

# Chapter 1

## An Introduction to Business Statistics

### 1 Vocabularies

**Data:** Facts and figures

**Data set:** The data that are collected from an individual element

**Element:** Units of population

**Variable:** Any characteristic of a population unit

**Measurement:** The process of assigning a value of a variable to each of the units

**Population:** A set of existing units

If we examine all of the population measurements, we say that we are conducting a **census** of the population

**Sample:** A subset of the units of a population

**Descriptive Statistics:** The science of describing the important aspects of a set of measurements

**Statistical Inference:** The science of using a sample of measurements to make generalizations about the important aspects of a population of measurements

**Frame:** A list of all of the units in a population. This is needed in order to select a random sample

**Process:** A sequence of operations that takes inputs and turns them into outputs

### 2 Comparable Vocabularies

- **Cross-sectional data:** data collected at the same or approximately the same point in time

**Time series data:** data collected over different time periods

- **Data sources:**

**Existing sources:** data already gathered by public or private sources

**Experimental and observational studies:** data we collect ourselves for a specific purpose

- **Response variable (Dependent variable) :** the variable of interest
- **Factors (Independent variables):** define other variables that may be related to the variable of interest
- If we manipulate the independent variables, we have **an experimental study**  
If unable to control independent variables, the study is **observational**

- **Qualitative Variable:** fall into several categories

**Quantitative Variable:** the values of a variable that are numbers that represent quantities

### Why statisticians don't make it as waiters...

