Quality issues in survey research

Technote

Questionnaire design

Although the science of survey sampling has reached the point where we can talk about error rates in terms of fractions of a percent, considerably less is known about issues relating to questionnaire design. The most important measure of a good questionnaire is its ability to translate the key issues and concerns of the client into explicit and understandable questions that respondents can answer. There are two basic steps in this process:

- First, the questionnaire designer must fully understand the client's requirements. Vague or broad goals must be translated into specific measurable objectives that can be used in question construction. Invariably, an unclear understanding of the goals for a particular assignment leads to an unclear questionnaire, and ultimately, to unclear results.
- Next, the designer must craft the objectives of the assignment into concrete questions that are comprehensible to individual respondents and yet still meet the client's need for detail. For many clients, this is a significant challenge. Few people appreciate the skill involved in writing questions about difficult material that are clear, and to the point, and yet still capture the essence of the message.

We custom-design each survey using a conceptual framework that considers the complementary and competing concerns of respondents and clients. In this model, data collection consists of an interactive process involving the respondent and the questionnaire. Aspects of the questionnaire (such as wording, order and flow of questions, clarity of skip logic, etc.) affect both the respondent and the quality of the data gathered.

Enumerating all issues and concerns is a very important step in questionnaire design. These should be ranked, since the range and number of issues to be examined usually exceed the parameters of reasonable questionnaire length. Mail surveys completed by business representatives should not take more than 10 minutes. Phone interviews should be limited to less than 20 minutes per respondent for cold calls. Extensive experimental research has shown that response and accuracy drop rapidly if these time limits are exceeded without additional support, such as a letter and scheduled interview.

Pre-testing is essential for a standardized interview. Questions must be understood exactly as intended by researchers. Again, extensive research in methodology has demonstrated that respondents often impose several meanings on questions that researchers believe are unambiguous. Focus groups and confirmatory interviews (i.e., re-interviews to probe for respondent understanding) are two methods to evaluate respondent comprehension.

We always use actual field testing with respondents to determine areas of weakness in a questionnaire. We tape-record interviews to note areas where pauses, interviewer difficulty, and other problems occur. For complex interviews, we have used tape coding where 50 to 75 interviews are taped. Each interview is coded by making annotations on a printed questionnaire. For example, a stumble by the interviewer or a request for clarification is noted with special codes, which are then analyzed to determine whether specific areas of the questionnaire are causing common problems. Clients are always involved in the field operations tests to ensure that any problems in understanding are clarified, as well as to illustrate where problems in the interpretation of results may arise.

Sampling and respondent selection

The ability to generalize quantitative results to the whole population is based on the assumption that we have been able to draw a random sample in the first place. While focus group respondents are chosen deliberately, all survey respondents must be enrolled based on probability methods. Non-random samples generally bias and confuse quantitative results.

Confidentiality requirements imposed by the nature of the client-respondent relationship often mean that we cannot use client lists as a sample frame. This forces researchers to select respondents from other sources. In some cases, developing a sample frame is straightforward. The general population can be accessed through random digit dialling techniques. Business operators can be obtained by printed directories. It is also possible to obtain telephone listings on databases, which include business name, phone number, address, and other selected data. Over time, these databases will also contain relevant data such as firm size and type of business.

Generally, the more specific the qualification of survey respondents, the more difficult the development of the sample frame and subsequent enrollment process. A multi-stage procedure is often needed to narrow a broad list of people into the specific population of eligible respondents.

Many clients face complex targeting and segmentation challenges. This can create population segments that are difficult to reach. For example, does a business person travelling by air differ from a vacationer travelling by air? If so, more detailed sampling procedures are needed to gain an accurate picture of the "flying public" than if we consider everyone to be the same.

Generating accurate results with such specific population groups often means using larger samples, perceptual mapping, and various grouping tests such as cluster and discriminant analysis to confirm the accuracy of the sample. Using these techniques increases project cost.

Response rates

With business surveys in particular, response rates are a challenge. We have conducted many surveys of the business community, including intensive client satisfaction work. We use a variety of techniques to enhance response rates:

- An initial call is made to determine the exact identity of the relevant respondent. This serves as a pre-announcement of the impending survey and ensures that a questionnaire or interview is precisely targeted.
- For a telephone interview, an introductory letter is sent (even if we have already made the call), outlining the major questions. This maintains our initial contact with the respondent, and confirms the nature of the survey to him or her.
- Increasingly, we are using a mixed mode approach, where the questionnaire is mailed and a telephone follow-up is used either as a reminder or to complete the questionnaire over the phone.
- Business surveys are difficult to execute. Design values must be very high, but the appearance of waste (such as the use of glossy paper) must be avoided, especially by government. Visual layout is very important, and translations must be impeccable (we always use a certified translator). A telephone support system must be in place to respond to questions. Someone must be available during business hours to field questions, and respondents are encouraged to call our offices on our toll-free line.

Additional readings

Blankenship, A.B., & Breen, George Edward. (1993). *State of the art marketing research.* Chicago: American Marketing Association.

Cochran, William G. (1977). *Sampling techniques.* Toronto: John Wiley & Sons.

Dillman, Don A. (1978). *Mail and telephone surveys: The total design method.* Toronto: John Wiley & Sons.

Peterson, Robert A. (2000). *Constructing effective questionnaires.* Thousand Oaks: Sage.

For additional information, please contact admin@pra.ca