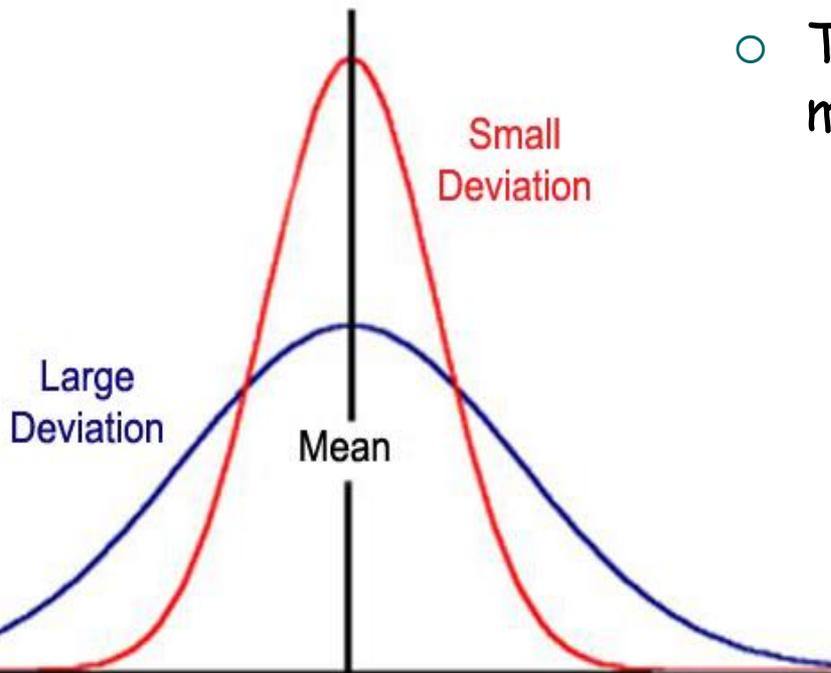
Derrick Rose

Measures of Variation

A better measure of variation is to calculate standard deviation...

Standard Deviation: A computed measure of how much scores vary around the mean.

- The higher the variance or SD, the more spread out the distribution is.



$$S = \sqrt{\frac{\sum (X - \bar{X})^2}{N}}$$

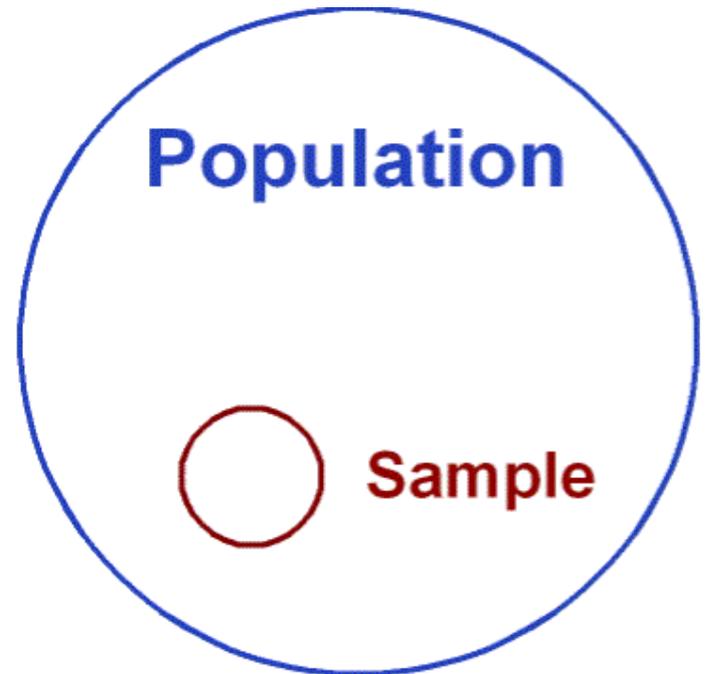
where S = the standard deviation of a sample,
 Σ means "sum of,"
 X = each value in the data set,
 \bar{X} = mean of all values in the data set,
 N = number of values in the data set.

Inferential Statistics

The purpose is to discover whether the finding can be applied to the larger population from which the sample was collected.

Therefore, we need to conduct tests to see if our data is actually meaningful or could our results have been due to chance alone?

We won't compute that formula in this class...but if you take stats you will!! 😊



Do the results of the sample apply to the rest of the population?