STAT 101 Introduction to statistics

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Outline

Learning objectives

By the end of this lesson learners should be able to:

1. *State at least one definition of statistics.*
2. *Differentiate between descriptive and inferential statistics.*
3. *Classify a variable as quantitative or qualitative, continuous or discrete, ordinal or nominal.*

Outline

What is statistics?

The word statistics can have two meanings:

1. In plural sense — numerical facts or observation collected with a definite purpose e.g. income of persons in Berlin.
2. In singular sense, statistics means the science of collection, organization, presentation, analysis and interpretation of numerical data to assist in making more effective decisions.

Outline

Branches of statistics

Statistics as a science can be broadly classified into two broad branches:

1. Descriptive Statistics — describe — summary values and presentations.
2. Inferential Statistics — generalize — generalization from sample to population.

Outline

Data types and variables

Data — collection of measurements or observations. We use datum for a single observation.

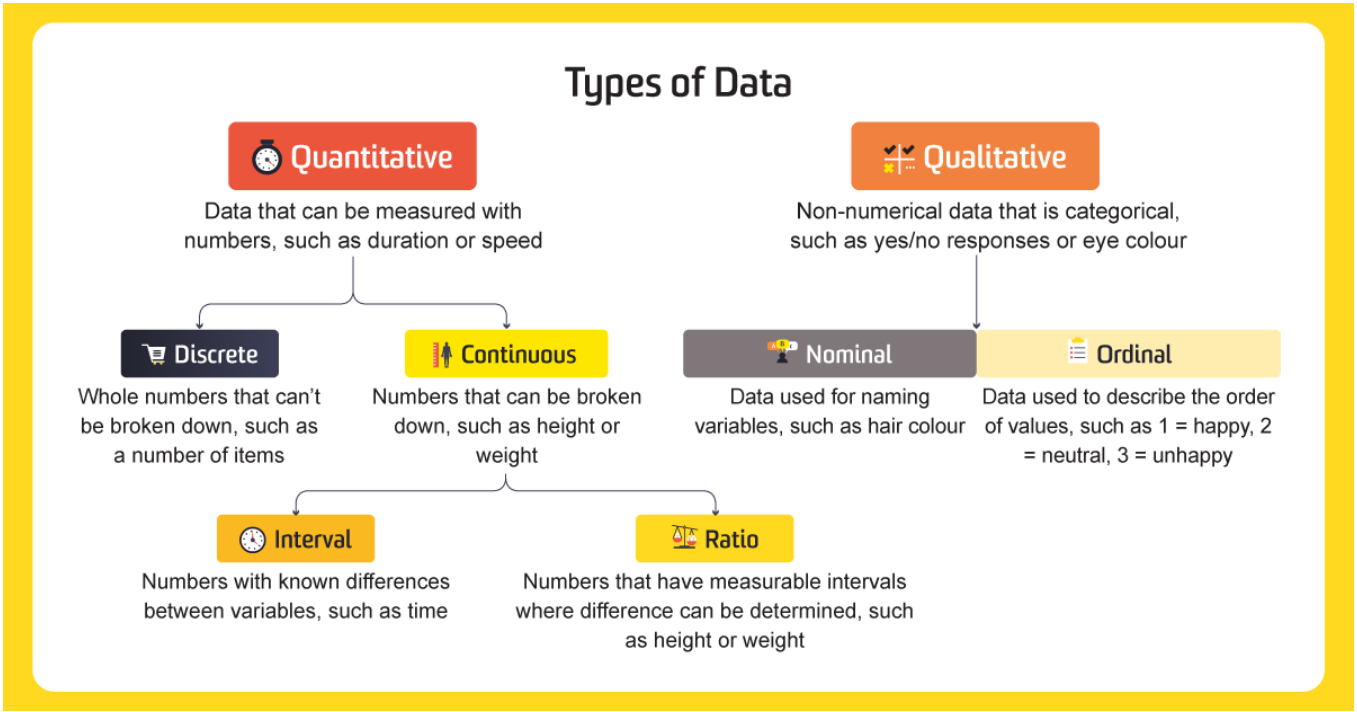

Figure 1: Types of data

Outline

Test your understanding

1. For each of the variables listed below identify the level of measurement.
    1. Date of diagnosis — interval
    2. Town of residence — nominal
    3. Age (years) — ratio
    4. Sex — nominal
2. Distinguish between descriptive and inferential statistics.
    1. descriptive — describe
    2. inferential — generalize
3. You are interested in how stress affects heart rate in humans. What would be your dependent variable.
    1. DV — heart rate.
    2. IV — stress levels.