UNIT 8: QUESTIONNAIRE DESIGN

UNIT STRUCTURE

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8.1 LEARNING OBJECTIVES

After going through this unit, you will be able to:

- explain the purpose of a questionnaire and its objectives.
- describe the process of designing a questionnaire, the steps involved, and the guidelines that must be followed at each step.
- discuss the observational form of data collection.
- discuss the use of software for designing questionnaires.
- explain the considerations involved in designing questionnaires for international marketing research.
- explain how social media interface with questionnaire design.
- learn the ethical issues involved in questionnaire design.

8.2 INTRODUCTION

Questionnaire or form design is an important step in formulating a research design. Once the researcher has specified the nature of the research design and determined the scaling procedures, a questionnaire or an observational form can be developed. This chapter discusses the importance of questionnaires and observational forms. Next, we describe the objectives of a questionnaire and the steps involved in designing questionnaires. We provide several guidelines for developing sound questionnaires. We also consider the design of observational forms. The considerations involved in

designing questionnaires when conducting international marketing research and research in social media are discussed. Several ethical issues that arise in questionnaire design are identified.

8.3 QUESTIONNAIRE METHOD

As was discussed in earlier, survey and observation are the two basic methods for obtaining quantitative primary data in descriptive research. Both of these methods require some procedure for standardizing the data collection process so that the data obtained can be analyzed in a uniform and coherent manner. If forty different interviewers conduct personal interviews or make observations in different parts of the country, the data they collect will not be comparable unless the interviewers follow specific guidelines and ask questions and record answers in a standard way. A standardized questionnaire or form will serve this purpose, ensure comparability of the data, increase speed and accuracy of recording, and facilitate data processing.

Questionnaire Definition

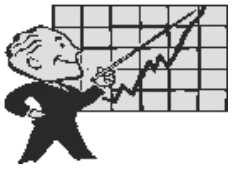
A **questionnaire** is a formalized set of questions for obtaining information from respondents.

Typically, a questionnaire is only one element of a data collection package, which might also include (1) field work procedures, such as instructions for selecting, approaching, and questioning respondents ; (2) some reward, gift, or payment offered to respondents; and (3) communication aids, such as maps, pictures, advertisements, and products (in personal interviews) and return envelopes (in mail surveys). Regardless of the form of administration, a questionnaire is characterized by some specific objectives.

Objectives of a Questionnaire

Any questionnaire has three main objectives. **First**, it must translate the information needed into a set of specific questions that the respondents can and will answer, in other words, that the respondents are both able and willing to answer. Developing questions that respondents can and will answer and that will yield the desired information is difficult. Two apparently similar ways of posing a question may yield different information. Hence, this objective is a challenge. **Second**, a questionnaire must uplift, motivate,

and encourage the respondent to become involved in the interview, to cooperate, and to complete the interview. Incomplete interviews have limited usefulness at best. In designing a questionnaire, the researcher should strive to minimize respondent fatigue, boredom, incompleteness, and non response. A well-designed questionnaire can motivate the respondents and increase the response rate. **Third,** a questionnaire should minimize response error. **Response error** is the error that arises when respondents give inaccurate answers or their answers are misrecorded or misanalyzed. A questionnaire can be a major source of response error. Minimizing this error is an important objective of questionnaire design.



CHECK YOUR PROGRESS

Q.1) Define a Questionnaire.

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Q.2) What are the objectives of a Questionnaire ?

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8.4 QUESTIONNAIRE DESIGN PROCESS

