Statistics

Contents

Chapter 1

1.1 – Key Words and Definitions

1.1 Key words

Data	Any observations that hvae been collected.
Statistics	Collect, analyze, summarize, interpret and draw conclustions from there.
Population	The complete set of elements being studied.
Samples	Some subset of the population.
Census	Collection from every member of a population.

Table 1.1: Statistics Vocabulary

→ If you take a sample, it must be collected **randomly**.

1.2 Types pf Data

P-P	**Parameter**	A characteristic of a population.
S-S	**Statistic**	A characteristic of a sample.

Table 1.2: Statistics Vocabulary

1.3 Two Types of Data

Qualitative (Categorical)	Data that is non-numerical e.g. color, gender, race, zip-codes... Mathematical operations are **meaningless**.
Quantitative	Numerical e.g. height/weight, wages, temperature, time. Mathematical operations are **meaningful**.

Table 1.3: table

1.3.1 Two types of Quantitative Data

Discrete data	Countabe or finite Numbers of eggs, dice...
Continious Data:	Infinite number of possible values (not countable) Usually a **measurement**, e.g. temperature.

Table 1.4: Quantitative data

1.4 4 Levels of Measurement

Nominal	Categories **not** ordered. e.g. religion
Ordinal	Can be ordered, differences are meaningless Rank, color (spectrum)...
Interval	Ordered, differences are meaningful, no ”Natural Zero” e.g. temperature

Table 1.5: Measurements