

Sampling in Quantitative and Qualitative Research

There are two general types of sampling: **representative** (probability) and **nonrepresentative** (nonprobability).

Representative Sampling

Representative sampling means identifying a **target population**, the group you wish to generalize your findings to, and selecting a subsample that represents that target population. Representative sampling is useful when a researcher wants to generalize the findings to a larger group or when the sample is an estimate of the incidence of something, such as the prevalence of a behavior (Ritchie, Lewis, & Elam, 2003). The whole point of sampling is to make data gathering manageable. It is usually impossible to study an entire target population, so we take a smaller sample of this larger target population.

Two examples of representative sampling are **simple random sampling** and **stratified random sampling**. Representative samples are most appropriate for quantitative studies. But contrary to popular belief, representative sampling is not as widely used as you might expect.

Simple random sampling means that everyone in the target population has an equal chance of being selected for the sample. A random sample is best selected by first assigning everyone in the target population a number, then generating random numbers with a calculator or computer. For example, if I want to generalize the findings of an experiment to all of the 11th-grade IB students at St. Petersburg High School, I would assign each junior a number between 1 and perhaps 130. Then I would program my

calculator or computer to randomly select numbers between 1 and 130 until my sample is selected, perhaps 30 students.

Stratified random sampling means that a target population is divided into subcategories, where each subcategory represents a proportion of the total population. If IB students make up 25% of St. Petersburg High School, then 25% of a stratified sample of St. Petersburg High School must be IB students. This is a very time-consuming process, but the advantage is that the sample really represents the total makeup of the school.

Representative sampling is the only kind of sampling that allows for the statistical generalization of study results outside the sample.

Qualitative studies typically do not use representative samples, and students must accept that the concept “representational” has a different meaning when generalizing from qualitative data. Chapter 5 includes a detailed discussion of generalizing from qualitative research.

While random sampling is the best kind of sampling to use to generalize findings outside a sample, it is in fact rarely used, even in experiments. Most experiments use opportunity samples, such as the students in an introductory psychology course at a university. Sometimes students think that efficacy studies of mental health treatment use random samples. However, many of these studies are opportunity samples of patients in clinics who meet specific exclusion criteria. Statisticians prefer random samples, but they are just too hard to put together in most cases. **Triangulation** takes care of generalizing from studies using nonrepresentative sampling; it addresses whether the findings from one study fit with the findings from a larger body of research.

Nonrepresentative Sampling

Three types of nonrepresentative sampling are **opportunity sampling**, **purposive sampling**, and **theoretical sampling**.

Nonrepresentative sampling does not necessarily represent a target population, but it *may* represent the target population. Statistically, the results of studies using nonrepresentative samples are generalizable only to the individuals studied. However, Chapter 5 includes a discussion about **symbolic generalization**, something it is possible to do from nonrepresentative samples in qualitative studies.

Jane Ritchie and colleagues (2003) make it clear that *qualitative research is not meant to be representative of a larger target population and representative*

means something a little different for qualitative research. When using a non-representative sample, "units are deliberately selected to reflect particular features of or groups within the sampled population" (p. 78).

Be careful of criticizing studies for doing what they are supposed to do, including using sampling techniques that meet specific research goals.

Sampling Techniques Appropriate to Qualitative Research

Let's look more closely at opportunity sampling, purposive sampling, and theoretical sampling one at a time.

Opportunity sampling is appropriate to use for some types of qualitative research, but an opportunity sample is not rigorously selected; purposive sampling is far more rigorous. Sometimes students confuse the terms *opportunity sampling* and *convenience sampling*. Do these words mean the same thing? It depends on the source. Coolican (2004) uses the words as synonyms. Convenience/opportunity samples are made up of the participants who are most available, or convenient, to the researcher, such as an introductory psychology class, and provide an opportunity to conduct research. In contrast, Ritchie and colleagues (2003) think that the terms *opportunity sampling* and *convenience sampling* are different. Opportunity sampling means that a psychologist discovers chances to test ideas while conducting fieldwork and takes advantage of these chances as they arise. Convenience sampling means not having any specific sampling strategy and using participants who are convenient at the time. However, I do not want to create a big issue about this distinction. I will consider the terms synonyms and use the term *opportunity sampling* in this book.

Sometimes opportunity sampling is the best choice for a qualitative study. For example, Ehrmin (2002) used opportunity sampling in her combination observation/interview study to investigate the process of recovery from substance abuse in African-American women. Ehrmin spent three years studying the environmental context of women living in a transitional inner-city home for persons recovering from substance abuse.

The main strength of opportunity sampling is its ease. Its main limitation is that participants are not selected with any rigor; they have no specific characteristics that make them statistically representative of a larger group. They *may* represent a larger group, but you cannot be sure.

