
Sample Size – How large does my sample need to be?

In survey research, a "sample" is a portion or subset of a larger group called a population. A population is the "universe" to be sampled. As most researchers know, a good sample is one that is representative of the population and exhibits similar characteristics (e.g., age, income, etc.) – basically a miniature version of the population. Conducting research with a sample is quick, efficient and much less expensive than with a total population. Of course, if you have the capability and the budget, it is always best to do a "census" and survey everyone in the population. This method allows everyone to have an opportunity to respond to the survey.

In today's real research world, however, most surveys are distributed to a "random sample." This means that every "nth" person in the population is surveyed. The "n" is determined by the total population and how big you want your sample size to be. For example, if you had a total population of 1,000 and wanted 100 people in your sample, you would randomly select every 10^{th} person to receive a survey.

"But how big ***should*** my sample be in order to give a valid estimate of the total population?" you ask. The answer to this important question is that it *depends on how precise you want your results to be*. Two factors affect preciseness: margin of error (also called "confidence interval") and confidence level. **Margin of error** is how close your sample estimate is to the true population number and is usually stated as a plus and minus number, such as +/- 3. It is directly related to sample size — the bigger the sample, the smaller the margin of error and the more precise the results. **Confidence level** refers to the degree of certainty one has that the "results found are truly the results." The confidence level for research is usually set at 95%. This means that 95 out of 100 times, the results found are accurate within the margin of error. See the chart below for an example:

Total population	**Sample size needed for each margin or error** (95% confidence level)			
	+/-1	**+/-2**	**+/-3**	**+/-4**
15,000	5,855	2,070	996	577
40,000	7,745	2,265	1,039	591
2,600,000	9,569	2,399	1,067	600

To determine what size sample size you'd need for your population and desired margin of error, visit the sample size calculator at: *www.surveysystem.com/sscalc.htm*.

Simple random sampling is easy and useful, but sometimes you need to be sure that you have adequate proportions of people with certain characteristics in your sample. For example, let's say you want to compare how different age groups feel about a new television show. To compare the groups most accurately, roughly the same number of respondents should be in each age group. In cases like these, a "stratified sample" can be used. A stratified random sample is one in which the population is first divided into subgroups ("strata") and then a random sample is selected from each subgroup.

May 15, 2004