CHAPTER 13

Questionnaire design

Stage 1
Problem definition

Stage 2
Research approach developed

Stage 3
Research design developed

Stage 4
Fieldwork or data collection

Stage 5
Data preparation and analysis

Stage 6
Report preparation and presentation

Objectives

After reading this chapter, you should be able to:

1. explain the purpose of a questionnaire and its objectives of asking questions that respondents can and will answer, encouraging respondents, and minimising response error;
2. understand the array of trade-offs that have to be made in the total process of questionnaire design;
3. describe the process of designing a questionnaire, the steps involved, and guidelines that must be followed at each step;
4. discuss the considerations involved in designing questionnaires for international marketing research;
5. understand the ethical issues involved in questionnaire design.

The questionnaire must motivate the respondent to cooperate, become involved, and provide complete, honest and accurate answers.

Overview

This chapter discusses the importance of questionnaires and how the marketing researcher must put themselves 'in the shoes' of target respondents in order to design an effective questionnaire. There are no scientific principles that can guarantee an optimal questionnaire; it is more of a craft that is honed through experience. Through experience, the questionnaire designer will see that, given the information needs of the decision-makers they support and characteristics of target respondents, they must make a series of trade-offs. These trade-offs are described and illustrated. Next, we describe the objectives of a questionnaire and the steps involved in designing questionnaires. We provide several guidelines for developing sound questionnaires. The considerations involved in designing questionnaires when conducting international marketing research are discussed. The chapter concludes with a discussion of several ethical issues that arise in questionnaire design.

We begin with an example that establishes the main principles of good questionnaire design, i.e. to engage respondents and stimulate their interest. These are vital to providing complete and accurate answers. The second example illustrates how the characteristics of target respondents affect the design and implementation of a questionnaire.

example

The field-good factor[1]

Sugging
The use of marketing research to deliberately disguise a sales effort.

The lifeblood of the marketing research industry is busy people who are bombarded with database marketing, **sugging** and catalogue distributors. They find it difficult to distinguish them from genuine research interviewers. David Jenkins, Chief Executive of Kantor: 'The problem is partly self induced in terms of sending out long, boring questionnaires and not respecting the value of people's time. There is a big onus on clients to resist the temptation to squeeze every piece of information they can from one interview. The clients signing off questionnaires do not then subject themselves to the fieldwork reality. We've been good at training our interviewers to get bad questionnaires completed. Once it comes back as data, cleaned up and sanitised, the reality of what has happened in the field and therefore affects the data quality, never surfaces. The vast bulk of what we try and do in consumer research is ambush people to try and get their opinions for free. This ought to be a transaction. It may not be money but consumers need to get something back for their time. A charitable donation, information, increasingly as we do Internet research you could trade something electronic of value – access to data and the like'. ■

example

Finding the elusive young through cooperative parents[2]

ACCESS to Youth is a specialist survey that comprises around 1100 in-home interviews targeted at 7- to 19-year-olds. In surveying this age group it was noted that children become fatigued more quickly than adults, and this could affect data quality. In this project strict controls were placed on the interview length – it did not exceed 10 minutes. Wording was kept simple; complicated questions must be avoided. The research showed that the ease with which children were able to answer questions correlated with age. The older they were, the easier they found the question; and the more times they were asked the question the easier they found it. It was also found that children found it more difficult to understand the traditional four- or five-point agree/disagree scale and so a simplified three-point scale was used. Interviewers should be correctly briefed on how to conduct interviews with children. They needed to be patient and must treat the child as an equal – impatience or a condescending manner affects the child's ease and hence influences the answers they give. ■

Questionnaire definition

As discussed in Chapter 10, survey and observation are the two sets of techniques for obtaining quantitative primary data in descriptive research. Both methods require some procedure for standardising the data collection process so that the data obtained are internally consistent and can be analysed in a uniform and coherent manner. If 40 different interviewers conduct personal interviews or make observations in different parts of the country, the data they collect will not be comparable unless they follow specific guidelines and ask questions and record answers in a standard way. A standardised questionnaire or form will ensure comparability of the data, increase speed and accuracy of recording, and facilitate data processing.

Questionnaire
A structured technique for data collection consisting of a series of questions, written or verbal, that a respondent answers.

A **questionnaire**, whether it is called a schedule, interview form or measuring instrument, is a formalised set of questions for obtaining information from respondents. Typically, a questionnaire is only one element of a data collection package that might also include (1) fieldwork procedures, such as instructions for selecting, approaching and questioning respondents (see Chapter 16); (2) some reward, gift or payment offered to respondents; and (3) communication aids, such as maps, pictures, advertisements and products (as in personal interviews) and return envelopes (in mail surveys).

Any questionnaire has three specific objectives. First, it must translate the information needed into a set of specific questions that the respondents can and will answer. Developing questions that respondents can and will answer and that will yield the desired information is difficult. Two apparently similar ways of posing a question may yield different information. Hence, this objective is a challenge.

Second, a questionnaire must uplift, motivate and encourage the respondent to become involved in the interview, to cooperate, and to complete the interview. Figure 13.1 uses a basic marketing model of exchange of values between two parties to illustrate this point. Before designing any questionnaire or indeed any research technique, the researcher must evaluate 'what is the respondent going to get out of this'. In other words, the marketing researcher must have an empathy with the respondent and appreciate what they go through when approached and questioned. Such an appreciation of what respondents go through affects the design of how they are approached, the stated purpose of the research, the rewards for taking part and the whole process of capturing the data.

Not all respondents are the same in what they seek from a questionnaire or interview process. In Figure 13.1, some respondents may want to see some personal benefit, perhaps a tangible reward, while others may be happy to see the social benefits. Taking care in appreciating what the respondent expects from the questioning process nurtures responses that have been well thought through, are honest and accurate.

Third, a questionnaire should minimise response error. The potential sources of error in research designs were discussed in Chapter 3, where response error was defined as the error that arises when respondents give inaccurate answers or when their answers are mis-recorded or mis-analysed. A questionnaire can be a major source of response error. Minimising this error is an important objective of questionnaire design.

Questionnaire design process

The great weakness of questionnaire design is lack of theory. Because there are no scientific principles that guarantee an optimal or ideal questionnaire, questionnaire design is a skill acquired through experience. Similarly, the correct grammatical use of language does

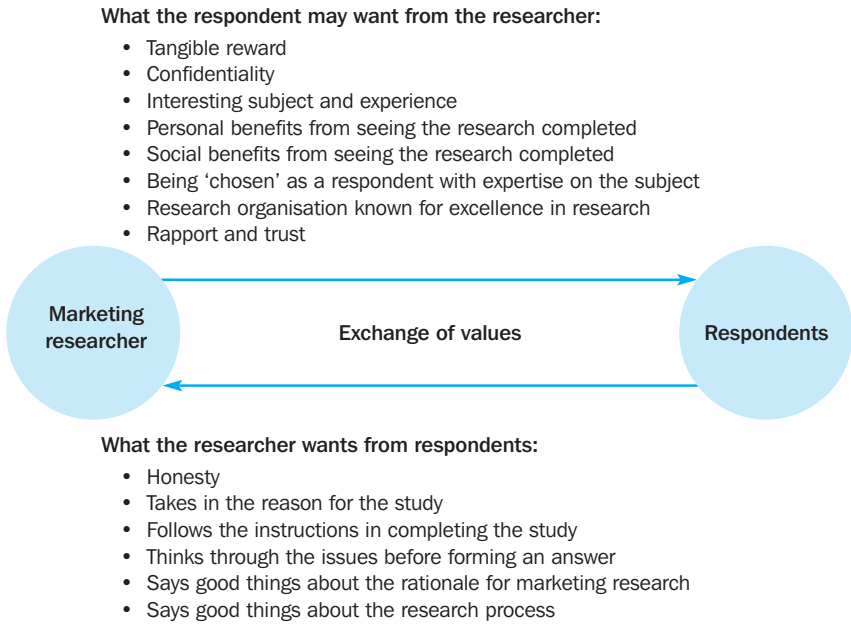

Figure 13.1
Exchange of values between marketing researchers and respondents

not guarantee the optimal questionnaire. There may be certain respondents who do not communicate in a 'correct' grammatical manner; such questionnaires may be confusing and meaningless. Therefore, this section presents guidelines and rules to help develop the craft of questionnaire design. Although these guidelines and rules can help you avoid major mistakes, the fine-tuning of a questionnaire comes from the creativity of a skilled researcher.[3] Developing the craft of questionnaire design requires the creative 'trade-off' of many factors. Figure 13.2 helps to illustrate some of the trade-offs that the questionnaire designer faces, that collectively make the design process problematic.

The design process is founded upon generating information that will effectively support marketing decision-makers. Establishing the nature of marketing problems

Designing a questionnaire to match the language and logic of target respondents is a craft that requires many tools.

