

Designing the Data-Gathering Instrument

CHAPTER

8



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Chapter Outline

Goals of a Questionnaire
Classification of Questions
Designing a Questionnaire
Summary
Discussion Questions
Endnotes

Learning Objectives

Upon completing this chapter, you should understand:

- The goals of a data-collection instrument.
- The basic components of a well-designed instrument.
- The different types of questions that can be used in a data-collection instrument.
- The steps involved in designing a questionnaire.
- How pretesting can be used to improve the data-collection process.



When we use the term “data-gathering instrument,” we typically are referring to using a descriptive research design data-collection method. That is because we do not think of collecting data per se in exploratory research (we are generating hypotheses, ideas, insights, clarifying concepts, and prioritizing objectives for the next phase of research). Although we do generate data in causal research, we tend to think in terms of putting together an experimental design rather than designing a data-collection instrument.

The quality of the information gathered is directly proportional to the quality of the instrument designed to collect the data. Consequently, it is extremely important that the most effective data-gathering instrument possible be constructed.

As mentioned in Chapter 5, it is necessary to anticipate the total information needs of the project so the data-gathering instrument can be designed in such a way that it will provide answers to the research questions. The instrument must also gather the data in a form that permits processing it using the analytical techniques selected. As a result of its importance, the data-gathering instrument is the key that holds the research project together and must be done well.

A questionnaire is the main type of data-gathering instrument in descriptive research designs. A *questionnaire* is defined in *Webster’s New Collegiate Dictionary* as “a set of questions for obtaining statistically useful or personal information from individuals.” Obviously, an effective questionnaire is much more than that. Because poor questionnaire design is a primary contributor to nonsampling errors, specifically response errors, the questionnaire should be well designed. The questions should minimize the possibility that respondents will give inaccurate answers. The questions that are asked respondents are the basic essence of a research project. Inquiring by way of specific questions forms the core of survey research. The reliability and validity of survey results are dependent on the way the specific questions are planned, constructed, and executed.

Constructing a questionnaire that generates accurate data that is relevant to solving the management problem is not a simple matter. It is quite possible to construct a questionnaire that flows well from part to part, containing questions easily understood by respondents, addressing the issues identified in the study’s research objectives, and lending itself to the appropriate analytical techniques, but totally failing to present an accurate picture of reality conducive to making decisions that lead to a solution of the management problem. How is this possible? As Patricia Labaw notes, a questionnaire is more than just a series of well-worded questions. “It is a totality, a gestalt that is greater than the sum of its individual questions. A questionnaire is organic, with each part vital to every other part, and all parts must be handled simultaneously to create this whole instrument.”¹

A questionnaire must provide data that allows the researcher to determine the information contained in Table 8.1. Without these contextualizing components, it is not possible to extract meaning from the answers that respondents give to the questions in a questionnaire.

We need to include questions that reveal respondent consciousness, knowledge, behavior, and environmental situation so that we can know how to interpret or extract meaning from the answers to those questions that are derived from our research objectives. While our research objectives provide guidance for what questions we will ask respondents, fulfill the research purpose, and permit selection from among our decision alternatives, thereby solving our management problem, those research objectives are not the only source of our questionnaire questions. We will only be able to derive meaning from the answer to those questions by using responses to the four components discussed in Table 8.1 as a filter. For example, we can imagine grouping respondents, based on their answers to some factual questions, into two groups, those knowledgeable about the topic and those not knowledgeable about the topic, and then analyzing the responses by the

TABLE 8.1 Necessary Components of Questionnaires to Allow for Meaningful Analysis

