

Good Questions, Better Survey Data: An Introduction to Effective Questionnaire Design
Susanne de Vogel, Data Science Center, University of Bremen

Exercise Descriptions

Duration: 6h + breaks

Participants: 10-20 pax

Format: Lecture style with exercises; online or in person

Activity: Introductory survey

(corresponds to slide 7)

Format: Live poll using Mentimeter or similar tool

Duration: ~5-8 minutes

This short activity helps participants mentally arrive at the session, provides an engaging start, and gives the trainer a quick overview of participants' prior knowledge and expectations.

Preparation:

Set up a short [Mentimeter](#) questionnaire (or similar live polling tool) with 3–5 questions, for example:

Question 1 (rating question):

Please indicate the extent to which you agree with the following statements about your prior knowledge of questionnaire design.

Please use a scale from 1-5 where 1 means “strongly disagree” and 5 “strongly agree”

- *I am familiar with the different types of questions commonly used in questionnaire design.*
- *I understand how to structure a questionnaire.*
- *I am aware of common biases and problems that can affect responses in questionnaire design.*

Question 2 (single choice):

Where are you currently in your questionnaire design process?

- *Haven't started (yet), just gathering information*
- *Planning, defining objectives and target audience*
- *Drafting questionnaire*
- *Pretesting and refining the questionnaire*
- *Finalizing and preparing for data collection*

Question 3 (single choice):

What modes are you planning to use for your questionnaire?

Mode refers to the way in which you will administer your questionnaire to respondents

- *Online (web based)*
- *Paper-pencil (self-administered)*
- *Telephone interview*
- *Face-to-face interview*

- *Mixed-mode (a combination)*
- *Not sure yet, N/A*

Question 4 (open question):

What do you hope to gain or learn from this questionnaire design workshop?

Instruction:

1. Explain the poll and share the Menti code or link in the chat.
2. Give participants a few minutes to respond.
3. Briefly comment on the live results to acknowledge the group's diversity and expectations (e.g., "Looks like we have a mix of newcomers and some with experience — great for shared learning!").

Exercise: Why is a well-designed questionnaire important?

(corresponds to slide 10)

Format: Small group work using collaborative boards

Duration: ~12–15 minutes total (8 minutes work + short group feedback)

This activity is designed to help participants reflect on the importance of thoughtful questionnaire design in different contexts. It serves as an engaging warm-up and transition into more technical content.

Preparation:

Create three collaborative boards (e.g. flipcharts or online tools like [Conceptboard](#) or [Padlet](#)), one for each of the following topics:

- The role of questionnaire design in ensuring data quality
- Questionnaire design and project requirements
- Questionnaire design for structuring and organizing research

Instruction:

1. Before sharing the Padlet links, assign participants to three small groups.
2. Once grouped, give a short verbal introduction (see example script below).
3. In three small groups, participants brainstorm reasons why questionnaire design is important for their assigned topic.
4. Participants have 8 minutes to write down their thoughts directly into the board.
5. After the time is up, each group nominates one person to summarize their key points briefly in the plenary.
6. Option: Add any aspects that you, as a trainer, feel worth mentioning (corresponds to slide 10)

Text for introduction:

I've created three boards, each one for a different aspect of why a well-thought-out questionnaire matters. I'll post the links in the chat shortly — please don't click yet. First, I'll divide you into three groups and assign a topic. Your task is to brainstorm why good questionnaire design matters for your topic. It doesn't need to be perfect or complete — just jot down your ideas. After 8 minutes, we'll regroup and hear one person from each group summarise what you discussed.

Exercise: Identifying levels of measurement and construct types

(corresponds to slide 37)

Format: Trainer-led exercise

Duration: ~5-8 minutes

This exercise is designed to help participants practice identifying the level of measurement (nominal, ordinal, interval, ratio) and the nature of the construct (observable vs. latent) for various survey items.

Preparation:

Before the session, trainers should prepare approximately five measurement examples that vary in both construct type (observable vs. latent) and level of measurement (nominal, ordinal, interval, ratio).

Examples may include:

- *Socioeconomic status rated as low, medium, high*
→ *Ordinal, latent*
- *Reaction time (in seconds), measured with a stopwatch*
→ *Ratio, observable*
- *Number of hospital visits in the last year*
→ *Ratio, observable*
- *Frequency of religious practice (e.g. never, occasionally, weekly, daily)*
→ *Ordinal, latent*

Choose examples that are relevant to the participants' research contexts where possible.

