

Year 1 Applied Chapter 1 - Data Collection

Key Definitions

Population – all data

Sample – a selection of the data

Sampling Unit – a piece of data

Sampling Frame – a list of data

Surveys

Census – survey of the entire population

Advantage	Disadvantage
- Accurate results	- Time consuming - Expensive

Sampling – selection of the population

SAMPLING – selection of the population

Advantage	Disadvantage
- Quicker - cheaper	- may not be accurate - sub group may not be represented

Random Sampling

Every sampling unit has an equal chance of being chosen.

Simple Sampling

Names out of a hat.

Random number generator.

Advantages	Disadvantages
- Easy + cheap - Bias Free - Data has equal chance of being selected	- Time consuming - Sample frame needed

Systemic Sampling

Sampling unit chosen at equal intervals. (starting position chosen at random).

Advantages	Disadvantages
- Suitable for large sample - simple + quick to use	- Introduces bias if sample frame not bias - Sample frame needed

Stratified Sampling

Sample groups (strata) in proportion to the population groups (strata).

Advantages	Disadvantages
- Simple + quick to use - Each Strata gets represented	- Population must be in distinct strata - Can introduce bias

Non-Random Sampling

You decide which sampling units you choose.

Quota Sampling

Collect sampling units until you have your quota for each strata.

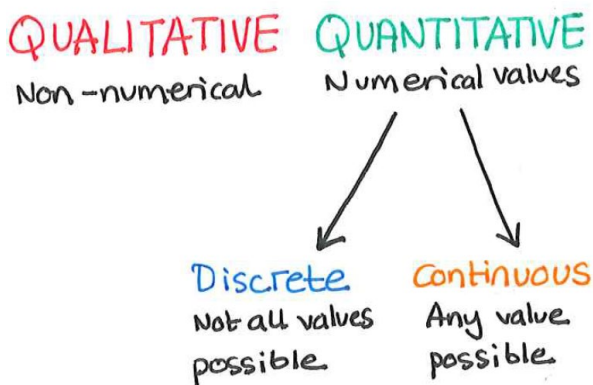
Advantages	Disadvantages
- Quick + Easy - Inexpensive	- Bias can be introduced - Non responses are not recorded

Opportunity Sampling

Collect sampling units until you have your quota for each strata.

Advantages	Disadvantages
- Easy to carry out - Cheap	- Sample not likely to represent the population

Types of Data

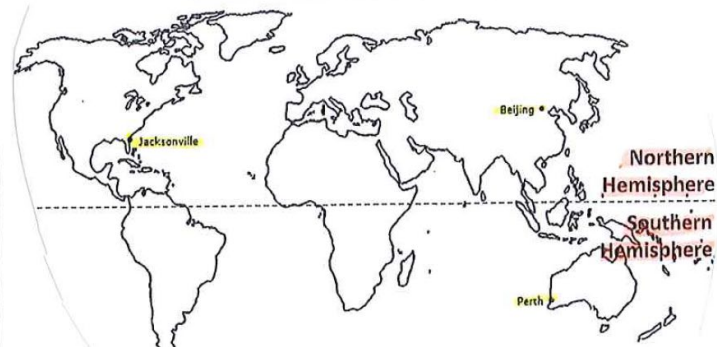


Large Data Set

Weather Stations

May - Oct 1987

May - Oct 2015



Measurements made

Total Rainfall - lots of zeros + tr

Wind Speed

Humidity

Visibility

mean temp

Total sunshine

Cloud cover

Pressure

Max gust speed

Wind Speed - Beaufort Scale qualitative

n/a no data available

tr trace (not zero but very small)