

## Sample Size and Accuracy

This table shows the effect of sample size on accuracy. The illustration is for populations of 100,000 or above, where a random sample of 384 will yield a confidence level of 95% with a margin of error of plus or minus 5%. If you wish to reduce the margin of error you must enlarge the sample substantially. To achieve a +or- 4% margin, the sample must be nearly doubled, to 600; to lower the margin of error by another point, to +or- 3%, the sample must be over 1000. These figures become significant if you are planning telephone interviews at a fixed cost per interview of \$10 or \$20 or more. Five percent is often regarded as sufficiently accurate. Sometimes researchers "oversample" for greater reliability or comfort level.

Reducing the size of the sample below 384 raises the margin of error and makes the results less dependable. With a sample of 96 or 100 interviews, for instance, the results obtained in the survey could be 10 percentage points above or below the actual level, and could be seriously misleading. You might show 55% approval, where the reality is 45% or 65% or somewhere else in between. If you wish to be sure of a majority, that's serious.

The same considerations apply in sampling smaller populations.

**Size of sample necessary to be fairly sure (19 chances in 20 or 95% confidence level) of accuracy to within specified limits of error, expressed in + or - percentage points:**

Limits of error + or - %:	Sample Size
.25	153,658
.50	38,415
.75	17,073
1	9,604
2	2,401
3	1,067
4	600
<b>5</b>	<b>384</b>
6	267
7	196
8	150
9	119
10	96
15	43
20	24
25	15
30	10
35	8
40	6