

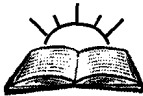
Unit 22

Survey Instrumentation

Contents

- 22.1 Introduction
- 22.2 Techniques/Instruments for Data Collection
- 22.3 Questionnaire Construction
- 22.4 Issues in Designing a Survey Instrument
- 22.5 Conclusion

Learning Objectives



It is expected that after reading Unit 12 you would be able to

- ❖ Understand techniques of data collection
- ❖ Practice the art of constructing questions
- ❖ Highlight the issues of reliability and validity in designing survey instruments.

22.1 Introduction

A reliable and valid instrument enhances the quality of data collected. If a reliable instrument is consistent and valid, it is also accurate. In other words, an instrument becomes reliable when each time it is used, the same information flows. A poorly worded survey instrument can seriously affect precision, affecting the entire research process. The researcher must be careful in developing the instrument for survey in order to enhance its quality and purpose.

22.2 Techniques/Instruments for Data Collection

In this section we will discuss i) types of survey instruments, ii) role of the interviewer, iii) stages of an interview and iv) interview bias.

i) Types of survey instruments

There are five principal types of instruments (or techniques) used in survey research. They are: (a) self-administered questionnaires, (b) face-to-face interviews, (c) telephone interviews, (d) internet survey, and (e) structured observation. Each of these instruments has its advantages and disadvantages, which are discussed below.

a) Self-administered questionnaire

A self-administered questionnaire consists of questions that an individual completes by himself or herself. Self-administered questionnaires can be mailed or completed 'on site', say, on a computer or by hand in a classroom, waiting room, or office. The respondents read the questions, then record their answers.

Advantages: Self-administered questionnaires have a clear advantage regarding cost. Since interviews are not part of the data gathering process, the expense of interviews is minimised. This reason alone probably accounts for the fact that so much survey research is conducted by self-administered questionnaires. Another advantage of this instrument is that respondents have time to consider (and ponder over) questions carefully. There is no pressure to react to questions right away as is often the case in an interview. Some respondents feel more comfortable expressing their actual reactions to questions on sensitive topics (sex, politics, and religion) on a self-administered questionnaire than they do in an interview.

In a mailed questionnaire, the researcher can send questionnaires to a wide geographical area and the respondents can complete when it is convenient and can check their personal records, if necessary. Mailed questionnaires offer anonymity and avoid interviewer bias. They are very effective and response rates are high for a target population that is well educated, or has a strong interest in the topic or the survey organization.

Disadvantages: The biggest disadvantage of the questionnaire is low response rate. Respondents may consider questionnaire filling a waste of time. Questionnaires are less successful in those social contexts where oral traditions reign and written traditions are in the back seat. When the attempt is to reach a cross-section of the population, a response rate of 10 percent (and less) may not be uncommon with questionnaires. The researchers may raise response rates by sending reminders, but this adds to the time and cost of data collection. Moreover, reminders, howsoever gentle, may be interpreted as irritants. A partial explanation of this low response rate is that some people have a difficult time filling out questionnaires. For purposes of filling out even simple written questionnaires, the literacy level must be high.

Further, a researcher cannot control the conditions under which a questionnaire is filled. For instance, if the questionnaire is completed during a get-together, there will be many others around the respondent influencing his answers. Some respondents may fill out the questionnaire in the presence of their family members, who may aid in giving answers. Sometimes, someone other than the sampled respondent may complete the questionnaire without the researcher's knowledge. Some respondents may complete the questionnaire weeks apart or answer questions in a different order than that intended by researchers. Incomplete questionnaires can also be a serious problem. Researchers cannot visually observe the respondent's reactions to questions, physical characteristic or the setting in which questionnaires are filled.

The self-administered questionnaire format limits the kind of questions a researcher can ask. Questions requiring visual aids (e.g. look at the picture and tell me what you see), open-ended questions, many contingency questions, and complex questions do poorly in self-administered questionnaires.

b) Face-to-face interview

An interview requires at least two persons: one to ask the questions (the interviewer) and the other, to respond (the interviewee). However, in some cases, group interviews are also possible.

Advantages: Face-to-face interview is generally the best data gathering technique for survey research. This approach enables the researcher to obtain information from a much larger percentage of those sampled than do self-administered questionnaires, particularly those mailed. One reason is that it is more difficult for respondents to refuse cooperation when they are directly confronted and requested to respond to questions than when they receive a questionnaire and are asked to fill it out themselves. The interviewing situation also increases the response rate because many respondents who are unable to fill out a questionnaire by themselves can and will respond to the same questions when asked by an interviewer.

