

### Population

Contains all items of interest that one seeks to study.

A **parameter** summarizes the value for a specific variable.

### Sample

Is a subset of the population.

Is analysed to estimate characteristics of an entire population.

The measurable quality is called a **statistic**.

Reports have a margin of error and confidence interval.

### Population vs Sample



### Types of variables

#### Quantitative

Data represent a counted or measured quantity

Discrete

Data that arise from a counting process.

Continuous

Data that arise from a measuring process

#### Qualitative

Data represent categories

### Levels of measurement

#### THE FOUR LEVELS OF MEASUREMENT:

	Nominal	Ordinal	Interval	Ratio
Categorizes and labels variables	✓	✓	✓	✓
Ranks categories in order		✓	✓	✓
Has known, equal intervals			✓	✓
Has a true or meaningful zero				✓

### Organizing and visualizing variables

#### Tables and charts for categorical data

Summary table

Contingency table

Bar chart

Pie chart

Doughnut chart

Pareto chart

#### Tables and charts for numerical data

Stem-and-leaf display

Histogram

Percentage polygon

Cumulative percentage polygon (Ogive)



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Not published yet.  
Last updated 26th October, 2022.  
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