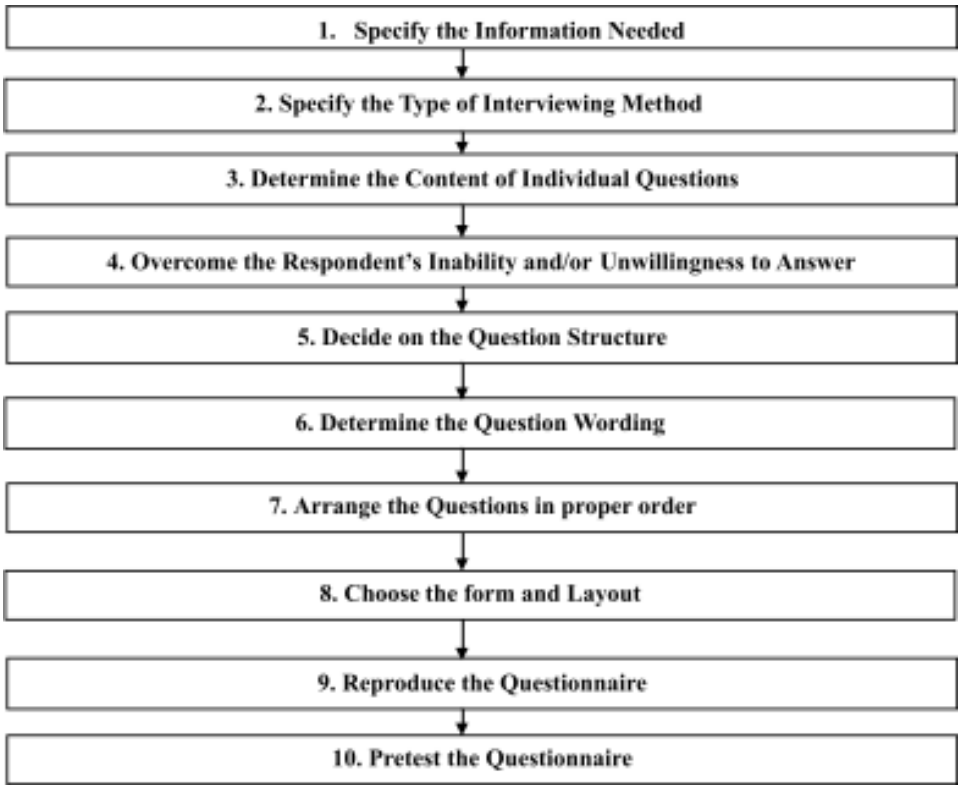
This section presents guidelines useful to beginning researchers in designing questionnaires.

Although these rules can help you avoid major mistakes, the fine-tuning of a questionnaire comes from the creativity of a skilled researcher.

Questionnaire design will be presented as a series of steps (see figure below) : (1) Specify the information needed, (2) specify the type of interviewing method, (3) determine the content of individual questions, (4) overcome the respondent's inability and/or unwillingness to answer, (5) decide on the question structure, (6) determine the question wording, (7)

arrange the questions in proper order, (8) choose the form and layout, (9) reproduce the questionnaire, and (10) pretest the questionnaire.

We will present guidelines for each step. In practice, the steps are interrelated and the development of a questionnaire will involve some iteration and looping. For example, the researcher may discover that respondents misunderstand all the possible wordings of a question. This may require a loop back to the earlier step of deciding on the question structure. Following the steps and guidelines presented in this unit should result in good questionnaires.



(i) **Specify the Information Needed:** The first step in questionnaire design is to specify the information needed, a task that has already been done earlier. As was discussed in Unit 2, this is one component of developing an approach to the problem (step 2 of the marketing research process). It is helpful to review components of the problem and the approach, particularly the information needed.

(ii) **Interviewing Method:** The second step in questionnaire design is to specify the interviewing method, something that has already been done at an earlier stage. An appreciation of how the type of interviewing method

influences questionnaire design can be obtained by considering how the questionnaire is administered under each method. Thus, lengthy, complex, and varied questions can be asked. In telephone interviews, the respondents interact with the interviewer but not face to face and they do not see the questionnaire. This limits the type of questions that can be asked to short and simple ones. Mail questionnaires are self-administered, so the questions must be simple, and detailed instructions must be provided. In computer-assisted personal interviews (CAPI) and computer-assisted telephone interviews (CATI), complex skip patterns and randomization of questions to eliminate order bias can be accommodated easily. Internet questionnaires share many of the characteristics of CAPI, but e-mail questionnaires have to be simpler. Questionnaires designed for personal and telephone interviews should be written in a conversational style. The type of interviewing method also influences the content of individual questions.

(iii) **Determine the Content of Individual Questions:** Once the information needed is specified and the type of interviewing method has been chosen, the next step is to determine individual question content: what to include in individual questions.

Is the Question Necessary? Every question in a questionnaire should contribute to the information needed or serve some specific purpose. If there is no satisfactory use for the data resulting from a question, that question should be eliminated. In certain situations, however, questions may be asked that are not directly related to the information that is needed but nevertheless serve some purpose. It is useful to ask some neutral questions at the beginning of the questionnaire to establish involvement and rapport, particularly when the topic of the questionnaire is sensitive or controversial. Sometimes filler questions are asked to disguise the purpose or sponsorship of the project. Rather than limiting the questions to the brand of interest, questions about competing brands may also be included to disguise the sponsorship. For example, a survey on personal computers sponsored by Hewlett Packard (HP) may also include filler questions related to Dell and Apple.