The face-to-face interview enhances not only the response rate, but also the quality of response. When questions are not understood by a respondent, the interviewer can clarify their meaning by the use of 'probing questions'. If a respondent does not answer a question in the proper frame of reference, an interviewer can follow up by asking: "Could you explain what you mean by what you just said?" The use of such probes can eventually bring the respondent around to providing the information sought by a particular question. Besides clarifying doubts, the additional questioning can add depth of information which a respondent provides. A further advantage of face-to-face interviews is that the respondent can ask for clarifications to the questions. It is less likely that false answers will be given by respondents directly to the interviewer.

Disadvantages: The advantages of face-to-face interviews over self-administered questionnaires are conditional: the effectiveness of the confrontation depends on good interviewers who achieve the respect of respondents. A considerable disadvantage of face-to-face interviews is that it is expensive. In fact, the cost can be prohibitive for many survey research situations, particularly, training, supervision, and personnel costs for interviews can be too high. Another disadvantage in a face-to-face interview is the possibility of interviewer bias. The appearance, tone of voice, question wording, and so forth of the interviewer may affect the respondent.

c) Telephone interviews

By telephone interviews is meant those interviews that are conducted on telephone, where the voice of the interviewer is used.

Advantages: Comparatively speaking, the telephone interview is less expensive. It can often provide a representative sample at less than half the cost of face-to-face interviewing. Telephone interview is a popular survey instrument where a large number of respondents have telephones. Further, if concessions and discounts are obtained from telephone

companies, it becomes far more inexpensive as an instrument of data collection.

Disadvantages: People without telephone connections (normally, poor people) and people with unlisted telephone numbers (the well-to-do and those who have recently shifted residence) have to be excluded from telephone surveys. Telephone interviews yield only one-third of the information that could normally be obtained from face-to-face interviews. In the telephone interview, the interviewer cannot use the visual questioning technique (e.g. handing the respondent a lengthy list of alternative response categories) available in self-administered and face-to-face interviews. Moreover, relatively high cost of telephone calls in many parts of the world along with the limited interview length are the main shortcomings of this instrument.

In addition, open-ended questions are difficult to use. Interviewers can only note serious disruptions (e.g. background noise) and respondent's tone of voice (e.g. anger, flippancy or hesitancy).

d) Internet survey

Since the mid-1990s, the internet has become a viable and popular means of administering questionnaires. There are two main ways in which the internet has been used as an instrument for survey: e-mails and via web pages.

i) E-mail surveys: E-mail questionnaires are the cheapest of all the techniques of survey research. They come in three different forms. First, as plain text-questions inserted as part of an e-mail. This is the most basic method of e-mail survey in which respondents simply edit the mail message to indicate their response. Second, a formatted questionnaire sent as an e-mail attachment. Third, an interactive questionnaire, which can be sent as an attachment, answered and returned by email.

ii) Web Page based surveys: These surveys require that the respondent visit a page (URL). From this page, they will be given a questionnaire. Typically, respondents are recruited for web page questionnaires in one of the following ways:

❖ **Pop-up questionnaires:** When a person happens to visit the page, a questionnaire will pop up or the respondent will be asked if he wants to go to URL (web address) to answer a questionnaire. This method of sample recruitment depends entirely on people happening to visit the site and then agreeing to answer the questionnaire.

❖ **Advertising on other sites:** Other sites might advertise a survey. This method can attract people from a wide range of sites and results in a large number of responses but it is difficult to think what population such a sample represents.

❖ **Listserve, news group and chat group advertising:** A researcher

may advertise questionnaire or invite participants from people an internet based lists.

❖ E-mail invitations: These may be sent to people whose e-mail addresses are available. The researchers may use both e-mail and web pages based surveys together also. It may be borne in mind that the shortcomings of this instrument are more or less the same as those of the telephonic interviews.

Table 22.1 Types of Surveys and their Features

TYPE OF INSTRUMENT			
Features	Self-administered Interview	Telephone Interview	Face-to-face Questionnaire
(a) Administrative Issue			
1. Cost	Cheapest	Moderate	Expensive
2. Speed	Slowest	Fastest	Slow to Moderate
3. Length (Number of Questions)	Moderate	Short	Longest
4. Response Rate	Lowest	Moderate	Highest
(b) Research Control			
1. Probes Possible	No	Yes	Yes
2. Specific Response	No	Yes	Yes
3. Question Sequence	No	Yes	Yes
4. Only One Respondent	No	Yes	Yes
5. Visual Observation	No	Yes	Yes
(c) Success with Different Questions			
1. Visual Aids	Limited	None	Yes
2. Open-ended Questions	Limited	Limited	Yes
3. Contingency Questions	Limited	Yes	Yes
4. Complex Questions	Limited	Limited	Yes
5. Sensitive Questions	Same	Same	Same
(d) Sources of Bias			
1. Social Desirability	No	Same	Worse
2. Interviewer Bias	No	Same	Worse
3. Respondent's Reading Bias	Yes	No	No

e) Structured observation

A structured observation collects data visually and is designed to guide the observer in focusing on specific actions or characteristics. For example, two visitors to a school would be participating in a structured observation if both are asked to count and record the number of

computers they see, look for the presence or absence of air conditioning and measure the room's area in square feet. This is a very rarely used instrument/technique in survey research. It is more frequently used in participant observation.

