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# 10

## Surveys: mail questionnaires

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Surveys are the most commonly used method of data collection in the social sciences, especially in sociology; so common, that they quite often are taken to be *the* research method of social sciences. This perception is strengthened by the fact that almost everyone has been surveyed sometime, for example has participated in census surveys, has received a mail questionnaire at home or at work, or has filled out a questionnaire when applying for admission to a tertiary institution, for a bank loan or for becoming a member of a club. Everyone is familiar with what surveys are all about. Surveys are not only a common research tool, but also a part of a person's life experience.

In general, surveys are methods of data collection in which information is gathered through oral or written questioning. Oral questioning is known as *interviewing*; written questioning is accomplished through *questionnaires*. These are the types of methods we shall discuss next. In this chapter, we shall explore the central elements of mail questionnaires, such as their nature, structure, content, design and construction, their strengths and weaknesses and the forms in which they are employed. Interviews, the other form of surveys, will be discussed in the next chapter.

### 1 Introduction

As noted above, the use of questionnaires is very common in the social sciences. In most cases, questionnaires are employed as the only method of data collection. In other cases they are used in addition to other methods. In either case they are administered to the respondents by mail or personally by the researcher. The main characteristic of this method is that data are offered by the respondents, with limited interference on the part of research personnel.

In this chapter we shall explore some fundamental issues of questionnaires. Due to the fact that interviews also employ a form of questionnaire, in the format of an interview guide, and since such guides are quite often as rigid and as standardised as questionnaires, the information presented in this

chapter is also pertinent to interviewing. Hence we will study questionnaires in a more general manner, concentrating primarily on questioning rather than strictly on questionnaires. We shall see, for instance, that issues such as questionnaire format, type of questions, content of questions and the response format are as relevant to interviewing as they are to questionnaires.

A number of general and specific questions will be emphasised here, of which the following are a few examples:

- Are questionnaires the appropriate method of data collection?
- What type of questions should be considered?
- How many questions should be included in the questionnaire?
- In standardised questions, what types of responses should be considered?
- How will the language of the questionnaire be chosen?
- What are the aspects of the study that must be covered by the questionnaire?
- What is the specific unit of analysis that must be addressed by the questionnaire?
- What elements will be included in the instructions and cover letter of the questionnaire?
- How long should a questionnaire be to do justice to its purpose?
- How will ethics and objectivity be observed in the questionnaire?

## 2 Advantages and limitations of questionnaires

Questionnaires, as methods of data collection, have strengths and weaknesses and thus advantages and disadvantages that the researcher must be aware of. Strengths and weaknesses are factors which have a significant impact on a researcher's decision about whether or not to use questionnaires in the study. The advantages and limitations which most researchers and writers consider as significant are listed below.

### *Advantages*

- Questionnaires are less expensive than other methods: in the words of Selltitz *et al.* (1976), 'questionnaires can be sent through the mail; interviewers cannot'.
- They produce quick results.
- Questionnaires can be completed at the respondent's convenience.
- They offer greater assurance of anonymity.
- They offer less opportunity for bias or errors caused by the presence or attitudes of the interviewer.
- Questionnaires are a stable, consistent and uniform measure, without variation.
- They offer a considered and objective view on the issue, since respondents can consult their files and since many subjects prefer to write rather than talk about certain issues.
- The use of questionnaires promises a wider coverage, since researchers can approach respondents more easily than other methods.
- They are not affected by problems of 'no-contacts'.

**Limitations**

- They do not allow probing, prompting and clarification of questions.
- They do not offer opportunities for motivating the respondent to participate in the survey or to answer the questions.
- The identity of the respondent and the conditions under which the questionnaire was answered are not known. Researchers are not sure whether the right person has answered the questions.
- It is not possible to check whether the question order was followed.
- Questionnaires do not provide an opportunity to collect additional information (e.g. through observation) while they are being completed. There is no researcher present, for instance, to make observations while the questions are being answered.
- Due to lack of supervision, partial response is quite possible.

**3 Structure of the questionnaire**

Regardless of whether the questionnaire is administered personally or by mail, it has to be constructed according to certain standards and principles. In the first place, it has to include three main elements, each having a certain purpose: the cover letter, the instructions and the main body.

***The cover letter***

The main aims of the cover letter are to introduce the respondents to the research topic and research team, to neutralise any doubt or mistrust respondents might have about the study, to motivate them to participate in the study and answer the questions, and to assure them of anonymity and confidentiality. More specifically, the minimum number of points the cover letter must address are:

- the main objectives and social significance of the study;
- the research team and its sponsors;
- the reasons why the respondent should complete the questionnaire;
- assurance of anonymity and confidentiality;
- requirements for completion such as maximum time, conditions, etc.;
- issues related to ethics.

The cover letter has been recognised as one of the factors that influence the response rate: the way the questionnaire is presented and introduced and the type of assurances given to the respondents determine to a large extent whether the respondent will complete the questionnaire or not, and whether he or she will answer all the questions. Some writers (e.g. Becker, 1989; Mahr, 1995), for instance, suggest that even the way the cover letter addresses the respondent (for example, Dear Sir; Dear Sir/Madam; Dear Mr Jones; Dear Householder, etc.) and also the colour of the paper used, the form of letter head and the style and format of the letter are very significant. Pilot studies and teams of experts are quite often employed to help prepare an effective cover letter.

