

Chapter 10

Designing questionnaires

Suggested solutions to questions and exercises

1. Discuss the importance of good questionnaire design.

Good questionnaire design is important for several reasons. A good questionnaire will be effective in addressing the research objectives – collecting valid and reliable data to address the research problem clearly and unambiguously. It also plays a very important part in the practical tasks of data collection and data processing and analysis: helping the interviewer gather and record data accurately and effectively; helping the respondent provide accurate, complete and reliable data; and helping the data analyst prepare accurate tables and analyses. In addition, it is important in representing research, and the research industry, to the wider world.

There are many ways in which error can creep into the research process; a poorly designed questionnaire can open the floodgates to it. Here are some of the ways in which this can happen and the sort of problems that arise as a result:

- A poorly designed questionnaire can result in an unpleasant experience for the respondent and a poor perception of research and the research industry, which can in turn lead to an unwillingness to take part in future research.
- A poor introduction or presentation of the research can lead to high levels of non-response and problems with representativeness of the sample
- Poorly conceived questions not measuring what they claim to measure mean the data collected are not valid.
- Unsuitable or irrelevant content – questions that lie outside the respondent's frame of reference, or which relate to subjects about which he or she has little or no knowledge, or which rely too heavily on the respondent's memory to provide accurate answers will produce inaccurate and unreliable data.
- Poorly worded questions (using ambiguous, vague, difficult, unusual or technical language) can be misunderstood, misinterpreted or interpreted differently by different people and will lead to unreliable and invalid data.
- A badly structured questionnaire (difficult, sensitive or personal questions appearing too early, before sufficient rapport has been established) can result in refusals to answer or complete the questionnaire.
- Poor question order may result in order bias, or contamination of later responses by earlier questions.
- Long, boring or repetitive questions may result in a loss of interest in answering or produce inaccurate responses.
- A questionnaire that is too long can lead to respondent fatigue, loss of interest and so poor quality data; too short and it may mean that there is no time to build rapport.
- Inadequate or poorly written interviewer or respondent instructions can result in response and recording errors.

- Poor layout can lead to errors in recording and data processing.

Interviewing is a social process. Regardless of how structured the questionnaire or the interview format, the interviewer and the respondent interact. Even with a self-completion questionnaire, there is an interaction, albeit with an invisible researcher. The interview is a sort of conversation, one in which the respondent is a willing, interested and able participant. The questionnaire should facilitate this process, not get in the way of it. In designing the questionnaire, you therefore need to think about how to begin this conversation, what words to use, what order to present the questions and how to bring it to a close. Refer to the example of an introduction given in Box 10.2 on page 205 of the book. (Your own organisation or your client may have a standard introduction that is modified to suit each project).

The questionnaire is at the front line of research – it is what the general public understands research, particularly market research, to be about. The questionnaire and the interviewer who administers it are ambassadors for the research industry. An interviewer should never be in the position of having to administer (nor a respondent to answer) a poorly designed questionnaire. With declining response rates, the onus is more than ever on the researcher to prepare a questionnaire (or discussion guide) that is clear and easy to understand and easy to administer or fill in. It should cover issues that are relevant to the respondent and it should be designed to maintain the respondent's interest throughout. The task of completing the questionnaire should not be burdensome to the respondent in any way, either in terms of the time needed or the difficulty or sensitivity of the topics covered.

The research experience should serve to bolster the credibility of the research industry and the high standards and professionalism it espouses. Effective questionnaire design can help to ensure that we do not 'spoil the field' for future research.

2. What is involved in the questionnaire design process?

The questionnaire design process involves converting the research objectives into meaningful questions and assembling the questions in an effective order on a workable questionnaire. There are several stages to the process:

- clarifying what it is exactly that you need the questions to measure
- wording the questions
- deciding on the types of question and the response format
- putting the questions into an effective and logical order
- designing the layout
- testing out a draft version
- revising the draft and agreeing a final version.

