*"A matter must be established
by the testimony of two or three witnesses."
-- Deuteronomy 19:15*

The Two Witnesses

How many people do we need to interview to get an accurate picture of the market?
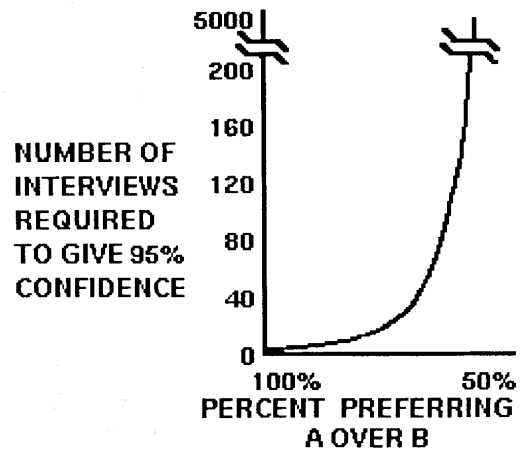First, let's consider reasons for interviewing only a small number of respondents.

Only a few will do

It would be foolish to base a major decision on a single opinion. But even the wisdom of
the Mosaic law permitted life and death decisions on as few as two witnesses. But how
does this relate to survey design? Although our differences as individuals are
important, we are really much more alike (in our opinions and otherwise) than we might
like to admit. This similarity argues for the reliability of small opinion samples. If you
have no knowledge of an issue and you seek thorough information from one
knowledgeable person, that person will take you from zero to a substantial amount of
information. The second person you interview will add to this body of information by
modifying and/or supplementing the information from the first respondent. However,
ordinarily there is no way the second respondent can make as large a contribution of
new information as the first. By the time you have interviewed ten people, you have
likely gotten just about every possible response and even trends are becoming
apparent.

The truth of this line of reasoning partially justifies the use of focus groups (8-12 people)
for guidance; and the use of small trained panels in product development and quality
control.

Maybe more is better?

Usually a researcher wants to detect
differences, if any, between products
consumer groups, etc. How big the
differences are, definitely affects how many
interviews need to be done. For example if
product A is preferred over product B by a
margin of two to one, then 10 interviews will
give you 85% confidence in your conclusion
that A is better than B.

Increasing the number of interviews to 20 increases the confidence to 96%. This is a fairly modest increase in confidence from doubling the amount of work done. But if the margin is a more modest three to two, then the corresponding confidence levels are 60% and 78%. Obviously, to get the same confidence with a smaller difference, larger numbers of interviews will be required.

How many interviews you need in order to get 95% confidence in a preference test is shown in the chart on the previous page.

Questions to consider

It is not possible in this brief essay to discuss all of the factors that need to be considered in deciding how many interviews to conduct in a survey, but we can at least list a few.

> ➢ How small are the differences we want to detect?
> ➢ How different are the people we will be interviewing?
> ➢ How many questions will we ask each respondent?
> ➢ How many different samples are included in the study?
> ➢ How confident do we need to be? What if we are wrong?
> ➢ How difficult is it to find qualified respondents?
> ➢ Who do we need to convince with our conclusions?

Based on such considerations, surveys usually include a minimum of 50 respondents (per cell, i.e., group to be separately analyzed) and often as many as 100. Larger studies ordinarily involve many cells: multi-city, multi-flavor, etc.

Statistical confusion

In all of the discussion above, the term "confidence" is used instead of "significance." Statistically the two words are similar and refer to the probability that you are making a correct conclusion. We prefer "confidence" because it means much the same thing to the lay person as to the statistician. Much confusion has resulted from use of the word "significant" because to the lay person it means "important." But to the statistician it "signifies" that the result is in harmony with some technical hypothesis. If 5000 interviews are conducted and you find that 51% of the respondents prefer A to B, you might claim: "Significantly more people prefer A than B." It is questionable whether a 51% preference is important, though in this case it is technically "significant."