**Instructions**

Instructions about how to fill in the questionnaires are mentioned only briefly in the cover letter (e.g. ‘. . . it shouldn’t take more than 30 minutes of your time’ or ‘. . . you only need to tick the box in front of the questions’). Instructions will be given on the questionnaire and/or on a separate sheet. As well as giving details of how to state their answer or preference (e.g. in pre-coded questions) the instructions usually remind the respondents that they should not try to please the researcher, that there are no right or wrong answers and that all questions should be attempted, and instructs them about what to do with the completed questionnaire, for example that it should be returned to the project director in the self-addressed envelop by a certain date. For obvious reasons the instructions are expected to offer as much information as possible and must be written in a simple language. Inadequate instructions are one of the major sources of non-responses and should be avoided.

**The main body**

The main body of the questionnaire includes the questions that are to be answered. In order to be effective, this part of the document must be worked out very carefully, for example with regard to content, structure, wording, flow, format and so on, and adhere to the basic rules of questionnaire construction (Foddy, 1993). This is the part of the questionnaire that will enable the researcher to collect the data required for the completion of the study, and will be discussed next.

## 4 The questionnaire format

Questionnaire construction is a very demanding task which requires not only methodological competence but also extensive experience with research in general and questioning techniques in particular. This expertise provides the researchers with the necessary skills required to cope with the major issues of this process, which relate to how the format of the questionnaire should be moulded, what types of questions should be considered and what they should contain, how long the questionnaire should be, and in general how the questionnaire should be presented so that it is clear, easy to read and attractive to the respondent and, most importantly, so that it achieves its purpose.

*Questionnaire format* refers to the general model which provides guidelines on how the questions should be placed in the context of the questionnaire; there are several models of questionnaire format. Nevertheless, a common requirement of all models is that the questions have to be listed in a *logical order*, allowing for *transition and flow*, that is, for a smooth passage from one topic to the next, and avoiding distortions and problems.

These criteria have been integrated by researchers into a number of *questionnaire formats*. The following six formats deserve to be mentioned:

- 1 *Funnel format* The questioning moves from general to specific, from impersonal to personal, and from non-sensitive to sensitive questions.

- 2 *Inverted funnel format* The questioning progresses from specific to general, from personal to impersonal, and from sensitive to non-sensitive.
- 3 *Diamond format* A combination of the inverted funnel format and the funnel format, where questions progress from specific to general and back to specific, from personal to impersonal and back to personal and so on.
- 4 *X-format* The first part of the questionnaire has a funnel format and the second part an inverted funnel format. The questions here change from general to specific and back to general, from impersonal to personal and again to impersonal and so on.
- 5 *Box format* Questions are uniform throughout the questionnaire, with all questions being kept at the same level.
- 6 *Mixed format* Here questions appear according to the logic of the project, shifting from general to specific and so on as required. Mixed format may also contain sections, each adopting one of the above formats; for example, the first section may employ the funnel format, the second the box format and the last the inverted funnel format.

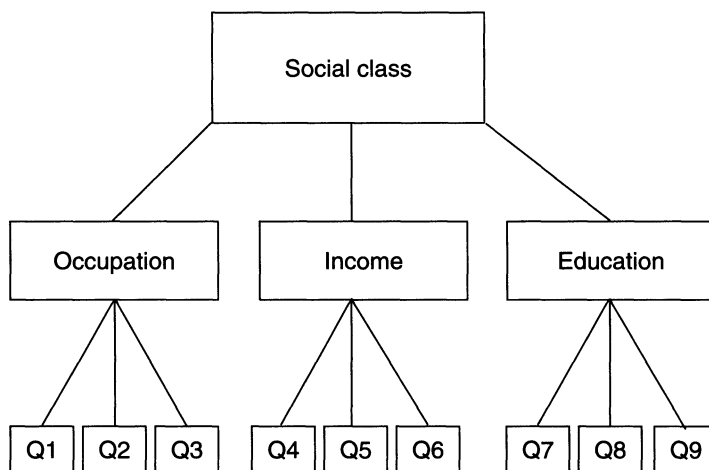
The type of questionnaire format is chosen to suit the nature of the survey, the type of respondents, length of questionnaire, nature of administering the questionnaire, and the findings of a pilot study. It is important that the format chosen serves the purpose of the study and is not the personal preference of the researcher. Factors such as those controlling soundness of questions must be taken into account when determining the questionnaire format. It is logical, for instance, to avoid asking contingency questions (e.g. 'How often do you read the bible?') before or without asking the relevant filter or screening question (e.g. 'Do you read the bible?'). Using contingency questions without filter questions being asked first, in order to 'trick' the respondent, is unethical and can affect adversely the researcher– respondent relationship. It is also important that the questions are related to each other logically and are interesting and relevant to the topic; above all, the presentation and structure of the questionnaire should make the respondents feel at ease and worthy, rather than the subject of a strict interrogation.

It should be borne in mind that an adequate format ensures a frictionless completion of the questionnaire, allows the respondent to feel a part of the research process, and helps to avoid fatigue and boredom, which can cause disinterest and lack of cooperation. If the questions are arranged according to the logic of the respondent, if they are adequately linked together and if the respondent does not notice the passing of time and the intellectual effort required to answer the questions, a positive attitude to the study is maintained and the respondent is more likely to complete the questionnaire and return it to the researcher.