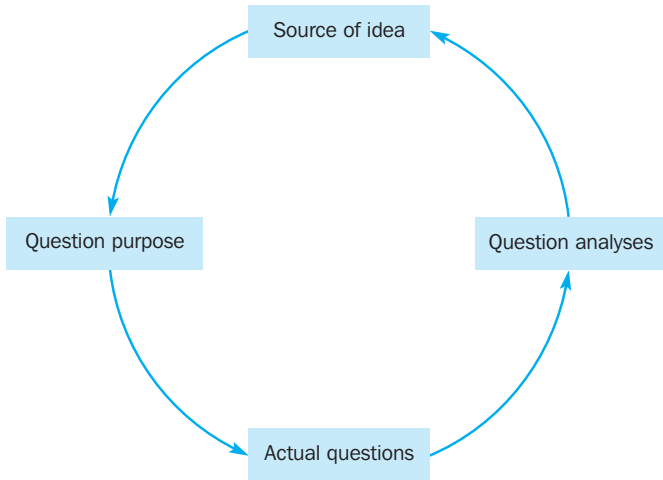

Figure 13.2
Trade-offs faced by the questionnaire designer

and corresponding marketing research problems, i.e. defining the nature of effective support, was discussed in Chapter 2. Different techniques and sources of information were outlined to help in the diagnosis process, which feed directly into the stages set out below.

1 The 'source of idea' represents the culmination of marketing decision-maker and marketing researchers' diagnoses and the data they have available at the time of commissioning a marketing research project.
2 From the diagnoses, and the statement of marketing and research problems, emerge specific research questions. Based upon the diagnoses, the purpose of each potential question should be established, i.e. 'question purposes'. Some research problems may be tackled through actual measurements in questionnaires. Other research problems may not be tackled by questionnaires. For example, in the GlobalCash Project, banks wished to know which criteria companies use to choose a bank. Tackling this issue is a straightforward task of establishing criteria and applying scales of importance to these criteria. Banks further wished to know what forces were shaping these criteria and how these forces interacted. The latter issues are qualitative in nature and were captured in follow-up in-depth interviews. In establishing question purposes, priorities have to be set of what can be measured using a questionnaire, and out of the array of issues that could be measured, what are seen as the most, down to the least, important.
3 With clear question purposes, the process of establishing 'actual questions' can begin. At this point, the researcher has to put themselves 'in the shoes' of the potential respondent. It is fine to say that certain questions need to be answered, but this has to be balanced with an appreciation of whether respondents are able or indeed willing to answer particular questions. For example in the GlobalCash Project, banks wished to know which banks individual companies use in every European country. The purpose of such a question was to establish which banks were gaining market share and to see whether companies were concentrating their business with fewer banks. This seems a straightforward question until one realises the enormity of the task. There are over 20 European countries and in some of them the norm is to conduct business with a large number of banks. In Italy, for example, one company conducted business with 70 banks. Thus, the task of remembering all the banks and writing them down placed an enormous burden on the respondent. Making the question closed by listing all the banks does not help either; in Germany, for example, there are over 400 banks that could be listed. The trade-off or final compromise was to ask respon-

dents who their 'lead bank' was, i.e. with whom they did most business. Asking them to name just one bank ensured that the task was not too onerous for the respondent, enabling a more complete and accurate response. The trade-off was that it did not completely satisfy the set question purpose.

4 Deciding how the data collected is to be analysed does not happen when questionnaires have been returned from respondents. 'Question analyses' must be thought through from an early stage. The connections between questions and the appropriate statistical tests that fulfil the question purposes should be established as the questionnaire is designed. Again, trade-offs have to be considered. In Chapter 12, different scale types were linked to different statistical tests. As one progresses from nominal to ordinal to interval and then ratio scales, more powerful statistical analyses can be performed. However, as one progresses through these scale types, the task for respondents becomes more onerous. This trade-off can be illustrated again using questions from the GlobalCash Project. Companies were asked who they thought were the top four banks in their country (ordinal scale). Respondents were then asked why they thought the top two banks were perceived to be best and second-best. This could be completed in a number of ways. A list of characteristics could be given and respondents asked to tick those that they thought matched the bank. This would be easy for respondents to undertake and produce nominal data. The same set of characteristics could be listed with respondents asked to rank order them. This task requires more thought and effort, though now produces the more powerful ordinal data. The same list could have been presented and respondents asked to allocate 100 points using a constant sum scale. This would have been an even more onerous task but would have produced the more powerful interval scale. The questionnaire designer has to consider how onerous the task is for respondents, especially when set in the context of all the other questions the respondent is being asked, and trade this off against the understanding they get from the data.

5 The understanding that is taken from the data comes back to the 'source of idea'. By now they may have collected other data, interpreted existing data differently, or been exposed to new forces in the marketplace. They may even now see what questions they should have been asking!

There can be no theory to encapsulate the trade-offs illustrated in Figure 13.2. Each research project will have different demands and emphases. With the experience of designing a number of questionnaires, the 'craft' of questionnaire design is developed and the balance understood to meet different demands and emphases.

In order to develop a further understanding of questionnaire design, the process will be presented as a series of steps, as shown in Figure 13.3, and we present guidelines for each step. The process outlined in Figure 13.2 shows that in practice the steps are interrelated and the development of a questionnaire involves much iteration and interconnection between stages.[4]

Specify the information needed

The first step in questionnaire design is to specify the information needed. This is also the first step in the research design process. Note that, as the research project progresses, the information needed becomes more and more clearly defined. It is helpful to review the components of the problem and the approach, particularly the research questions, hypotheses and characteristics that influence the research design. To further ensure that the information obtained fully addresses all the components of the

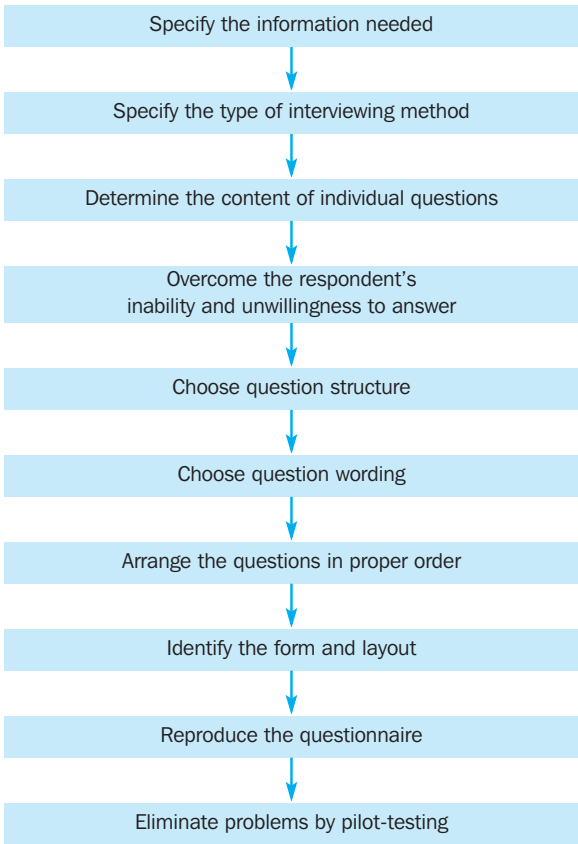

Figure 13.3
Questionnaire design process

problem, the researcher should prepare a set of dummy tables. A dummy table is a blank table used to catalogue data. It portrays how the analysis will be structured once the data have been collected.

It is also vital to have a clear idea of the target respondents. The characteristics of the respondent group have a great influence on questionnaire design. The wording and style of questions that may be appropriate for finance directors being surveyed about their IT needs may not be appropriate for retired persons being surveyed about their holiday needs. The more diversified the respondent group, the more difficult it is to design a single questionnaire appropriate for the entire group.

Specify the type of interviewing method

An appreciation of how the type of interviewing method influences questionnaire design can be obtained by considering how the questionnaire is administered under each method (see Chapter 10). In personal interviews, respondents see the questionnaire and interact face to face with the interviewer. Thus, lengthy, complex and varied questions can be asked. In telephone interviews the respondents interact with the interviewer, but they do not see the questionnaire. This limits the type of questions that can be asked to short and simple ones. Mail and electronic questionnaires are self administered, so the questions must be simple, and detailed instructions must be provided. In computer-assisted interviewing (CAPI and CATI), complex skip patterns and randomisation of questions to eliminate order bias can be easily accommodated. Questionnaires designed for personal and telephone interviews should be written in a conversational style.[5]

Determine the content of individual questions

Once the information needed is specified and the type of interviewing method decided, the next step is to determine individual question content: what to include in individual questions.

Is the question necessary?

Every question in a questionnaire should contribute to the information needed or serve some specific purpose. If there is no satisfactory use for the data resulting from a question, that question should be eliminated.

In certain situations, however, questions may be asked that are not directly related to the needed information. It is useful to ask some neutral questions at the beginning of the questionnaire to establish involvement and rapport, particularly when the topic of the questionnaire is sensitive or controversial. Sometimes filter questions are asked to disguise the purpose or sponsorship of the project. For example, rather than limiting the questions to the brand of interest, questions about competing brands may be included to disguise the sponsorship. Questions unrelated to the immediate problem may sometimes be included to generate client support for the project. At times, certain questions may be duplicated for the purpose of assessing reliability or validity.[6]

Are several questions needed instead of one?