Reflection and Action 22.1

Suppose you have to carry out a survey of waste disposal methods in your area. Which of the above discussed survey instruments would you like to select for your survey? Give specific reasons why you would select one instrument and not any other mentioned in Section 22.2.

ii) Role of the interviewer in social survey

To gather information interviews occur in several settings. Employers interview prospective employees, doctors interview patients, mental health professionals interview clients, social workers interview the needy, reporters interview politicians, police interview the witnesses and victims. But, survey research interviewing is a special kind of interviewing. As with most interviewing, its goal is to obtain as far as possible accurate information.

Interview is not just about asking questions. It includes quite a bit of information about the social context in which the interview occurs.

The survey interview is a social relationship. Like other social relationships, it involves social roles, norms, and expectations. The interview is a short term, secondary social interaction between two strangers with the explicit purpose of one person obtaining specific information from the other. The social roles are those of the interviewer and the interviewee or respondent. Information is collected in a structured conversation in which the interviewer asks prearranged questions and the respondent answers. It differs in several ways from ordinary conversations. (See Table 22.2).

Often characteristics of the respondents and the interviewer, such as sex or race or age affect the way either the interviewer or the respondent would reflect attitudes and behaviour that is unrelated to the interview itself.

An important problem for interviewers is that many respondents are unfamiliar with the survey respondents' role and respondents often do not have a clear conception of what is expected of them. As a result, they substitute another role that may affect their responses. Some believe the interview is an intimate conversation or therapy session, others see it as a bureaucratic exercise in completing forms, others view it as a testing session, etc. Even in a well-designed, professional survey, follow-up research found that only half the respondents understand questions exactly as intended by researchers. Respondents reinterpreted questions to make them applicable to their idiosyncratic, personal situations or to make them easy to answer.

Table 22.2 Differences between Structured Interview and Ordinary Conversation

Sl.No	Ordinary Conversation	Sl.No	Structured Survey Interview
1.	Questions and answers from each participant are relatively equally balanced.	1.	Interviewer asks and respondent answers most of the time.
2.	There is an open exchange of feelings and opinions.	2.	Only the respondent reveals feelings and opinions.
3.	Judgments are stated and attempts made to persuade the other to a particular point of view.	3.	Interviewer is non-judgmental and does not try to change respondent's opinions or beliefs.
4.	A person can reveal deep inner feelings to gain sympathy or as a therapeutic release.	4.	Interviewer tries to obtain direct answers to specific questions.
5.	Ritual responses are common (e.g. 'Un huh', shaking head, 'How are you?' 'Fine').	5.	Interviewer avoids making ritual responses that influence a respondent and also seeks genuine answers, not ritual responses.
6.	The participants exchange information and correct the factual errors that they are aware of.	6.	Respondent provides almost all information. Interviewer does not correct a respondent's factual errors.
7.	Topics rise and fall and either person can introduce new topics. The focus can shift directions or digress to less relevant issues.	7.	Interviewer controls the topic, direction, and pace. He keeps the respondent "on task", and irrelevant diversions are contained.
8.	The emotional tone can shift from humour, to joy, to affection, to sadness, to anger, and so on.	8.	Interviewer attempts to maintain a consistently warm but serious and objective tone throughout.
9.	People can evade or ignore questions and give flippant or non-committal answers.	9.	Respondent should not evade questions and should give truthful, thoughtful answers.

Thus, the role of the interviewer is crucial. The interviewer has to obtain cooperation, build rapport, yet remain neutral and objective. He has to encroach upon the respondent's time and privacy for information that may not directly benefit the respondent. The investigators have to try to reduce embarrassment, fear, and suspicion so that respondents feel comfortable while revealing information. Good interviewers monitor the pace and direction of the social interaction as well as the content of answers and the behaviour of respondents. They are non-judgmental and do not reveal their opinions, verbally or non-verbally (e.g., by a look of shock). If a respondent asks for an interviewer's opinion, he politely redirects the respondent and indicates that such questions are largely inappropriate and may be out of context. For instance, if a respondent

asks, "what do you think?", the interviewer may answer politely, "Here, we are interested in what 'you' think; what I think doesn't matter". Likewise, if a respondent gives a shocking answer (e.g. I was arrested three times for beating my wife), the interviewer does not show shock, surprise, or disdain but treats the answer as a matter of fact. He helps respondents in giving truthful answers.

