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Leibniz Institute
for the Social Sciences



Cognitive Pretesting

GESIS Survey Guidelines

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These slides are based on the GESIS Survey Guidelines paper about cognitive pretesting:

Lenzner, T., Neuert, C. und Otto, W. (2016). Cognitive Pretesting. GESIS Survey Guidelines. Mannheim, Germany: GESIS – Leibniz Institute for the Social Sciences. doi: [10.15465/gesis-sg_en_010](https://doi.org/10.15465/gesis-sg_en_010)

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A complete list of all references used on these slides can be found in the above mentioned Survey Guidelines paper.

Overview

1. What is a pretest and why should questionnaire pretests be conducted?
2. Pretesting methods
3. What techniques are applied in cognitive pretests?
4. How are cognitive pretests conducted?
5. How are cognitive pretests analyzed?

1. What is a pretest and why should questionnaire pretests be conducted?

The purpose of a pretest is to provide information about:

- The comprehensibility of the questions
- Difficulties that respondents have with their task
- Respondents interest in, and attention to, individual questions
- Respondent well-being
- Frequency distributions of the responses

1. What is a pretest and why should questionnaire pretests be conducted?

The purpose of a pretest is to provide information about:

- Context effects
- Interviewer problems
- Technical problems with the questionnaire and with the interview aids
- The duration of the interview/questionnaire completion

2. Pretesting Methods

- Standard Pretest
- Cognitive Interviewing
- Behavior Coding
- Respondent Debriefing
- Group Discussion
- Expert Review
- Eye Tracking
- Web Probing
- ...

2.1 Standard Pretest

- **Objective:** to check the **practicability** of the interview process as a whole and the **functionality** of the entire questionnaire
- **Passive procedure:** interviewer observes respondent **without actively probing** his or her understanding
- **Dress rehearsal:** Administration of the questionnaire under **realistic conditions**
 - ▶ Respondents are usually not informed about the fact that a pretest is conducted

2.1 Standard Pretest

- Yields information about:
 - ▶ Technical defects: filter questions, administering questionnaire
 - ▶ Frequency distribution of responses, duration of the interview
 - ▶ Limited information about the way respondents understand the question
- Sample of 10 to 200 respondents
- Same mode (face-to-face, telephone, postal, online, etc.) that will be used in the main survey

2.2 Cognitive pretesting

- Usually conducted during the questionnaire design phase
- Active pretesting method, participant's answering process is actively probed and investigated
- Objective: obtain information about a wide range of questionnaire problems
- Focus is on testing individual questions

2.2 Cognitive Interviewing

The aim of cognitive interviewing is to get insights into the cognitive processes underlying survey responding:



- How do respondents interpret questions?
- How do they retrieve relevant information and events from memory?
- How do they arrive at a judgment about what to answer?
- How do they map their „internal“ answer to the answer categories provided?

3. What techniques are applied in cognitive pretests?

Think Aloud:	Verbalize all thought processes
Probing:	Follow-up questions (probes)
Confidence Rating:	Rating of the reliability of the answer
Paraphrasing:	Repeat question in their own words
Sorting:	Assign terms or situations to certain categories

3.1 Think Aloud

- Asking the participant to “think aloud” and to verbalize all the thought processes that lead, or led, to their response
- Variants:
 - ▶ Concurrent: while the question is being answered
 - ▶ Retrospective: after it has been answered

Example:

“While you are answering the following questions, can you tell me what you are thinking, or what is going through your mind? Please also mention things that may appear to you to be unimportant. The question is:...”

3.2 Probing

- Asking participants one or more follow-up questions about terms, questions or responses
- Objective: additional information about the way in which participants understand the question
- Variants:
 - ▶ Comprehension Probing: demands about the understanding
 - ▶ Category Selection Probing: demands about the chosen category
 - ▶ Information retrieval probing: demands about information collection
 - ▶ General/Elaborative Probing: unspecific demands

3.3 Paraphrasing

- Asking the participant to repeat the question in their own words
- Yields information about whether the participant's understanding corresponds to that of the researcher
- Attention: memory performance \neq understanding
- Instruction for the participant:
"Can you repeat the question I just asked you in your own words?"

3.4 Confidence Rating

- Asking participants to assess the reliability of their response
- Example:
“How sure are you that you went to the doctor [...] times in the past 12 months?”
- If participants respond that they are not quite sure whether their response is correct, they should always be asked about the reason for this uncertainty

3.5 Sorting

- Investigate the way in which participants assign terms or situations to certain categories

- Variants

Free sorting

Participants group specific items according to their own criteria

Dimensional
sorting

Participants sort items according to predefined criteria

- Challenge: constructing adequate categories

4. How are cognitive pretests conducted?

- No firm rules
- Interviews should be recorded with a video camera or a dictaphone
- Degree of standardization ranges from (almost) completely unstructured to (almost) completely standardized
- No strict rules for the number of participants
- Pretest participants should generally have the same characteristics as the respondents in the main survey
- Usually, between five and 30 interviews are conducted per pretest (round)
- Scheduled to last a maximum of 90 minutes

5. How are cognitive pretests analyzed?

Before analyzing:

- Transcribing the individual recordings and generating a case-specific list of all participant utterances
 - (1) Responses to the tested questions
 - (2) Spontaneous participant's utterances
 - (3) Responses and reactions to cognitive probes
 - (4) Remarks by the cognitive interviewer

5. How are cognitive pretests analyzed?

Several different methods of analyzing cognitive interviews are available:

- Informal analysis

- Formal analysis:
 - ▶ quantitative
 - ▶ qualitative

5. How are cognitive pretests analyzed?

Informal analysis

- Analyst decides
- Deciding for each participant's utterance whether or not it indicates that a problem exists with the question
- Pro: fast
- Contra: subjective and non-systematic

5. How are cognitive pretests analyzed?

Formal analysis (quantitative)

- Use of coding schemes
- Codes are assigned to behaviors of the interviewers and the participants
- Risk of losing information

- Example of codes:
 - ▶ Participant has difficulty understanding the question
 - ▶ Participant does not understand certain words
 - ▶ Participants understand the question differently
 - ▶ Participants have difficulty recalling the subject matter addressed in the question

5. How are cognitive pretests analyzed?

Formal analysis (qualitative)

- Example Constant Comparative Method (CCM):

1. Open Coding
 - Verbal data of participants are openly coded by topic
 - Initial categories are created
2. Axial Coding
 - Endeavour to integrate the categories created
 - Check whether there are group differences in the assignment of the categories
3. Selective Coding
 - Specification of subordinate topics that connect the categories
 - Formulating a hypothesis or theory that describes the phenomena that a survey question captures

Thank you for your attention.

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