

Chapters 10 and 11 provided a great deal of information about how to write questions and organize questionnaires. The purpose of this chapter is to make that material more concrete by applying it to specific questionnaires.

Four questionnaires are used as examples in this chapter. Our general format for discussing each of these questionnaires is as follows:

- First, some background on a research project is given and the research objectives are stated.
- Next, a questionnaire that is intended to satisfy those objectives is presented.
- Next, the questionnaire is evaluated.
- Finally, for two of the examples, a revised questionnaire that resolves the problems identified in our evaluation is presented.

As you read through the chapter, you will find that you don't always agree with our evaluations and revisions of the questionnaires. This is typical of questionnaire design. If a questionnaire writing assignment is given to ten experts in questionnaire design, they will produce ten different questionnaires. All these questionnaires will have points of similarity, but each will reflect a unique approach to satisfying the research objectives and a unique writing style. Each will be "correct" in its own way. There isn't any one "right" way to write a questionnaire; the rules in Chapters 10 and 11 don't so much describe how to write good questionnaires as how to avoid writing bad ones.

## Example 1

### The Research Problem

This example relates to a chain of inexpensive, sit-down restaurants—a Denny's type of operation. For the chain to be promoted effectively, food and service quality must be consistent across the restaurants. Therefore, the company has designed a program to monitor quality at each of its restaurants on an ongoing basis.

The program will work as follows. Copies of the proposed questionnaire will be placed in a rack on each table in the company's restaurants. The questionnaire will ask customers to comment on the food, service, and prices. Completed questionnaires will be picked up by waiters and waitresses and taken to the manager on duty, who will place them in a box. Once a month, results from the questionnaires will be tabulated and reported for each restaurant.

### The Questionnaire

The proposed questionnaire is shown in Exhibit 12.1.

## 12.1

## EXHIBIT

## Questionnaire #1

**Your Opinions Count!**

We'd like to hear your comments about our restaurant.

1. How was the food?

Excellent \_\_\_\_\_ Good \_\_\_\_\_ Fair \_\_\_\_\_

2. How was the service?

Excellent \_\_\_\_\_ Good \_\_\_\_\_ Fair \_\_\_\_\_

3. How were the prices?

Reasonable \_\_\_\_\_ High \_\_\_\_\_ Low \_\_\_\_\_

4. Other comments

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## Questionnaire Evaluation

Some good features of this research effort (including the questionnaire) are that:

1. The proposed research program uses a fixed questionnaire and fixed data collection methods on a "tracking" basis. The results for any given restaurant may not be meaningful in isolation, but comparisons across locations and across time will allow the company to identify operations that are below average and/or declining.
2. The length of the questionnaire is well suited to the data collection environment. The questionnaire can be faulted for gathering only limited data. However, a self-administered questionnaire for restaurant patrons *must be* brief. People will not take the time to complete a long, detailed questionnaire.
3. Given the brevity of the questionnaire, the topics seem well chosen. If only two questions could be asked about a restaurant dining experience, they would be about the food and the service, and "value" seems to be a good topic for a third question.
4. Closed questions are appropriate for the data collection environment.

Those are the good points. Some of the weaknesses of the questionnaire are that:

1. The results are likely to give a misleading picture of overall customer satisfaction because very few patrons will complete the questionnaire, and those who do cannot be regarded as typical of the average patron after the average meal. This **sample bias**, the difference between all customers and those who fill out the questionnaire, may not be a problem if results are used on a consistent basis across locations and time, but it is still undesirable.

2. There is a problem with the data collection method. Servers will be motivated to destroy questionnaires that criticize the service. Similarly, site managers will be motivated to destroy questionnaires that criticize the restaurant, and to “manage” their results by stuffing the ballot box with positive questionnaires.
3. As already noted, the questionnaire is very limited. This may be necessary given the data collection environment, but it means that the results will have limited diagnostic value.
4. Respondents are not given a response alternative that allows them to comment negatively on the food or service. In addition to knowing how many patrons liked the food and service, we’d like to know how many thought they were poor.
5. This questionnaire breaks the rule for vertical layout of response categories. However, the horizontal layout helps create an impression that the questionnaire will “just take a second” and seems unlikely to cause any problems.
6. Respondents are not told what to do with the questionnaire after completing it. Instructions should be given at the bottom of the form.