3. What is meant by the terms 'open-ended' and 'closed' questions? What are the advantages and disadvantages of each type?

In an open or free response question the respondent gives the response in his or her own words. For example, '*What is it about X that makes you say that?*' The respondent in a personal interview gives the answer verbally to the interviewer, who writes it down (or in

a telephone interview or qualitative interview might record it); in a self-completion interview, he or she writes or types the answer into the space provided on the questionnaire. The responses to open questions can be 'pre-coded' or listed in the questionnaire (a list which the respondent does not see). The interviewer records the response or responses that corresponds to the respondent's answer. If the answer is not on the list, the interviewer records it under 'Other', which is usually accompanied by the instruction 'Write in' or 'Specify'.

A *closed* question offers the respondent a choice of answers. The alternatives may be read out or shown to him or her on a card (known as a show card or prompt card). In a self-completion questionnaire, the respondent may be asked to tick a box corresponding to the answer, or underline or circle the response.

Response 'scales' are a form of closed question often used to measure attitudes and opinions. Scales are also used to measure such things as preference, likelihood to buy and satisfaction. The choice of scale and response format will depend on your information requirements, the level of sensitivity that you need in measuring the issue under investigation and the suitability for the method of data collection.

Advantages: open questions

- Make respondents feel more at ease and in control
- Can collect a wide range of responses
- Responses in respondent's own words
- Chance to probe for more detail
- Easier to word than closed questions

Disadvantages: open questions

- Requires more of respondent, interviewer and DP
 - More time consuming, more expensive
 - Detail or meaning can be lost

Advantages and disadvantages: closed questions

- Relatively easy to administer
- Take up less time than open questions
- Easier for data processing
- Hard to design
- Don't get 'real' response
- Too many in succession can be boring and repetitive

4. What are the pitfalls in question wording? Give examples of some poorly worded questions.

The pitfalls in question wording include:

- Vaguely worded questions, e.g. 'Do you have a car?'
- Unfamiliar words, jargon, abbreviations, e.g. 'Which of these FABs do you drink nowadays?'

- Words or phrases that are difficult to pronounce/read out, e.g. ‘an inanimate object’
- Double-barrelled questions, e.g. ‘Do you agree or disagree that hunting with dogs and fishing should be banned?’
- Negatively phrased questions, ‘Do you agree or disagree that serving as a soldier in the frontline is not a job for a woman?’
- Long or convoluted questions, e.g. ‘Thinking back to the last time you went on holiday, but excluding any weekend or short breaks or any holidays you took in this country, what type of holiday was that?’
- Questions which overtax the respondent’s memory ‘Thinking back five years, where did you go on holiday that summer?’
- Leading questions, e.g. ‘What do you think of the recent flood of immigration?’
- Questions using sensitive or loaded ‘non-neutral’ words, e.g. ‘What do you think of handouts for the poor?’
- Questions that make assumptions, e.g. ‘When did you first start drinking?’
- Hypothetical questions, e.g. ‘If you were ever to visit Spain on holiday, what type of accommodation would you look for?’
- Questions with overlapping response categories, e.g. ‘How many times a week on average do you visit the gym?’
 - None
 - Once or twice
 - Two to three times
 - Three or more times’
- Questions with insufficient response categories, e.g. ‘How many shops would you be prepared to visit in order to find a copy of X magazine?’
 - One other
 - Two or three others
 - I would keep looking until I got a copy

5. Give examples of the sort of topics for which there are standard questions. Why is it important to use standard questions?

Standard questions are often used to determine eligibility to take part in a survey and the characteristics or circumstances of those who do. For example, in a consumer or social survey classification questions might include questions on age, marital status, working status, social class, total household income, housing tenure and so on; in a business-to-business survey they might include questions on type of organisation, job title, number of employees and so on. In consumer surveys there may also be questions on awareness (of products, services, brands, advertising), buying behaviour, usage and satisfaction, for example. It is for these commonly asked questions that standard wording and format are developed – so that there is no need to design them anew each time and so that responses can be compared across surveys conducted in different time periods, for example, or on different topics. Questions that are common to several surveys – especially questions on demographics, geodemographics and buying behaviour can be used to combine or fuse data from different surveys.

