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Sample Size

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The sample size is the number of data sources that are actually selected from the total population. Basic principles of statistical sampling demonstrate that the accuracy of an estimate from a probability sample is strongly influenced by the size of the sample itself. The importance of sample size in determining the accuracy of the results is the reason that larger samples generate more precise estimates and smaller samples produce less accurate estimates— regardless of the size of the larger population.

Table 1 illustrates how sample size affects accuracy in the case of estimating a simple percentage (e.g., percent male) with random sampling in a population where the actual proportion is 50%.

Thus, for a population that is divided 50–50 between men and women, 95% of all the samples of size 10 would produce an estimate that fell somewhere between 19% and 81%, while 95% of all estimates from samples of 25 would fall between 30% and 70%, and so on. This table makes it easy to see why surveys typically rely on samples of 500 and over, because it takes that many observations to produce estimates that are accurate within the desired range of 3– 4%. In contrast, the table also shows why random sampling is seldom of much practical value with small samples, since even a random sample of 100 is only accurate to 10 percentage points either way.

Table 1 How Sample Size Affects Accuracy in the Case of Estimating a Simple Percentage

Sample Size	95% Confidence Internal
10	19%–81%
25	30%–70%
50	36%–64%
100	40%–60%
250	44%–56%
500	46%–54%
1,000	47%–53%

Although qualitative researchers are seldom interested in results that can be expressed as percentages, the real point is not whether it makes sense to estimate simple percentages, but whether it makes sense to try to estimate anything with a small sample—regardless of whether it is a random sample. In particular, it is common to hear criticisms of the lack of generalizability in qualitative studies because they do not use probability samples, but this argument overlooks the fact that small samples seldom have any practical value for generalizability—regardless of whether they are random samples.

In most qualitative studies, the goals of the research emphasize an in-depth and highly contexualized understanding of specific phenomena, and such goals are well-suited to small sample sizes. For these purposes, qualitative researchers are well justified in using criteria such as saturation or redundancy in the data collection, rather than statistical criteria, as a standard for determining sample size—especially when the alternative is to be "drowning" in more data than it is possible to analyze.

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See also

- Context and Contextuality
- Generalizability
- Probability Sampling
- Random Sampling
- Sampling
- Theoretical Saturation

Further Readings

Henry, G. T.(1990). Practical sampling. Thousand Oaks, CA: Sage.

Kalton, G.(1983). Quantitative applications in the social sciences: Vol. 35. Introduction to survey sampling.Thousand Oaks, CA: Sage.