Overall, the crucial issues in this research program relate to sample bias and data security. A questionnaire revision will not address these issues. Rather than revise the existing questionnaire and, in doing so, implicitly accept the general research design, we would recommend that the company consider different methods that would reduce the sample bias and data security problems.

One such method would be to use intercept surveys rather than table cards. In **intercept surveys**, patrons on their way out will be approached by interviewers and asked to answer a few questions about the restaurant. This method will reduce data collection problems and provide a less biased cross section of patrons. It will also allow a somewhat longer questionnaire. The disadvantages of intercept surveys, compared with table cards, are that they cost more and can be done only periodically.

Another method of evaluating service quality would be to use **service shoppers**, that is, people who are paid to visit a restaurant or store, make a purchase, and evaluate the service on a prepared rating sheet. The advantages of service shoppers, compared with table cards, are improved data security and much more detailed evaluations. The disadvantage of service shoppers is that monthly evaluations for any given restaurant will be based on only a small number of service encounters.

If the restaurant chain adopts an intercept survey program, a questionnaire will be needed for this program, but it will not simply be a revision of the current questionnaire. If the chain adopts a service shopper program, a rating form will be needed, but this form again will not be a revision of the current questionnaire.

Overall, this first example illustrates the following points about questionnaires:

- A questionnaire cannot be evaluated separately from the context and motives of the research.
- Questionnaire design rules need not be followed slavishly.
- A questionnaire design that breaks the rules may be desirable in some situations.
- A well-written questionnaire will not save poorly conceived research.
- Sometimes the best thing to do is not to revise a questionnaire but rather to go back to the drawing board and redesign the entire research project.

### Critical Thinking Skills

**G**iven this restaurant company’s objectives, design a questionnaire that might be used for an intercept survey of patrons.



# The Research Problem

This example relates to the Houston Astros baseball team. As a major-league baseball team, the Astros play eighty-one home games in a regular season. These games are attended by a mixture of season ticket holders and single game attenders. Of course, people who buy single game tickets may come to more than one game in the course of a season. The Astros promote attendance in various ways, including:

- Direct mail solicitations for season ticket sales
- Game promotions such as "Bat Day" and "Jacket Day"
- Billboard advertising that promotes the team but not any particular game
- Television commercials with voice-overs that promote specific games
- Radio commercials that promote specific games
- Newspaper ads that promote specific games
- A mobile ticket van that visits various shopping centers

The Astros wish to do a survey of fans to learn more about the people who attend Astros games. Astros executives don't have a specific decision objective for this project, but they feel that a fan survey will provide useful guidance in placing advertising and planning promotions.

The team considered two options for this project: (1) a telephone survey of the general population and (2) an intercept survey done at one or more Astros games. The intercept survey would cost less per interview and focus attention on people who actually attend games. The telephone survey would allow the team to learn about people who do not attend games but might be motivated to do so. On balance, Astros management decided that an intercept survey would be preferable.

An intercept survey could be done in various ways. Fans could be intercepted as they entered the stadium, at their seating areas, or as they left. The questionnaire could be self-administered or administered by an interviewer. In considering various options, Astros management decided to intercept people as they entered. The team felt this was best because people would dislike any effort to intercept them while the game was in progress, and they would be in a hurry to leave after the game. The team decided to use self-administered questionnaires because employees with no training as interviewers could distribute large numbers of questionnaires to incoming fans, and the distribution process would not cause congestion near the entrance gates. To entice fans to return these self-administered questionnaires, the team planned to use the questionnaires as entries in a prize drawing to be held at the end of the third inning. The team also planned to place prominently labeled collection boxes throughout the stadium, to distribute pencils along with the questionnaires, and to print the questionnaires on a card stock that could be used without backing.

Astros management requested that the survey provide the following information about fans:

- Where do they live?
- Are they season ticket holders?
- How many people came with them?
- How many children?
- How many games do they attend?
- Why did they come to this game?
- What radio stations do they listen to?

## The Questionnaire

The proposed questionnaire is shown in Exhibit 12.2.

