

## **TIPSHEET – COGNITIVE INTERVIEWS**

Surveys seek to obtain accurate information from respondents about attitudes, beliefs, experiences, and behaviors. Cognitive interviewing involves administering the draft survey questions while collecting additional verbal information about the survey response, for the purpose of determining whether subjects understand the question, both consistently across the respondents and in the way intended by the researcher. Particularly when studying populations whose backgrounds, beliefs, or experiences are different from those of the researcher(s), crafting questions that achieve these goals is challenging.

To improve the quality of questions and questionnaires, researchers use cognitive interviewing to pre-test and fine-tune drafts of surveys before beginning data collection. A few members of the population being studied are presented with the questionnaire, and interviewed as they read it, allowing the researcher to understand how respondents understand the questions and to improve language that is confusing or unclear.

Planning and conducting cognitive interviews involves the following steps:

- Specialized recruitment (5-15 from target population) with appropriate incentive
- Conducting interviews
- Analyzing results
- Revising the questionnaire

To maximize the value of these steps, make them *iterative*. Although it is common to conduct between 5 and 10 cognitive interviews, or as many as 15, it is not at all unusual to realize that a question is confusing after just a few such interviews. In situations where there is an obvious problem and clear way to improve a question, it is appropriate to proceed with that revision before continuing with interviews – there is no value in gathering information about a question that you have identified as problematic and readily improvable.

Cognitive interviews are research and as such, need to undergo IRB review. Preparing an IRB protocol also offers an opportunity to consider the logistics of this component of the research. Consider how you can tap into the expertise of members of the population you will be researching – how can you identify and contact them for recruitment, what do you need to tell them about what the interview will involve, and what incentive can you offer them for participating?

### **Recruiting subjects for cognitive interviews**

For recruitment, reaching out to the study population using the same tools you will use for the survey research will typically suffice. Beyond that –

- Seeking “close enough” respondents is often appropriate, particularly if your project has limited time or money. For example, if you are studying the experiences of doctors at one rural hospital, you may seek doctors at another hospital nearby to conduct your cognitive interviews.
- Subjects who participate in cognitive interviews should not also take the survey as respondents, so you want to keep the two groups distinct, either because they do not overlap or by alerting respondents who participate in the cognitive interviews that by doing so, they are opting out of being a survey respondent.

Given that cognitive interviews involve both administering the survey and discussing the items with respondents, the process is more time- and labor-intensive than the typical survey respondent experience. Cognitive interviews should generally be limited to 60 to 90 minutes. If a questionnaire is too long or complex for this, you should focus on key questions that are likely to be sources of confusion, or segment the questionnaire and address those segments in separate interviews with distinct respondents. Questions that are used routinely (e.g., many demographic items) will not require testing, and items you are replicating from other surveys to allow for comparison should *not* be revised and thus need not be tested. Respondent incentives such as gift cards should be scaled to reflect the commitment required to meaningfully participate in cognitive interviews.

## Conducting interviews

Cognitive interviews can involve three distinct processes or approaches – think-aloud, probing, and observations – and any given protocol may use all 3 of these. Regardless of the approach(es) used, it is important to keep detailed records of what happens. Generally, researchers will request permission to record the interview; the widespread contemporary use of Zoom and similar online interviewing tools facilitate this. If it is not feasible (or permissible) to record, it is essential to take *detailed* notes.

With the “think aloud” approach –

- The respondent reads the question and answer options and talks through what they are thinking about as they do so.
- You can guide respondents in this approach by prompting them with questions such as:
  - “What’s going through your mind right now?”
  - “How did you decide on your answer?”
  - “What questions do *you* have about what this question is trying to find out?”
- Some respondents may provide useful thoughts outside of these prompts that help you understand their interpretation of the question and their process of selecting an answer.

With probes –

- The cognitive interviewer uses prepared questions to explore how the interviewee understands and interprets specific questions on the survey.
- A common probe is to ask, “Can you tell me in your own words what this question is asking?”
- For the question above about talking with a doctor, tailored probes might be,
  - “What time frame did you have in mind as you were thinking about *the past month*?”
  - “In recalling talking with a doctor, what kind of medical health professionals were you including in your count? Would you have included a Physician’s Assistant? A mental health professional?”
- Much of what constitutes best practices in writing probes is the same as best practices in writing survey questions such as making language conversational, clear, concise.

With observation –

- The interviewer observes the respondent’s behavior and generates questions dynamically in response to their observations
- For example, you might say,
  - “You seemed hesitant about how to answer that question, can you tell me why?”
  - “You seem confused by this question, can you tell me more about what you are thinking?”
- Keep the language of your conversation and questions either neutral or positive, asking, for example, “Tell me what made this question challenging to answer?” rather than, “Why couldn’t you understand this question?”

### Analyze results

Once you have completed 5-15 cognitive interviews, it is time to analyze the results (though as noted above, obviously necessary revisions can occur before that). This involves describing the respondents’ input, and interpreting and explaining it in order to be able to improve your questions and questionnaire. It is common to do this in a spreadsheet, e.g. with one column (or group of columns, depending on level of detail) per respondent and one question (or question probes) per row. This facilitates looking for similarities as well as discrepancies across how respondents have (mis)understood questions, and their recommendations – if any – for improving question wording and format. Use this review to reach conclusions about the quality of existing questions (and answer options) and to make any recommendation for their modification.

### Revise the questionnaire

From the recommendations developed in the analysis, develop and implement revisions to the survey. Depending on the complexity of the project and its timeline and budget, it may be appropriate to do a second round of cognitive interviewing with the revised questionnaire, though this is not always possible.

### Additional sources

Presser, Stanley et. al. (2004). *Methods for Testing and Evaluating Survey Questionnaires*. John Wiley & Sons, Inc.

Willis, G. B. (2005). *Cognitive interviewing*. SAGE Publications, Inc., <https://doi.org/10.4135/9781412983655> . Available online free to Duke students, faculty, and staff via Duke Libraries.

UNC’s [Odum Institute](#) offers short courses in survey research that include cognitive interviewing and are open to Duke registrants for a modest fee. You can check for upcoming workshops [here](#).

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