Component	What It Means	Evidence of It	Why It Is Needed	Example
1. Determination of levels of respondent consciousness	Does the respondent see or understand the <i>implications</i> of his or her answers to the questions?	Unconscious answers that are inconsistent, not based on objective reality, purely emotional, ignorant, or misleading	If data from answers reflect low level of consciousness, no amount of statistical analysis can help us to predict behavior	Respondent says in answer to one question that they don't believe in abortion "under any circumstances," then say in another answer that abortion is OK to save a mother's life
2. Delineation of the structures or environments affecting behavior	The physical determinants surrounding the respondent's behavior	Such things as age, sex, health, race, locale, mobility, etc., which impinge on respondent's ability to behave in certain ways	People, despite their attitudes toward an object, may behave in ways different than their attitude would suggest because of environmental or situational constraints	While a respondent's attitude toward mass transit may be quite favorable, the key determinant of whether he or she will use it is whether it exists in his or her environment
3. Determination of levels of respondent knowledge	Does the respondent really understand the topic of the questions?	Ability to answer factual questions correctly	Lack of knowledge colors respondent attitudes and behaviors and makes decisions based on such responses very risky	Respondents may answer questions about the positioning of a product relative to its competition without possessing any knowledge of the product, making interpretation of the positioning map impossible
4. Determination of present respondent behavior in specific situations	Respondents reporting what they have already done	Responses to questions asking for the frequency with which specific behaviors are performed	Behavior acts as a measure of experience (or knowledge) with the topic as well as the importance of the topic	Someone who smokes reveals more in that behavior than what might be revealed from answering attitudes about smoking (e.g., believing smoking is deleterious to your health)

Source: Adapted from *Advanced Questionnaire Design*, by Patricia Labaw, 1980, Abt Books.

knowledgeable group in our attempt to make meaningful conclusions from the data. In fact, answers to well-worded, relevant questions may lack meaning for several reasons:²

1. Respondents may not respond truthfully to the question, either to protect their ignorance or true feelings.
2. The questions were understandable but failed to allow respondents to reveal how they really thought, felt, or behaved because of inadequate response options.
3. Respondents might answer without really being in touch with their own thoughts or emotions (this is a consciousness problem).
4. Respondents provide meaningful answers, but they only provide a piece of the total picture. Other questions that could have completed the picture were not asked.
5. Respondents might answer the questions honestly, but the answers were based on incomplete or faulty knowledge. More knowledge might have changed the answers.
6. Researchers might impute meaningfulness to the answers when, in fact, the issues have no importance or salience to the respondents. They answered only because we asked and really do not make their decisions by thinking about the issue. It is vitally important to us but not at all important to them.

GOALS OF A QUESTIONNAIRE

Researchers therefore should take great care in designing a data-collection instrument that it is perceived in the gestalt sense—more than just a well-ordered series of questions resulting from our research objectives. A good questionnaire should accomplish the following goals:

Contextualize the Information Collected

This is what we mean by collecting meaningful information, as outlined in Table 8.1. The researcher should include any questions that will aid in the interpretation of those questions that are directly related to the research objectives. In other words, include questions such as those indicated in Table 8.1 and others, which can be used by the decision maker in the decision-making process, even if those additional questions are not directly related to the research objectives. A questionnaire is more than merely a conversion of research objectives into questionnaire questions.

Express the Study Objectives in Question Form

The questionnaire must capture the essence of the study objectives and ask questions that will provide the information needed to answer the various research questions. Quite often, a set of study objectives are adapted to an existing questionnaire that has been effective in the past. Care must be taken that one does not compromise the achievement of the current research study's objectives by trying to force a previous study's questionnaire questions into use in an attempt to economize time and effort. Each project with its unique set of study objectives should have a custom-made questionnaire designed especially for that project. The design of the questionnaire is the wrong place to try to economize during the research process. Judicious selection of questions from previous studies is appropriate in some cases, however.

Measure the Attitude, Behavior, Intentions, Attributes, or Other Characteristics of the Respondent

The questions must be specific and reported in a form that will allow for comparisons to be made and results to be analyzed. The responses to the questions must provide the information that is necessary to answer the research questions and in a format that can be subjected to the appropriate analytical technique (techniques of analysis are discussed in Chapters 11 and 12).

Create Harmony and Rapport with the Respondent

A well-designed questionnaire targeted at the correct population sample should provide an enjoyable experience for the respondent. The frame of reference of the respondent must be considered in the design, wording, and sequencing of a questionnaire. Occupational jargon, cultural background, educational level, and regional differences can alter the effectiveness of a questionnaire if they are not taken into consideration. Not only should the questionnaire appeal to the respondent, but it should also be designed so the respondent can easily understand it, be able to answer it, and be made willing to answer it.