## Questionnaire Evaluation

This questionnaire has some good features. It generally uses closed questions, which are appropriate to a self-administered questionnaire. The questions are direct, and questions 4 and 5 nicely specify to whom the question refers. The questionnaire has an introduction and an end, and it tells respondents what they should do with the completed forms.

Now let's talk about possible improvements:

1. Questions 1 and 1A are well written but unnecessary. The zip code information obtained at the bottom of the questionnaire provides better data.
2. Question 2 is well written but should specify whether the respondent should count himself or herself.
3. The categories used in questions 2 to 5 may or may not be reasonable, depending on the exact purposes of the question and the expected distribution of answers. For example, if the team's purpose is to learn how many people come by themselves, how many come in small groups, and how many come in large groups, question 2 may need only three categories. Also, although the format is attractive for a self-administered study, the most flexible way of gathering these data would be to provide spaces in which respondents write the appropriate numbers.
4. Question 3 needs to define "children." Are sixteen year olds children?
5. Question 4, which asks about season ticket ownership for everyone in the group, asks respondents for information they may not have. It might be better simply to ask whether the respondent himself or herself is attending on a season ticket or a single game ticket.
6. Question 5 is pretty good, but it needs to specify whether tonight's game should be counted.
7. Question 6 is overambitious. The obvious goal of this question is to get a fairly complete list of the respondent's radio stations. However, the question ignores a basic rule of surveys: no one person needs to carry the load. The purpose of this

We are conducting a survey to learn more about you, our fan. We want to make your attendance at Astros games as enjoyable as possible.

To fill out the survey, check the boxes that most nearly describe you. Drop the completed form in any of the orange and blue boxes located near concession stands. After the third inning, we will draw names to win a NEW VCR, ASTROS TICKETS, and OTHER PRIZES.

1. In what city do you live? \_\_\_\_\_

(IF HOUSTON)

- A. In what part of Houston do you live?

- |  |                                    |
|--|------------------------------------|
| <input type="checkbox"/> Inside the Loop | <input type="checkbox"/> South     |
| <input type="checkbox"/> North           | <input type="checkbox"/> Southwest |
| <input type="checkbox"/> Northeast       | <input type="checkbox"/> West      |
| <input type="checkbox"/> East            | <input type="checkbox"/> Northwest |
| <input type="checkbox"/> Southeast       |                                    |

2. How many people are in your group at tonight's game?

- ☐ 1    ☐ 2-3    ☐ 4-5    ☐ 6 or more

3. How many of them are children?

- ☐ 1    ☐ 2-3    ☐ 4-5    ☐ 6 or more

4. How many people in your group, including yourself, are Astros season ticket holders?

- ☐ 1    ☐ 2-3    ☐ 4-5    ☐ 6 or more

5. How many games have you yourself attended this season?

- ☐ 1    ☐ 2-3    ☐ 4-5    ☐ 6 or more

6. What four radio stations do you listen to most often?

\_\_\_\_\_  
\_\_\_\_\_

7. Why did you come to tonight's Astros game?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

We need your name and address for our prize drawing.

NAME: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CITY, STATE, ZIP: \_\_\_\_\_

Thanks for your help. Please drop this form in any orange and blue box to enter our drawing.

survey isn't to learn what each respondent does—the purpose is to learn what Astros fans *in general* do. If the respondent's favorite radio station is requested and data are gathered from several hundred respondents, a nice distribution of radio stations will be provided.

8. Question 7 will not work in a self-administered survey. Fans will not write essays about their reasons for attending—especially when they are sitting in the stadium and writing with a golf pencil on an unbacked form. The question must be closed.

### Critical Thinking Skills

**F**or each of the revised questions in Exhibit 12.3, explain why the question was revised, whether or not you find our revision an improvement, and what alternative version you suggest.

9. To close question 7, it is necessary to think about the motivation for the question. Why does Astros management want to know why people come to a particular game? Does it hope to learn whether people come for the baseball versus some other social purpose? Does it hope to learn what types of promotions are effective in drawing people? Does it hope to learn how many people make a last-minute decision and thus might be influenced by advertising on game day and preceding days? Whatever the purpose, it is likely that a more specific question will provide more useful information.