6. What is social desirability bias and how would you minimise it?

Questions on some topics are susceptible to a form of response bias known as social desirability or prestige bias. There are three main areas of questioning in which socially desirable responses, and so over-reporting, can occur: questions about being a good citizen; being a well informed and cultured person; and fulfilling moral and social responsibilities. For example, social desirability bias might arise in questions about completing accurate tax returns, driving to the speed limit, using your vote, frequency of visiting museums and art galleries and going to the theatre, giving to charity and recycling waste. Prestige bias can also affect answers to questions about age, occupation, income and cleanliness and grooming. The flip side of social desirability, in which there is likely to be under-reporting rather than over-reporting, can occur in relation to issues such as illness, alcohol consumption, sexual activity and socially undesirable behaviour such as criminal activity and use of illegal drugs.

In designing questions to avoid social desirability bias, it is important to make it just as easy and painless for the respondent to give the low prestige answer as it is to give the high prestige answer. This can be done by asking the respondent to record his or her own answers, unseen by the interviewer or by using show cards from which the respondent reads the relevant code. Another way is to ensure that the question is presented in such a way that all answers are allowable and equally acceptable, or that the respondent has a valid escape route, for example, 'We have found that a lot of people did not manage to...How about you ... did you manage to ...'. More anonymous methods of data collection – telephone and self-completion – may be better suited to collecting this type of information.

7. Why is the order in which questions appear on the questionnaire important?

An interview is a conversation, a social interaction – even with self-completion formats, where the conversation is with an invisible interviewer or researcher. To keep the respondent's interest and co-operation, the order in which topics are raised or questions are asked must make sense – there should be no jarring non-sequiturs or illogical jumps. The order of topics and questions is important in enabling the interviewer to establish and build rapport with the respondent. For example, asking questions on difficult or sensitive topics too early in the interview can destroy rapport and lead to withdrawal from the interview or refusal to answer particular questions; if the respondent does respond, he or she may not feel comfortable enough to give accurate answers so data quality is compromised. In addition, the order of questions can impact on the interviewer's confidence and research has shown that a confident interviewer will have greater success in achieving interviews.

Order is also important in terms of bias: earlier questions may bias response to later ones. Questions eliciting unaided or spontaneous awareness should be asked before aided or prompted awareness questions. Also, in asking respondents about a relatively long list of items – brands, for example, or image or attitude statements – fatigue can set in, influencing the quality of responses to items at the end of the list and/or the pattern of response. A way of randomising these effects across the sample is to rotate or randomise the order in which the items are presented (this can be done automatically in computer-aided interviewing and by using randomised tick starts in pen and paper interviewing).

8. Why is the layout and appearance of a questionnaire important?

The layout or appearance of the questionnaire is important for several reasons. In a self-completion format, the questionnaire must look good in order to encourage the respondent to fill it in and it must be laid out so that the respondent understands what is required and can fill it in easily. An interviewer-administered questionnaire must be set out so that the interviewer can read it easily, follow the routing and record the respondent's answers accurately. Layout is also important from a data processing point of view and should take into consideration the requirements of the data entry and analysis software.

9. What is involved in pilot testing a questionnaire? Why is it important?

It can sometimes be difficult to assess objectively how a questionnaire or a discussion guide will work. Conducting a pilot study is an invaluable way of testing it out – it will show what questions are difficult, which ones give the type of answers you were expecting and so on. A pilot is especially useful if a questionnaire is a new one and not a repeat of a previous job or similar to other questionnaires you have used with a similar sample (or if the discussion guide is on a topic that is relatively new to you). Although relatively expensive and time consuming to conduct, in the end a pilot study can save time and money by delivering a questionnaire (or discussion guide) that is efficient in collecting good quality data. Pilot studies are crucial in multi-country projects to ensure that the questionnaire has been adapted to suit the language and culture in which it is to be used. The results of the pilot tests in each country should be compared to ensure that the questions are measuring the same things, that they are gathering equivalent data.

