

# Purposeful Sampling: Advantages and Pitfalls

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## Abstract

This editorial monograph explores the advances and pitfalls of the common forms of purposeful sampling. Purposeful sampling is a common research design in qualitative research.

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Purposeful sampling is commonly encountered in qualitative social, nursing, and medical literature. Purposive sampling is a population sampling process in which a researcher selects research participants based on their presence in a population of interest, characteristics, experiences, or other criteria. The sample selected is used as study subjects to represent a group or population that is the target of the investigation. Research using purposeful samples is used to identify current concepts, standards, and social issues. Often, purposeful sample-based research is designed to develop insight into a study question.

Purposeful sampling is advantageous because it requires less resources and time than most traditional research methods. As a form of synthesis research, purposeful sample-based studies are often cited in systematic reviews. Purposeful sample research is often used to evaluate questions or areas of interest to politicians, educators, funding agencies, and health professionals.<sup>1</sup> Purposeful sampling can also be used to compare different samples, such as gender-based group sample, to show differences in findings.

Despite the advantages of purposeful sampling, there are challenges to consider. Often, journal editors have a bias against publication of purposeful sample-based research due to the similarity of the technique to convenience sampling. This negative publication bias is due to the often-inappropriate reporting that a convenience sample is a purposeful sample. To assure validity when using purposeful sampling, it is imperative that a researcher limit outcome biases and avoid over interpretation of research results.

An important aspect of a purposeful sample-based study is the formation of a concise, well-focused study objective with both independent and dependent variables defined. A study based on multiple study objectives should be avoided as this increases the risk of confounding and difficulty in well-focused outcome measures. The primary study objective will determine a method for selection of purposeful sample participants.

Two fundamental forms of purposeful sampling are purposeful sampling by randomized participant selection and subjective purposeful sampling based upon non-randomized selection of sample participants. Random purposeful samples are those in which the sample participants are selected using randomization of all potential participants. Subjective purposeful sampling involves the use of any non-randomization method for sample subject selection. Random purposeful sampling is representative of a whole target population and study findings are transferable to that target population. Subjective purposeful sampling cannot be representative of a target population due to unmeasurable sampling errors and biases. Rather, subjective purposeful sampling is used to find divergent and competing information among the group of sample participants.<sup>2</sup> The variation of information derived from subjective purposeful samples allows for investigation into the causes for study subject differences and can set groundwork for hypothesis generation for future studies.<sup>1,2</sup> Due to non-transferability of subjective purposeful sampling study findings, the outcomes of such research can only apply to the study sample participants.

Random purposeful sampling is used for the selection of sample participants that represent a target population. In this form of participant selection, members of a group (for example, residents of a city struck by an earthquake) are all considered potential participants, and by randomized selection of these potential participants, a sample of the total population is selected to participate in the study. When using random sampling, extra participants are often selected to replace those who were originally selected but cannot participate. Random selection of target population participants for a purposeful sample is



preferred when considered research designed to develop study findings with transferability of findings to the whole of the target population.

Stratified and cell forms of sampling are types of purposeful sampling done by selecting specific groups of subjects to be included in the sample. Examples of these groups could be members of organizations or associations, age groups, diabetics, and victims of a disaster. Often a combination of group criteria is used, such as age and disaster victim. Attention to inclusion and exclusion criteria is important and must be reported in a manuscript. While these are common methods of purposeful sampling, they are not without bias if randomized selection of sample participants within the study groups is not employed. Often, the subjective purposeful sampling method is used with stratified, or cell sampling, and once groups of interest are identified, individual study participants are selected by a non-random method such as online invitations to participate sent to group members or recruitment of volunteers at a clinic or group meeting. Stratified or cell sampling by randomization recruitment can be used to apply study findings to the entire group as defined in the research. If subjective forms of sampling are used, the findings can only apply to the members of the sample and not the entire group of interest.

Purposeful sampling by quota methodology is a form of participant recruitment in which specific categories of potential participants and the number needed from each category are established before recruitment into the sample. As described for stratified and cell methods, the individual sample participants can be selected using randomization of all members of the category of interest or by non-random techniques.

Purposeful sampling with snowball recruitment uses the first participants included in a sample to recommend and recruit more participants to increase the size or expand the sample. This form of sampling should be avoided because an initial participant is likely to suggest another participant with the same experiences and opinions for the snowball recruited study subject. The snowball method is of low validity and prone to a high degree of selection bias. In the event the first sample participants are recruited using randomization, the addition of snowball recruitment does not address the error of selection bias and motivation to participate error and negates the validity of the original random recruitment.

Convenience sampling is often labeled incorrectly as purposeful sampling. The convenience sampling method is the non-random invitation of volunteers from a target population or group to participate as members of the sample. Invitations are usually distributed online by email or through employers. This type of recruitment is of low validity and subject to several forms of bias and error in study findings. Errors and biases common with convenience purposeful sampling include sampling error, selection bias, motivation to participate causing bias, and participation volume error.

When describing the selection of purposeful sample subjects in a manuscript or report, the method for participant recruitment must be defined and reported along with inclusion and exclusion criteria.<sup>3</sup> Reporting the characteristics and demographics of the sample allow readers and other researchers the ability to understand the composition of the sample. When using purposeful sample randomization methods, helpful is reporting the characteristics and demographics of the sample and the full target population. Time periods for sample selection should also be reported due to the tendency for opinion, experiences, and environmental circumstances to change over periods of time. For subjective purposeful samples, any study findings can only apply to the sample participants and cannot be assumed to be representative of a target population.

When using any purposeful sampling method in a study, it is important to use a valid survey, interview, or data collection method.<sup>3</sup> The sample must reflect the characteristics of the target population, or groups as described in the study objective. For example, if a study is designed to determine the knowledge or skill of paramedics in the field, the study sample should only include paramedics active in the field and not paramedic service administrators, supervisors that are not in the field, or educators that are not in the field.

In summary, there are two general forms of purposeful sampling, random selection purposeful sample and subjective purposeful sample. Findings for a purposeful sample study based on randomized selection of sample participants are transferable to the overall target population. On the other hand, subjective purposeful study-based research findings are valid for the sample participants and not transferable to a larger population. Each type of purposeful sampling has a specific application for distinct types of research objectives.

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