Once we have ascertained that a question is necessary, we must make sure that it is sufficient to get the desired information. Sometimes several questions are needed to obtain the required information in an unambiguous manner. Consider the question 'Do you think Coca-Cola is a tasty and refreshing soft drink?' A yes answer will presumably be clear, but what if the answer is no? Does this mean that the respondent thinks that Coca-Cola is not tasty, that it is not refreshing, or that it is neither tasty nor refreshing? Such a question is called a **double-barrelled question**, because two or more questions are combined into one. To obtain the required information, two distinct questions should be asked: 'Do you think Coca-Cola is a tasty soft drink?' and 'Do you think Coca-Cola is a refreshing soft drink?'.

Double-barrelled question
A single question that attempts to cover two issues. Such questions can be confusing to respondents and result in ambiguous responses.

Another example of multiple questions embedded in a single question is the 'why' question. In the context of the GlobalCash study, consider the question 'Why do you bank at ABN AMRO?' The possible answers may include: 'for their banking software', 'their branches are more conveniently located', and 'they were recommended by a respected colleague at a conference'. Each answer relates to a different question embedded in the why question. The first tells why the respondent banks with the pan-European bank, the second reveals what the respondent likes about ABN AMRO compared with other banks, and the third tells how the respondent learned about ABN AMRO. The three answers are not comparable and any one answer may not be sufficient. Complete information may be obtained by asking two separate questions: 'What do you like about ABN AMRO compared with other banks?' and 'How did you first develop a relationship with ABN AMRO?' Most 'why' questions about the use of a product or choice alternative involve two aspects: (1) attributes of the product and (2) influences leading to knowledge of it.[7]

Overcoming the respondent's inability and unwillingness to answer

Researchers should not assume that respondents can provide accurate or reasonable answers to all questions (assuming that they are willing to!). The researcher should attempt to overcome the respondents' inability to answer. Certain factors limit the respondents' ability to provide the desired information. The respondents may not be informed, may not remember, or may be unable to articulate certain types of responses.

Is the respondent informed?

Respondents are often asked about topics on which they are not informed. A parent may not be informed about their child's daily purchasing or vice versa (especially when one considers that sons and daughters can have an age range from 0 to around 80!).

Filter question
An initial question in a questionnaire that screens potential respondents to ensure they meet the requirements of the sample.

In situations where not all respondents are likely to be informed about the topic of interest, **filter questions** that measure familiarity, product use and past experience should be asked before questions about the topics themselves.[8] Filter questions enable the researcher to filter out respondents who are not adequately informed. The GlobalCash questionnaire included questions that asked respondents about their experiences when working with banks in domestic markets and in international markets. A filter question was used to establish whether a respondent was informed about banking in international markets. If they had no experience of international banking, they could skip the 'international banking' section and focus upon questions that were relevant to them. The use of CATI, CAPI and Internet surveys allow extensive filtering to produce a variety of questionnaire formats that can be tailored to the familiarity, product use and past experiences of respondents.

As a general rule, a 'don't know' option appears to reduce uninformed responses without reducing the overall response rate or the response rate for questions about which the respondents have information. Hence, this option should be provided unless there are explicit reasons for not doing so.[9]

Can the respondent remember?

Many things that we might expect everyone to know are remembered by only a few. Test this on yourself. Can you remember the brand name of the socks you are wearing (presuming you are wearing socks), what you had for lunch a week ago, or what you were doing a month ago at noon? Further, do you know how many litres of soft drinks you consumed during the last four weeks? Evidence indicates that consumers are particularly poor at remembering quantities of products consumed. In situations where factual data were available for comparison, it was found that consumer reports of product usage exceeded actual usage by 100% or more.[10]

Telescoping
A psychological phenomenon that takes place when an individual telescopes or compresses time by remembering an event as occurring more recently than it actually occurred.

The inability to remember leads to errors of omission, telescoping and creation. Omission is the inability to recall an event that actually took place. **Telescoping** takes place when an individual telescopes or compresses time by remembering an event as occurring more recently than it actually occurred.[11] For example, a respondent reports three trips to the supermarket in the last two weeks when, in fact, one of these trips was made 18 days ago. Creation error takes place when a respondent 'remembers' an event that did not actually occur.

The ability to remember an event is influenced by (1) the event itself, (2) the time elapsed since the event, and (3) the presence or absence of things that would aid memory. We tend to remember events that are important or unusual or that occur frequently. People remember their wedding anniversary and birthday. Likewise, more recent events are remembered better. A grocery shopper is more likely to remember what he purchased on his last shopping trip than what he bought three shopping trips ago.

Research indicates that questions that do not provide the respondent with cues to the event, and that rely on unaided recall, can underestimate the actual occurrence of an event. For example, testing whether respondents were exposed to a beer commercial at the cinema could be measured in an unaided manner by questions like 'What brands of beer do you remember being advertised last night at the cinema?' (having established that the respondent was at a cinema last night). Naming a brand shows that they saw the advert, took in the brand name and could recall it – three different stages. An aided recall approach attempts to stimulate the respondent's memory by providing cues related to the event of interest. Thus, the important features to measure may be that they saw the advert and took in the brand name – the fact that they cannot say the brand name may not affect their purchasing intentions. The aided recall approach would list a number of beer brands and then ask 'Which of these brands were advertised last night at the cinema?' In presenting cues, the researcher must guard against biasing the responses by testing out several successive levels of stimulation. The influence of stimulation on responses can then be analysed to select an appropriate level of stimulation.

Is the respondent able to articulate?

Respondents may be unable to articulate certain types of responses. For example, if asked to describe the atmosphere of the bank branch they would prefer to patronise, most respondents may be unable to phrase their answers. On the other hand, if the respondents are provided with alternative descriptions of bank atmosphere, they will be able to indicate the one they like the best. If the respondents are unable to articulate their responses to a question, they are likely to ignore that question and refuse to respond to the rest of the questionnaire. Thus, respondents should be given aids such as pictures, maps and descriptions to help them articulate their responses.

Even if respondents are able to answer a particular question, they may be unwilling to do so, either because too much effort is required, the situation or context may not seem appropriate for disclosure, no legitimate purpose or need for the information requested is apparent, or the information requested is sensitive.

Effort required of the respondents

Most respondents are unwilling to devote much effort to providing information. Suppose that the researcher is interested in determining from which shops a respondent bought goods on their most recent shopping trip. This information can be obtained in at least two ways. The researcher could ask the respondent to list all the items purchased on their most recent shopping trip, or the researcher could provide a list of shops and ask the respondent to indicate the applicable ones. The second option is preferable, because it requires less effort from respondents.

Context

Some questions may seem appropriate in certain contexts but not in others. For example, questions about personal hygiene habits may be appropriate when asked in a survey sponsored by a health organisation but not in one sponsored by a breakfast cereal manufacturer. Respondents are unwilling to respond to questions they consider to be inappropriate for the given context. Sometimes, the researcher can manipulate the context in which the questions are asked so that the questions seem appropriate.

Legitimate purpose

Respondents are also unwilling to divulge information that they do not see as serving a legitimate purpose. Why should a firm marketing breakfast cereals want to know

their age, income and occupation? Explaining why the data are needed can make the request for the information seem legitimate and may increase the respondents' willingness to answer. A statement such as 'To determine how the preferences for cereal brands vary among people of different ages, we need information on . . . ' can make the request for information seem more legitimate.

Sensitive information

Respondents may be unwilling to disclose, at least accurately, sensitive information because this may cause embarrassment or threaten the respondent's prestige or self-image, or be seen as too personal and an invasion of privacy. If pressed for the answer, respondents may give biased responses, especially during personal interviews[12] (see Table 10.2). Sensitive topics include money, personal hygiene, family life, political and religious beliefs, involvement in accidents or crimes. In industrial surveys, sensitive questions may encompass much of what a company does, especially if it reveals strategic activities and plans. The techniques described in the following section can be adopted to increase the likelihood of obtaining information that respondents are unwilling to give.