## 5 Size of the questionnaire

The size of the questionnaire depends on factors such as the research objective, the type of respondents, the methods of analysis and availability of resources.

The number of questions ranges from only a few to several hundred. However, the golden rule with respect to questionnaire size is that one should include as many questions as necessary and as few as possible.



**Figure 10.1** Diagrammatic representation of where questions fit in the context of the study and questionnaire

Some more specific guidelines will be introduced in the following sections. At this stage it should be mentioned that the questionnaire, regardless of whether it is offered to the respondent in a written form or in the form of an interview, must contain a translation of the central elements of the research topic: whether a questionnaire will be long or short depends on the number of variables, and the number of indicators considered in the study, as well as the number of questions required to address fully the indicators. If, for instance, the research contained one variable only (e.g. social class), and the indicators of the variable were occupation, income and education, the questionnaire would include as many questions as is required to address the indicators. Figure 10.1 shows diagrammatically where questions fit in the context of the study and the questionnaire. It shows, for instance, that you may include three questions for each indicator; in this case nine questions are sufficient. The questionnaire may include questions about the occupation of the respondent (Q1), the occupation of the respondent's partner (Q2) and the occupation of the respondent's father (Q3). If information about the occupation of the respondent's mother, brother, sister, grandfather, etc. are required, more questions will be included under the indicator 'occupation'. The number of questions related to the indicators 'income' and 'education' will be considered in the same context. The important point here is that there is a straight line between a question, an indicator and a variable. Questions without that link should not be included in the questionnaire unless there is a good reason for it (e.g. they may be secondary or tertiary questions; see below).

The size of the questionnaire also depends on the methodology used and the type of study. For instance, a Gallup poll might include a few question a

census survey many more questions and a detailed study of a social issue (e.g. a national family survey) a few hundred questions.

## 6 Types of questions

Questions contained in a questionnaire vary with respect to a number of criteria, especially those relating to their relevance to the research topic, their approach and structure, content and wording, and with regard to the type of response they require. A brief description of a few of the most common types of questions is given below.

### *Primary questions*

Primary questions elicit information directly related to the research topic. Each question provides information about a specific aspect of the topic, that is, an indicator of a particular variable. In a study of marital power, the question 'Who is the boss in your marriage?' is a primary question.

### *Secondary questions*

Secondary questions are questions which do not relate directly to the research topic. They are of secondary importance in that they provide information on secondary issues such as consistency of opinions or reliability of the instrument used. They do not add new information about the research topic; they guard methodological soundness, integrity of the questionnaire or truthfulness of the respondents.

### *Tertiary questions*

Tertiary questions have neither primary nor methodological significance. They help to establish a framework that allows convenient data collection and sufficient information without exhausting or biasing the respondent. Two examples are padding questions and probes.

### *Padding questions*

These questions are not central to the research but are of interest to the respondent. Acting as a 'breather', they are usually placed before or after sensitive questions.

### *Probes*

These questions are used in interviewing and have the purpose of completing, amplifying or expanding information given by the respondent, stimulating and guiding the discussion and establishing a friendly atmosphere free of bias.

There are several techniques of probing, with interviewers developing and applying them according to need; the two techniques often referred to by writers (e.g. Becker, 1989; Kahn and Cannell, 1957; Moser and Kalton, 1971) are the *summary technique* and *controlled non-directive probing* (see the next chapter).

***Direct and indirect questions***

Direct or personal questions ask the respondent to offer information about himself or herself. An example of a direct question is: 'Do you believe in God?'. Indirect questions ask the respondent to offer information about other people, assuming that in this way the respondent will indirectly tell about himself or herself. An example of an indirect question is: 'Do you think that people of your status and age believe in God nowadays?'.

Indirect questioning is mainly used when the respondent is unable or unwilling to offer direct information on the research question; this is the case, for example, when the questions deal with sensitive, embarrassing or threatening issues, or when the topic of research is too difficult for the respondent to answer a direct question. In such cases, indirect questioning makes it easy for the respondent to answer the question. However, indirect questioning raises many serious ethical questions which need to be considered.

***Suggestive questions***

Suggestive questions presuppose that the respondent holds a particular view on the issue in question that is similar to that of the researcher and contain an implied attempt to tempt the respondent to confirm this view. For example, if we were to test the views of students to examinations, a direct question could have been: 'Do you believe that examinations should be abolished in all sociology subjects?' In a suggestive mode this question could read as follows: 'Don't you also think that examinations should be abolished?'. Suggestive questions *lead* the respondent and *bias* the direction of the findings.

***Filter and contingency questions***

Filter questions aim at eliciting, for the first time in the study, information related to a general aspect of the research topic, and are usually followed by another more specific question (i.e. a contingency question). An example of such a question is: 'Do you smoke?'.

Contingency questions are geared towards eliciting additional and more specific information on an issue already addressed by a filter question. After an issue has been addressed through a filter question (e.g. 'Do you smoke?'), the contingency question may read as follows: 'How many cigarettes do you smoke each day?'. Asking contingency questions before filter questions are introduced is not a correct practice.

***Fixed-alternative and open-ended questions***

According to their response format, questions can be divided into two categories: open-ended (free answer) and closed, pre-coded or fixed-alternative questions. In the case of open-ended questions the respondents are free to formulate their answers the way they consider to be the most appropriate, in their own way and in their own words. When the question is pre-coded, the responses are fixed and the respondent is expected to choose the option with which he or she agrees most.