Include both "easy wins" (like "age") and "grey zones" (like "intelligence test score") to make the exercise more engaging.

Instruction:

1. Introduce the goal of the activity: to classify examples of measurements according to level and construct type.
2. Read out examples one by one (e.g. "Height in centimetres", "Self-reported satisfaction with work", "Gender", "Income brackets", "Political orientation on a 7-point scale"). Optionally display them on a slide or shared board.
3. Participants respond orally or via chat.
4. After each example, briefly explain the correct answer and clarify edge cases or common misunderstandings.

Exercise: Matching research objectives with question types

(corresponds to slide 61)

Format: Plenary activity using annotation tools

Duration: 10 minutes

This exercise helps participants to reflect on the link between different types of survey questions and the research objectives they serve.

Preparation:

Prepare a poster or slide that shows 6–8 typical research objectives (e.g., measuring frequency, collecting factual info, capturing attitudes).

Next to these, include a list of common question types (e.g., single choice, multiple choice, open-ended, rating scale), each with a unique symbol (e.g., ✓, ✗, →, ♥, ★, ?) or different colour.

Research objectives may include:

- Inquiring marital status
- Rank preferred social media platforms
- Evaluate perceptions of product quality
- Understand motivations for voting in local elections
- Measure acceptance of renewable energy technologies in urban areas
- Understand factors influencing community involvement or volunteerism
- Determine preferred features in smart home devices
- Gauge attitudes toward vaccination in different age groups

Question types may include:

- Single Choice
- Multiple Choice
- Open-Ended
- Rating Scale
- Ranking
- Semantic Differential

For online workshops, enable annotation in Zoom and familiarize yourself with the process if needed. For in-person workshops, prepare stamps, stickers or differently coloured pens matching the question type.

Instruction:

1. Explain the logic: Participants are to match each objective with the question type that they think fits best.
2. If online: Show participants how to use the **Zoom Annotate** tool → **Stamp** feature.
3. Participants read the research objectives and choose a symbol that represents the type of question they'd use and stamp it next to the objective it matches (2-3 minutes).
4. Give participants 2–3 minutes to work.
5. Once done, debrief by reviewing the annotations together. Discuss the most commonly chosen matches. Highlight where multiple question types might be valid, and when one is preferable.

Exercise: Identifying problems in real survey questionnaires

(corresponds to slides 77-80)

Format: Plenary discussion

Duration: 5-8 Minutes

Participants learn to identify common mistakes in the layout and structural organization of questionnaires and understand their potential impact on data quality and respondent experience.

Preparation:

Select 3 real-world examples of survey pages or question sets with poor layout or structural issues (e.g., confusing order, missing instructions, overloaded pages, inconsistent formatting). Prepare slides with one example per slide, ideally as screenshots or visual representations.

Instructions:

1. Present the first example (without explanation) and ask: “What do you notice? What might be confusing or problematic for respondents here?”
2. Collect brief input from participants (via plenary or chat).
3. Then explain the issue in detail — e.g., how the layout violates good design principles, why the question order is confusing, or how the lack of visual clarity might lead to missing or invalid answers. You can emphasize how even small structural or visual issues (e.g. unclear grouping, inconsistent formatting, overwhelming layout) can increase response burden and affect data quality — linking back to key principles from earlier in the session.
4. Repeat the process for the second and third example.

Exercise: Construction effects

(corresponds to slide 93)

Format: Plenary discussion (optional: small group work followed by plenary sharing)

Duration: 5-8 minutes

This exercise helps participants recognize common pitfalls in question wording and learn how to rephrase problematic items to improve clarity, neutrality, and validity.

Preparation:

Prepare a list of 4–6 flawed survey questions representing different types of construction issues, such as:

- Leading questions
- Unbalanced response scales
- Loaded or assumptive wording
- Double-barrelled questions
- Ambiguous phrasing

Examples may include:

Problem	Bad example	Improved suggestion
Leading question	Don't you agree that our customer service is excellent?	How would you rate our customer service?
Unbalanced response categories	How much do you love dogs?	What do you think of dogs?
Double-barrelled question	How satisfied are you with your salary and job responsibilities?	How satisfied are you with your salary? How satisfied are you with your job responsibilities?
Unjustified assumption	How do you cope with the stress of being a parent?	Are you a parent?