Provide Just the Right Amount of Information: No More, No Less

This appears to be a trite statement, but it has much truth to it. There are often honest differences of opinion on just how much information is needed to answer a set of research questions. However, in designing a questionnaire the two basic mistakes are leaving an important question unasked, which makes the survey incomplete, and asking

too many irrelevant questions, which makes the survey too long and unwieldy. A researcher must learn to economize in asking questions to avoid respondent burnout, which leads to early terminations and incomplete and inaccurate information. However, care must be taken in the design process to be sure that the proper quantity of information is gathered to accomplish the research objectives.

CLASSIFICATION OF QUESTIONS

Questions can be classified in terms of their degree of *structure* and *disguise*. By structure we mean the degree to which the question and the responses are standardized at some point in the data-collection process. When a questionnaire is classified according to disguise, it depends on how evident the purpose of the question or questionnaire is. An undisguised questionnaire is one in which the purpose of the research is obvious to the respondent because of the questions asked. A disguised questionnaire obscures the purpose of the research and tries to indirectly get at a respondent's point of view. Of course, the sponsor of the research may or may not be revealed to the respondent before he or she answers the questions, but this is not what is meant by "disguise."

Based on the classification of questions according to structure and disguise, the following general types emerge.

Structured-Undisguised Questions

Structured-undisguised questions are the most commonly used in research today. Every respondent is posed the same questions in the same sequence with the same opportunity of response. In most cases the purpose of the research is clearly stated in an introductory statement or is obvious from the questions asked. This type of instrument has the advantages of simplicity in administration, tabulation, and analysis; standardized data collection; objectivity; and reliability. The disadvantages include lack of flexibility in changing questions on the fly.

Structured-Disguised Questions

Structured-disguised questions are probably the least-used questions in business research. They maintain the advantages of structuring while attempting to add the advantage of disguise in eliminating possible bias from the respondent's knowledge of the purpose of the survey. The main advantages of this type of questionnaire are ease of administration, coding, and tabulating. An additional advantage is to gain insight on a sensitive issue without alerting the respondent. The problem with this type of research is the difficulties encountered in interpreting the respondent's answer. An example of a structured-disguised question would be:

Which of the following types of people would eat a lot and which would eat a little hot cereal?

	Eat a lot	Eat a little
Professional athletes	_____	_____
Wall Street bankers	_____	_____
Farmers	_____	_____
College teachers	_____	_____



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The structure is obvious. The disguise is related to the purpose of the questions, which is to use the responses to determine the image that people have of hot cereal. It is easy to get the responses but considerably more difficult to interpret what the responses mean with regard to the respondents' image of the product. (What does it mean that 23 percent of respondents said professional athletes eat a lot of hot cereal, while 18 percent said they eat only a little compared to 31 percent and 22 percent, respectively, for college teachers?)

Unstructured-Undisguised Questions

Unstructured-undisguised questions are appropriate for in-depth interviews and focus group interviews. They allow the interviewer or moderator to begin with a general question or series of questions and allow the discussion to develop following a general series of questions in a discussion guide. Because of the nature of these types of questions, the effectiveness of the depth or focus group interview depends largely upon the skills of the interviewer or moderator. Advantages of this method are that more in-depth and accurate responses can be obtained, particularly for complex and sensitive issues, and greater cooperation and involvement can be obtained from the respondent. The unstructured-undisguised interview is well-suited for exploratory research, gaining background, and generating and clarifying research questions.

Unstructured-Disguised Questions

Unstructured-disguised questions are often used in motivation research to determine the whys of an individual's behavior. Projective methods are often used to get at the subtle issues that are not easily explored by direct questioning. Word association, storytelling, and sentence completion are methods that can be used to try to gain information about a subject without revealing the actual purpose of the research (see Chapter 5).

Descriptive research questionnaires largely consist of structured-undisguised questions. They are highly structured data-gathering instruments compared to the less structured instruments used in focus groups or in-depth interview guides. In the descriptive research questionnaire each respondent hears (or sees) the same question and has the same response options. This is obviously true with questions such as:

Would you say you eat away from home more often, less often, or about the same as you did three years ago?