For example the question 'What is your marital status?' followed by an empty writing space is an open-ended question; here it is left up to the respondent to state his or her answer. The question 'Are you currently: (1) Single, (2) Married, (3) Cohabiting, (4) Divorced, (5) Separated,



(6) Widowed?’ is a fixed-alternative question. In this case the respondents are expected to indicate their status by placing a tick next to the relevant category or by circling the number that corresponds to their marital status.

Whether to choose pre-coded and open-ended questions or not depends on a number of factors. In a discussion quite a few years ago (which, nevertheless, is still relevant today), Kahn and Cannell (1957) explained these factors as follows: If the researcher is interested in ample information, if the attitudes, ability to communicate and the motivation of the respondents are not known, if they cannot communicate, and if they are not well informed and have not yet structured an opinion, open-ended questions are advisable. If, on the other hand, the researcher is interested in classifying responses or respondents, if the situation of the respondents is known, if they can communicate, and if they are well informed and have formed an opinion, pre-coded questions can be employed.

Open-ended questions have many advantages and several limitations. The advantages are as follows:

- they allow freedom to express feelings and thoughts, especially when complex issues are being studied;
- they offer more details than pre-coded questions, especially qualifications and justifications;
- they offer information in areas that might not have been foreseen by the researcher;
- they allow conclusions about the respondents’ way of thinking and logic; and
- they allow the respondent to show creativity, self-expression and initiative.

Despite these strengths, open-ended questions are thought to have certain limitations (Becker, 1989). These are:

- they are not very suitable for sensitive questions;
- they produce large amounts of information which require extensive time and effort to code and/or evaluate;
- they are time consuming and allow no accurate comparisons;
- they can offer useless or irrelevant information;
- they are not suitable if the respondents have problems articulating well; and
- they require additional processing if statistical analysis is intended.

Pre-coded questions have the advantage of being easy to administer, to code and to answer; they allow comparisons and quantification and they help to produce fully completed questionnaires and to avoid irrelevant answers. Their limitations are, for instance, difficulty in covering all possible answers, restriction of freedom, creativity and expressiveness of the respondent, and a high chance of guessing the answers.

The construction of the response categories in pre-coded questions is a relatively difficult task. Alternative answers are primarily constructed so that they are accurate, unidimensional, exhaustive and mutually exclusive (see below). Their final structure should be determined by experts and pilot studies, and they may be formed on a nominal, ordinal, interval or ratio level. The final goal of such a construction should be easy application, reduced stress on the respondent, reduced time required for completion and high precision. It

must be kept in mind that too many (more than five) responses may overtax the respondent's ability to differentiate; although more options offer more details they may also offer more options for bias! In general, while well-educated respondents may be in a position to respond effectively to long lists of responses without difficulties or bias, less educated people may not.

Whether or not the response categories should contain neutral options such as 'I don't know', 'no opinion', etc. is a contentious issue (Becker, 1989). While some researchers argue that such an option is required to allow for unexpected answers and to guarantee that the response set is exhaustive, others argue that this encourages the respondent to take the 'soft option' and avoid answering sensitive questions. In methodological terms, the inclusion of a neutral category will depend on the nature of the study and the respondents. If direct answers are required a neutral option has no place in the response set. A compromise position is to employ a filter question to eliminate the need for neutral responses, for instance to ask whether the respondents have an opinion on the government's taxation policy, and then direct questions regarding the nature of the opinion only to those who do have an opinion.

## 7 Response format

### a Introduction

A characteristic of open-ended and fixed-alternative questions is that the former are easy to construct but difficult to process and the latter difficult to construct but easy to process. Consequently, constructing response sets for fixed-alternative questions is a serious and very demanding task. In this section, we shall look at the options available for responses to pre-coded questions, leaving an examination of the factors affecting the choice of options to be discussed elsewhere. (For an interesting discussion of this issue see Berger *et al.*, 1989.)

It is a strict methodological requirement that response sets to fixed-alternative questions adhere to certain standards and principles of which the most important is that response categories are accurate, exhaustive, mutually exclusive and unidimensional. A brief description of such options is given below.

#### *Accurate sets*

Response sets must be accurate; they must address the central point of the question to be relevant and related to the essence of the question. A response set developed to provide responses to the question 'How successful are you with your progress?' containing the response categories 'very satisfied', 'satisfied', 'unsatisfied' and 'very unsatisfied' is not accurate because it relates to *satisfaction* and not to *success*. These two issues may be interrelated but different nonetheless: a business manager may be 'very satisfied' with the progress of his or her branch, but also rate the degree of success of this business as 'moderate'.

***Exhaustive sets***

Response sets must cover all possible options. If required, the option 'other' is added, to make the response set *exhaustive*. Nevertheless, care must be taken to avoid high proportions of respondents opting for this option. It is desirable and advisable that researchers explore thoroughly the research item before establishing the response categories. Pre-tests, for instance, can determine the type of response categories required for a question, and can assist in reducing the number of respondents opting for 'other' to a minimum.

