

Keywords in Qualitative Methods

Sampling

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Sampling

Definition

The selection of cases from wider populations.

Distinctive Features

Sampling is the link between the study population and its **generalization** to the wider population. The units of analysis of a sample may be individuals, institutions and communities.

A sample is representative of the population from which it is selected if the characteristics of the sample approximate to the characteristics in the population. Samples might only be representative with respect to characteristics that are important to the study question, although at the beginning of a study the researcher might not know which characteristics are relevant.

There are a wide variety of sampling methods. Miles and Huberman (1994) and Arber (2001) provide a useful typology of sampling strategies. Sampling methods fall into two broad types: probability and non-probability sampling. In probability sampling (random and systematic sampling) cases are selected in accordance with probability theory. The principle of random sampling is that every case in the population has an equal and non-zero chance of being selected to be part of the sample. Cases are selected using some kind of random mechanism such as computer-generated random numbers or random number tables. Systematic sampling requires the researcher to select every *n*th case (for example, every fifth child on a class register). *N* is calculated by dividing the population (the entire class) by the desired sample size. Systematic sampling is often easier to perform than random sampling as a random number generator is not required. Probability sampling requires the researcher to obtain a list of all cases in the total population from which the sample is selected. This is referred

to as the sample frame and might be a list of all children in a school, or patients on a GP register or all addresses on an electoral register. Probability samples are typically more representative of the total population than other types of samples as selection **bias** is avoided and they are more typically used in survey research than in qualitative methods.

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There are variations to random or systematic sampling. Stratified sampling ensures that appropriate numbers of cases are drawn from homogenous subsets of the population. Stratification may be on the basis of variables such as sex, age or ethnicity. Multi-stage cluster sampling involves the initial sampling of groups of cases (clusters) followed by the selection of cases within each of the selected clusters. For example researchers may randomly select general practitioners within an area, and then randomly select patients on the selected general practitioner's list.

Non-probability sampling involves the selection of cases according to reasons other than mathematical probability and includes a range of sampling approaches such as quota, convenience, theoretical and snowball sampling. Quota sampling, a technique popular within market research, involves the population of interest being divided into relevant categories such as age group or ethnicity. Fieldworkers are allocated quotas of types of respondents. The quota size is dependent on the size of the category in the population. Convenience sampling involves the selection of cases on the basis of their availability. This method may be useful when researching hard-to-access populations although clearly there are problems with selection bias. Theoretical sampling (sometimes referred to as purposive sampling) involves the selection of cases on the basis of the researcher's own judgement about which will be the most useful. For example samples might be chosen on the basis of being extreme (maximum variation sampling) or because they are typical of other cases. Theoretical sampling typically involves the selection of cases which are of particular interest to the study in that they confirm or contrast emergent theory thereby making the theory more definitive and useful. Therefore it is a technique often associated with **grounded theory** and **analytic induction**. Researchers may select deviant cases (cases that do not fit the general pattern) in order to tease out reasons why they do not fit the theory.

If the population of interest is particularly hard to **access** and there is no sample frame (for example drug-using populations and homeless populations), researchers might adopt sampling methods such as volunteer sampling or snowball sampling. Volunteer sampling involves respondents presenting themselves to researchers following an advertising campaign. Snowball sampling involves the researcher asking each respondent to suggest other potential respondents.

Qualitative research strategies such as **ethnography** require the researcher not only to think about sampling in terms of who to select but also of when and where data should be collected (Hammersley and Atkinson, 1995). This is known as time sampling. For example, activities in a typical high street will vary over different times of day. Consequently, attempts to represent ranges of people or activities in a given setting will have to take account of temporal structures. Ethnographers who decide to hang around a shopping high street [p. 155 ↓] will need to make sampling decisions about when and where to observe, what to observe and who to talk to. These choices are invariably determined by the research question.

A frequently asked question from many qualitative researchers is 'how big should my sample be?' Qualitative research designs typically use small numbers of cases compared with quantitative designs. Some research questions and research designs might use a single **case study** which might be sufficient to study a topic in depth. But even single settings have sub-settings (schools have classrooms, hospitals have wards, communities have locations) so the researcher must still make judgements about the number of sub-settings. Unlike quantitative research, qualitative research does not estimate sample size so as to determine the statistical significance of its findings, however researchers must collect data from enough points so as to make meaningful conclusions about the phenomenon of interest. One criteria for closure on continued sampling is '**theoretical saturation**', that is when additional data does not provide new insights but rather confirms previous theories. Morse (1994) suggests that between 30 and 50 interviews are required for ethnographies and grounded theory studies.

Examples

Kumar, Little and Britten (2003) used a combination of maximum variety sampling (a form of stratified sampling) and theoretical sampling in their interview study of why general practitioners prescribe antibiotics for sore throats. They used grounded theory to guide their sampling decisions as well as the analysis of the data. The maximum variety sample of 25 general practitioners reflected a range of practitioner characteristics that they felt could influence prescribing (trainer status, gender, qualifications). A further 15 GPs were interviewed in the theoretical sample, the selection of GPs being guided by the emerging analysis. The authors claim that their sampling strategy was powerful because of its ability to capture variation, consistency and contradictions in responses.

Parker, Bakx and Newcombe (1988) used a combination of random sampling and snowball sampling in their study of heroin use in the north-west of England. The research team interviewed 125 heroin users about their motivations and their careers as drug users. Their total sample consisted of both known users, that is heroin users who were known to drug agencies, and hidden drug users who had no contact with drugs agencies. For the known users the research team used a random sample using the drug agencies' client lists as the sampling frame. In order to contact the 'hidden' drug users the team employed snowball sampling in four separate sites, whereby the researcher made contact with new informants by means of a referral chain. The authors discuss how the establishment of good personal relations was crucial to the [p. 156 ↓] success of snowball sampling. For example the fieldworker would need to have the similar accent and clothing for them to be considered as 'all right'. Participation in the referral chain was also considered to be dependent on other factors such as the drug users' personal circumstances at the time the request was made, their feelings towards the drug services, boredom, the perception that participation might help them in the future and curiosity.

Evaluation

The main advantages of sampling over researching the entirety of the population (known as census-taking) are that it is quicker and cheaper. More crucially, it is often not possible to study everyone and everything within the population. Such benefits have to be balanced against the fact that researchers run the risk of selecting cases that are not representative of the population, especially in relation to the central research topic.

Although probability sampling does have its place in qualitative research, probability samples are often unachievable or inappropriate. It is therefore often difficult to establish how accurately the study sample reflects the wider population of concern. Rather than aspiring to statistical representativeness or **generalizability**, qualitative researchers are often more concerned with reflecting the diversity within a given population. With theoretical sampling, researchers deliberately seek to include extreme cases which tend to be discounted in samples for quantitative research.

Unlike probability samples where the sample frame must be specified before data collection begins, samples in qualitative research may evolve during data collection and analysis. An initial choice of informants or setting may lead the researcher to select later cases that invite comparisons. Sampling is therefore progressive and theory-driven.

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Associated Concepts:

Arber, S. (2001) 'Designing samples', in N. Gilbert (ed.), *Researching Social Life* (2nd edn.) London: Sage. pp. 58–84.

Hammersley, M. and Atkinson, P. (1995) *Ethnography: Principles in Practice*. London: Routledge.

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