Finding Participants

Sampling

- Definition
  - The process of selecting a number of individuals representative of the larger group
- Purpose
  - To gain information about the group

Why Sample?

It is rarely possible to observe all the actions and actors relevant to the phenomenon under study

Definition of Terms

- Element—unit about which data is collected and is the basis of analysis
- Population—theoretically specified aggregation of study elements
- Study population—the aggregation of elements from which the study is actually selected

Definition of Terms

- Sampling unit—element or set of elements considered for selection in some stage of sampling (in single-stage sample, sampling units are the same as elements).
- Sampling frame—actual list of sampling units from which the sample (or some stage) is selected

Definition of Terms

- Observation unit (unit of data collection)—an element or aggregation of elements from which information is collected
- Variable—set of mutually exclusive attributes (gender, age, etc)
- Parameter—summary description of a given variable in a population

Definition of Terms

- Statistic—summary description of a given variable in a sample
- Sampling error—estimation of the degree of error to be expected for a given sample design
- Confidence levels and intervals—the way the accuracy of sample statistics are expressed. There is a 95% confidence level that X is true within plus or minus 5%

Sampling Techniques

- Probability
  - Simple random
  - Systematic
  - Stratified
  - Multistage (cluster)
  - Proportionate
- Non-probability
  - Convenience
  - Judgmental
  - Snowball
  - quota

Sampling Danger

Conscious and unconscious bias

Convenience

- Based on the population that is there
- Researcher does little to ensure that sample is representative of population
- Teacher as researcher (could be example)
- Not representative of population
- Personal attitudes intrude
- Lack of criteria for total population
- Over and under representation can occur

Judgmental

- Researcher chooses sample based on knowledge of the group, element, or nature of study
- Can be used to sample deviant cases

Snowball

Most commonly used in accidental sampling in qualitative studies

- Collecting data on hard-to-locate populations
- Involves targeting those researchers can locate and asking these participants to identify others

Quota

- Addresses issue of representation
- Begins with table or matrix describing the characteristics of the population
- Establish proportions in each category
- Collect data from people in a given cell
- Assign a weight appropriate to portion of total population

Quota Matrix

gender	Age level	Education level	Ethnicity
male	20-30	High school	Euro-American
female	30-40	college	Asian-American

Problems with Quota

- Quota frame must be accurate
- Biases may exist in the selection of sample elements

Probability Sampling

Basic Principle:

A sample will be representative of the population from which it is selected if all members of the population have an equal chance of being selected in the sample

Defining the Population

Who to Study?

- Population may be any size and in any geographical area(s)
- The entire population is rarely available
- Population to be generalized is the target population
- Population from which selection is taken is the accessible or available population

Describing the Sample Characteristics

- Include the following:
  - Number of participants in sample
  - Demographics of sample
  - Anomalies in sample

Random Sampling

- All individuals in the defined population have an equal and independent chance of being selected for the sample
- Best way to obtain a representative sample
- Discrepancies in sample are by chance
- Equal chance of too many or too few

Steps in Random Sampling

- Turn to pages 124-5 in text
- Study Table A.1 page 606 in text

Stratified Sampling

- A technique to ensure that subgroups in the population are represented in proportion to the population

Steps in Stratified Sampling

- Turn to pages 127-9 in text

Multistage (Cluster)Sampling

- A random selection of groups not individuals
- Most useful when there is a large population or when it is spread geographically
- Sampling errors can occur at each stage of sampling

Steps to Multistage (Cluster)

- Turn to page 130-1 in text
- Cluster sampling is highly efficient BUT it produces a less accurate sample

Reducing Cluster Sampling Error

- **Sampling error is reduced by**
  - AN INCREASE IN SAMPLE SIZE
  - INCREASED HOMOGENCITY OF ELEMENTS
- Maximize number of clusters
- Minimize number of elements within each cluster

Systematic Sampling

- Selecting individuals from a list using every **K**$_{th}$ name
  - Not used often
  - List should be randomly ordered

- Steps in systematic sampling
  - Turn to pages 132-2 in text

Proportionate Sampling

- More sophisticated cluster sampling
- Each cluster is given a chance of selection proportionate to its size
- Allows different cluster sizes the same chance of being selected

Sample Size

- Too small? Results are not generalizable
- Too many? Cannot manage study or data

Guidelines for Sample Size

- Dependent on type of study
  - Correlational, causal-comparative, & experimental---minimum of 30 participants
  - Descriptive---10-20% of total population
- Turn to Table 4.2 page 135
- Turn to General Guidelines page 134

Sample Error and Bias

- Sampling error is beyond the control of the researcher
- Sampling bias is controlled by the researcher—should be avoided

Qualitative Sampling

- Almost always purposive
- The experience, judgment, and insight of researcher is used to select the sample

Qualitative Sampling

- Participants chosen based on their
  - Thoughtfulness
  - Information
  - Perceptiveness
  - Experiences
  - Expertise

Qualitative Sampling Techniques

- Intensity
- Homogeneous
- Criterion
- Snowballing
- Random purposive

Turn to page 139 in text for definitions