Are Several Questions Needed Instead of One? Once we have ascertained that a question is necessary, we must make sure that it is

sufficient to get the desired information. Sometimes, several questions are needed to obtain the required information in an unambiguous manner.

Consider the following question:

"Do you think Sprite is a tasty and refreshing soft drink?"

A yes answer will presumably be clear, but what if the answer is no? Does this mean that the respondent thinks that Sprite is not tasty, that it is not refreshing, or that it is neither tasty nor refreshing? Such a question is called a **double-barrelled question** because two or more questions are combined into one. To obtain the required information unambiguously, two distinct questions should be asked:

"Do you think Sprite is a tasty soft drink?" and

"Do you think Sprite is a refreshing soft drink?"

(iv) **a. Overcome the Respondent's Inability to Answer:** Researchers should not assume that respondents are able to provide accurate or reasonable answers to all questions. The respondents will be unable to respond accurately if they are not informed or unable to articulate their responses.

Is the Respondent Informed? Respondents are often asked about topics on which they are not informed. A husband may not be informed about monthly expenses for groceries and department store purchases if it is the wife who makes these purchases, or vice versa. Research has shown that respondents will often answer questions even though they are uninformed. In situations where not all respondents are likely to be informed about the topic of interest, questions that measure familiarity, product use, and past experience should be asked before questions about the topics themselves. Such questions enable the researcher to filter out respondents who are not adequately informed. A "don't know" option appears to reduce uninformed responses without reducing the overall response rate or the response rate for questions about which the respondents have information. Hence, this option should be provided when the researcher expects that respondents may not be adequately informed about the subject of the question. Also, in some cases it may be appropriate to give the respondents relevant information about the brand or product before asking them to express their

opinions. The ability of the respondents can also be enhance by asking questions in a way that will help them remember or respond.

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

(v) **b. Overcome the Respondent's Unwillingness to Answer:**
Even if respondents are able to answer a particular question, they may be unwilling to do so either because too much effort is required or the information requested is sensitive.

Effort Required of the Respondent : Most respondents are unwilling to devote a lot of effort to providing information. Hence, the researcher should minimize the effort required of the respondents by providing the response options. Suppose the researcher is interested in determining from which departments in a store the respondent purchased merchandise on the most recent shopping trip. This information can be obtained in at least two ways. The researcher could ask the respondent to list all the departments from which merchandise was purchased on the most recent shopping trip, or the researcher could provide a list of departments and ask the respondent to check the applicable ones.

Sensitive Information: Respondents are unwilling to disclose, at least accurately, sensitive information because this may cause embarrassment or threaten the respondent's prestige or self-image. If pressed for the answer, respondents may give biased responses, especially during personal interviews. Sensitive topics include money, family life, political and religious beliefs, and involvement in accidents or crimes. Respondents may be encouraged to provide sensitive information that they are otherwise unwilling to give by using the following desensitizing techniques:

1. Place sensitive topics at the end of the questionnaire. By then, initial mistrust has been overcome, rapport has been created, the legitimacy of the project has been established, and respondents are more willing to give information.

2. Preface the question with a statement that the behaviour of interest is common. For example, before requesting information on credit card debt, say, "Recent studies show that most Indians are in debt." This technique is called the use of counter biasing statements.

3. Ask the question using the third-person technique. In other words, phrase the question as if it referred to other people.

4. Provide response categories rather than asking for specific figures. Do not ask, "What is your household's annual income?" Instead, ask the respondent to check the appropriate income category: under $25,000, $25,001–$50,000, $50,001–$75,000, or over $75,000. In personal interviews, give the respondents cards that list the numbered choices. The respondents then indicate their responses by number.

(vi) **Decide on the Question Structure:** A question may be unstructured or structured. In the following sections, we define unstructured questions and discuss their relative advantages and disadvantages, and then consider the major types of structured questions: multiple-choice, dichotomous, and scales.

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

- What is your occupation?
- Who is your favorite singer?

Open-ended questions are good as first questions on a topic. They enable the respondents to express general attitudes and opinions that can help the researcher interpret their responses to structured questions. Unstructured questions have a much less biasing influence on response than structured questions. Hence, unstructured questions are useful in exploratory research.