***Mutually exclusive categories***

A set of categories is expected to include items that are clearly distinguishable from each other and mutually exclusive. The respondents should only be able to choose *one response*, without confusion and ambiguity. The responses included in the set 'Single', 'Married', 'Living together', 'Divorced', 'Separated', 'Widowed' are — strictly speaking — not mutually exclusive, because it allows a certain group of respondents to choose more than one option. For instance a separated man who is cohabiting can equally tick the third or the fifth option. The same is true for a divorced woman who is cohabiting. This problem can be corrected by making the question specific and more discriminating, for example by asking 'Are you *currently* "Married" . . .' or 'Is your *current* status "Married" . . .' Still, such solutions are not always successful. In the above example, a divorced wife may be obtaining alimony, and therefore considers herself a divorced woman, while cohabiting with another person, establishing that way two *current* statuses.

***Unidimensionality***

This refers to the requirement that a set of categories should refer to and measure only one construct, in only one dimension. A response category that includes the items 'very reliable', 'reliable', 'unreliable', 'very unreliable' is unidimensional because it measures reliability. The response set 'very reliable', 'reliable', 'unacceptable', 'very unacceptable' is not unidimensional because it relates to two dimensions, namely reliability and acceptability.

**b Response sets**

The following are possibilities for forming response sets in the context of questionnaires; while some are more common than others, all have been and are currently being employed by social researchers in various studies using questionnaires or interviews.

***Numerical responses***

This response category includes a continuum, with two opposite adjectives at each end and a range of numbers in between, one of which must be circled or otherwise marked by the respondent.

*Example A:* The response of the Prime Minister regarding maternal employment was: (Please circle the appropriate number.)

Very satisfactory    5    4    3    2    1    Very unsatisfactory

**Verbal scales**

In many cases the expected response to a question is formulated in words. The respondent in such cases is expected to tick one of the words in the space provided for that purpose.

*Example B:* The support provided by the Union was:

Very high            ( )  
 High                    ( )  
 Moderate            ( )  
 Low                     ( )  
 Very low             ( )

**Scales of increasing strength**

Some researchers opt for response categories that are described simply by an adjective and are followed by a set of numbers ranging from low to high, from which the respondent is expected to choose one. The meaning of the numbers (e.g. 1 standing for very low and 10 for very high) will be explained in the instructions.

*Example C:* The conditions of Aborigines in this country can be characterised as: (Please circle the appropriate number.)

Acceptable	1	2	3	4	5	6	7	8	9	10
Discriminating	1	2	3	4	5	6	7	8	9	10
Just	1	2	3	4	5	6	7	8	9	10

**Graphic responses**

The use of graphic responses is not new in social research. In its simplest form, a response contains a continuum whose extremes are defined by two opposite adjectives connected by a line. The respondent is expected to mark the line at a point that expresses the strength of his or her view. The researcher will then evaluate the answer according to the position of the mark by means of a standard pattern.

*Example D:* Last Sunday's elections of the municipal officers were:

Fair ..... Unfair

**Graphic-numerical responses**

A combination of graphic symbols and numerals is being used quite often by social investigators. The direction of choice and evaluation is based on the selected position of the tick, which is not defined in words.

*Example E:* My wife's reaction to last week's rise in taxes was: (please tick)

( )	+3
( )	+2
( )	+1
( )	-1
( )	-2
( )	-3

**Thermometer scales**

In these scales, the responses are set in the form of a thermometer, containing a continuum that is the reading range of a thermometer, the extremes of which are being described by opposite adjectives, for example 'unsatisfactory', 'satisfactory'. The divisions given on the thermometer are used as points of response for the respondent.

**Face scales**

Another graphic scale employed to record answers to pre-coded questions in a simple manner is the use of faces. Here, usually five to seven faces of equal size and structure are ordered on a line. The faces are identical, except for the shape of the mouth, which at one end is shaped in a U-form giving the impression of happiness, and progressively changes through a neutral position (straight line) to an inverted U at the other end describing unhappiness. There are no explaining adjectives here as it is assumed that the faces offer a clear indication of the implied feeling. The respondents are asked to indicate their feelings to the question by marking the appropriate face.

**Ladder scales**

In a response set that employs a ladder scale the responses are given on a ladder presenting a continuum of five or more steps, whose extremes are defined by two opposite adjectives (e.g. 'high', 'low' or 'strong', 'weak'). The question could be, for example, 'Whereabouts do you stand on the social ladder?', advising the respondents to place an X on the point of their choice.

**Constant-sum scales**

These scales ask respondents to score two or more objects or concepts so that they together add up to a given amount (e.g. 100). This relative measure is most suitable to ascertain, for instance, the psychological distance between stimuli. The respondents may be asked to allocate 100 points to the Labor Party or to the Liberal Party, according to their handling of taxation issues. The rating can be 100 to 0 or vice versa; it can be 20 to 80, 60 to 40 and so on. Scores

allocated by the respondents can be further computed and evaluated, for instance, by constructing relations of the pattern  $A/B = 60/40 = 6/4 = 1.5$ , and vice versa.

### **Likert scales**

Likert scales are widely used, particularly as a means for studying attitudes. The response categories range between two extreme positions divided into five points corresponding to a verbal–numerical scale.

*Example F:* The reaction of the members of the Teachers' Union of NSW to the salary increase suggested by the government was, in my opinion:

Very positive	5
Positive	4
Neutral	3
Negative	2
Very negative	1

(Please circle the relevant number.)

### **Ranking scales**

Unlike many scales in which respondents are asked to tick one response only, in ranking scales it is required that all responses be answered, for example by ranking them from highest to the lowest. In such cases there are as many ranks as there are items.