Increasing the willingness of respondents

Respondents may be encouraged to provide information which they are unwilling to give by the following techniques.[13]

1. Place sensitive topics at the end of the questionnaire. By then, initial mistrust has been overcome, rapport has been created, legitimacy of the project has been established, and respondents are more willing to give information. In this context, consider how sensitive classification questions such as gender, age and income may be perceived.
2. Preface the question with a statement that the behaviour of interest is common. For example, before requesting information on credit card debt, say 'Recent studies show that most European consumers are in debt'. This technique describes the use of counter-biasing statements.
3. Ask the question using the third-person technique (see Chapter 7): phrase the question as if it referred to other people.
4. Hide the question in a group of other questions that respondents are willing to answer. The entire list of questions can then be asked quickly.
5. Provide response categories rather than asking for specific figures.[14] Do not ask 'What is your household's annual income?' Instead, ask the respondent to indicate an appropriate income category. In personal interviews, give the respondents cards that list the numbered choices. The respondents then indicate their responses by number.
6. Use randomised techniques. In these techniques, respondents are presented with two questions, one sensitive and the other a neutral question with a known probability of yes responses (e.g. 'Is your birthday in March?'). They are asked to select one question randomly by flipping a coin, for example. The respondent then answers the selected question yes or no, without telling the researcher which question is being answered.[15] Given the overall probability of a yes response, the probability of selecting the sensitive question, and the probability of a yes response to the neutral question, the researcher can determine the probability of a yes response to the sensitive question using the law of probability. The researcher cannot, however, determine which respondents have answered yes to the sensitive question.[16]

Choose question structure

A question may be unstructured or structured. We define unstructured questions and discuss their relative advantages and disadvantages and then consider the major types of structured questions: multiple-choice, dichotomous and scales.[17]

Unstructured questions

Unstructured questions
Open-ended questions that respondents answer in their own words.

Unstructured questions are open-ended questions that respondents answer in their own words. They are also referred to as free-response or free-answer questions. The following are some examples:

- What is your occupation?
- What do you think of people who patronise secondhand clothes shops?
- Who is your favourite film personality?

Open-ended questions are good first questions on a topic. They enable the respondents to express general attitudes and opinions that can help the researcher interpret their responses to structured questions. They can also be useful as a final question in a questionnaire. After respondents have thought through and given all their answers in a questionnaire, there may be other issues that are important to them, that may not have been covered. Having an open-ended question at the end allows respondents to express these issues. As well as providing material to help the researcher interpret other responses, the respondent has the chance to express what they feel to be important. Unstructured questions have a much less biasing influence on response than structured questions. Respondents are free to express any views. Their comments and explanations can provide the researcher with rich insights.

A principal disadvantage is that potential for interviewer bias is high. Whether the interviewers record the answers verbatim or write down only the main points, the data depend on the skills of the interviewers. Tape recorders should be used if verbatim reporting is important.

Another major disadvantage of unstructured questions is that the coding of responses is costly and time-consuming, as illustrated in Chapter 9.[18] The coding procedures required to summarise responses in a format useful for data analysis and interpretation can be extensive. Implicitly, unstructured or open-ended questions give extra weight to respondents who are more articulate. Also, unstructured questions are not very suitable for self-administered questionnaires (mail and CAPI), because respondents tend to be briefer in writing than in speaking.

Pre-coding can overcome some of the disadvantages of unstructured questions. Expected responses are recorded in multiple-choice format, although the question is presented to the respondents as an open-ended question. Based on the respondent's reply, the interviewer selects the appropriate response category. Because the response alternatives are limited, this approach may be satisfactory when the respondent can easily formulate the response and when it is easy to develop pre-coded categories. In general, open-ended questions are useful in exploratory research and as opening or closing questions. They should be chosen with great care as their disadvantages can outweigh their advantages in a large survey.[19]

Structured questions
Questions that pre-specify the set of response alternatives and the response format. A structured question could be multiple-choice, dichotomous or a scale.

Structured questions

Structured questions specify the set of response alternatives and the response format. A structured question may be multiple-choice, dichotomous or a scale.

Multiple choice questions. In multiple-choice questions, the researcher provides a choice of answers and respondents are asked to select one or more of the alternatives given. Consider the following question:

Which of the following items have you purchased in the last two months?
Please tick as many as apply.

		✓
1	Clothing	
2	Jewellery	
3	Cosmetics	
4	Shoes	
•		
•		
•		
16	Camera equipment	
17	Other (please specify)	

Of concern in designing multiple-choice questions are the number of alternatives that should be included and the order of potential responses, known as position bias. The response alternatives should include the set of all possible choices. The general guideline is to list all alternatives that may be of importance and to include an alternative labelled 'other (please specify)', as shown above. The response alternatives should be mutually exclusive. Respondents should also be able to identify one, and only one, alternative, unless the researcher specifically allows two or more choices (for example, 'Please indicate all the brands of soft drinks that you have consumed in the past week'). If the response alternatives are numerous, consider using more than one question to reduce the information processing demands on the respondents.

Order bias (position bias)
A respondent's tendency to choose an alternative merely because it occupies a certain position or is listed in a certain order.

Order bias or **position bias** is the respondents' tendency to tick an alternative merely because it occupies a certain position or is listed in a certain order. Respondents tend to tick the first or the last statement in a list, particularly the first.[20] For a list of numbers (quantities or prices), there is a bias towards the central value on the list. To control for order bias, several forms of the questionnaire should be prepared with the order in which the alternatives are listed varied from form to form. Each alternative should appear once in each of the extreme positions, once in the middle, and once somewhere in between.[21]

Multiple-choice questions overcome many of the disadvantages of open-ended questions because interviewer bias is reduced and these questions are administered quickly. Also, coding and processing of data are much less costly and time-consuming. In self-administered questionnaires, respondent cooperation is improved if the majority of the questions are structured.

Multiple-choice questions are not without disadvantages. Considerable effort is required to design effective multiple-choice questions. Qualitative techniques may be required to determine the appropriate response alternatives. It is difficult to obtain information on alternatives not listed. Even if an 'other (please specify)' category is included, respondents tend to choose among the listed alternatives. In addition, showing respondents the list of possible answers produces biased responses.[22] There is also the potential for order bias.

Dichotomous question
A structured question with only two response alternatives, such as yes and no.

Dichotomous questions. A **dichotomous question** has only two response alternatives, such as yes or no, or agree or disagree. Often, the two alternatives of interest are supplemented by a neutral alternative, such as 'no opinion', 'don't know', 'both', or 'none', as in this example.[23]

Do you intend to buy a new laptop computer within the next six months?

	✓
Yes	
No	
Don't know	

Note that this question could also be framed as a multiple-choice question using response alternatives 'Definitely will buy', 'Probably will buy', 'Probably will not buy', and so forth. The decision to use a dichotomous question should be guided by whether the respondents approach the issue as a yes-or-no issue. Although decisions are often characterised as series of binary or dichotomous choices, the underlying decision-making process may reflect uncertainty that can best be captured by multiple-choice responses. For example, two individuals may be equally likely to buy a new laptop computer within the next six months if the economic conditions remain favourable. One individual, who is being optimistic about the economy, will answer yes, while the other, feeling pessimistic, will answer no.

Another issue in the design of dichotomous questions is whether to include a neutral response alternative. If it is not included, respondents are forced to choose between yes and no even if they feel indifferent. On the other hand, if a neutral alternative is included, respondents can avoid taking a position on the issue, thereby biasing the results. We offer the following guidelines. If a substantial proportion of the respondents can be expected to be neutral, include a neutral alternative. If the proportion of neutral respondents is expected to be small, avoid the neutral alternative.[24]

The general advantages and disadvantages of dichotomous questions are very similar to those of multiple-choice questions. Dichotomous questions are the easiest type of questions to code and analyse, but they have one acute problem. The response can be influenced by the wording of the question. To illustrate, the statement 'Individuals are more to blame than social conditions for crime and lawlessness in this country' produced agreement from 59.6% of the respondents. On a matched sample that responded to the opposite statement, 'Social conditions are more to blame than individuals for crime and lawlessness in this country', however, 43.2% (as opposed to 40.4%) agreed.[25] To overcome this problem, the question should be framed in one way on one-half of the questionnaires and in the opposite way on the other half. This is referred to as the split ballot technique.

Scales. Scales were discussed in detail in Chapter 12. To illustrate the difference between scales and other kinds of structural questions, consider the question about intentions to buy a new laptop computer. One way of framing this using a scale is as follows:

Do you intend to buy a new laptop computer within the next six months?

Definitely will not buy	Probably will not buy	Undecided	Probably will buy	Definitely will buy
1	2	3	4	5

This is only one of several scales that could be used to ask this question (see Chapter 12).

Choose question wording

Question wording is the translation of the desired question content and structure into words that respondents can clearly and easily understand. Deciding on question wording is perhaps the most critical and difficult task in developing a questionnaire. If a question is worded poorly, respondents may refuse to answer it or answer it incorrectly. The first condition, known as item non-response, can increase the complexity of data analysis.[26] The second condition leads to response error, discussed earlier. Unless the respondents and the researcher assign exactly the same meaning to the question, the results will be seriously biased.[27]

To avoid these problems, we offer the following guidelines: (1) define the issue, (2) use ordinary words, (3) use unambiguous words, (4) avoid leading or biasing questions, (5) avoid implicit alternatives, (6) avoid implicit assumptions, (7) avoid generalisations and estimates, and (8) use positive and negative statements.

Define the issue

A question should clearly define the issue being addressed. Consider the following question:

> Which brand of shampoo do you use?