One may ask, "if survey interviewer must be neutral and objective, why not use a robot or machine?" Machine interviewing has not been very successful because it lacks human warmth, sense of trust, and rapport that an interviewer creates. An interviewer helps define the situation and ensures that respondents have the information sought, understand what is expected, give relevant and serious answers, and are motivated to cooperate. Therefore, the interview is a social interaction in which the behaviour of both interviewer and respondent stems from their attitudes, motives and perceptions.

It may also be borne in mind that the interviewers do more than interview respondents (see Box 22.1).

Box 22.1 Time Allocation of Interviewers' Work schedule

Moser and Kalton (1973) note that face-to-face interviewers spend only about 35 percent of their time interviewing. About 40 percent is spent in locating the correct respondent, 15 percent in traveling, and 10 percent in studying the materials and dealing with administrative aspects and recording details.

iii) Stages of an interview

The interview is conducted in stages, beginning with an introduction and entry. The interviewer gets into the door, shows authorisation, and reassures and secures cooperation from the respondent. He is prepared for reactions such as, "How did you pick me up?" "What good would come out of this?" "I don't know about this?" The interviewer should explain why the specific respondent has been chosen for interviewing and why he cannot be substituted or replaced by anyone else.

The main part of the interview consists of asking questions and recording answers. The interviewer asks the appropriate questions in order, without returning to or skipping questions unless the directions specify this. He goes at a comfortable pace and gives non-directive feedback to maintain interest.

In addition to asking questions, the interviewer records answers. This is easy for close-ended questions, where interviewers just mark the correct box. For open-ended questions, the interviewers' job is more difficult. They listen to the respondent carefully, record in a legible writing what is said verbatim without correcting grammar or slang. Moreover, the interviewers need to avoid summarising or paraphrasing because this causes a loss of information or distorts answers.

The interviewer should know how and when to use probes. A *probe* is a neutral request to make clear an ambiguous answer to complete an incomplete answer, or to obtain a relevant response. Interviewers recognise an irrelevant or inaccurate answer and use probes as needed.

There are many types of probes

- ❖ A three-to-five seconds pause;
- ❖ Non-verbal communication (e.g. tilt of head, raised eyebrows, eye contact, etc.)
- ❖ Repetition of the question or the answer, and then pause
- ❖ Ask a neutral question (such as 'Any other reasons?')

The last stage is the exit, when the interviewer thanks the respondent and leaves. He then goes to a quiet private place to edit the questionnaire and record other details, while they are still fresh in mind. Other details include the date, time, and place of interview; a thumbnail sketch of the respondent's attitude (serious, angry, laughing, etc.). The interviewer records the personal feelings also on the sides. For instance, "the respondent became nervous when questioned about his income".

iv) Interviewer bias

Interviewer bias falls into six categories

- i) Errors by respondent - forgetting, embarrassment, misunderstanding, or lying because of the presence of others.
- ii) Unintentional errors or interviewer sloppiness - contacting the wrong respondent, misreading a question, omitting questions, reading questions in the wrong order, recording the wrong answer to a question, misunderstanding the respondent.
- iii) Intentional subversion by the interviewers -- purposeful attention of answers, omission or rewarding of questions, etc.
- iv) Influence due to the interviewer's expectations about a respondent's answers based on the respondent's appearance, living situation, etc.
- v) Failure of an interviewer to probe or to probe properly.
- vi) Influence on the answers due to interviewer's appearance, tone, attitude, reactions to answers, or comments made outside of the interview schedule.

Further, there are some other factors which might influence the interviewer. For instance, the social setting in which the interview occurs and the interviewer's social background (race, caste, gender, social class, etc.) may also affect the responses.

22.3 Questionnaire Construction

All the data gathering techniques (or instruments) we have discussed

earlier employ a set of questions to which the respondents are asked to reply. This set of questions is referred to as a questionnaire for self-administered questionnaires, mailed questionnaires as well as internet surveys and as an interview schedule for face-to-face interviews and telephonic interviews. This section considers the types of questionnaires and the questions, discussing the guidelines for constructing a good questionnaire or interview schedule.