10. If the rule that background questions should come after topic questions is to be followed, question 1 belongs at the end of the questionnaire, and question 6 should probably follow question 7. This is not terribly important in this questionnaire because the questionnaire's express purpose is to learn something about the fans' backgrounds, and also because respondents can see the questionnaire from start to finish before they answer the questions.

## Questionnaire Revision

Exhibit 12.3 shows a revised questionnaire that reflects the preceding comments.

## Example 3

## The Research Problem

This example relates to an electric utility. The company wished to evaluate the potential residential market for equipment that protects against power fluctuations and outages.

As you may know, electrical service is subject to variability. The voltage flowing into a home or business occasionally surges or drops and sometimes goes out completely. Power fluctuation can damage electrical devices or cause them to perform improperly, and power outages cause electrical devices to stop working altogether.

## EXHIBIT

12.3

Questionnaire  
#2 Revised

We are conducting a survey to learn more about you, our fan. We want to make your attendance at Astros games as enjoyable as possible.

To fill out the survey, check the boxes that most nearly describe you. Drop the completed form in any of the orange and blue boxes located near concession stands. After the third inning, we will draw names to win a NEW VCR, ASTROS TICKETS, and OTHER PRIZES.

1. Are you attending tonight's game on a season ticket or a single game ticket?  
☐ Season ticket      ☐ Single game ticket
2. Counting tonight's game, how many Astros games have you attended this season?  
☐ 1      ☐ 2-3      ☐ 4-5      ☐ 6 or more
3. Counting yourself, how many people are in your group at tonight's game?  
☐ 1      ☐ 2-3      ☐ 4-5      ☐ 6 or more
4. How many of the people in your group are less than 13 years of age?  
☐ 1      ☐ 2-3      ☐ 4-5      ☐ 6 or more
5. When did you decide to attend tonight's game? Was it today, before today but during the past week, or earlier than the past week?  
☐ Today      ☐ Past week      ☐ Earlier
6. What promotions, if any, might influence you to attend an Astros game? (CHECK ALL THAT APPLY)  
☐ \$2 off tickets      ☐ Prize drawings  
☐ Family discounts      ☐ Country music concert  
☐ Free parking      ☐ Rock music concert  
☐ Free Astros mug      ☐ Tailgate parties  
☐ Free child's cap      ☐ Home run derby
7. What is your favorite radio station?

(FILL IN) \_\_\_\_\_

We need your name and address for our prize drawing.

NAME: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CITY, STATE, ZIP: \_\_\_\_\_


Thanks for your help. Please drop this form into any orange and blue box to enter our drawing.



Users of electricity can protect themselves from the effects of power outages by buying devices with built-in battery backups or by buying generators to be used when the power goes out. They can protect themselves from the effects of line fluctuations by connecting electrical devices to surge suppressors.

The power company wanted to estimate how many of its residential customers might be interested in buying generators or surge suppressors from the company and how much they might be willing to pay. To accomplish this goal, the company planned a survey of residential customers to measure the following general objectives:


- Customers' awareness of power supply problems
- Customers' willingness to purchase or lease corrective equipment
- Customers' willingness to purchase or lease corrective equipment from the power company
- The amount that customers are willing to pay



## The Questionnaire

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The proposed questionnaire is shown in Exhibit 12.4.



## Questionnaire Evaluation

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This is a terrible questionnaire. Let's note some of the problems.

1. The introduction uses technical jargon and, in effect, tells the respondent, "I'm about to ask you some questions you won't understand."
2. Question 1 asks about "equipment systems" that are "critical" to the "everyday functions" of the home. Some definition of these terms might be necessary.
3. The format of question 1 is messy. There isn't any need for the numbers in front of the equipment types.
4. Question 2 asks for information the respondent may not have. Also, the purpose of the question is not clear. The power company should already know how often power outages occur. If the purpose of the question is to identify people who perceive power outages as a problem, it would probably be better to ask for this perception directly.
5. Question 3 seems somewhat ambiguous. What is meant by being "familiar" with this equipment?
6. In question 3, the "Not very familiar" response category should be dropped. It isn't distinct from the "Somewhat familiar" category.
7. Question 4 uses jargon terms ("Uninterruptible power supply equipment" and "Power conditioning equipment"). If you were a respondent, would you know that "uninterruptible power supply equipment" refers to generators and "power conditioning equipment" refers to surge suppressors?
8. Question 4 is also two questions in one. Separating these questions will make the questionnaire easier to use.