On the surface, this may seem to be a well-defined question, but we may reach a different conclusion when we examine it in terms of 'who', 'what', 'when' and 'where'. 'Who' in this question refers to the respondent. It is not clear, though, whether the researcher is referring to the brand the respondent uses personally or the brand used by the household. 'What' is the brand of shampoo. But what if more than one brand of shampoo is being used? Should the respondent mention the most preferred brand, the brand used most often, the brand used most recently, or the brand that comes to mind first? 'When' is not clear; does the researcher mean last time, last week, last month, last year, or ever? As for 'where', it is implied that the shampoo is used at home, but this is not stated clearly. A better wording for this question would be:

> Which brand or brands of shampoo have you personally used at home during the last month? In the case of more than one brand, please list all the brands that apply.

Use ordinary words

Ordinary words should be used in a questionnaire, and they should match the vocabulary level of the respondents.[28] In other words, even though we may speak the same language as our potential respondents, there may be particular colloquialisms and ways of using words and terms they use which we should acquaint ourselves with. When choosing words, bear in mind the intellectual level of the target group of respondents, and how comfortable they are with technical terms related to any products or services we are measuring. Most respondents do not understand technical marketing words. For example, instead of asking 'Do you think the distribution of soft drinks is adequate?', ask 'Do you think soft drinks are readily available when you want to buy them?' Never forget that you are imposing your language upon respondents in the form of a questionnaire. Your language communicates and puts respondents in a particular frame of mind as they answer the questions you pose. Unless that language is meaningful to respondents, they will be put in a frame of mind that you may not intend, and be answering different questions from those you set.

Use unambiguous words

The words used in a questionnaire should have a single meaning that is known to the respondents.[29] A number of words that appear to be unambiguous have different meanings for different people.[30] These include 'usually', 'normally', 'frequently', 'often', 'regularly', 'occasionally' and 'sometimes'. Consider the following question:

In a typical month, how often do you visit a bank?

	✓
Never	
Occasionally	
Sometimes	
Often	
Regularly	

The answers to this question are fraught with response bias, because the words used to describe category labels have different meanings for different respondents. Three respondents who visit a bank once a month may tick three different categories: occasionally, sometimes and often. A much better wording for this question would be the following:

In a typical month, how often do you visit a bank?

	✓
Less than once	
1 or 2 times	
3 or 4 times	
More than 4 times	

Note that this question provides a consistent frame of reference for all respondents. Response categories have been objectively defined, and respondents are no longer free to interpret them in their own way.

In deciding on the choice of words, researchers should consult a dictionary and thesaurus and ask the following questions:

1. Does the word mean what we intend?
2. Does the word mean the same to our target respondents?
3. Does the word have any other meanings?
4. If so, does the context make the intended meaning clear?
5. Does the word have more than one pronunciation or similar pronunciations that may be confusing?
6. Is a simpler word or phrase suggested that may be more meaningful to our target respondents?

Avoid leading or biasing questions

Leading question
A question that gives the respondent a clue as to what the answer should be.

A **leading question** is one that clues the respondent to what the answer should be, as in the following:

Do you think that patriotic French people should buy imported cars when that would put French workers out of employment?

	✓
Yes	
No	
Don't know	

Leading questions can take your respondents in unintended directions – a little like a wobbly wheel on your supermarket trolley.

This question would lead respondents to a 'No' answer. After all, how could patriotic French people put French people out of work? Therefore, this question would not help determine the preferences of French people for imported versus domestic cars.

Bias may also arise when respondents are given clues about the sponsor of the project. Respondents tend to respond favourably towards the sponsor. The question 'Is Colgate your favourite toothpaste?' is likely to bias the responses in favour of Colgate. A more unbiased way of obtaining this information would be to ask 'What is your favourite toothpaste brand?' Likewise, the mention of a prestigious or non-prestigious name can bias the response, as in 'Do you agree with the British Dental Association that Colgate is effective in preventing cavities?' An unbiased question would be to ask 'Is Colgate effective in preventing cavities?'[31]

Avoid implicit alternatives

Implicit alternative
An alternative that is not explicitly expressed.

An alternative that is not explicitly expressed in the options is an **implicit alternative**. Making an implied alternative explicit may increase the percentage of people selecting that alternative, as in the following two questions.

1 Do you like to fly when travelling short distances?

2 Do you like to fly when travelling short distances, or would you rather drive?

In the first question, the alternative of driving is only implicit, but in the second question it is explicit. The first question is likely to yield a greater preference for flying than the second question.

Questions with implicit alternatives should be avoided unless there are specific reasons for including them.[32] When the alternatives are close in preference or large in number, the alternatives at the end of the list have a greater chance of being selected. To overcome this bias, the split ballot technique should be used to rotate the order in which the alternatives appear.

Avoid implicit assumptions

Implicit assumptions
An assumption that is not explicitly stated in a question.

Questions should not be worded so that the answer is dependent on implicit assumptions about what will happen as a consequence. **Implicit assumptions** are assumptions that are not explicitly stated in the question, as in the following example.[33]

1 Are you in favour of a balanced national budget?

2 Are you in favour of a balanced national budget if it would result in an increase in personal income tax?

Implicit in question 1 are the consequences that will arise as a result of a balanced national budget. There might be a cut in defence expenditures, an increase in personal income tax, a cut in health spending, and so on. Question 2 is a better way to word this question. Question 1's failure to make its assumptions explicit would result in overestimating the respondents' support for a balanced national budget.

Avoid generalisations and estimates

Questions should be specific, not general. Moreover, questions should be worded so that the respondent does not have to make generalisations or compute estimates. Suppose that we were interested in households' annual per capita expenditure on groceries. If we asked respondents the question:

What is the annual per capita expenditure on groceries in your household?

they would first have to determine the annual expenditure on groceries by multiplying the monthly expenditure on groceries by 12 or the weekly expenditure by 52. Then they would have to divide the annual amount by the number of persons in the household. Most respondents would be unwilling or unable to perform these calculations. A better way of obtaining the required information would be to ask the respondents two simple questions:

What is the monthly (or weekly) expenditure on groceries in your household?

and

How many members are there in your household?

The researcher can then perform the necessary calculations.

Use positive and negative statements

Many questions, particularly those measuring attitudes and lifestyles, are worded as statements to which respondents indicate their degree of agreement or disagreement. Evidence indicates that the response obtained is influenced by the directionality of the statements: whether they are stated positively or negatively. In these cases, it is better to use dual statements, some of which are positive and others negative. Two different questionnaires could be prepared. One questionnaire would contain half-negative and half-positive statements in an interspersed way. The direction of these statements would be reversed in the other questionnaire. An example of dual statements was provided in the summated Likert scale in Chapter 12 designed to measure attitudes towards Dresdner Bank.

Arrange the questions in proper order

The order of questions is of equal importance to the wording used in the questions. As noted in the last section, questions communicate and set respondents in a particular frame of mind. The frame of mind in which they are set affects how they perceive individual questions and respond to those questions. As well as understanding the characteristics of language in target respondents, questionnaire designers must be aware of the logical connections between questions – as perceived by target respondents. The following issues help to determine the order of questions.

Opening questions

The opening questions can be crucial in gaining the confidence and cooperation of respondents. They should be interesting, simple and non-threatening. Questions that ask respondents for their opinions can be good opening questions, because most people like to express their opinions. Sometimes such questions are asked although they are unrelated to the research problem and their responses are not analysed.[34] Though classification questions seem simple to start a questionnaire, issues like age, gender and income can be seen as sensitive. Opening a questionnaire with these questions tends to make respondents concerned about the purpose of these questions and indeed the whole survey.

Type of information

Classification information
Socio-economic and demographic characteristics used to classify respondents.

Identification information
A type of information obtained in a questionnaire that includes name, address and phone number.

The type of information obtained in a questionnaire may be classified as (1) basic information, (2) **classification information**, and (3) **identification information**. Basic information relates directly to the research problem. Classification information, consisting of socio-economic and demographic characteristics, is used to classify the respondents, understand the results and validate the sample (see Chapter 14). Identification information includes name, address and telephone number. Identification information may be obtained for a variety of purposes, including verifying that the respondents listed were actually interviewed and to send promised incentives or prizes. As a general guideline, basic information should be obtained first, followed by classification, and finally identification information. The basic information is of greatest importance to the research project and should be obtained first, before we risk alienating the respondents by asking a series of personal questions.

Difficult questions

Difficult questions or questions that are sensitive, embarrassing, complex or dull should be placed late in the sequence. After rapport has been established and the respondents become involved, they are less likely to object to these questions. Thus, in the GlobalCash Project, information about the banks that companies use and how they rated those banks was asked at the end of the section on basic information. Likewise, income should be the last question in the classification section (if it is to be used at all).

Effect on subsequent questions

Questions asked early in a sequence can influence the responses to subsequent questions. As a rule of thumb, general questions should precede specific questions. This prevents specific questions from biasing responses to the general questions. Consider the following sequence of questions:

Q1: *What considerations are important to you in selecting a bank?*

Q2: *In selecting a bank, how important is convenience of location?*

Note that the first question is general whereas the second is specific. If these questions were asked in the reverse order, respondents would be clued about convenience of location and would be more likely to give this response to the general question.