A principal disadvantage of unstructured questions is that potential for interviewer bias is high. Whether the interviewers record the answers verbatim or write down only the main points, the data depend on the skills of the interviewers. Voice recorders should be used if verbatim reporting is important. Another major disadvantage of unstructured questions is that the coding of responses is costly and time consuming. The coding procedures required summarizing responses in a format useful for data analysis and interpretation can be extensive. By their very nature, unstructured or open-ended questions give extra weight to respondents who are more articulate. Also, unstructured questions are not suitable for self-administered questionnaires (mail, CAPI, e-mail, and Internet) because respondents tend to be briefer when they are writing rather than speaking. In general, open-ended questions are useful in exploratory research and as opening questions. Otherwise, their disadvantages outweigh their advantages in a large survey.

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

Multiple-Choice Questions In multiple-choice questions, the researcher provides a choice

of answers and respondents are asked to select one or more of the alternatives given.

Dichotomous Questions A **dichotomous question** has only two response alternatives: yes or no, agree or disagree, and so on. Often, the two alternatives of interest are supplemented by a neutral alternative, such as "no opinion," "don't know," "both," or "none." The question asked before about intentions to buy a new car as a multiple-choice question can also be asked as a dichotomous question.

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

_____ Yes

_____ No

(vii) Determine the Question Wording

Question wording is the translation of the desired question content and structure into words that respondents can clearly and easily understand. Deciding on question wording is perhaps the most critical and difficult task

in developing a questionnaire. If a question is worded poorly, respondents may refuse to answer it or may answer it incorrectly. The first condition, in which respondents refuse to answer, is known as item non response and can increase the complexity of data analysis. The second condition leads to response error, discussed earlier in this chapter. Unless the respondents and the researcher assign exactly the same meaning to the question, the results will be biased. To avoid these problems, we offer the following guidelines:

- **define the issue,**
- **use ordinary words,**
- **use unambiguous words,**
- **avoid leading or biasing questions, and**
- **use positive and negative statements.**

(viii) Arrange the Questions in Proper Order

Opening Questions : The opening questions can be crucial in gaining the confidence and cooperation of respondents. The opening questions should be interesting, simple, and nonthreatening. Questions that ask respondents for their opinions can be good opening questions because most people like to express their opinions. Sometimes such questions are asked even though they are unrelated to the research problem and their responses are not analyzed. In some instances, it is necessary to screen or qualify the respondents, or determine whether a respondent is eligible to participate in the interview. In these cases, the screening or qualifying questions serve as the opening questions.

Type of Information : The type of information obtained in a questionnaire may be classified as: (1) basic information, (2) classification information, and (3) identification information.

Basic information relates directly to the research problem. **Classification information**, consisting of socioeconomic and demographic characteristics, is used to classify the respondents and understand the results. **Identification information** includes the respondent's name, postal address, e-mail address, and telephone number. Identification information may be obtained for a variety of purposes, including verifying that the respondents listed were actually interviewed, remitting promised incentives, and so on. As a general guideline, basic information should be obtained

first, followed by classification, and, finally, identification information. The basic information is of greatest importance to the research project and should be obtained first, before the risk of alienating the respondents by asking a series of personal questions.

(ix) Choose the Form and Layout

The format, spacing, and positioning of questions can have a significant effect on the results. This is particularly important for self-administered questionnaires. It is good practice to divide a questionnaire into several parts. Several parts may be needed for questions pertaining to the basic information. The questions in each part should be numbered, particularly when branching questions are used. Numbering of questions also makes the coding of responses easier. The questionnaires themselves should be numbered serially. This facilitates the control of questionnaires in the field as well as the coding and analysis. Numbering makes it easy to account for the questionnaires and to determine if any have been lost. A possible exception to this rule is mail questionnaires. If these are numbered, respondents assume that a given number identifies a particular respondent. Some respondents may refuse to participate or may answer differently under these conditions. However, recent research suggests that this loss of anonymity has little, if any, influence on the results.

(x) Reproduction of the Questionnaire

How a questionnaire is reproduced for administration can influence the results. For example, if the questionnaire is reproduced on poor-quality paper or is otherwise shabby in appearance, the respondents will think the project is unimportant and the quality of response will be adversely affected. Therefore, the questionnaire should be reproduced on good-quality paper and have a professional appearance. Each question should be reproduced on a single page (or double-page spread). A researcher should avoid splitting a question, including its response categories. Split questions can mislead the interviewer or the respondent into thinking that the question has ended at the end of a page. This will result in answers based on incomplete questions. Vertical response columns should be used for individual questions. It is easier for interviewers and respondents to read down a single column rather than sideways across several columns. Sideways

formatting and splitting, done frequently to conserve space, should be avoided. The tendency to crowd questions together to make the questionnaire look shorter should be avoided because it can lead to errors.