More _____ Less _____ Same _____

Here, both the question and the response categories are highly structured. Open-ended questions are structured, but the response is not, at least at the point of gathering the data. An example of an open-ended question:

[If said "less"]

Why do you eat away from home less often than you did three years ago?

The respondent could give any explanation to the interviewer or write in any response if the respondent were completing the questionnaire alone. The responses become structured when the researcher develops categories of the answers based on the type and frequency of the responses (for example, the number of times the researcher sees an answer such as "I work at home now whereas I used to eat lunch out every day at work" or "Our household income has decreased, and we cannot afford to eat out as often"). The researcher might establish a number of different categories of responses after considering all the responses and then tabulate the responses for all completed questionnaires

by category. Thus, what appears to be an unstructured question is in fact structured as a question before asked and as an answer after it has been asked (that is, open-ended questions are still structured-undisguised).

Another way of collecting information is when the respondent hears what appears to be the same open-ended question in a phone or personal interview, but the interviewer categorizes the response into predetermined categories at the time the question is asked, such as:

[If “less often” indicated in previous question asked]

Why do you eat away from home less often than you did three years ago? [CHECK ALL THAT APPLY]

- Economics/less money/lower income.
 - Change in household members/circumstance.
 - Changed jobs, etc.
 - Other [WRITE IN VERBATIM]
-
-

Instructions to the interviewer are in brackets and uppercase or capital letters. In this example the interviewer exercises the judgment in categorizing the response (the respondent hears only the questions; the responses are not read). Response categories may have been established based on exploratory research or previous descriptive studies. If a response does not fit any of the given categories, the interviewer is to record the verbatim response, allowing the researcher to later establish new categories to capture the unanticipated responses. The researcher must balance the ease of tabulating and lower expense of having structured responses with the flexibility and richness of the more expensive open-ended responses that must later be structured.

DESIGNING A QUESTIONNAIRE

There is no single generally accepted method for designing a questionnaire. Various research texts have suggested procedures ranging from four to fourteen sequential steps. Questionnaire design, no matter how formalized, still requires a measure of science and a measure of art with a good dose of humility mixed in. In designing a questionnaire, presumption must be set aside. Although for simplicity of format the sequence for developing a questionnaire is given on a step-by-step basis, rarely is a questionnaire constructed in such a routine way. Quite often it is necessary to skip from one step to another and to loop back through a previous series of steps.

The following steps represent a sequential procedure that needs to be considered for the development of an effective survey instrument.

- *Step 1:* Determine the specific information needed to achieve the research objectives.
- *Step 2:* Identify the sources of the required information.
- *Step 3:* Choose the method of administration that suits the information required and the sources of information.
- *Step 4:* Determine the types of questions to be used and form of response.



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- *Step 5:* Develop the specific questions to be asked.
- *Step 6:* Determine the sequence of the questions and the length of the questionnaire.
- *Step 7:* Predetermine coding.
- *Step 8:* Pretest the questionnaire.
- *Step 9:* Review and revise the questionnaire.

Remember that a questionnaire is a measurement device, and all the procedures discussed in Chapter 6 on how to develop more scientific measures apply here as well (see Figure 6.2). A brief discussion of each of the questionnaire development steps follows.

Determine the Specific Information Needed

The initial step to be taken in the design of a questionnaire is to determine the specific information needed to achieve the research objectives—answer the research questions and test the hypotheses. Or another way of thinking of this step is that you are specifying the domain of the constructs of interest and determining the constructs' attributes (see Chapter 6). This task can be made much easier if the earlier phases of the research process have been precisely accomplished. Clear study objectives facilitate this important decision. One of the most common and costly errors of research is the omission of an important question on the data-gathering instrument. Once the questionnaire is fielded, it is too late to go back for additional information without significant delay and additional cost.

The researcher must determine all of the information required before the questionnaire is developed. Sometimes the articulation of research objectives into specific questions by setting up dummy tables to be used when analyzing the results will trigger a new idea or research question that should be included in the survey. Every effort needs to be marshaled at this point of the design process to ensure relevant results for the analysis phase of the research process. In some cases, it is advisable to conduct exploratory research to ensure that all of the relevant variables are identified. Focus groups, reviews of secondary sources of information, and some selected personal interviews are good ways of making sure that the pertinent variables are identified. Also, contextualizing information such as is listed in Table 8.1 should be determined.

