When conducting experiments in statistics, populations or samples are studied. This document outlines the similarities and differences between the two.

Populations

What is a population?

A population is an entire group of individuals or objects of interest that are being studied.

What symbols do we use?

Population Mean: μ Population Standard Deviation: σ

Population Size: N

Examples:

1. The height of all Durham College students
2. The number of zebras found in all of Africa
3. The average cost of a burger and fries in Ontario

What describes a population?

A parameter is a measurable characteristic of a population, it is a number that summarizes data. For example, the <u>average height</u> of all football players in Canada is a parameter.

Samples

What is a sample?

A sample is part or subset of the individuals or objects that are selected from a population.

What symbols do we use?

Sample Mean: $\bar{x}$ Sample Standard Deviation: s

Sample Size: n

Examples:

1. The height of Durham college students studying nursing
2. The number of zebras found in Kenya
3. The average cost of a burger and fries in Oshawa

What describes a sample?

A statistic is a measurable characteristic of a sample, it is a number that summarizes the data. For example, the <u>average height</u> of a portion of all football players in Canada is a parameter.

> **Populations are often difficult to study because of the cost, the difficulty surveying each individual or item, it is time consuming, and some tests may be destructive to the individual or item. Sometimes samples are used since the results may be adequate and easier to obtain.**