

## **DATA COLLECTION METHODS**

There are a number of methods used in data collection, among them, direct observation and measurement; mail questionnaire; telephone and personal interview.

### **1.1. Direct observation and measurement**

This method is usually more objective. It is free from memory lapse and subjectivity of both respondents and interviewers. Examples of areas where direct observation has been used are:

- a. Some aspects of food consumption surveys;
- b. Price collection exercises, where enumerators can purchase the produce and record prices.

This method, though useful, has a snag of being expensive in terms of both resources and time. In most cases, interviewers have to use some equipment. Experience has shown that the method of direct observation and measurement tends to be useful and practical when the sample sizes or populations are relatively small.

### **1.2. Mail questionnaires**

The use of mail questionnaires is fairly cheap and quick. The major cost component at the data collection stage is postage. After the questionnaire is designed and printed it is mailed to respondents. In this case, the respondents are assumed to be literate as they are expected to fill the questionnaire on their own. This may be an erroneous assumption especially in developing countries where literacy levels are still low. The major weakness of this method is the high non-response rates associated with it. This may be due to the complexity of questionnaires used. However, apathy cannot be completely ruled out. In some cases, there is good questionnaire response but high item non-response.

In trying to improve the response rate, some reminders have to be sent to nonrespondents. However, it is advisable to select a sub-sample of the non-respondents and cover them by the personal interview method. This may be necessary because the characteristics of the nonresponding units may be completely different from those that responded. In this case, the responding and non-responding units are treated as two post-strata that have to be differentially weighted when preparing the estimates. In order to increase the response rate, the mailed questionnaires should be attractive, short and as simple as possible. Enclosing stamped and addressed returns may help to improve the response rate.

In order to use this method satisfactorily, there must also be a sampling frame that is as current as possible. Thus addresses of the respondents must be up-to-date. The survey organization must also be convinced that respondents are capable of completing the questionnaires on their own.

## **Here is a summary of some of the advantages and limitations of mail questionnaire**

### **Advantages:**

- a. It is cheaper;
- b. Sample can be widely spread;
- c. Interviewer bias is eliminated;
- d. It is quick.

### **Limitations:**

- a. Non-response is usually high;
- b. The answers to the questions are taken at their face value as there is no opportunity to probe;
- c. If it is an attitude survey, it is difficult to ascertain whether the respondent answered the questions unaided;
- d. The method is useful only when the questionnaires are fairly simple, and, therefore, it is not a suitable method for complex surveys.

### **1.3. Personal interview method**

This method is the most common in collecting data through large-scale sample surveys in developing countries. Apart from the usually high response rate resulting from personal interviews, the method is appropriate because of the prevailing high illiteracy rates in some of these countries. The method entails interviewers going to selected respondents collecting information by asking questions. The main advantage of this method is that the interviewers can persuade (through motivation) respondents to answer questions and can explain the objectives of the survey. Further, in using the personal interview method, there is greater potential for collecting statistical information on conceptually difficult items, which are likely to yield ambiguous answers in a mailed questionnaire.

### **The following are some of the limitations in using the personal interview method:**

- a. Different interviewers may give different interpretations to the questions, thereby introducing bias in the survey results as very few interviewers consistently refer to the instructions manual;
- b. In the process of probing, some interviewers may suggest answers to respondents.
- c. Personal characteristics of interviewers may influence attitudes of respondents, for example, age, sex at times even race;
- d. Interviewers may read questions wrongly because of the divided attention of interviewing and recording.

Collectively the limitations listed above are the main sources of so-called interviewer bias, studies of which have shown can cause serious nonsampling errors in surveys.

**The following points should be taken into consideration when asking questions to respondents:**

- a. The interviewer should clearly understand the purpose of each question as explained in the interviewers' manual. It is important that interviewers constantly refer to the manual.
- b. Experience has shown that it is better for the interviewer to follow the sequence of questions in the questionnaire. In most questionnaires careful thought is given in the ordering of questions, taking into consideration motivation of respondents, linkage of topics, facilitating memory of the respondent's past events, and careful of the most sensitive questions.
- c. Interviewers should by all means refrain from suggesting answers to respondents.
- d. All questions should be asked. In this way, item non-response is minimized. Further, no item in the questionnaire should have a blank space unless it satisfies the skip pattern. If a question is not relevant to a particular respondent, then a comment should be included. Such an approach assures the survey manager that all questions included in the questionnaire have been administered.

**QUESTIONNAIRE DESIGN**

Once the survey objectives and tabulation plan have been determined, the relevant questionnaire can be developed. The questionnaire plays a central role in the survey process in which information is transferred from those who have it (the respondents) to those who need it (the users). It is the instrument through which the information needs of the users are expressed in operational terms as well as the main basis of input for the data processing system for the particular survey.

