

POLS 5377 Scope & Method of Political Science

Week 3 Conducting Research

Sampling Methods

Babbie E. (2016) *The Practice of Social Science*, Chapter 7 (pp. 182-220)

Key Question:

- * What is sampling?
- * What are the key differences between probability and nonprobability sampling?
- * What are the available nonprobability and probability sampling designs?
- * What are the potential weaknesses of each sampling design?

Outline

- * Sampling
- * Nonprobability Sampling Methods
- * Probability Sampling Methods

Sampling

- * Sampling: a process of selecting observations
- * An appropriate sampling process allows a researcher to select a few people for study things that apply to hundreds of million of people not studied.

There are two types of sampling method:

- * Probability Sampling
 - * Each member of the population has a known probability of being selected in the sample. The distribution of samples is more likely to represent the distribution of the population.
- * Nonprobability Sampling
 - * Any technique in which samples are selected in some way not suggested by probability theory

Nonprobability Sampling

- * Nonprobability Sampling: techniques in which samples are selected in some way not suggested by probability theory
 - * Reliance on available subjects
 - * Purposive or judgmental sampling
 - * Snowball sampling
 - * Quota sampling

Nonprobability Sampling

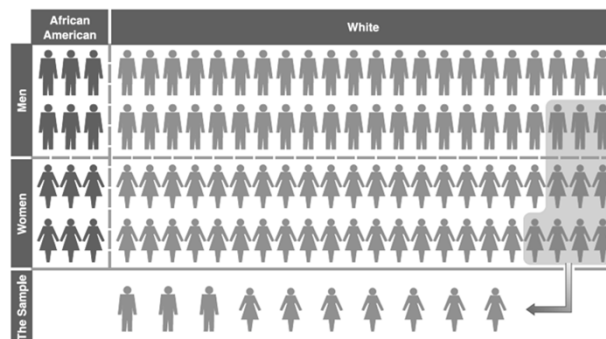
- * Reliance on Available Subjects
 - * Convenience sampling
 - * Does not allow for control over representativeness
 - * Only justified if less risky methods are unavailable
 - * Researchers must be very cautious about generalizing when this method is used
- * Purposive or judgmental Sampling
 - * the units to be observed are selected on the basis of the researcher's judgment about which ones will be the most useful or representative
 - * Select small subsets of a population
 - * Two-group comparison
 - * Deviant cases
 - * Key person

Nonprobability Sampling

- * Snowball Sampling
 - * A nonprobability sampling method whereby each person interviewed may be asked to suggest additional people for interviewing
 - * Often used in field research, special populations
 - * To find out the actors in a network
- * Quota Sampling
 - * Select a sample on the basis of pre-specified characteristics, so that the total sample will have the same distribution of characteristics assumed to exist in the population being studied
 - * Quota frame must be accurate
 - * Selection of sample elements may be biased
 - * Example: interviewing managers and non-manager in an organization for a study of organizational culture

Nonprobability Sampling

- * Potential problem of nonprobability sampling: BIAS
- * Bias: those selected are not typical nor representative of the larger population



Logic of Probability Sampling

- * Representativeness and Probability of Selection
 - * Representativeness – the quality of a sample of having the same distribution of characteristics as the population from which it was selected.
 - * EPSEM (Equal Probability of Selection Method)
 - * 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.
- * Advantage of Probability Sampling
 - * More representative than other types of samples because biases are avoided
 - * Probability theory permits researchers to estimate the accuracy or representativeness of the sample

Types of Probability Sampling Design

- * Simple Random Sampling
- * Systematic Sampling
- * Stratified Sampling
- * Multistage Cluster Sampling

Types of Probability Sampling Design

- * Simple Random Sampling
 - * the units composing a population are assigned numbers. A set of random numbers is generated and the units having those numbers are included in the sample.
 - * Not necessarily the most accurate sampling method, when the population is not normally distributed or when there are significant differences among population

Types of Probability Sampling Design

- * Systematic Sampling
 - * every kth unit in a list is selected for inclusion in the sample
 - * Sampling Interval – the standard distance between elements selected from a population in the sample

$$\text{Sampling Interval} = \frac{\text{population size}}{\text{sample size}}$$

- * Could be biased, if the list of elements is arranged in a cyclical pattern that coincides with the sampling interval.
- * For example: military list or apartment numbers

Types of Probability Sampling Design

- * Stratified Sampling
 - * Stratification is a modification to simple random and systematic sample methods
 - * Stratification – the grouping of units composing a population into homogenous groups (strata) before sampling.
 - * Slightly more accurate than simple random sampling.

Types of Probability Sampling Design

- * Multistage cluster sampling
 - * Cluster Sampling – a multistage sampling in which natural groups are sampled initially with the members of each selected group being sub-sampled afterward.
 - * Used when it is not practical or possible to create a list of all elements that compose the target population.
 - * Highly efficient, but less accurate.

Sampling Methods in Review

- * Probability sampling
 - * Avoids researchers' conscious or subconscious biases in element selection.
 - * Probability sampling permits estimates of sampling error.
- * Nonprobability Sampling
 - * Often biased
 - * Used in qualitative research

The End