Identify the Sources

Step 2 involves the important aspect of identifying the sources of the information requirements determined in Step 1. Sample selection is discussed in more detail in Chapter 9; however, the characteristics of the sample frame are extremely important in designing the data-gathering instrument. The sophistication, intelligence, frame of reference, location, ethnic background, and other characteristics of the potential respondents are vital to determining the type of questionnaire, the wording of questions, the means of administration, as well as other aspects of the questionnaire. Consider, for example, the difference in the design of a questionnaire if the questions are asked of ten-year-old children or twenty-year-old college students.

Choose the Method of Administration

Step 3 involves utilizing the results of Steps 1 and 2 to decide whether the Internet or a personal interview, telephone survey, or mail questionnaire is most acceptable. Issues such as whether a stimulus is required, the length of the questionnaire, the complexity of the questions, and the nature of the issue being researched must be considered in choosing which type of survey is best. These decisions should be made with respect to the information required and the nature of the sources of the information. Other considerations that affect this decision are the cost and time constraints placed on the research project (see Chapter 7).

Determine the Types of Questions

Step 4 involves choosing the types of questions to be used in the questionnaire. To accomplish this the researcher must look both backward and forward. The researcher looks back to review the information required and the nature of the respondents. This can dictate various decisions concerning the types of questions selected. The researcher must also look forward to the analysis stage of the research process to ensure that the right form of data is obtained to accommodate the proper analytical techniques.

There are four basic types of questions that might be used in a questionnaire: (a) open-ended, (b) dichotomous, (c) multichotomous, and (d) scales. Most questionnaires have more than one type of question.

Open-Ended Questions

Open-ended questions such as “What did you like about the product?” provide an unlimited range of replies the respondent can make. The major advantages and uses of this type of question is that they can be used when the possible replies are unknown, when verbatim responses are desired, and when gaining deep insight into attitudes on sensitive issues is needed. Open-ended questions are also useful to break the ice with the respondent and provide background information for more detailed questions. As discussed earlier, these questions are good for providing respondents with maximum flexibility in answering questions regarding motivations (why they behave as they do), or in explaining attitudes, behaviors, or intentions in greater depth. Their responses can be categorized by the researcher after the questionnaire has been completed, but the extra time for collecting and categorizing responses may add to the expense of the study (thousands of dollars for each open-ended question).

Dichotomous Questions

Dichotomous questions give two choices: either yes or no, or a choice of two opposite alternatives. They are preferred for starting interviews, are easy to tabulate, and can be used as a lead-in for more specific questions to a particular group. A weakness of dichotomous questions is that they can force a choice where none exists or lead to bias (such as the classic “Do you still cheat on your taxes?” Yes No). Another weakness is that few questions can be framed in terms of a dichotomy, particularly more complex questions.

Multichotomous Questions

Multichotomous questions provide several alternatives to respondents. In some cases, they may be asked to select only one from a list or asked to select as many as are applicable. The advantages of the multichotomous question are ease of administration, ease of tabulation, and flexibility for factual as well as attitudinal responses. Some disadvantages exist in the length of the list of alternative responses, the fact that response alternatives may not be mutually exclusive, or that reading the list may lead the respondent to a particular response.

Scales

Although a scale can be considered a multichotomous question, it deserves separate consideration. (Scaling was discussed and examples provided in Chapter 6.) The benefit of a scale is that it permits the objective measurement of attitudes and feelings. This allows for the identification of segments who are more favorably inclined toward a product, service, or issue. Scaling is somewhat subject to various frames of reference differences and to the halo effect. Some debate exists concerning whether scales should be balanced or unbalanced. Balanced scales have the same number of responses on the positive side of the scale as on the negative side of the scale. Unbalanced scales have more possible responses on one side of the scale than the other, usually the positive side. Some debate also exists over whether to have a neutral response. Those who feel there should be a neutral option



believe so because they think that this is a legitimate response category and for the sake of accuracy the respondent should have that option. People against having a neutral response category argue that most individuals are unlikely to be authentically neutral on an issue. They consider the neutral as an easy way out or a polite negative. Consequently, they feel that it is much better to frame the issue so that the respondent is induced to indicate a preference, however slight.