The size and format of the questionnaire need very serious consideration. It is advisable to design questionnaires at the time of planning for the survey. If the questionnaires have to be mailed to respondents, they have to be attractive and simple. This may increase the response rate. On the other hand a questionnaire to be used in the field for recording responses by interviewers should be sturdy to survive the field handling.

The questionnaire so designed should be ideal in facilitating the collection of relevant and accurate data. In order to enhance accuracy in the survey data, special consideration should be made in ordering the sequence and in the wording of items in the questionnaire. The respondent has to be motivated. The questionnaire has to be well spread out to facilitate easy reading of questions either by the respondent or the interviewer. We cannot overemphasize that every questionnaire should have clear instructions.

Special care, therefore, should be taken by the survey team in giving precise definitions of the data to be collected and the translation of data requirements and related concepts into operational questions. In this connection pre-testing of the questionnaire becomes a usual and generally a necessary activity to undertake, unless it has been fully validated in prior surveys.

**In summary a good questionnaire should:**

- a) Enable the collection of accurate information to meet the needs of potential data users in a timely manner;
- b) Facilitate the work of data collection, data processing and tabulation;
- c) Ensure economy in data collection, that is, avoid collection of any non-essential information.
- d) Permit comprehensive and meaningful analysis and purposeful utilization of the data collected.

This implies that survey questionnaires must be developed so as to yield information of the highest quality possible with special emphasis on relevance, timeliness and accuracy. This must be accomplished efficiently, minimizing the cost and burden involved in the provision of the necessary information.

**2.1. Question construction**

Open and closed-ended questions are used in sample survey questionnaires. In an open-ended question, the respondent gives his/her own answer to a question. In an attitudinal survey we may ask respondents to define what they consider is good quality of life. Obviously different respondents will define in their own way what constitutes quality of life. On the other hand, a closed-ended question restricts the respondent to select answers from a list already given by the survey team. The following are examples of closed-ended questions:

Is (NAME) male or female?

- 1. Male
- 2. Female

Do you do anything to the water to make it safer to drink?

- 1. Yes
- 2. No
- 3. Don't know

The advantages of using closed-ended questions are that: (i) they yield more uniform responses and (ii) they are easy to process. The main limitation of such questions is that the designer of the survey has to structure the possible answers. In such a case, important possible responses may be overlooked. In most surveys, complex issues and questions pertaining to attitudes and perceptions that may not be known are best handled by open-ended questions.

**2.2. Question wording**

The questions should be clear, precise and unambiguous. The respondent should not be left to guess what the interviewer wants out of him/her. The use of definitions and concepts may seem obvious to the survey manager while this may not be so to the respondent. This way, a respondent may use discretion when answering questions. The end result is a proliferation of nonsampling errors in survey results. Consider a simple example. The question, "What is your home address?," creates confusion in many

African countries, especially for the urban population, unless “home” is clearly defined. There are respondents who take “home” to mean the village they originally come from.

### 2.3. **Loaded/leading questions**

A so-called loaded question persuades a respondent to answer a question in a certain way. This means that the question tends to be biased in favour of a certain answer. Here is an example of a loaded question in a health survey: “How many days in a week do you drink more than two bottles of beer”? This question courts the respondent into admitting that he/she drinks beer, above all, not less than two bottles a day. Such questions tend to bias answers of respondents. It is important to be mindful of avoiding creating data but rather simply collecting data.

### 2.4. **Relevance of questions**

The purpose of a questionnaire is to enlist information that would be used in studying the situation. It is therefore imperative for the survey organization to ask relevant questions in order to obtain a true picture of a particular situation under study. The questions included in a questionnaire should be relevant to most respondents. For instance, it is pointless to administer a questionnaire cluttered with questions on individual achievement with regard to higher university education in a typical rural environment of most African countries today. Similarly, it is not appropriate in a fertility survey to include females of, say, age 10 or under, and ask them questions on number of children ever born, whether married, divorced or widowed. These questions would be relevant to females above a certain age, but not to girls who are less than child bearing age.

### 2.5. **Question sequence**

The order of items in a questionnaire should try to motivate and facilitate recall in the respondent and help to solicit accurate information. It is suggested that the first questions should be easy, interesting and not sensitive. This builds up the confidence of the respondent to carry through the interview, which in most cases he/she provides voluntarily. It has also become fairly standard that a general sequence in household surveys begins with questions that identify the sample unit, such as address, followed by those which describe the household and the individuals in the household, such as demographic characteristics. Finally, the detailed questions that constitute the main subject of the survey are asked. In general, sensitive questions must be among the last questions to ask. We should emphasize that there must be a logical link in questions, especially those that are contingent.

**Source:** United Nations (2005). *Designing Household Survey Samples: Practical Guidelines*. New York