*Example G:* My ranking of the performance of the five political parties from 1 (low) to 5 (high) is as follows:

Democrats	... ( )
Labor Party	... ( )
Independents	... ( )
National Party	... ( )
Liberal Party	... ( )

(Please enter numbers in the spaces provided.)

The structure of the set of responses, its nature and size depends on many factors, but mainly on the nature of the study, the nature of the respondents and the extent to which statistical analysis will be used. For an accurate and effective construction of response categories of this kind, several techniques have been developed and are frequently used by researchers. Those introduced by Likert, Thurstone and Guttman are three examples. Such scales have already been introduced in another chapter. We now turn our attention to another aspect of questionnaire construction, namely the content of the question. The main issues related to the content of questions are described below.

## 8 Question content

The content of the questions is obviously the most important element of the construction of a questionnaire or an interview guide. While form and order of questions may influence accessibility to information, the content of the questions will lead to the type of information sought in the study. In order that the questionnaire achieves its purpose, the content of questions must be organised according to the following criteria (see Becker, 1989; Mahr, 1995; Puris, 1995):

- *Composition* The composition of each question is expected to address one item only. Double-barrelled questions are not allowed. For instance, the question 'Are your parents caring and supportive?' addresses more than one issue: first it does not differentiate between father and mother. It is not possible here for the respondent to state the specific feelings of each parent. And, second, it asks about care and support. Such questions should be avoided. If information for all these issues is required, four separate questions should be asked.
- *Relevance* The content of each question *must be related* to the research topic. Questions not directly related to the topic may be asked only if they can be well justified and if they serve a certain purpose.
- *Symmetry* The questions should address a specific element of the research topic and be symmetrical: there should not be many questions on one aspect and few on the others unless there are reasons to justify it. Each sector in the questionnaire should be symmetrical to the whole questionnaire.
- *Clarity and simplicity* The content of the questions must be *clear and simple* in language and in content. Questions that are too general, ambiguous, vague and embarrassing should be avoided. Personal questions should be employed very carefully.
- *Language* Questions should be formulated in the language of the respondent.
- *Attitude* Questions should convey a positive attitude towards the respondent and the study, in general, based on friendliness and collegiality.
- *Presuming questions* are not permitted. It is also unethical to ask, for instance, a student, 'When did you stop cheating in the examinations?' without introducing a filter question first regarding cheating.
- *Suggestive questioning* is when the respondent is encouraged to give a certain answer ('Don't you also think . . .'); *prestige bias* occurs when the respondent is motivated to follow some generalised views of important people (e.g. 'Gerontologists believe that progressive age causes alienation and hostility among older males; what is your view on this issue?'). This form of questioning must be avoided.

Some important rules regarding the content of questions will be presented in the next section.

## 9 Rules of questionnaire construction

It is common practice for questionnaires to be constructed according to set rules and standards. Some rules are more important than others, but overall they are expected to be taken into consideration during the construction of the questionnaires (or interview schedules). Many writers (Berger *et al.*, 1989; Mahr, 1995) refer to the rules listed below.

### a Layout

- Questions must be well presented in the questionnaire, easy to read and easy to follow.
- Questions and response categories must be easy to identify and distinguishable from other questions and response categories. For this reason, sufficient space should be provided between the questions.
- Clear instructions regarding the way of answering the questions must be given, for example 'circle the appropriate number' or 'tick the right box'. Nothing should be taken for granted.
- Sufficient space should be left for the respondent to make relevant remarks if required.

### b Content of the questions

- Every question must be relevant to one or more aspects of the study.
- Ambiguous, non-specific and hypothetical questions are to be avoided.
- Leading, double-barrelled and presuming questions should not be employed.
- Embarrassing, personal or threatening questions should be avoided.
- Vague words and academic jargon should not be used.
- The language of the respondent should be employed. If impossible, a simple language should be used, without jargon, slang or complicated expressions.
- Easy flow and logical progression in the questionnaire should be assured.
- Each question should ask what it is supposed to ask.

### c Questionnaire format

- The questionnaire must have a professional appearance and should give the impression of a document that deserves respect and invokes feelings of responsibility.
- The questionnaire should be presented in a way that encourages the respondent to complete and return it.
- Writing on one side of the page is, for smaller questionnaires, preferable to writing on both sides.



- Print and colour of paper and ink must correspond with the preferences of the respondents.
- The questionnaire should be presented as a complete document with an inviting and reassuring introductory cover letter and a concluding note containing instructions regarding the return of the questionnaire.
- The questionnaire size should be kept to a minimum, and restricted to as many questions as necessary, and as few as possible.
- Sufficient instructions and probes should be provided where necessary.
- Pre-coded questions should offer adequate response categories.
- All questions should be checked for possible bias and ethical adequacy.

It must be noted that the success of the questionnaire in general and the response rate in particular depend to a large extent on the factors stated above — factors that motivate the respondent to read the questionnaire, to complete it and to return it. Sending the questionnaire directly to a ‘person’, rather than to the ‘householder’, giving it a professional appearance, arranging for a free return, and timing the arrival of the questionnaire at a convenient time for the respondent may guarantee a high response rate.

The issues presented above relate more to quantitative than to qualitative studies. As we shall see later, qualitative investigations use a less rigid structure and a more flexible approach than do quantitative studies. This discussion is also relevant to qualitative research using an interview guide rather than a questionnaire.