The “don’t know” or “no opinion” response should always be available to respondents. An honest expression of a lack of awareness, experience, or thought given to an issue should be allowed so that these responses are not lumped together with those people who have considered the issue and find that their position is the neutral point on the scale.

Earlier we mentioned that the researcher must look ahead to the analysis stage of the research process when determining the types of questions in order to ensure that the right levels of data are obtained to accommodate the planned analytical techniques. By this we mean that the researcher who plans to use specific analytical techniques (such as multiple regression, multidimensional scaling, conjoint analysis, and analysis of variance) to test hypotheses or determine the relationship between variables of interest (such as between sales volume and various attributes of the target market) must have collected data in the form required by the analytical technique. In other words, one cannot just use any data as an input to these techniques. They require raw data in very specific forms before they can be run, just as a production process requires raw material to be in a very specific form to be able to produce a product. It must be determined how to analyze the data even before questions are written that will generate the data. In the interest of simplifying things somewhat, we will confine our questionnaire design suggestions to address analytical procedures no more complicated than cross-tabulation. As will be seen in Chapter 11, that technique is the most widely used and useful approach to getting managerial answers to the research objectives.



Develop the Specific Questions

Step 5 of the process of constructing a questionnaire is to actually write the specific questions that will be asked (i.e., the operational definitions of our constructs’ attributes discussed in Chapter 6). The previous steps regarding the information required and the choices made relative to the types of questionnaire and questions will, to a large extent, control the content of the questions. The wording should be understandable and as explicit as possible. Questions should be worded in ways that avoid leading, pressuring, or embarrassing the respondent. The questions should avoid ambiguous words. Six basic rules for wording questions are:

1. Keep the questions short, simple, and to the point.

Reasons for keeping the questions as brief as possible are that longer questions make the response task more difficult, are more subject to error on the part of both interviewers and respondents, cause a loss of focus, and are less likely to be clear. One question should not ask more than one thing at a time.

2. Avoid identifying the sponsor of the survey. In some cases, such as customer satisfaction surveys, the researcher may want to identify the sponsor of the survey. In most cases, however, it is best to not identify the sponsor so more objective responses may be gathered.

3. Keep the questions as neutral as possible. Unless a question can be worded objectively, it should not be asked. Nonobjective questions tend to be leading because they suggest an answer.
4. Do not ask unnecessary questions. Always ask yourself, “Is this question necessary?” Each question should relate or add meaning to a specific research objective. If the question falls in the “nice to know but not necessary” category, leave it out.
5. Avoid asking questions that the respondent either cannot answer or will not answer. Because respondents will answer most questions, it is important to determine if a respondent can be expected to know the information desired. On other occasions, respondents will have the information required but may not be willing to divulge it. If a question appears to be sensitive, it may be best to leave it out. If it is crucial to the research objective, then it is best to ask the sensitive question later in the survey after a degree of trust has been established with the respondent.
6. Avoid asking leading or overly personal questions. Words or phrases that show bias are emotionally charged and will lead to inaccurate results. When sensitive questions must be asked, they should be asked after a warm-up period or hidden within a series of less personal questions.

Researchers should refer to some of the standard texts on how to word questions.³

Determine Question Sequence and Length of the Questionnaire

Step 6 can be extremely important in the completion rate of the survey. Excessive length may deter some respondents from completing the survey. This step can be equally important to the quality of the results acquired. The sequence of the questions should follow a logical pattern, so it flows smoothly and effortlessly from one section to another. Another important consideration is to ensure that questions building on previous questions are placed properly in the questionnaire. Generally, questions will flow from the general to the specific. This warms up the respondents and lets them reflect appropriately before being asked specific questions that require good recall and some degree of detail. Skip patterns for branching questions need to be carefully designed. Quite often, a respondent must be directed to a specific location in the questionnaire based on a previous question such as, “Have you baked brownies in the past three months?” “Yes” respondents go on to answer specific questions about the baking occasion while “No” respondents skip to a different part of the survey. Personal, telephone, and Internet surveys lend themselves more to branching than do mail questionnaires.