Funnel approach
A strategy for ordering questions in a questionnaire in which the sequence starts with the general questions, which are followed by progressively specific questions, to prevent specific questions from biasing general questions.

Going from general to specific is called the **funnel approach**. The funnel approach is particularly useful when information has to be obtained about respondents' general choice behaviour and their evaluations of specific products.[35] Sometimes the inverted funnel approach may be useful. In this approach, questioning starts with specific questions and concludes with the general questions. The respondents are compelled to provide specific information before making general evaluations. This approach is useful when respondents have no strong feelings or have not formulated a point of view.

Logical order

Questions should be asked in a logical order. This may seem a simple rule, but as the researcher takes time to understand respondents and how they use language, they should also take time to understand their logic, i.e. what 'logical order' means to target respondents. All questions that deal with a particular topic should be asked before beginning a new topic. When switching topics, brief transitional phrases should be used to help respondents switch their train of thought.

Branching question
A question used to guide an interviewer (or respondent) through a survey by directing the interviewer (or respondent) to different spots on the questionnaire depending on the answers given.

Branching questions should be designed carefully.[36] Branching questions direct respondents to different places in the questionnaire based on how they respond to the question at hand. These questions ensure that all possible contingencies are covered. They also help reduce interviewer and respondent error and encourage complete responses. Skip patterns based on the branching questions can become quite complex. A simple way to account for all contingencies is to prepare a flowchart of the logical possibilities and then develop branching questions and instructions based on it. A flowchart used to assess the use of electronic payments in clothes purchases via the Internet is shown in Figure 13.4.

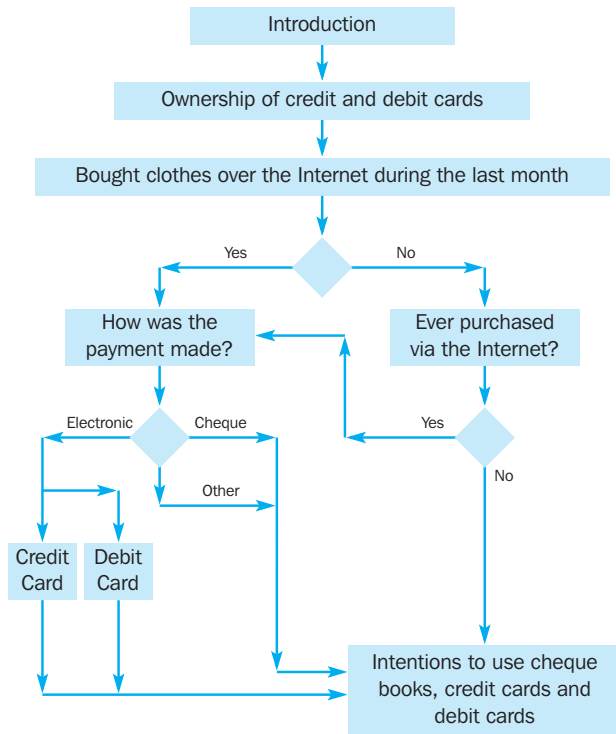

Figure 13.4
Flowchart for questionnaire design

Placement of branching questions is important and the following guidelines should be followed: (1) the question being branched (the one to which the respondent is being directed) should be placed as close as possible to the question causing the branching, and (2) the branching questions should be ordered so that the respondents cannot anticipate what additional information will be required. Otherwise, the respondents may discover that they can avoid detailed questions by giving certain answers to branching questions. For example, the respondents should first be asked if they have seen any of the listed commercials before they are asked to evaluate commercials. Otherwise, the respondents will quickly discover that stating that they have seen a commercial leads to detailed questions about that commercial and that they can avoid detailed questions by stating that they have not seen the commercial.

Identify the form and layout

The format, spacing and positioning of questions can have a significant effect on the results, particularly in self-administered questionnaires. It is good practice to divide a questionnaire into several parts. Several parts may be needed for questions pertaining to the basic information.

The questions in each part should be numbered, particularly when branching questions are used. Numbering of questions also makes the coding of responses easier. In addition, the questionnaires should preferably be pre-coded. In **pre-coding**, the codes to enter in the computer are printed on the questionnaire. Coding of questionnaires is explained in more detail in Chapter 17 on data preparation.

Pre-coding
In questionnaire design, assigning a code to every conceivable response before data collection.

The questionnaires themselves should be numbered serially. This facilitates the control of questionnaires in the field as well as the coding and analysis. Numbering makes it easy to account for the questionnaires and to determine whether any have been lost. A possible exception to this rule is mail questionnaires. If these are numbered, respondents assume that a given number identifies a particular respondent. Some respondents may refuse to participate or may answer differently under these conditions. However, recent research suggests that this loss of anonymity has little influence on the results.[37]

Reproduce the questionnaire

How a questionnaire is reproduced for administration can influence the results. For example, if the questionnaire is reproduced on poor-quality paper or is otherwise shabby in appearance, the respondents will think that the project is unimportant and the quality of response will be adversely affected. Therefore, the questionnaire should be reproduced on good-quality paper and have a professional appearance.

When a printed questionnaire runs to several pages, it should take the form of a booklet rather than a number of sheets of paper clipped or stapled together. Booklets are easier for the interviewer and the respondents to handle and do not easily come apart with use. They allow the use of a double-page format for questions and look more professional.

Each question should be reproduced on a single page (or double-page spread). A researcher should avoid splitting a question, including its response categories. Split questions can mislead the interviewer or the respondent into thinking that the question has ended at the end of a page. This will result in answers based on incomplete questions.

Vertical response columns should be used for individual questions. It is easier for interviewers and respondents to read down a single column rather than reading sideways across several columns. Sideways formatting and splitting, done frequently to conserve space, should be avoided.

The tendency to crowd questions together to make the questionnaire look shorter should be avoided. Overcrowded questions with little blank space between them can lead to errors in data collection and yield shorter and less informative replies. Moreover, they give the impression that the questionnaire is complex and can result in lower cooperation and completion rates. Although shorter questionnaires are more desirable than longer ones, the reduction in size should not be obtained at the expense of crowding.[38]

Directions or instructions for individual questions should be placed as close to the questions as possible. Instructions relating to how the question should be administered or answered by the respondent should be placed just before the question. Instructions concerning how the answer should be recorded or how the probing should be done should be placed after the question (for more information on probing and other interviewing procedures, see Chapter 16). It is common practice to distinguish instructions from questions by using different typefaces (such as capital or boldfaced letters).

Although colour does not influence response rates to questionnaires, it can be employed advantageously in some respects. Colour coding is useful for branching questions. The next question to which the respondent is directed is printed in a colour that matches the space in which the answer to the branching question was recorded. Surveys directed at different respondent groups can be reproduced on paper of a different colour. In the GlobalCash survey, the questionnaire was printed with different coloured covers to identify which country the response came from.

The questionnaire should be reproduced in such a way that it is easy to read and answer. The type should be large and clear. Reading the questionnaire should not impose a strain.

Eliminate problems by pilot-testing

Pilot-testing
Testing the questionnaire on a small sample of respondents for the purpose of improving the questionnaire by identifying and eliminating potential problems.

Pilot-testing refers to testing the questionnaire on a small sample of respondents to identify and eliminate potential problems.[39] Even the best questionnaire can be improved by pilot-testing. As a general rule, a questionnaire should not be used in the field survey without adequate pilot-testing.[40] A pilot-test should be extensive. All aspects of the questionnaire should be tested, including question content, wording, sequence, form and layout, question difficulty, and instructions. The respondents in the pilot-test should be similar to those who will be included in the actual survey in terms of background characteristics, familiarity with the topic, and attitudes and behaviours of interest.[41] In other words, respondents for the pilot-test and for the actual survey should be drawn from the same population.

Pilot-tests are best done by personal interviews, even if the actual survey is to be conducted by Internet, mail or telephone, because interviewers can observe respondents' reactions and attitudes. After the necessary changes have been made, another pilot-test could be conducted by Internet, mail or telephone if those methods are to be used in the actual survey. The latter pilot-tests should reveal problems peculiar to the interviewing method.

A variety of interviewers should be used for pilot-tests. The project director, the researcher who developed the questionnaire, and other key members of the research

team should conduct some pilot-test interviews. This will give them a good feel for potential problems and the nature of the expected data. Most of the pilot-test interviews, however, should be conducted by regular interviewers. It is good practice to employ both experienced and new interviewers. Experienced interviewers can easily perceive uneasiness, confusion and resistance in the respondents, and new interviewers can help the researcher identify interviewer-related problems. Ordinarily the pilot-test sample size is small, varying from 15 to 30 respondents for the initial testing, depending on the heterogeneity (e.g. a wide array of education levels) of the target population. The sample size can increase substantially if the pilot-testing involves several stages.