*(Cont. on p. 318)*

## 12.4

## EXHIBIT

## Questionnaire

Hello, I'm \_\_\_\_\_ of \_\_\_\_\_, a public opinion research firm. We have been retained by Western Shores Power to survey some of their residential customers about power interruptions to electrical service in your area.

Western Shores Power is evaluating the need for uninterruptible power equipment and power conditioning equipment to protect residential customers from power interruptions. I would like to ask you a few questions to help us determine the scope of this problem and find solutions geared to residential customers' needs.

Please be assured that all information will remain completely confidential and will be used for statistical purposes only.

1. I'm going to read you a list of equipment systems that may or may not be critical to the everyday functions of your home. For each system I read, please tell me if this equipment is critical to the everyday functions of your home, even during a power outage. (READ LIST—ROTATE)

What about	Yes	No
------------	-----	----

- |   |   |   |
|---|---|---|
| 1. Computers? .....   | 1 | 2 |
| 2. Medical diagnostic equipment? .....  | 1 | 2 |
| 3. Security systems? .....  | 1 | 2 |
| 4. (READ) Is there any other system that is critical to the everyday functions of your home, even during a power outage?<br>(SPECIFY) _____ |   |   |

(IF NONE OF THE ABOVE APPLY, THANK AND TERMINATE)

2. During the past year, how many times has there been an electrical power outage at your home? (READ CATEGORIES)

None .....	1
1-6 .....	2
7 or more .....	3

3. How familiar are you with equipment that can be used to protect against power fluctuations and outages? (READ CATEGORIES)

Very familiar .....	1
Somewhat familiar .....	2
Not very familiar .....	3
Not familiar at all .....	4
Unsure (DO NOT READ) ....	5

*Continued*

## EXHIBIT

## 12.4

Questionnaire  
#3—Continued

As you may know . . .

**Uninterruptible Power Supply (UPS)** is designed to protect critical equipment against ALL power fluctuations, including a total power outage. The backup power capability for power outages will vary with the customer's needs.

**Power Conditioning Equipment** is designed to protect against power fluctuations only.

4. Considering everyday home uses for your critical equipment, is there a need for either (1) uninterruptible power supply equipment or (2) power conditioning equipment to protect critical equipment from power fluctuations?

Uninterruptible power supply equipment . . . . .	1
Power conditioning equipment . . . . .	2
Both (DO NOT READ) . . . . .	3
Neither (DO NOT READ) . . . . .	4
Don't know/No answer . . . . .	5

5. Does your home currently have uninterruptible power supply equipment or power conditioning equipment to protect your critical equipment against power fluctuations or outages?

Yes/Uninterruptible power supply equipment . . . . .	1
(GO TO Q7 & Q9)	
Yes/Power conditioning equipment . . . . .	2
(GO TO Q8 & Q9)	
Yes/Both (GO TO Q7-9) . . . . .	3
No (GO TO Q6) . . . . .	4
Don't know/No answer . . . . .	5

(IF NO IN QUESTION 5, ASK:)

6. What are the reasons you do not currently use uninterruptible power supply or power conditioning equipment in your home? (DO NOT READ)

1. Do not experience power-related failures of critical equipment (GO TO Q10) . . . . .	1
2. Initial cost of equipment (GO TO Q7-9) . . . . .	2
3. Cost of maintaining equipment . . . . .	3
(GO TO Q7-9)	
4. Not familiar with the equipment . . . . .	4
(GO TO Q7-9)	
5. Other (SPECIFY) (GO TO Q7-9) . . . . .	5
6. Don't know/No answer . . . . .	6

7. Considering the importance of your critical equipment, if **uninterruptible power supply** equipment that would protect all critical systems from power failure were available at a cost of \$\_\_\_\_\_ **per month**, would you be interested in looking at this system? (READ CATEGORIES—TOP TO BOTTOM, BOTTOM TO TOP—STOP WHEN ANSWERED) What if the cost were:

\$50 or more? .....	1
Between \$25 and \$50? .....	2
Between \$15 and \$25? .....	3
Less than \$15? .....	4
No level (DO NOT READ) .....	5
Don't know/No answer .....	6

8. Considering the importance of your critical equipment, if a **conditioned power system** that would protect all critical equipment from power fluctuations were available at a cost of \$\_\_\_\_\_ **per month**, would you be interested in looking at this system? (READ CATEGORIES—TOP TO BOTTOM, BOTTOM TO TOP—STOP WHEN ANSWERED) What if the cost were:

\$50 or more? .....	1
Between \$25 and \$50? .....	2
Between \$15 and \$25? .....	3
Less than \$15? .....	4
No level (DO NOT READ) .....	5
Don't know/No answer .....	6

9. A number of companies provide uninterruptible power supply equipment and power conditioning equipment. Assuming that this equipment is available at a reasonable price, which of the following arrangements would you prefer? (READ CATEGORIES)

Deal directly with vendor .....	1
Deal directly with Western Shores Power .....	2
Other (DO NOT READ) (SPECIFY) .....	3
No interest (DO NOT READ) .....	4
Don't know/No answer .....	5

10. For classification purposes only, do you live in a house or an apartment?

House .....	1
Apartment .....	2

Those are all of our questions. Thanks for your help.

9. Question 5 is two questions in one and uses jargon. The branching instructions are complicated by the failure to separate the questions.
10. Question 6 is open, and interviewers are expected to code respondents' answers in the appropriate categories. However, the categories given in this question do not seem very complete. In fact, the most common answers received during field interviews were "Don't know" and "Other." The high rate of "Don't know" answers suggests that respondents had trouble with the question.
11. Question 6 appears to allow multiple answers: respondents are asked for *reasons* (plural). However, interviewers are not told to circle all answers that apply, and it is not clear how the branching instructions would be affected by multiple answers.
12. The branching instructions in question 6 are awkward. It would be better if questions 7 to 9 were indented to show the branching pattern and if interviewers were simply told to CONTINUE rather than told to GO TO questions 7-9.
13. There isn't any need for the numbers in front of each response category in question 6.
14. Interviewers are asked to specify the exact nature of "other" responses in question 6 but are not given space to write these answers.
15. Interviewers will need to be trained to interpret the vague instructions given in questions 7 and 8.
16. The DO NOT READ instruction that follows the "No level" category in question 7 and question 8 is misplaced. It comes too late to alert the interviewer.
17. The "Don't know/No answer" category in questions 7 and 8 should also have a DO NOT READ instruction.
18. Question 9 could be written more directly, and the term "vendor" may not be familiar to respondents. Here is an alternative wording: "If you bought a generator, would you prefer to buy it from Western Shores Power or from some other company?"
19. Question 9 also repeats some of the problems we have noted in earlier questions: it is two questions in one, the DO NOT READ instructions are poorly placed, and the "Don't know" category needs a DO NOT READ instruction.
20. Questions 1 and 2 seem redundant with question 4, at least in purpose, and might be eliminated. Presumably, the purpose of questions 1 and 2 is to determine whether the respondent might benefit from a generator and/or surge suppressor. This is the same purpose as question 4, which addresses the issue more directly.

Overall, this questionnaire has severe technical deficiencies. These are not all of its deficiencies, though, or even its worst deficiencies. The questionnaire could be revised to eliminate the jargon, the double-barreled questions, and the format problems, and it would still be a bad questionnaire. The reason is that this questionnaire asks the wrong questions.

Consider questions 3 to 9, which are the heart of the questionnaire. Respondents are asked whether they know about equipment that reduces problems from power variation (question 3), whether they would benefit from such equipment (question 4), and whether they own such equipment (question 5). If they don't own such equipment, they are asked why not (question 6). They are also asked how much they would pay for the equipment (questions 7 and 8) and whether they would buy from the power company (question 9). Taken together, questions 3 to 9 represent a

coherent, though poorly executed, sequence that presumes a deliberative purchase model. In other words, these questions presume that people who buy generators or surge suppressors deliberate the purchase in advance and that key marketing questions include (1) "How many people know about the products but need to be convinced of their benefits?" (2) "How many people see the benefit of the products but need to be activated as buyers?" and (3) "How many activated buyers need to be convinced that the power company is the best vendor for these products?"