## 10 Steps in questionnaire construction

Questionnaires are constructed in a very sophisticated and systematic manner. The process of construction goes through a number of interrelated steps, and offers a basis for the research stage to follow. Some steps seem to receive more attention than others, and the following are the most commonly mentioned steps of questionnaire construction (see Becker, 1989; Berger *et al.*, 1989; Puris, 1995):

### *Step 1: Preparation*

The researcher decides what is the most suitable type of questionnaire and determines the way it will be administered. As well, a search for relevant questionnaires that might have already been developed by other investigators is undertaken. If suitable questionnaires are found they can either be adopted for the study or used as guides in the construction of the new questionnaire. If the search is unsuccessful, a new questionnaire is developed.

### *Step 2: Constructing the first draft*

The investigator formulates a number of questions, usually a few more than required, including questions of substance (directly related to aspects of the research topic), questions of method (those testing reliability and wording), and secondary as well as tertiary questions.

*Step 3: Self-critique*

These questions are tested for, among other things, relevance, symmetry, clarity and simplicity, as well as for whether they comply with the basic rules of questionnaire construction presented above.

*Step 4: External scrutiny*

The first draft is then given to experts for scrutiny and suggestions. It is anticipated that some questions might be changed or eliminated, while new questions might be suggested.

*Step 5: Re-examination and revision*

The critique offered by the experts and group leaders will be considered and eventual changes implemented. If the revision is not significant, the investigator proceeds to the next step. If the revision is substantial, the questionnaire is presented again to experts and later re-examined and revised until it is considered satisfactory. The investigator then proceeds to the new step.

*Step 6: Pre-test or pilot study*

In most cases a pilot study or a pre-test is undertaken to check the suitability of the questionnaire as a whole (pilot study) or of some aspects of it (pre-test). A small sample is selected for this purpose, and the respondents requested to respond to the whole or part of the questionnaire; the results are then analysed and interpreted.

*Step 7: Revision*

The pre-test and pilot study usually result in some minor or major changes. If the changes are minor, the investigators will proceed to Step 8. But if the changes are major they will return to Step 4.

*Step 8: Second pre-test*

The revised questionnaire is then subjected to a second test, mainly with regard to the revised questions. The response is considered and adjustments and revisions follow.

*Step 9: Formulation of the final draft*

In this final step, apart from implementing the suggestions derived from the pre-tests, the investigator concentrates on editorial work, checking for spelling mistakes, legibility, instructions, layout, space for responses, pre-coding, scaling issues and general presentation of the questionnaire. This copy will finally be sent to the printer.

## **11 Reviewing the questionnaire**

The questionnaire review often involves a large number of points, many of which relate to the nature of the particular research topic. However, many

writers (Berger *et al.*, 1989; Selltiz *et al.*, 1960: 552–74, 1976; Puris, 1995) stress that the following points should be considered in the review:

- *Size of the questionnaire* Is the questionnaire too large or too small? In ideal terms it should include as many questions as necessary and as few as possible. Often, large research topics require many questions, small topics fewer questions. The rule here is that every question should have a specific purpose; if not, it has no place in the questionnaire.
- *Relevance of the procedure* Which point of the topic is the question related to? Is it strictly relevant? Does it ask what it is meant to ask? Questions must be tuned to one specific point in a clear and unambiguous way.
- *Necessity* Is every question required? Could some questions be omitted? Is there any repetition in the questions? Is more than one question needed for each item? Questions will be retained only if they have a certain purpose and if they are really necessary.
- *Clarity* Are the questions easy to understand, clear and unambiguous?
- *Tone and content* Is the tone of the questions acceptable? Are the questions unethical, threatening, insulting, patronising or otherwise biasing? Such questions must be changed or omitted.
- *Set-up of the questionnaire* Is sufficient space provided for recording answers given to open-ended questions?
- *Pre-coded questions* Are the response categories to pre-coded questions easy to understand, exhaustive, unidimensional and mutually exclusive? If not, they need to be restructured.
- *Adequacy* Are all aspects of the topic adequately covered? If not, new questions have to be added.
- *Instructions* Are sufficient instructions given for filling out the questionnaire and for proper use of probes?
- *Level of pitching* Is the wording of the questions appropriate for the respondents' linguistic ability, education, interest and intellectual capacity?
- *Cover letter* Is the cover letter constructed adequately? Does it offer the required information? Are there any points missing? Is it too long or too short? Are the respondents properly addressed in the cover letter?
- *Layout* Are the layout of the questionnaire, the colour of the paper and the print size adequate and acceptable?
- *Pre-coding* Is pre-coding (where required) recorded adequately and in accordance with the computer program used?
- *Statistical data* Are all statistical data of the respondent (age, education, occupation, etc.) required? Are they sufficient? Are they positioned in the right place on the questionnaire?
- *Guides* Are the guides introduced to direct the respondent through the questions clear and adequate?
- *Principles* Have the methodological principles regarding the questionnaire construction been adhered to?
- *Legal responsibilities* Are any questions likely to cause violation of rights of the respondents or third parties?
- *Ethical considerations* Is the questionnaire ethically sound?
- *Overall impression* Is the questionnaire easy to read and pleasant to follow overall?

There are, of course, many more points mentioned by writers on this topic that need to be considered when reviewing a questionnaire (or interview schedule). The list presented above offers a guide only, concentrating mainly on issues referred to most frequently by writers. Individual projects will raise additional and more specific issues that will need to be addressed by the investigator.