Protocol analysis and debriefing are two commonly used procedures in pilot-testing. In protocol analysis, the respondent is asked to 'think aloud' while answering the questionnaire, as explained in Chapter 12. Typically, the respondent's remarks are tape-recorded and analysed to determine the reactions invoked by different parts of the questionnaire. Debriefing occurs after the questionnaire has been completed. Respondents are told that the questionnaire they just completed was a pilot-test and the objectives of pilot-testing are described to them. They are then asked to describe the meaning of each question, to explain their answers, and to state any problems they encountered while answering the questionnaire.

Editing involves correcting the questionnaire for the problems identified during pilot-testing. After each significant revision of the questionnaire, another pilot-test should be conducted, using a different sample of respondents. Sound pilot-testing involves several stages. One pilot-test is a bare minimum. Pilot-testing should be continued until no further changes are needed.

Finally, the responses obtained from the pilot-test should be coded and analysed. The analysis of pilot-test responses can serve as a check on the adequacy of the problem definition and the data and analysis required to obtain the necessary information. The dummy tables prepared before developing the questionnaire will point to the need for the various sets of data. If the response to a question cannot be related to one of the pre-planned dummy tables, either those data are superfluous or some relevant analysis has not been foreseen. If part of a dummy table remains empty, a necessary question may have been omitted. Analysis of pilot-test data helps to ensure that all data collected will be utilised and that the questionnaire will obtain all the necessary data.[42]

Summarising the questionnaire design process

Table 13.1 summarises the questionnaire design process in the form of a checklist.

Table 13.1 Questionnaire design checklist

Step 1: Specify the Information Needed
1 Ensure that the information obtained fully addresses all the components of the problem. Review components of the problem and the approach, particularly the research questions, hypotheses and characteristics that influence the research design.
2 Prepare a set of dummy tables.
3 Have a clear idea of characteristics and motivations of the target population.
Step 2: Specify the Type of Interviewing Method
1 Review the type of interviewing method determined based on considerations discussed in Chapter 10.
Step 3: Determine the Content of Individual Questions
1 Is the question necessary?
2 Are several questions needed instead of one to obtain the required information in an unambiguous manner?
3 Do not use double-barrelled questions.

Step 4: Overcome the Respondent's Inability and Unwillingness to Answer

1 Is the respondent informed?
2 If the respondent is not likely to be informed, filter questions that measure familiarity, product use and past experience should be asked before questions about the topics themselves.
3 Can the respondent remember?
4 Avoid errors of omission, telescoping and creation.
5 Questions that do not provide the respondent with cues can underestimate the actual occurrence of an event.
6 Can the respondent articulate?
7 Minimise the effort required of the respondent.
8 Is the context in which the questions are asked appropriate?
9 Make the request for information seem legitimate.
10 If the information is sensitive:
   (a) Place sensitive topics at the end of the questionnaire.
   (b) Preface the question with a statement that the behaviour of interest is common.
   (c) Ask the question using the third-person technique.
   (d) Hide the question in a group of other questions that respondents are willing to answer.
   (e) Provide response categories rather than asking for specific figures.
   (f) Use randomised techniques, if appropriate.

Step 5: Choose Question Structure

1 Open-ended questions are useful in exploratory research and as opening questions.
2 Use structured questions whenever possible.
3 In multiple-choice questions, the response alternatives should include the set of all possible choices and should be mutually exclusive.
4 In a dichotomous question, if a substantial proportion of the respondents can be expected to be neutral, include a neutral alternative.
5 Consider the use of the split ballot technique to reduce order bias in dichotomous and multiple-choice questions.
6 If the response alternatives are numerous, consider using more than one question to reduce the information processing demands on the respondents.

Step 6: Choose Question Wording

1 Define the issue in terms of 'who', 'what', 'when' and 'where'.
2 Use ordinary words. Words should match the vocabulary level of the respondents.
3 Avoid ambiguous words: usually, normally, frequently, often, regularly, occasionally, sometimes, etc.
4 Avoid leading or biasing questions that cue the respondent to what the answer should be.
5 Avoid implicit alternatives that are not explicitly expressed in the options.
6 Avoid implicit assumptions.
7 Respondent should not have to make generalisations or compute estimates.
8 Use positive and negative statements.

Step 7: Arrange the Questions in the Proper Order

1 The opening questions should be interesting, simple and non-threatening.
2 Qualifying questions should serve as the opening questions.
3 Basic information should be obtained first, followed by classification and finally identification information.
4 Difficult, sensitive or complex questions should be placed late in the sequence.
5 General questions should precede specific questions.
6 Questions should be asked in a logical order.
7 Branching questions should be designed carefully to cover all possible contingencies.
8 The question being branched should be placed as close as possible to the question causing the branching, and the branching questions should be ordered so that the respondents cannot anticipate what additional information will be required.

Step 8: Identify the Form and Layout

1 Divide a questionnaire into several parts.
2 Questions in each part should be numbered.
3 The questionnaire should be pre-coded.
4 The questionnaires themselves should be numbered serially.

Step 9: Reproduce the Questionnaire

1. The questionnaire should have a professional appearance.
2. A booklet format should be used for long questionnaires.
3. Each question should be reproduced on a single page (or double-page spread).
4. Vertical response columns should be used.
5. Grids are useful when there are a number of related questions that use the same set of response categories.
6. The tendency to crowd questions to make the questionnaire look shorter should be avoided.
7. Directions or instructions for individual questions should be placed as close to the questions as possible.

Step 10: Eliminate Problems by Pilot-testing

1. Pilot-testing should always be done.
2. All aspects of the questionnaire should be tested, including question content, wording, sequence, form and layout, question difficulty and instructions.
3. The respondents in the pilot-test should be similar to those who will be included in the actual survey.
4. Begin the pilot-test by using personal interviews.
5. The pilot-test should also be conducted by mail or telephone if those methods are to be used in the actual survey.
6. A variety of interviewers should be used for pilot-tests.
7. The pilot-test sample size should be small, varying from 15 to 30 respondents for the initial testing.
8. Use protocol analysis and debriefing to identify problems.
9. After each significant revision of the questionnaire, another pilot-test should be conducted, using a different sample of respondents.
10. The responses obtained from the pilot-test should be coded and analysed.

International marketing research

The questionnaire or research instrument should be adapted to the specific cultural environment and should not be biased in terms of any one culture. This requires careful attention to each step of the questionnaire design process. The information needed should be clearly specified. It is important to take into account any differences in underlying consumer behaviour, decision-making processes, psychographics, lifestyles and demographic variables. In the context of demographic characteristics, information on marital status, education, household size, occupation, income and dwelling unit may have to be specified differently for different countries, as these variables may not be directly comparable across countries. For example, household definition and size varies greatly, given the extended family structure in some countries and the practice of two or even three families living under the same roof.

Although personal interviewing may dominate as a survey method in many Western countries, different survey methods may be favoured in different countries. Hence, the questionnaire may have to be suitable for administration by more than one method. For ease of comprehension and translation, it is desirable to have two or more simple questions rather than a single complex question. In overcoming the inability to answer, the variability in the extent to which respondents in different cultures are informed about the subject matter of the survey should be taken into account. Respondents in some parts of the world may not be as well informed on many issues as people in Europe.

The use of unstructured or open-ended questions may be desirable if the researcher lacks knowledge about the determinants of response in other countries. Because they do not impose any response alternatives, unstructured questions also

reduce cultural bias, but they are more affected by differences in educational levels than structured questions. They should be used with caution in countries with low literacy levels.

The questionnaire may have to be translated for administration in different cultures. The researcher must ensure that the questionnaires in different languages are equivalent. The special procedures designed for this purpose are discussed in Chapter 26. The following example illustrates the problems of translation.

example

If you board the Asian 'bus, better mind your language[43]

On the surface it would appear that the omnibus service could be made very standardised in Asia, even more so than in Europe where one must deal with a different language in almost every country. One might conclude that a questionnaire in Chinese could be used with little or no modification in a number of countries such as China, Hong Kong, Taiwan and Malaysia, thus avoiding the problems of timing, cost and inaccuracies generally associated with translations. However, due to vast differences in the region in terms of language, culture and geography, the 'standard' omnibus survey becomes less standard than would first meet the eye. While the omnibus is a very cost-effective and efficient way of conducting research in Asia, great care must be taken in order to make best use of this service, particularly by companies thinking of entering these markets. Countries such as Japan, Korea and Thailand are typical of South East Asia in that they each possess a single culture and a single language. But, in both Singapore and Malaysia, for example, omnibus questionnaires are always printed in three languages: English, Mandarin and Malay. In Malaysia, in addition to Mandarin which is spoken by all 'Chinese-literate' consumers, there are three other commonly spoken dialects which have to be dealt with at the respondent level: Cantonese, Hokkien and Hakka. In Singapore the commonly spoken dialects are Cantonese, Hokkien and Teochew. ■

Pilot-testing the questionnaire is complicated in international research because linguistic equivalence must be pilot-tested. Two sets of pilot-tests are recommended. The translated questionnaire should be pilot-tested on monolingual subjects in their native language, and the original and translated versions should also be administered to bilingual subjects. The pilot-test data from administration of the questionnaire in different countries or cultures should be analysed and the pattern of responses compared to detect any cultural biases.

