

Qualitative Methods for Testing and Evaluating Survey Questionnaires

Testing survey questionnaires before data collection is a necessary step for data quality. There are several methods available to test and evaluate survey questionnaires. Qualitative methods do not require large sample sizes and tend to provide rich information on questionnaire performance. When budget and time allow, a combination of methods is recommended. This Methodology Bits outlines some of the more popular qualitative methods available and goes into further detail about the cognitive interviewing method.

Focus groups, semi-structured interviews and literature reviews are usually used in the initial phases of questionnaire development to explore conceptual issues and make sure response categories are meaningful and comprehensive.

- ☺ Can explore concepts at an early stage of questionnaire development
- ☹ Potentially time consuming

Traditional pilot testing is a trial run of the survey instrument with follow-up debriefings with the interviewers regarding the interview process and problems with the instrument. This technique has a strong emphasis on interviewer perception.

- ☺ Testing is done in a real world scenario
- ☹ Can only capture problems made evident by the respondents and/or interviewers' behaviour

Cognitive Interviewing is a method used to gather qualitative information about respondents' thought processes while answering survey questions. More detailed information on this method is provided on the next page.

- ☺ Can reveal questionnaire problems not visible to the respondent and interviewer
- ☹ Requires experienced interviewers as well as sample variability

Question appraisal systems are structured checklists that help researchers identify potential problems with their questionnaire. There are a variety of appraisal systems available and some are available on-line.

- ☺ Quick and inexpensive
- ☹ Testing does not include the perspective of the survey respondents or experts in the field

Expert review consists of one or many experts reviewing the questionnaire to assess validity and reliability. The reviewers can be experts in questionnaire development and/or the topic of interest.

- ☺ Quick and inexpensive
- ☹ Requires access to experts

Behaviour coding consists of rating interviewer and respondent behaviour (e.g. respondent requested clarification) either during the interview or after it is completed (when recorded) in order to flag problems with the survey instrument and/or the interviewer skills. Frequencies of potential problems are reported. It can be conducted with just a few interviews or larger quantitative samples.

- ☺ Provides measurable data
- ☹ Can only capture problems made evident by the respondents and/or interviewers' behaviour

Vignettes are hypothetical scenarios presented to respondents to elicit interpretation of wording and concepts (e.g. 'In which of the following situations would you consider that you are living in your own home? Living in a home owned by: (a) yourself, (b) your partner, (c) your parents, (d) your children?').

- ☺ Easy way to test scenarios with limited sample variability
- ☹ Not based on respondent's real life experience

Experiments are used to compare different versions of the survey questionnaire for differences in response distribution, number and type of problems, administration time, etc. This method needs to be used in combination with other methods, such as cognitive interviewing, for example.

- ☺ Allows for questionnaire version comparison
- ☹ Potentially time consuming and costly

More about Cognitive Interviewing

The two main **cognitive interviewing** techniques are referred to as: Think Aloud and Verbal Probing. They are typically used together with an emphasis on Verbal Probing.

The Think Aloud Technique

With as little interference as possible from the interviewer, the survey respondents are asked to verbalize their thinking as they answer the survey questions. Using this technique, the cognitive interviewer would give instructions such as: Tell me what you are thinking as you decide what to answer for this question.

The Think Aloud technique is especially useful for testing problem solving aspects of questions. It requires less interviewer training and introduces less interviewer bias compared to the Verbal Probing technique.

The Verbal Probing Technique

The survey respondent is asked a series of probing questions about different aspects of the cognitive process that could potentially contribute to survey error.

Probing can happen immediately after each survey question or retrospectively after all survey questions are answered. One approach is to use concurrent probes for interviewer-administered questionnaires and retrospective probes for self-administered questionnaires. A hybrid approach is often used, especially for a long self-administered questionnaire, where probes are administered at the end of each major block of questions.

The probes can be planned before the cognitive interview takes place or be based on information being provided by the respondent on the spot. Typically, one would use a combination of both.

Some examples of probes are: Can you repeat the question in your own words? How did you get to the answer? Did you consider choosing another option? Probes typically cover the 4 stage Tourangeau response process model: comprehension, retrieval of information, judgment and response mapping onto available categories.

The Verbal Probing technique is especially useful for testing comprehension aspects of questions. It is easier to categorize, less time-consuming and less intrusive compared to the Think Aloud technique.

Sample selection for cognitive interviews

A cognitive interview sample is not designed to be representative of the entire population. It aims to capture variability in terms of respondent demographics, characteristics related to the topics of the survey questions, and questionnaire paths (as it relates to planned survey skip patterns). There are still limited guidelines around how much variability is necessary and how many interviews are necessary. Sample sizes of 5-15 are common, but studies have shown that more interviews can identify more potential survey problems. The grounded theory approach for sampling has been suggested as a way to determine a sample size. Using this approach, the sample would be complete when no new questionnaire problems arise (i.e. saturation is reached).

Reference

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