Instructions:

1. Display the slide showing only the bad example first, one flawed question at a time.
2. Participants are asked to identify the problem and suggest how to reword the item.
3. After collecting responses, reveal the improved version and explain the rationale.
4. Repeat for remaining examples.

Exercise: Cognitive pretesting in pairs

(corresponds to slide 104)

Format: groups of 2 people, e.g. in breakout rooms

Duration: 10 minutes incl. instructions

This short interactive exercise introduces participants to basic techniques of questionnaire pretesting, such as think-aloud, probing, and paraphrasing. Working in pairs, participants test a small set of example survey questions on each other. It is designed to sensitize participants to potential issues of clarity and interpretation in seemingly well-formulated survey questions.

Preparation:

Prepare one question for each participant that they will subject to a pretest. The questions should be phrased in a way that makes them seem clear and unambiguous at first glance, but during testing it becomes evident that they are, in fact, open to misunderstanding.

Text for a brief pre-announcement in the public chat:

Quick note: I'll be sending each of you a private message shortly with a question that we'll use for an exercise after the break. No need to check it now and no need to answer it—just take a look when you're ready after the break. Enjoy your break, and see you soon!

Example Questions (sent via private message):

How satisfied are you with your work-life balance?

How many hours do you spend on social media per day?

How frequently did you eat out in the last months?
How satisfied are you with your current income?
On average, how much time do you spend commuting each day?
How often do you visit family?
How much time have you spent reading in the last week?
How healthy do you consider your diet?
How satisfied are you with your living situation?
How often did you meet your close friends in the last months?
How important is career advancement to you?
How would you describe your level of physical fitness?
How frequently did you watch TV in the last week?
How confident are you in managing your finances?
How often did you shop online in the last six months?
How satisfied are you with your work environment?
How frequently do you engage in community activities?
How often do you feel you get enough sleep?
How organized do you feel your home is?
How often do you engage in personal development activities?
How satisfied are you with the quality of healthcare in your area?
How much control do you feel you have over your work-life balance?
How frequently do you eat fast food?
How safe is your neighbourhood?
How productive do you feel during a typical workday?
How satisfied are you with the amount of free time you have?
How many hours do you spend on hobbies each week?
How often do you follow current events?
How would you rate your ability to handle difficult situations?

Instruction:

1. Each participant receives a survey question from the instructor (e.g. via private message) and must not show it to the other participants.
2. Individually, participants develop 2–3 pretesting questions (e.g., probing, paraphrasing, think-aloud prompts) to explore how their assigned question is understood.
3. In pairs, one participant administers their question and uses the pretesting prompts to test it with their partner.
4. After the first round, roles are switched, and the second participant tests their assigned question.
5. After the round, pairs reflect briefly on possible misunderstandings and how the question could be improved.

Exercise: Putting questionnaire design steps in order

(corresponds to slide 146)

Format: Interactive ordering task (e.g., using whiteboards, Padlet, or digital drag-and-drop tools)

Duration: 10 minutes (incl. 5 minutes for discussion)

This exercise helps participants get started by encouraging them to actively reflect on the key steps involved in questionnaire development and to understand how a structured process supports effective survey design.

Preparation:

Provide the following steps of questionnaire design on slips of paper (in a physical setting) or as draggable cards (online).

Steps to be sequenced by participants:

- Develop your research question, hypotheses and analysis strategy.
- Define the target respondents.
- Choose the method(s) of reaching your target respondents.
- Decide on question content and scale level.
- Search for existing instruments to adopt or adapt.
- Develop the remaining question wording.
- Put questions into a meaningful order and format.
- Check the length of the questionnaire.
- Pretest the questionnaire.
- Revise the questionnaire.
- Develop the final survey form.

Instruction:

1. Ask participants to bring the steps of the questionnaire design process into a meaningful sequence. Emphasize that there may be overlaps or iterative processes, but that the goal is to agree on a generally logical and practical workflow.
2. After the activity, discuss with the group:
 - Where did participants disagree or struggle to organize steps?
 - What parts of the process are iterative rather than strictly linear?
 - How does the chosen order affect data quality and feasibility?