(xi) Pretest the Questionnaire

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

Pretests are best done by personal interviews, even if the actual survey is to be conducted by mail, telephone, or electronic means, because interviewers can observe respondents' reactions and attitudes. After the necessary changes have been made to the survey, another pretest should be conducted by mail, telephone, or electronic means if those methods are to be used in the actual survey. The latter pretests should reveal problems peculiar to the interviewing method. To the extent possible, a pretest should involve administering the questionnaire in an environment and context similar to that of the actual survey.

Ordinarily, the pretest sample size is small, varying from fifteen to thirty respondents for the initial testing, depending on the heterogeneity of the target population. The sample size can increase substantially if the pretesting involves several stages or waves. The questionnaire should be revised to correct for the problems identified during pretesting. After each significant revision of the questionnaire, another pretest should be conducted using a different sample of respondents. One pretest is a bare minimum. Pretesting should be continued until no further changes are needed. Finally, the responses obtained from the pretest should be coded and analyzed. Table 8.2 summarizes the questionnaire design process in the form of a checklist.

Table 8.1 Questionnaire Design Checklist

Step 1 Specify The Information Needed
1. Ensure that the information obtained fully addresses all the components of the problem. 2. Have a clear idea of the target population.
Step 2 Type of Interviewing Method
1. Review the type of interviewing method determined based on considerations discussed in Chapter 5.
Step 3 Individual Question Content
1. Is the question necessary? 2. Are several questions needed instead of one to obtain the required information in an unambiguous manner? 3. Do not use double-barreled questions.
Step 4 Overcoming Inability and Unwillingness to Answer
1. Is the respondent informed? 2. If respondents are not likely to be informed, questions that measure familiarity, product use, and pastexperience should be asked before questions about the topics themselves. 3. Can the respondent remember? 4. Can the respondent articulate? 5. Minimize the effort required of the respondents. 6. Make the request for information seem legitimate. 7. Is the information sensitive?
Step 5 Choosing Question Structure
1. Open-ended questions are useful in exploratory research and as opening questions. 2. Use structured questions whenever possible.

3. In multiple-choice questions, the response alternatives should include the set of all possible choices and should be mutually exclusive.
4. In a dichotomous question, if a substantial proportion of the respondents can be expected to be neutral, include a neutral alternative.
5. Consider the use of the split ballot technique to reduce order bias in dichotomous and multiple-choice questions.
6. If the response alternatives are numerous, consider using more than one question.

Step 6 Choosing Question Wording

1. Define the issue in terms of who, what, when, where, why, and way (the six Ws).

2. Use ordinary words. Words should match the vocabulary level of the respondents.
3. Avoid ambiguous words: usually, normally, frequently, often, regularly, occasionally, sometimes, etc.
4. Avoid leading questions that clue the respondent to what the answer should be.
5. Use positive and negative statements.

Step 7 Determine the Order of Questions

1. 1. The opening questions should be interesting, simple, and nonthreatening.

2. Qualifying questions should serve as the opening questions.
3. Basic information should be obtained first, followed by classification, and finally, identification information.
4. Difficult, sensitive, or complex questions should be placed late in the sequence.
5. General questions should precede the specific questions.
6. Questions should be asked in a logical order.

Step 8 Form and Layout
1. Divide a questionnaire into several parts. **2. Questions in each part should be numbered.** **3. The questionnaires themselves should be numbered serially.**
Step 9 Reproduction of the Questionnaire
1. The questionnaire should have a professional appearance. **2. Booklet format should be used for long questionnaires.** **3. Each question should be reproduced on a single page (or double-page spread).** **4. The tendency to crowd questions to make the questionnaire look shorter should be avoided.**
Step 10 Pretesting
1. Pretesting should be done always. **2. All aspects of the questionnaire should be tested, including question content, wording, sequence, form and layout, question difficulty, and instructions.** **3. The respondents in the pretest should be similar to those who will be included in the actual survey.** **4. Begin the pretest by using personal interviews.** **5. Pretest should also be conducted by mail, telephone, or electronically if those methods are to be used in the actual survey.** **6. A variety of interviewers should be used for pretests.** **7. The pretest sample size is small, varying from 15 to 30 respondents for the initial testing.** **8. After each significant revision of the questionnaire, another pretest should be conducted, using a different sample of respondents.** **9. The responses obtained from the pretest should be coded and analyzed.**



CHECK YOUR PROGRESS

Q.3) What are unstructured Questions

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Q.4) What is Pretesting

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8.5 LET US SUM UP

To collect quantitative primary data, a researcher must design a questionnaire or an observational form. A questionnaire has three objectives. It must translate the information needed into a set of specific questions the respondents can and will answer. It must motivate respondents to complete the interview. It must also minimize response error.