The pilot study can be conducted at any stage in the development of the questionnaire – from the conceptualisation stage (to explore the meanings of concepts and understand the language used by the target audience) to the fully developed draft (to check if it delivers the information it is designed to deliver). The style of the pilot interview will depend on how well developed the questionnaire is. Pilot interviews undertaken in the early stages of development might take the form of an informal qualitative in-depth interview. Those undertaken with a more fully formed questionnaire are likely to resemble a formal quantitative interview (in the first instance, face-to-face, then using the method of data collection intended for the final version).

Once the questionnaire is close to the final draft stage, interviewers from the fieldforce conducting the survey should do some pilot interviews. It is invaluable to get feedback from experienced interviewers as well as relatively new ones – each will have a different view of the interview process and the effectiveness of the pilot questionnaire. A relatively new interviewer will have insights into the way the questionnaire works from the interviewer's point of view – if it is easy to follow, if instructions are clear and so on; the more experienced interviewer will have insights into how it works from the respondent's point of view; and both will give you feedback on timing and overall manageability of the interview. If a full scale, proper pilot study is not possible, it can be useful to ask others not directly involved in the project (and if possible who are in the target population) to do pilot interviews.

The pilot interviews should be conducted face-to-face (regardless, in the case of a questionnaire, of whether the final version is designed for the telephone or as a self-completion sheet) with members of the target population. A face-to-face interview enables the interviewer to observe and note the respondent's physical reaction to the questions. In order to get a clear picture of how a survey questionnaire works conduct at least about 12 interviews. (For a discussion guide, a relatively new qualitative interviewer should conduct about three or four pilot interviews; with more experience, one or two interviews might provide the necessary insight.) One approach is to conduct the interview as you would a 'real' interview, making notes on how the respondent reacts to the questions. At the end of the interview you might go back over each question, asking the respondent for his or her comments on each one. Alternatively, you can ask the respondent to comment on each question as it is asked. You may even give the respondent a copy of the research objectives to enable him or her to evaluate the questions. It can be useful to tape record pilot interviews.

When the pilot study is complete, it is useful to think through how you would analyse the responses. Check the data against the research objectives to see whether you are getting the sort of information you need. For a quantitative project, it is worth preparing a coding frame based on the responses to the questions, editing the questionnaires, entering the data and producing a holecount. This allows you to check for any inconsistencies in logic or in coding that might hamper data processing. Make the necessary changes to the questionnaire or discussion guide that the pilot work suggests. If they are substantial, it may be worthwhile conducting another pilot study with a new set of respondents. Finally, it will also be worthwhile to run a short pilot study using the data collection method that is to be used in the main study, in order to identify any problems that may be related to the method of data collection.

10. Start collecting examples of questionnaires from as many sources as you can. For each questionnaire in your collection, ask yourself the following:
- (a) What information does the questionnaire aim to collect?
 - (b) At whom is it aimed?
 - (c) Is it for self-completion, or would an interviewer fill it in?
 - (d) What types of questions are used?
 - (e) How is the questionnaire set out?
 - (f) Is it easy to fill in?
 - (g) Did you understand the questions?
 - (h) How long did it take you to complete?
 - (i) What sort of questions come first?
 - (j) Are the questions in a logical order?
 - (k) Were any of the questions sensitive or too personal?
 - (l) Would you feel anxious about what might be done with the information you give?
 - (m) For example, have a look at the questionnaires on the Life and Times website, www.ark.ac.uk/nilt.