Ethics in marketing research

The researcher must be mindful of the demands placed on the respondents when designing questionnaires. Because the administration of the questionnaire is a substantial intrusion by the researcher, several ethical concerns arise pertaining to the researcher–respondent relationship. Ethical issues impinging on the researcher–marketing decision-maker relationship may also have to be addressed.

In consideration of the respondents, exceedingly long questionnaires should be avoided. As a general guideline, the following are generally considered 'overly long': a personal interview in-home over 60 minutes, a telephone interview over 30 minutes and a street interview over 30 minutes.[44] Excessively long questionnaires are burdensome on the respondents and adversely affect the quality of responses. Similarly, questions that are confusing, exceed the respondents' ability, are difficult

➤➤➤ *See Professional Perspective 12.*

or are otherwise improperly worded, should be avoided. Professional Perspective 12 'The field-good factor' on the Companion Website addresses many of these issues.

Overly sensitive questions deserve special attention. A real ethical dilemma exists for researchers investigating social problems such as poverty, drug use and sexually transmitted diseases like AIDS, or conducting studies of highly personal products like feminine hygiene products or financial products.[45] Candid and truthful responses are needed to generate meaningful results. But how do we obtain such data without asking sensitive questions that invade respondents' privacy? When asking sensitive questions, researchers should attempt to minimise the discomfort of the respondents. It should be made clear at the beginning of the questionnaire that respondents are not obligated to answer any question that makes them uncomfortable.[46]

One researcher–marketing decision-maker issue worth mentioning is piggybacking, which occurs when a questionnaire contains questions pertaining to more than one sponsoring organisation. One sponsor's questions may take up a part of the questionnaire, while a second sponsor's study takes up the rest. Although there is some risk that one study will contaminate the other or that the questionnaire may not be very coherent, piggybacking can substantially reduce the cost. Thus, it can be a good way for sponsors with limited research budgets to collect primary data they would not be able to afford otherwise. In these cases all sponsors must be aware of and consent to the arrangement. Unfortunately, piggybacking is sometimes used without disclosure to the sponsors for the sole purpose of increasing the researcher's profit. This is unethical.

Finally, the researcher has the ethical responsibility of designing the questionnaire so as to obtain the required information in an unbiased manner. Deliberately biasing the questionnaire in a desired direction – for example, by asking leading questions – cannot be condoned. In deciding the question structure, the most appropriate rather than the most convenient option should be adopted. Also, the questionnaire should be thoroughly pilot-tested before fieldwork begins, or an ethical breach has occurred.

Internet and computer applications

Word processing packages/software, such as Microsoft Word, are widely used for designing questionnaires, particularly if they are paper based. Researchers are familiar with their operation as they typically use this type of software to write project briefs and reports. However, although the finished result may be sufficiently presentable, the underlying structures associated with a survey are missing. These include elements such as single or multiple response on any tick box question, data validation and routing.

Even though word processing software is becoming increasingly more sophisticated, desktop publishing packages, such as QuarkXpress, provide added graphical functionality and are widely used within the design and print industry. Consequently, some researchers are advised to use this type of software. However, the learning curve is fairly steep and researchers rarely undertake design tasks more complex than can be achieved in a standard word processing package.

One word of caution, though – the print industry is very often Apple Mac based and the marketing research industry is very often PC based. Although software such

as QuarkXpress is available for both platforms, and questionnaires can be designed on a PC and then transferred to a Mac for typesetting and printing, the results are not always identical. Do be extremely careful in the proof checking process. If questionnaires are to be scanned, where the positioning of boxes is even more critical, then the process of proof checking will be even more important and consequently time consuming.

Software such as SNAP enables questionnaires to be designed and printed for all survey formats (paper, Web, CATI, CAPI, PDA) and can be likened to a word processor with an intelligent template. The processes of selecting boxes, single or multiple responses, routing, etc., are automated, and entire libraries (see the example of SurveyPaks on **www.snapsurveys.com**) exist to select individual questions or entire questionnaires. These include topics such as Customer Satisfaction, Human Resources, Travel and Tourism, Healthcare and Best Value. Questions can be selected, pasted in a survey and amendments made where necessary to remove or add new codes. The formatted questionnaire is then ready for the next stages of data collection and data analysis. The SNAP software is described in more detail and reviewed by Tim Macer in Professional Perspective 20 on the Companion Website. Visit **www.camsp.com** to download a demo of the software KEYPOINT2, which again allows for the design of questionnaires in all formats, the handling of survey responses and the analysis and presentation of results. Another Website that should be familiar from the review of qualitative data analysis software in Chapter 10 is **www.scolari.co.uk**. Click on the SphinxSurvey to evaluate the survey software.

➤➤➤ *See Professional Perspective 20.*

Internet questionnaires share many of the features of CAPI questionnaires. The questionnaire can be designed using a wide variety of stimuli such as graphics, pictures, advertisements, animations, sound clips and full-motion video. Moreover, the researcher can control the amount of time for which the stimuli are available to the respondents, and the number of times a respondent can access each stimulus. This greatly increases the range and complexity of questionnaires that can be administered over the Internet. As in the case of CATI and CAPI, complicated skip patterns can be programmed into the questionnaire. The questions can be personalised and answers to previous questions can be inserted into subsequent questions. The various types of scales, such as ordinal ranking scales, Likert scales, semantic differential scales and Stapel scales, can be utilised. Open-ended questions can also be posed using the Internet. The data collected may need coding after the survey process, as with all open-ended questions.

As the Internet becomes a more accepted method of administering surveys, the nature and expectations of the sponsors of marketing research increases. Their expectations can include the need to do the following.

- Allow respondents to take a break part way through completing a questionnaire and then return to it later.
- Include a password to control access to a survey.
- Include a user ID to restrict access and avoid multiple completions by the same respondent as well as accessing demographic data of participants on a panel.
- Log information on the time spent by each respondent on each individual question (known as paradata).

All of these capabilities are becoming more and more standard.

To see a more detailed evaluation of the power and potential of Internet surveys, go to the Companion Website and read Professional Perspective 4 by Peter Wills.

➤➤➤ *See Professional Perspective 4.*

Summary

A questionnaire has three objectives. It must translate the information needed into a set of specific questions the respondents can and will answer. It must motivate respondents to complete the interview. It must also minimise response error.

Designing a questionnaire is more of a craft than a science. This is primarily caused by the interrelationship of stages and the trade-offs that questionnaire designers make in balancing the source of ideas, question purposes, actual questions and question analyses. The steps involved in the questionnaire design process involve:

1. Specifying the information needed. Understanding what information decision-makers need.
2. Specifying the type of interviewing method. Understanding which means of eliciting the information will work best, given the research design constraints that the researcher has to work with.
3. Determining the content of individual questions. Understanding the purpose of each question and working out how a posed question may fulfil that purpose.
4. Overcoming the respondents' inability and unwillingness to answer questions. Understanding the process of approaching and questioning respondents – from their perspective. Knowing what benefits they get from taking part in the survey process.
5. Choosing the question structure. Understanding how individual questions help to elicit information from respondents and help them to express their feelings.
6. Choosing the question wording. Understanding the meaning of words from the perspective of the respondent.
7. Arranging the questions in a proper order. Understanding what 'proper' means from the perspective of the respondent. Recognising that, as each question is posed to a respondent and they think about their response, the respondent changes. Information is not only drawn out of respondents, it is communicated to them as each question is tackled.
8. Identifying the form and layout of the questionnaire. Understanding how in a self-completion scenario the form and layout motivate and help the respondent to answer the questions properly and honestly. Understanding how the form and layout help the interviewer to conduct and record the interview.
9. Reproducing the questionnaire. Understanding how the professional appearance of a questionnaire affects the perceived credibility and professional ability of researchers.
10. Eliminating problems by pilot-testing. Understanding that no matter how much experience the researcher has in designing questionnaires – the issues, respondent characteristics and context of questioning make each survey unique – pilot-testing is vital.

Questions

1. What is the purpose of the questionnaire?
2. What expectations does the marketing researcher have of potential questionnaire respondents – in terms of how they will react to the experience of completing a questionnaire?
3. What does the marketing researcher have to offer potential questionnaire respondents? Why should this question be considered?
4. How would you determine whether a specific question should be included in a questionnaire?

5 What are the reasons why respondents may be (a) unable to answer and (b) unwilling to answer the question asked?

6 Explain the errors of omission, telescoping and creation. What can be done to reduce such errors?

7 Explain the concepts of aided and unaided recall.

8 What can a researcher do to make the request for information seem legitimate?

9 What are the advantages and disadvantages of unstructured questions?

10 What are the issues involved in designing multiple-choice questions?

11 What are the guidelines available for deciding on question wording?

12 What is a leading question? Give an example.

13 What is the proper order for questions intended to obtain basic, classification and identification information?

14 What guidelines are available for deciding on the form and layout of a questionnaire?

15 Describe the issues involved in pilot-testing a questionnaire.

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