## 12 Relevance of the questionnaire

As stated earlier, questions must be relevant to the research topic. Each question will be related to one or more aspects of the topic, and all questions together will cover all elements of the topic. To ensure that questions are relevant to the topic and evenly distributed among the different aspects of the research question, and that parts of the research issue will not be omitted from the questionnaire, researchers usually follow a number of steps. These steps were mentioned earlier in this chapter and were described in Figure 10.1. These steps are summarised below:

- *Step 1* The variable(s) to be studied is (are) identified.
- *Step 2* Variables are divided into a number of indicators.
- *Step 3* Indicators are translated into a number of questions.
- *Step 4* These questions are put in a questionnaire following the rules and points stated above.

This way, developing questions for a questionnaire is a *process of translating* research topics into variables, variables into indicators and indicators into questions. This process ensures that each question has a certain purpose and elicits information related to a specific aspect of the research object.

Let us see how this works in practice. Assume that we wished to study the 'Effects of religiousness on the scholastic achievement of teenagers'. Following the suggestion contained in Step 1 above we identify the variables, which in this example are 'religiousness' and 'scholastic achievement'. Following Step 2, we translate the variables into a number of indicators; for example, for the first variable belief in God, church attendance, bible reading and participation in religious activities and for the second variable grade in English, grade in mathematics, grade in science and grade in social studies.

These indicators are then translated into questions (Step 3) such as whether they believe in God; whether they attend church; whether they read the bible; whether they participate in religious activities; and what grade they achieved in English, in mathematics, science and social studies. However, while some indicators might be translated into one or two questions, others might require more questions. One might wish to know, for instance, about the frequency of church attendance of the respondents as well as their sibling(s), parent(s) or other relatives at the present time, last year or two years ago. Nevertheless, the important point is that questions translate the meaning of a topic or variable and provide information for a particular aspect of the research topic.

**Table 10.1** Chain of translation

<i>Variables</i>	<i>Indicators</i>	<i>Questions</i>
Religiousness	Belief in God	<i>Do you believe in God?</i>
	Bible reading	<i>Does your father believe in God? . . . Do you read the Bible? If so, how often? . . .</i>
	Church attendance	<i>Do you go to church? If so, how often? . . .</i>
	Religious activities	<i>Do you participate in any religious activities? . . .</i>
.....	.....	.....
Scholastic achievement	Grade in maths	<i>What grade did you receive last term in mathematics?</i>
	Grade in English	<i>What grade did you receive last term in English?</i>
	Grade in science	<i>What grade did you receive last term in science?</i>
	Grade in social studies	<i>What grade did you receive last term in social studies?</i>

If this chain of translation is followed carefully, all questions will be relevant to the research topic and the researcher will know exactly the purpose of every question in the questionnaire. As a result, every point of the research issue will have one or more corresponding questions, and every question will have one or more corresponding points in the research problem for which they intend to provide information.

### 13 Questionnaires in the computer age

Due to their structure, questionnaires, especially those with a standardised structure, lend themselves to computer assistance. To a certain extent, the use of computers goes further than just assisting the researcher in data collection. In certain cases the computer takes over questioning, and collection of data occurs between the computer and the respondent without the involvement of the researcher.

This is obvious in the area of interviewing, which will be discussed more extensively in the next chapter. The packages CAPI, CATI, CODSCI and CISUR allow interviews to be run through a computer, where the respondent reads questions on the screen and answers these questions as instructed (by the computer). Interviews are administered like questionnaires; interviews become electronic questionnaires, often without the presence of the interviewer.

Apart from this, there are computer packages that take over the administration and completion of the questionnaires, replacing the traditional research assistant. The program 'Computerised self-administered questionnaire' (CSAQ) is one example. The respondent is given no questionnaires to fill in

but is asked instead to sit in front of a computer terminal; the computer displays the questions on the screen, giving the necessary instructions and offering advice on technical aspects of the questionnaire when required. The respondent enters the responses in the computer and the computer then saves the data in its memory and adds the responses to the research data, gradually preparing them for analysis.

Other programs operate in a similar way. The computer has, obviously, extended its function from its traditional role of the assistant in the statistical analysis to data preparation and collection, functions that were accomplished in the past predominantly by research assistants.

## 14 Summary

In this chapter it was shown that the questionnaire is one of the forms of survey research, and one that uses written questioning as its medium. More specifically we saw that the questionnaire is a popular method of data collection and one that has many advantages over other methods but also a number of weaknesses. The coverage of many respondents in a relatively short time and the low costs as well as the reduced interference on the part of the researcher in the collection of data are the most important advantages; overall, the advantages of the questionnaire outweigh its weaknesses.

The questionnaire is an integral part of the process of operationalisation in that it extends the process of translation of variables to dimensions and indicators further; it translates variables to questions, ultimately connecting abstract concepts to specific questions. Questionnaires are the instruments used to bring to the researcher the information that is required for formulating answers to the research question.

Questionnaire construction is not only employed in the area of mail questionnaires, it is also employed by researchers using interviews. Here questions are formulated and response categories constructed and issues relating to the format and length of the questionnaire debated and resolved. The only difference is that in the end they are not sent to the respondent by mail or handed to them in some way; they are instead communicated to the respondent by the researcher reading the questions one by one. Here the communication between the researcher and the respondents is closer and more intense than it is in mail questionnaires. How this is conducted we shall discuss in the next chapter.