Most questionnaires have three basic sections: (a) introduction, (b) body, and (c) classification section.

Introduction

The introduction tells the respondent who the researcher is, why she is requesting the respondent’s information, and explains what is expected of the respondent. The introduction should explain the purpose of the questionnaire and enlist the cooperation of the respondent. In the case of a mail survey this may take place in an attached cover letter. On the phone this is accomplished with a positive tone without sounding like a polished sales pitch. Most people want to express their opinion as long as they know it is not a sales gimmick. The introduction should promise to keep the respondent’s identity anonymous and the information confidential. Often the introduction will qualify the respondent in a special way to make sure that the interviewer is talking only to the right respondents. Qualification questions may include brand usage; gender categories; and security issues such as whether the respondent or any member of the household works for a competitor of the client, an advertising agency, or a business research company.

Body or Content

The body or main content of the questionnaire provides basic information required by the research objectives. This is usually the most substantial portion of the questionnaire.

If the respondent has not been qualified in the introduction, the first question of this section should identify the proper respondents and have instructions to end the survey for all others. This section should begin with easy, direct questions. Place questions that are personal or reflect a sensitive issue well toward the end of the body. Once respondents have become interested in the survey, they are more likely to respond to personal or sensitive issues.

Classification Section

The final section is designed to obtain cross-classification information such as sex, income, educational level, occupation, marital status, and age. These demographic data allow for comparisons among different types of respondents. Certain market segments may emerge through the use of this cross-classification data. Many of these questions address the situational or environmental questions described in Table 8.1.

Predetermine Coding

Questionnaires should be precoded so that any difficulties encountered in entering data into computer tabulation and analysis programs can be solved before the data are gathered. Once the questionnaires are completed and returned, the responses can be quickly entered into the database and results generated.

Pretest the Questionnaire

The eighth step is an essential step that should not be ignored. Following the maxim, “the proof is in the pudding,” a questionnaire should be pretested before it is administered. A questionnaire may be too long, ambiguous, incomplete, unclear, or biased in some way. Not only will a thorough pretest help overcome these problems, but it will help refine any

procedural problems a questionnaire might have. Some of the procedural problems might be improper skip patterns and misunderstanding the interviewer. A pretest will evaluate and fine-tune the questionnaire, estimate the time required for completion of the interview, and allow for setup of coding refinements for tabulations. The pretest should be administered under actual field conditions to get an accurate response. If significant changes result from an original pretest, it is advisable to conduct a second pretest after appropriate revisions have been made. A relatively small number of interviews is sufficient to pretest a normal questionnaire. Once they have been completed, all interviewers who participated should report their findings. They will be able to determine whether the questions work and be able to make suggestions for revision.



Review and Revise the Questionnaire

Based on the pretest and a thorough review of all the previous steps, the questionnaire should be revised. The bottom line for an effective data-gathering instrument is the accuracy of the data collected. Everything that can possibly be done in advance should be done to ensure the accuracy of the instrument.

The steps used to design an effective data-gathering instrument need to be viewed as a dynamic outline and not a sequential step-by-step process. Each step should be applied with a sharp eye on the research objectives and the data needs they require. The finished questionnaire is the result of rearticulating the study objectives into a set of effective questions for extracting the required information from the pertinent set of respondents.

Developing a good questionnaire requires both creativity and highly structured, disciplined thought. You will go through numerous drafts of the questionnaire, so allow plenty of time for this part of the research. Pretest each version of the questionnaire. Refer to the books listed in this chapter's notes for more on questionnaire design. Refer to Appendix B for copies of sample questionnaires.

Research Project Tip

SUMMARY OF KEY POINTS

The goals of a data-collection instrument.

The goals of a data-collection instrument include: contextualize the information collected; express the study objectives in question form; measure the attitude, behavior, intentions, attributes, or other characteristics of the respondent; create harmony and rapport with the respondent; and provide just the right amount of information: no more, no less.

The basic components of a well-designed instrument.

