

Sampling

- A **population** is all individuals of interest to a researcher
 - For identical twins research the population would be all individuals with an identical twin.
- A **sample** is a subset of the population that is selected to participate in the research.
 - 200 identical twins randomly selected from the population participated in the research.

32

Confidence Intervals

- Data collected from the sample are used to make inferences about the variables of interest in the population.
- Inferences can contain error (sampling error) which is estimated and used to provide a **confidence interval**
 - A confidence interval is a range of values drawn from the sample that the researcher is 95% sure are true for the population.
- A larger sample size (up to a point) provides a more accurate prediction of the true population value.

33

Unbiased Sampling

- To insure an accurate sample, researchers must:
 - Randomly sample from a population that contains all members of that population
 - Collect data from ALL participants in the selected sample.
- Completely unbiased samples are rare and truly random samples are often difficult to obtain.
 - Researchers tolerate nonrandom samples because they are not trying to estimate population values but are investigating general relationships between variables within a population.

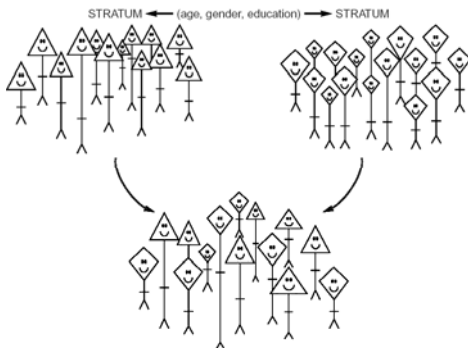
34

Sampling Techniques

- Probability Sampling
 - Each member of the population has a specifiable probability of being selected
 - Simple random sampling: each person has an equal probability of being selected.
 - Stratified random sampling: the total population is divided into relevant "strata" (or subdivisions) and then members of each strata are randomly selected
 - Cluster sampling: the population is organized in clusters and then a subset of clusters is randomly selected, then all individuals within the cluster are sampled.

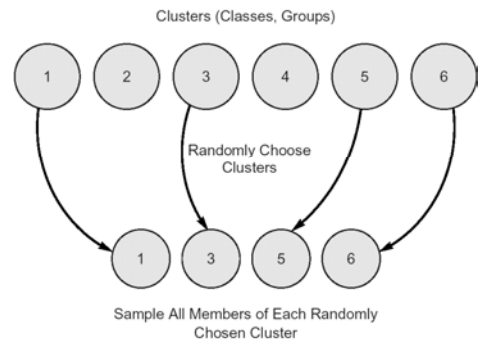
35

STRATIFIED RANDOM SAMPLING



36

CLUSTER SAMPLING



37

Sampling Techniques

- Nonprobability Sampling
 - No systematic method is used to insure the sample is representative of the population
 - Haphazard sampling- select people wherever you can find them
 - Purposive sampling- select people who meet some predetermined criteria.
 - Quota sampling-pick representative percentages of people to represent the numerical composition of the population.
 - These are different from stratified and cluster sampling because there is no random selection.

39

Sampling Methods Terms

- Sampling Frame
 - The actual population of individuals or clusters from which the random sample is drawn.
 - It is important to consider how well the sampling frame matches the population of interest.
- Response Rate
 - The percentage of participants in the sample who completed the survey.
 - The lower the response rate the more likely the sample results will be biased.

45