In this section we will discuss i) types of questionnaires, ii) types of questions, iii) designing a good questionnaire, and iv) things to avoid in questionnaire construction.

i) Types of questionnaires

There are three types of questionnaires, namely, structured, unstructured and semi-structured questionnaires. Structured questionnaires use structured (or closed) questions that provide a respondent with a set of options and it is expected that he picks up one out of many. It does not give much freedom or choice to the respondent. These questionnaires are used when the respondent is a high profile person or professional and who does not want to give longer time for the interview. The unstructured questionnaire includes only the open-ended questions without any options being provided to the respondent. The semi-structured questionnaires include both structured (closed) and unstructured (open) questions and are the most widely used in social research.

ii) Types of questions

a) Structured (closed) and unstructured (open-ended) questions

As mentioned earlier, the structured questions provide the alternative (multiple choice) answers from which the respondent chooses an option. The following is an example.

Example 1: If the general elections were held today, for which party would you vote?

- ❖ Congress
- ❖ B.J.P.
- ❖ CPI(M)
- ❖ Any other (Specify)
- ❖ Don't Know

The alternative answers for a structured question are printed on the questionnaire and either the respondent or the interviewer (depending on the type of instrument) ticks off the appropriate response. Another example of a structured question is the following.

Example 2: How do you feel about the Central Government's initiative to make education a fundamental right?

- ❖ Strongly Approve
- ❖ Approve
- ❖ Ambivalent

- ❖ Disapprove
- ❖ Strongly Disapprove
- ❖ Don't Know

The second question is a better example of a structured (closed) question than the first one because the alternative responses cover the full range of relevant (approving or disapproving) answers. The first question obviously fails by this criterion of completeness because it does not include current political parties, which are potential options. Notice that both questions have a "don't know" category. It is important to have such a category for structured questions because some respondents really may not know how they feel about such issues. However, the researcher generally does not volunteer this as a response alternative because many respondents would use it just to avoid making a decision among the other alternatives.

On the other hand, unstructured (open-ended) questions do not predetermine the possible answers from which the respondent must choose. The following is an example.

Example 3: What do you feel are the major problems facing our nation today?

Instead of providing the possible answers, the questionnaire leaves space for the respondent to answer the question in his own words. In other words, the issue is left open. Such questions have the advantage of allowing for the expression of the depth and complexity of the respondent's feelings and attitudes about a particular topic.

One disadvantage of unstructured questionnaires is that they produce data, which is sometimes difficult to analyse quantitatively because the categorisation of responses must take place after the data has been collected. In some cases, the answers given by respondents vary so much that it becomes impossible to discern a relatively small number of response patterns. This problem does not occur with structured questions because the categories of response on the questionnaire become the categories used for data analysis.

Another important use of structured questions is in the measurement of abstract concepts such as anomie, social class, etc., using an index or scale, which combines several structured questions.

It should be made clear that structured (closed) and unstructured (open-ended) questions have their advantages and disadvantages and that some topic areas are best covered by one or the other question type. For example, the issues for which there is general agreement about the possible alternative replies are best tapped by structured questions. However,

structured questions sometimes inappropriately force respondents to select an answer from irrelevant and predetermined options/choices. This is a major and potential drawback with structured questions.

Unstructured questions, on the other hand, provide respondents the opportunity to 'open up' and answer questions in their own terms. Unfortunately, such responses are sometimes difficult to interpret and analyse.

b) Threatening versus non-threatening questions

Researchers sometimes ask about sensitive issues or ones that respondents may find threatening. The questions about sexual behaviour, drug or alcohol use, criminal or deviant behaviour, mental health, illegal activity, controversial public issues, etc., are considered to be threatening. Researchers who ask such questions must do so with extra care.

Threatening questions are part of a broader issue. Respondents may be ashamed, embarrassed, or afraid to give a truthful answer. Instead, they give what they believe to be the normative or socially desirable answer. This is the '*social desirability bias*'. This social pressure can cause an over-reporting or under-reporting of the true situation. For example, people may under-report an activity that involves deviance, sex, illness, etc. They may over-report being a good citizen (e.g. voting, knowing about issues, etc), being well informed and cultured (e.g. reading, going to cultural events), fulfilling moral responsibilities (e.g. having a job, giving to charity), or having a good family life (e.g. having a happy marriage and good relations with children), etc.

