Sampling for Beginners

Online course learning objectives

This course introduces the fundamentals of selecting a sample for research involving human participants. It takes a practical approach to sampling and will provide you with a clear understanding of why samples are needed, give an overview of common sampling techniques, and share key information around ethical research and minimizing bias.

This course will help learners to:

- Understand the concept of sampling in research

- Grasp the ethical considerations in participant identification and contact

- Address challenges posed by ill-defined, wary, and hard-to-reach populations

- Define sampling variance and bias, and comprehend their distinctions

- Identify how sampling frames and non-response contribute to bias

- Understand the impact of sample size on sampling error and statistical power

- Assess strategies for drawing valid conclusions from imperfect samples to the broader population

Language: English
Time to complete: 3 hours
Level: Beginner
Instructor: Paul Silvia

Online course full syllabus

MODULE ONE: WHAT IS SAMPLING?

The craft of sampling involves balancing what's ideal (what sampling theory shows is best) with what's realistic (what's legal, ethical, and practically possible given the time and resources available). This module dives straight into the basics of identifying a population and determining whether existing data sets are appropriate for use in your research.

This module will help you to:

- Distinguish between populations, samples, and elements

- Explain the relationship between samples and populations

- Create a focused, specific definition of a population of interest

- Evaluate the usefulness of samples from existing dataset

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MODULE TWO: WHAT ARE COMMON SAMPLING METHODS?

Researchers have developed many ways to select a sample, but the methods divide into two main groups: probability and non-probability sampling. This module begins with a close look at probability sampling methods, before moving on to non-probability sampling methods, with lots of practical examples.

This module will help you to:

- Describe the difference between probability and non-probability sampling

- Explain the role of sampling frames in probability sampling

- Recognize the different kinds of non-probability sampling

- Describe the limitations and virtues of convenience sampling methods

MODULE THREE: WHAT ARE THE PRACTICAL AND ETHICAL CHALLENGES OF SAMPLING?

This module explores the key ethical and practical considerations when recruiting human participants. Some populations—for example, those that are ill-defined, hard to reach, and wary—are particularly challenging to sample, so you'll learn techniques to involve these participants.

This module will help you to:

- Detect ethical issues related to identifying and contacting potential participants

- Describe the distinct challenges posed by populations that are ill-defined, wary, and hard to reach

- Evaluate the virtues and limitations of snowball sampling methods

MODULE FOUR: HOW CAN I REDUCE ERRORS AND BIAS IN SAMPLING?

This module delves into sampling error, a broad category that captures different ways that a sample can stray from the broader population. You'll be introduced to the major causes of sampling error: sampling variance and sampling bias, and learn techniques for preventing and reducing the impact. Considerations around sample size and how this can be balanced with ethical and practical requirements will also be explored. This module will help you to:

- Define sampling variance and sampling bias and describe the differences

- Describe how sampling frames and non-response create bias

- Develop strategies for reducing sampling error and sampling bias

- Explain how the size of a sample influences sampling error and bias

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