

The **confidence level** tells you how confident one can be about the survey responses. Most common confidence level used to validate a survey is 95%. Most researchers use the 95% confidence level as an acceptable standard.

The **confidence interval** is the plus-or-minus figure usually reported in newspaper or television opinion poll results. For example, if you use a confidence interval of 4 and 50% of your sample picks an answer you can be sure that if you had asked the question of the entire relevant population between 46% (50-4) and 54% (50+4) would have picked the answer.

When you combine the confidence level and the confidence interval, you can say that you are 95% sure that the true percentage of the population is between 46% and 54%.

The wider the confidence interval you are willing to accept you are willing to accept the more certain you can be that the whole population's answers will be within that range.

There are three factors that determine the size of the confidence interval for a given confidence level; sample size, percentage and population size.

**Sample size** is the number of people who participate in a poll or survey. The larger the sample size the more certain you can be that their answers truly reflect the population. For a given confidence level the larger you sample size the smaller your confidence interval. The relationship between sample size and confidence interval is not linear; i.e., doubling the sample size will not halve the confidence interval. See table below.

When evaluating the sample size needed for a given level of accuracy you must use the **worst-case percentage** (50%). If the percentage answers are 51% and 49% the chances of error are much greater than if the sample was 99% and 1%. It is easier to be sure of extreme answers than middle of the road answers.

To determine the confidence interval for a specific answer your sample has given, you can use the percentage picking that answer and get a smaller interval than the 50% worst-case confidence interval.

**Population size** is the number of people in the group your sample represents. Often you may not know the exact population size, this is not a problem. The mathematics of probability proves the size of the population is irrelevant, unless the size of the sample exceeds a few percent of the total population. This means that a sample of 500 people is equally useful in examining the opinions of a state of 15,000,000 as it would a city of 100,000.

Let's determine the population size; starting with the active STVR permits on October 30,

STVR LOCATION	# of STVR UNITS	% of STVR TOTAL
Within HOA	170	14%
Within PGA West HOA	442	35%
Not in HOA	445	35%
Commercial	203	16%
Total	1260	100%

In order to focus on impact STVRs have on La Quinta residential areas, subtract commercial STVRs; total number of STVRs in residential communities are 1057. Consider neighbors on four sides of each STVR (adjacent on both sides, across the street and behind) the population size is 4228.

The sample size for a 4228-population size 95% confidence level with a +/-4% confidence interval is 526.