One way of addressing threatening questions is by offering explicit guarantees of confidentiality and by telling respondents that what the survey is seeking are truthful answers, irrespective of what they are. They should ask questions on sensitive topics after respondents have developed trust in an interviewer. They can also wait until after asking a less threatening warm-up material and providing a meaningful context. They can phrase questions to make it easy for a respondent to admit engaging in the threatening behaviour. Another method is to have an introductory statement that states that many people engage in such a behaviour and the respondent certainly is not alone. Yet another way is to use survey instruments that permit anonymity. For instance, it may be better to use a mail or self-administered questionnaire or internet survey or telephonic interview instead of face-to-face interviews.

c) Knowledge questions

Studies on survey suggest that a large majority of the public cannot correctly answer questions that seek to know the facts or knowledge. Researchers may sometimes want to find out whether respondents know about an issue or topics, but knowledge questions can be threatening because respondents do not want to appear ignorant.

d) Skip or contingency questions

Researchers avoid asking questions that are irrelevant for a respondent. Yet some questions apply only to specific respondents. A '*contingency question*' is a two (or more) part question. The answer to the first part of the question determines which of two different questions select respondents for whom a second question is relevant. Sometimes they are called *screen or skip questions*. On the basis of the answer to the first question, the respondent or an interviewer is instructed to go to another or to skip certain questions:

Example 4: Were you a student of the social sciences?

(1) Yes (2) No

(If No, please go to Question 2).

1. (a). If yes, which subject / discipline?

1. (b). How many years have you studied the subject?

iii) Designing a good questionnaire: some guidelines

A good questionnaire forms an integrated whole. The researcher weaves questions together so that they flow smoothly. A good questionnaire is clear, unambiguous and uniformly workable. Its design must minimise potential errors from respondents.

There are two key principles for a good survey questionnaire: Avoid confusion and keep the respondents' perspective in mind. Further, questionnaire construction is an art. It takes skill, practice, patience, and creativity. The principles/guidelines for constructing a good questionnaire are the following:

a) Introduction

Every questionnaire should have an introduction, which gives a description of what the study is all about. The introduction should also provide instructions for responding to the questionnaire and the promise of confidentiality.

b) The order of questions

Most researchers like to begin a questionnaire with one or two questions that will be easy to answer, such as questions about the household size, occupation, village, etc. However, it is important not to make these questions so personal that respondents will be put on the defensive or terminate the interview immediately.

As a rule of thumb, the line of questioning generally is broader at the beginning than later in the questionnaire. For instance, in an apolitically oriented survey, the opening questions might probe in a general way (including some open-ended questions) for the respondent's opinion on the most important issues of the day. Later in the questionnaire, the interviewer might read a list of specific issues and ask the respondent to appraise the relative importance of each one.

The questions should be placed in an order, which facilitates an orderly progression of the interchange between the interviewer and the respondent. One would not, for example, ask a few questions about the most important issues of the day, then skip to questions about political leaders, and then skip back to more questions on the issues of the day, then ask some questions about the respondent's characteristics, then skip back to more questions about political leaders.

Further, the most personal questions are usually saved until late in the questionnaire, so that if the respondent refuses to answer or terminates the interview at that point, most of the information would already have been obtained.

c) Form of the questions

It is important to determine whether structured or unstructured questions are best suited for a given objective. We have stressed the importance of interspersing both types of questions throughout the questionnaire to maintain the interest of the respondent and to complement each other in eliciting both closed and open-ended information. Even more detailed decisions are necessary. Should a structured question take the form a numerical scale (for instance, rating something from 0 to 9 in terms of favorability) or a verbal scale (highly favorable, somewhat favorable, highly unfavorable, somewhat unfavorable)?

d) Clarity

It is crucial to make sure that respondents will be able to understand the meaning of each question. In other words, the researcher must phrase questions in terms the respondents will understand, but he must be careful not to seem patronizing to the respondents. This is often a difficult balance to achieve and is usually best gained through extensive pre-testing of alternative questions.

e) Cross-check questions

It is a good policy to include several different questions on one topic area to see if respondents answer them in the same way. Such questions allow for an appraisal of the validity of the questionnaire and of the accuracy of the respondents' self-reports. A special type of cross check question is the 'random probe'. Each respondent is asked to explain what is meant by his or her responses to a few randomly selected questions. Different respondents are asked to do this for different structured questions. The procedure enables the researcher to eliminate from the analysis phase of research any structured questions which many respondents have misunderstood.

f) Interviewer control

The questionnaire should not only elicit information, it should also facilitate control of the quality of the interviewer's work. For instance, the questionnaire should explicitly instruct the interviewer what to do whenever a specific procedure might be in question. The instruction,

"Give the respondent two or three minutes to think about the question", may be necessary in certain cases, since some interviewers are more impatient than others.

It is important to let the interviewer know through the questionnaire that his work will be fully evaluated after it is completed. Not only should there be a section at the end of the questionnaire for the interviewer's signature and the date of the interview, but this section should be headed with a statement like, "I certify that this is a complete and honest interview, conducted in accordance with the instructions". This phrase implies the sort of commitment which helps motivate interviewers to their best effort.