While opportunity sampling is used with some qualitative research, **purposive sampling** is more rigorous and is used more frequently. Purposive sampling means that the researcher selects a sample for a particular purpose: Participants have particular characteristics. Ritchie and colleagues (2003) use the term **symbolic representation** when referring to purposive samples. A sample is meant to symbolize a larger group, although technically it does not represent a target population the way that a representative sample does.

As an example, Becker, Burwell, Gilman, and Herzog (2002) used a study population of all the ethnic teenage girls from two high schools in Nadroga, Fiji. All participants filled out the EAT-26 questionnaire to assess disordered eating before and after television became widely available. After the field experiment, Becker and colleagues selected a purposive sample from the questionnaire sample. Interviews were collected "from a subset of 30 purposively sampled respondents with a range of disordered eating attitudes and behaviors and television viewing habits within the original sample" (p. 510).

Becker and colleagues did the things that Ritchie and colleagues (2003) outlined for selecting a good purposive sample.

1. They used a small sample that met the criteria for proper **sample coverage** (showed different points of view) of the topic for investigation. Small samples are typical in qualitative research for several reasons. First, there quickly comes a point in conducting qualitative research when the use of more participants adds nothing new to the analysis—the study becomes saturated. One notation of an opinion or attitude is enough to make a point of view part of the analysis. Second, there is no need for the sample to be representative of a situational context. Third, qualitative studies are rich in detail, and too many participants make the study unmanageable. How can a researcher provide a rich view of meaning and context if there are large numbers of participants?
2. Their **sample frame**, or information source, was well selected. Sample frames can come from different kinds of sources, such as administrative records, previously surveyed samples, a household screen (where interviews are conducted with all the households in a study area), or **snowball samples** (though it is a potential problem if the researcher does not give a specific criteria for the selection of the next participant in the snowball chain). Becker and colleagues used a previously surveyed sample for her purposive sample.

Coolican (2004) identifies several types of purposive sampling that fit the needs of qualitative research.

1. **Focus groups.** Focus groups are often made up of experts on a topic or people selected because they have certain experiences in common with one another.
2. **Snowball sampling.** Snowball sampling means to ask one expert for an interview, and then that person suggests the next expert participant, and so on. Robert Rosenthal (1993) used snowball sampling to study homeless people living in Santa Barbara, California. He did not have any contacts of his own to start the interviewing process, so he attended a meeting for the homeless. There he met a woman who introduced him to other homeless people. This is how Rosenthal gained entry into the lives of the homeless. Interestingly, Rosenthal experienced one limitation of snowball sampling. It is possible that when one person suggests other people for the sample, the people suggested represent only the point of view of the original interviewee. Rosenthal noticed that many of the tougher homeless people did not socialize with this woman and wondered if he had sampled the full range of opinion. It is important that researchers using snowball samples understand this potential problem and try to gain access to a variety of opinions and circumstances.
3. **Critical cases.** According to Coolican (2004), "a special case may sometimes highlight things that can be related back to most non-special cases" (p. 43).

In each type of purposive sample, the researcher must identify the sample frame (Ritchie et al., 2003). The sample frame is a series of decisions about the specific characteristics of participants. Characteristics could include a particular age group, one or both genders, people undergoing a specific type of mental or physical health treatment, people with different types or degrees of mental or physical health problems, people living in a specific type of neighborhood, or people representing specific attitudes. The psychologist must prioritize these characteristics so that the list does not get too long. Next, a **sample matrix** might be used to sort through all of the characteristics that should be included in the sample. For example, a sample matrix that is appropriate for a study on disordered eating can include four girls who watch a minimal amount of television and have a small amount of disordered eating, four girls who watch a large amount of television and have a high score for disordered eating, and so on.

The details of the sample characteristics in a purposive sample make it easier for independent critics to examine the proper **generalizing** from the study sample.

I include **theoretical sampling** because it is one way to get a sample for observation studies (Neuman, 2006). Theoretical sampling is really a type

of purposive sampling where what is sampled is "guided by developing theory. . . . Field researchers sample times, situations, types of events, locations, types of people, or contexts of interest" (p. 406). Sampling evolves with the interpretation of field notes. For example, one sampling of a particular location might lead the researcher to ask questions that lead to new ideas about other locations and people to sample. Theoretical sampling is related to the term **grounded theory**, meaning that theory is created from interpreting each new set of data collected in a study. Not all observation studies use theoretical sampling. In fact, Ehrmin (2002) used opportunity sampling. But if a researcher is in the field and has the opportunity to study a variety of data, then theoretical sampling probably is a good choice.