The questionnaire design process begins by specifying (1) the information needed and (2) the type of interviewing method. The next step is (3) to decide on the content of individual questions. Each question should overcome the respondents' inability and/or unwillingness to answer (step 4). Respondents may be unable to answer if they are not informed or cannot articulate the response. The unwillingness of the respondents to answer must also be overcome. Respondents may be unwilling to answer if the question requires too much effort or solicits sensitive information. Next comes the decision regarding the question structure (step 5). Questions can be unstructured (open-ended) or structured to varying degrees. Structured questions include multiple-choice questions, dichotomous questions, and scales.

Determining the wording of each question (step 6) involves defining the issue, using ordinary words, using unambiguous words, and using dual

statements. The researcher should avoid leading questions. Once the questions have been worded, the order in which they will appear in the questionnaire must be decided (step 7). Special consideration should be given to opening questions, type of information, difficult questions, and the effect on subsequent questions. The questions should be arranged in a logical order. The stage is now set for determining the form and layout of the questions (step 8). Several factors are important in reproducing the questionnaire (step 9). These factors include appearance, fitting each question on one page or double-page spread, response category format, and avoiding overcrowding. Last but not least is pretesting (step 10). Important issues are the extent of pretesting, the nature of the respondents, the type of interviewing method, the type of interviewers, sample size, and editing and analysis.

The questionnaire should be adapted to the specific cultural environment and should not be biased in terms of any one culture. Also, the questionnaire may have to be suitable for administration by more than one method because different interviewing methods may be used in different countries. Questionnaires translated into different languages should be equivalent.



8.6 FURTHER READING

Malhotra, N.K. and Dash, S. (2011). *Marketing research: An Applied Orientation* (6th edition), New Delhi: Pearson Education.



8.7 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q1. A questionnaire is a formalized set of questions for obtaining information from respondents.

Ans to Q2: Any questionnaire has three main objectives. **First**, it must translate the information needed into a set of specific questions **Second**, a questionnaire must uplift, motivate, and encourage the respondent to become involved in the

interview.**Third,** a questionnaire should minimize response error.

Ans to Q3: Unstructured questions are open-ended questions that respondents answer in their own words. They are also referred to as free-response or free-answer questions.

Ans to Q4: Pretesting refers to the testing of the questionnaire on a small sample of respondents to identify and eliminate potential problems or bugs. Even the best questionnaire can be improved by pretesting.



8.8 MODEL QUESTIONS

1) What are the three main objectives of any questionnaire?

2) Explain how the mode of administration affects questionnaire design.

3) What are the different methods of administering a questionnaire?

4) What is a double-barreled question?

5) What is a split-ballot technique and what is it used for?

6) What are the reasons that respondents are unwilling to answer specific questions?

7) What are the advantages and disadvantages of unstructured questions?

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

9) What are the guidelines available for deciding on question wording?

10) What is a leading question? Give an example.

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

12) What are counter biasing questions and what are they used for?

13) Describe the issues involved in pretesting a questionnaire.

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References

1. Malhotra, N.K. and Dash, S. (2011). Marketing research: An Applied Orientation (6th edition), New Delhi: Pearson Education.
2. Shields, Patricia; Rangarjan, Nandhini (2013). A Playbook for Research Methods: Integrating Conceptual Frameworks and Project Management. Stillwater, Oklahoma: New Forums Press. ISBN 1-58107-247-3.
3. Kakati R. P. and Choudhury S. (2013),Measuring Customer-Based Brand Equity Through Brand Building Blocks for Durables, The IUP Journal of Brand Management, Vol. X, No. 2, pp.24-42
4. Kothari, C.R. and Garg, G.(2014), 'Research Methodology - Methods and Techniques', New Age International Publishers
5. Malhotra. N.K.(2011), Marketing Research – An Applied Orientation, Pearson Education
6. Beri, G C (2009), Marketing Research, Fourth Edition, Tata McGrew Hill Publishing Company Limited, New Delhi
7. Bajpai N(2011), Business Research Methods, Pearson Education, India
8. Sachdeva J K (2011), Business Research Methodology, 2nd Edition , Himalaya Publishing House Pvt. Ltd.