Another section on validation is sometimes even more persuasive. A portion of each interviewer's work should normally be 'validated' by a member of the research staff who either telephones or writes to a portion of the interviewer's respondents (usually about 15 percent) to make certain the interview was completed, roughly how long it took, whether there were any irritants to the respondents, and whether the respondent confirms the answers to two or three questions. It is important to let the interviewer know that this type of validation will take place; and the questionnaire may end with a section which has space for validator's comments and recommendations.

g) Pre-test

All the interviewing experience and wisdom in the world cannot replace the method of pretest as a means of ensuring that all the above considerations are observed to the fullest possible extent. In a pre-test, the proposed questionnaire is actually administered to a very small sample of respondents (anywhere from 10 to 100, depending on the size of the eventual sample). It is a good idea for the researchers to conduct some of the interviews and for the people who will actually be administering the eventual interviews to conduct others. Thus, the researcher can be mindful of the practical problems inherent in the questionnaire with the help of a pre-test. Sometimes, several pre-tests are necessary, with the questionnaire being revised between the pre-tests.

iv) What to avoid in questionnaire construction

The following aspects should be avoided while preparing a questionnaire.

a) Avoid jargon, slang, and abbreviations: Jargon[®] and technical terms (such as alienation, anomie, Oedipus complex, etc.) are difficult to understand by laypersons, hence they should be avoided in the questionnaire. Slang is a kind of jargon within a sub-culture. Members of other sub-cultures may not understand it. So slang (such as hotdog, snowbird, etc.) should also be avoided. Also, avoid abbreviations. One should avoid slangs, jargons, and abbreviations unless a specialized population is being surveyed.

b) Avoid ambiguity, confusion, and vagueness: Ambiguity and vagueness plague many researchers engaged in questionnaire construction. A researcher might make implicit assumptions without thinking of the respondents. For example, the question, "What is your income?", could mean weekly, monthly, or annual; family or personal; before taxes or after taxes; for the current year or last year; from salary or from all sources. The confusion causes a lot of inconsistency in how different respondents assign meaning to and answer the question.

Another source of ambiguity is the use of definite words or response categories. For example, an answer to the question, "Do you jog regularly? Yes— No—," hinges on the meaning of the word *regularly*. Respondents may define the word *regularly* as everyday or every week or month. To reduce confusion, it is better to be specific.

c) Avoid emotional language and prestige bias: Words have implicit connotative as well as explicit denotative meanings. Likewise, titles, or positions in society carry prestige or status. Words with strong emotional connotations and stands on issues linked to people with high social status can colour how respondents hear and answer survey questions. Use neutral language. Avoid words with emotional 'baggage' because respondents may react to the emotionally laden words rather than to the issue. Also avoid prestige bias - associating a statement with a prestigious person or group. Respondents may answer on the basis of their feelings towards the person or group rather than addressing the issue.

d) Avoid double-barreled questions: Make each question about one and only one topic. A double-barreled question consists of two or more questions joined together. It makes a respondent's answer ambiguous. For example, if asked, "Are you provided accommodation and food in the hostel?", the respondent who gets only accommodation or the one who gets only food will have problems in answering. In this case the respondent will also be not certain of the answer.

e) Avoid leading questions: Make respondents feel that all responses are legitimate. Do not let them become aware of an answer that the researcher wants. A leading (or a loaded) question is one that leads the respondent to choose one response over another by its wording. For example, the question, "You don't smoke, do you? leads respondents to state they do not smoke. Further, loaded questions can be stated to get either negative or positive answers.

f) Avoid asking questions that are beyond respondents' capabilities: Asking something that only a few respondents know frustrates and produces poor quality responses among other respondents.

g) Avoid false promises: Do not begin a question with a promise with which respondents may not agree and ask about choices regarding it. Respondents who disagree with the promise will be frustrated and not know how to answer. For example, the question, "The library is open

too many hours. Do you want it to open four hours later or close four hours earlier each day?”, leaves those who either support the premise or oppose both alternatives without a meaningful choice.

h) Avoid asking about future intentions: Avoid asking people about what they might do under hypothetical circumstances. Responses are poor predictors of behaviour. Questions such as these are a waste of time as they are abstractions without any indication to the immediate experiences.

i) Avoid double negatives: Double negatives in ordinary language are grammatically incorrect and confusing. For example, “I haven’t got no job”, logically means that the respondent does have a job.

j) Avoid overlapping or unbalanced response categories: Make response categories or choices mutually exclusive, exhaustive, and balanced. Mutually exclusive means that response categories do not overlap.