Most questionnaires have three basic sections: (a) introduction, (b) body, and (c) classification section. The introduction tells the respondent who the researcher is, why he/she is requesting the respondent's information, and explains what is expected of the respondent. The introduction should explain the purpose of the questionnaire and enlist the cooperation of the respondent. In the case of a mail survey this may take place in an attached cover letter, or in an Internet survey, the basic text of the email. The body or main content of the questionnaire provides basic information required by the research objectives. This is usually the most substantial portion of the questionnaire. If the respondent has not been qualified in the introduction, the first question of this section should identify the proper respondents and have instructions to end the survey for all others. This section should begin with easy, direct questions. The final section is designed to obtain cross-classification information such as sex, income, educational level, occupation, marital status, and age. These demographic data allow for comparisons among different types of respondents. Certain market segments may emerge through the use of this cross-classification data.

The different types of questions that can be used in a data-collection instrument.

Questions can be classified in terms of their degree of *structure* and *disguise*. By structure we mean the degree to which the question and the responses are standardized at some point in the data-collection process. When a questionnaire is classified according to disguise, it depends on how evident the purpose of the question or questionnaire is. An undisguised questionnaire is one in which the purpose of the research is obvious to the respondent because of the questions asked. A disguised questionnaire obscures the purpose of the research and tries to indirectly get at a

respondent's point of view. Of course, the sponsor of the research may or may not be revealed to the respondent before he or she answers the questions, but this is not what is meant by "disguise."

Based on the classification of questions according to structure and disguise, the following general types emerge: Structured-Undisguised Questions, Structured-Disguised Questions, Unstructured-Undisguised Questions, and Unstructured-Disguised Questions.

The steps involved in designing a questionnaire.

The following steps represent a sequential procedure that needs to be considered for the development of an effective survey instrument.

- Step 1:* Determine the specific information needed to achieve the research objectives.
- Step 2:* Identify the sources of the required information.
- Step 3:* Choose the method of administration that suits the information required and the sources of information.
- Step 4:* Determine the types of questions to be used and form of response.
- Step 5:* Develop the specific questions to be asked.
- Step 6:* Determine the sequence of the questions and the length of the questionnaire.
- Step 7:* Predetermine coding.
- Step 8:* Pretest the questionnaire.
- Step 9:* Review and revise the questionnaire.

How pretesting can be used to improve the data-collection process.

The eighth step is an essential step that should not be ignored. Following the maxim, "the proof is in the pudding," a questionnaire should be pretested before it is administered. A questionnaire may be too long, ambiguous, incomplete, unclear, or biased in some way. Not only will a thorough pretest help overcome these problems, but it will help refine any procedural problems a questionnaire might have. Some of the procedural problems might be improper skip patterns and misunderstanding the interviewer. A pretest will evaluate and fine-tune the questionnaire, estimate the time required for completion of the interview, and allow for setup of coding refinements for tabulations. The pretest should be administered under actual field conditions to get

an accurate response. If significant changes result from an original pretest, it is advisable to conduct a second pretest after appropriate revisions have been made. A relatively small number of interviews is sufficient to pretest a

normal questionnaire. Once they have been completed, all interviewers who participated should report their findings. They will be able to determine whether the questions work and be able to make suggestions for revision.

DISCUSSION QUESTIONS

1. Why will good questionnaires collect information beyond that identified in the Research Objectives (research questions and hypotheses)?
2. Discuss when you would typically use structured-undisguised questions and when you would use unstructured-disguised questions.
3. How are dummy tables (discussed in Chapter 5) used to help design the questionnaire?
4. What is meant by saying that a questionnaire is a “gestalt.” In what ways does thinking of a questionnaire in this way affect the quality of information obtained from the use of a questionnaire?

ENDNOTES

1. Labaw, P. (1980). *Advanced questionnaire design* (p. 12). Abt Books.
2. Labaw, P. (1980). *Advanced questionnaire design* (p. 61). Abt Books.
3. See Payne, S. L. (1951). *The art of asking questions*. Princeton University Press; Sudman, S., & Bradburn, N. M. (1982). *Asking questions: A practical guide to questionnaire design*. Jossey-Bass; Converse, J. M., & Presser, S. (1986). *Survey questions: Handcrafting the standardized questionnaire*. Sage Publications. Another good source on designing and implementing a mail or Internet questionnaire is Dillman, D. (2000). *Mail and internet surveys*. John Wiley and Sons.