Reflection and Action 22.2

To continue with supposing that you have to carry out a survey of waste disposal methods in your area, construct a questionnaire, specifying the types of questions you are going to include in the questionnaire.

22.4 Issues in Designing a Survey Instrument

There are two most important issues which need to be kept in mind while designing a survey instrument. First is the reliability and second the validity of the survey instrument.

i) Reliability

A reliable survey instrument is one that is relatively free from ‘measurement error’. Because of this error, the scores obtained from individuals are different from their true scores, which can only be obtained from perfect measures. What causes this error? In some cases, the error results from the measure itself: It may be difficult to understand or poorly administered. For example, a self-administered questionnaire on the value of preventive health care might produce unreliable results if its reading level is too high for the teenaged mothers who are to use it. If the reading level is on the target but the directions are unclear, the measure will be unreliable. Of course, the survey researcher could simplify the language and clarify the directions and still find the measurement error. It is because measurement errors can also come directly from the examinees. For example, if teenaged mothers are asked to complete a questionnaire and they are especially anxious or fatigued, their obtained scores could differ from their true scores.

There are four kinds of reliability, discussed here in terms of survey research: stability, equivalence, homogeneity, and inter- and intra-rater reliability.

a) **Stability:** Stability is sometimes called test-retest reliability. A measure is stable if the correlation between the scores from one time to another is high. Suppose a survey of student's attitudes was administered to the same group of students at school A in April and then again in October. If the survey was reliable and no special program or intervention was introduced, then, on the average, we would expect attitudes to remain the same.

b) **Equivalence:** 'Equivalence' (or 'alternate-form reliability') refers to which two items measure the same concepts at the same level of difficulty. Suppose students were asked a question about their views toward technology before participating in a computer course and again two months after completing it. Unless the researcher was certain that the items on the surveys were equal, more favourable views on technology after the second survey could reflect the survey's language level (for example) rather than the improved views.

c) **Homogeneity:** Homogeneity refers to the extent to which all the items or questions assess the same skill, characteristic, or quality. Sometimes, this type of reliability is referred to as internal consistency. For example, suppose a researcher has created a questionnaire to find out about students' satisfaction with a textbook. An analysis of homogeneity will tell us the extent to which all items on the questionnaire focus on satisfaction.

d) **Inter- and Intra-rater reliability:** Inter-rater reliability refers to the extent to which two or more individuals agree. Intra-rater reliability refers to a single individual's consistency of measurement.

ii) Validity

Validity refers to the degree to which a survey instrument assesses what it purports to measure. For example, a survey of student attitude toward careers in Information Technology would be invalid if the survey only asked about their knowledge of the newest advances in software and hardware technologies. Similarly, an attitude survey will not be considered valid unless you can prove that people who are identified as having a good attitude on the basis of their responses to the survey are different in some observable way from people who are identified as dissatisfied.

Four types of validity are often discussed: content, face, criterion, and construct.

a) **Content:** Content validity refers to the extent to which a measure thoroughly and appropriately assesses the skills or characteristics it is intended to measure. For example, a researcher who is interested in mental health has to define the concept ("What is mental health?" "How is health distinguished from the disease?") and then write items that adequately contain all aspects of the definition so that the concept is well explained in terms of its measure.

b) Face: Face validity refers to how a measure appears on the surface: Does it seem to ask all the needed questions? Does it use the appropriate language and language level to do so? Face validity, unlike content validity, does not rely on established theory for support.

c) Criterion: Criterion validity compares responses to future performance or to those obtained from other, more well-established surveys. Criterion validity is made up of two sub-categories: Predictive and Concurrent. Predictive validity is the extent to which a measure forecasts future performance. Concurrent validity is demonstrated when two assessments agree or a new measure is compared favourably with one that is already considered valid.

d) Construct: Construct validity is established experimentally to demonstrate that a survey distinguishes between people who do and do not have certain characteristics. For example, a researcher will have to prove in a scientific manner that satisfied respondents behave differently from dissatisfied respondents.

22.5 Conclusion

Unit 22 discussed the details of survey instrumentation. It described the types of data collection techniques/instruments and their advantages and disadvantages, role of the interviewer, interviewer bias, guidelines for constructing a questionnaire and some principles to be kept in mind while preparing the questionnaire, and the issues of reliability and validity of the survey instruments. Each one of these items is important for the success of survey research as this stage is crucial to yield reliable and valid data. Thus the development of survey instrument translates the research question into a questionnaire which then is used to generate data.

Further Reading

Aldridge, Alan. And **Levine, Ken.** 2201. *Surveying the Social World - Principles and Practice in Survey Research.* Open University Press: Buckingham