However, most people who own a surge suppressor bought it as an add-on purchase with some other item such as a computer. Awareness of surge suppressors was irrelevant before the person developed a need by buying the other item, and the development of this need was essentially simultaneous with purchase. In this context, it is of little use to measure how many people have a general awareness of surge suppressors. Similarly, there is little benefit in asking whether respondents own equipment that would benefit from a surge suppressor or whether they like the power company as a stand-alone supplier of surge suppressors, since surge suppressors are bought on an unplanned, add-on basis at the same point of sale as the equipment with which they are used.

Generators do not fit a deliberative purchase model any better than surge suppressors do. The power company that sponsored this research is located in a coastal area where almost all consumer purchases of generators are made immediately before or after a major storm. People might be willing to buy their generators from the power company, but purchases would be on an immediate, "as needed" basis and would not really depend on awareness or careful shopping. (The commercial market for surge suppressors is much less crisis-driven.)

This questionnaire should not be revised until researchers meet with managers at the power company to reconsider the nature of the residential market for generators and surge suppressors and reevaluate the research objectives.

### Critical Thinking Skills

**G**iven the way in which surge suppressors and generators are purchased by consumers, how would you design a study to evaluate whether the power company can be a viable vendor of these products?

## Example 4

### The Research Problem

The final example concerns a chain of sporting goods stores that offers its own credit card. The chain currently has about \$10 million in annual sales on this card, and it costs about \$800,000 to run the credit operation (to evaluate applicants, issue cards, process transactions, prepare bills, mail bills, and collect payment). In other words, the expense rate for processing charges on the chain's own card is about 8 percent of credit sales. In contrast, the chain is charged about 1.5 percent to process Visa and Mastercard transactions and 3.5 percent for American Express (the chain takes all these cards).

If the chain dropped its credit card and switched the \$10 million in sales to “third-party” credit cards (Visa, etc.), it would save at least \$450,000 in annual costs. However, dropping the chain’s credit card might also cause lower sales because customers would no longer have an incentive to shop at this particular chain. It isn’t clear whether the net result would be profitable.

The chain has undertaken a three-step research project to help it decide what to do about the credit operation. In the first step, the chain gathered national statistics on the costs of retail credit departments. These statistics showed that the chain’s costs are in line with national averages; therefore, significant gains from streamlining the credit department are not likely. In the second step, the chain analyzed sales from each merchandise department to identify areas that might be hard hit by a decline in credit sales. As expected, this analysis showed that the bigger-ticket items are more vulnerable. Now, in the third step, the chain plans a telephone survey of its credit customers. The purpose of this survey is to estimate the extent to which these customers will spend less at the chain’s stores if the credit card is withdrawn.

Given that the chain plans to do a survey to evaluate the credit operation, it also wishes to learn how its customers rate it on various dimensions. In particular, the chain’s last major study, done five years ago, showed that customers rated the chain low on having merchandise in stock. The chain wishes to know whether it has improved on this dimension.

## The Questionnaire

This research problem was introduced in Chapter 10. There it was noted that respondents might not give accurate answers when asked whether they would shop less if the chain’s credit card were withdrawn. The value of attacking this issue with multiple measures such as (1) open-ended measures of credit card importance in determining store choice, (2) closed-end measures of credit card importance, (3) measures of the extent to which customers have third-party credit cards available, and (4) direct measures of how people think their shopping would change was discussed. An appropriate ordering for these topics was also discussed.

A proposed questionnaire is shown in Exhibit 12.5.

## Questionnaire Evaluation

This questionnaire generally reads and flows well. It also seems well suited to the research objectives. The instructions and precoding are solid. We would recommend only minor changes in it, as follows.

1. Spacing should be added throughout the questionnaire and the double-columning of questions and answers eliminated. The current format saves paper but will be difficult for interviewers to use.
2. Branching sequences should not be split across pages if possible.
3. It is not a good idea to ask about five different merchandise categories at the start of the questionnaire. One motive for doing so is to show how credit cards vary in importance across merchandise categories, but this has already been shown by the company’s analysis of credit purchases. Another motive is to

(Cont. on p. 326)

## EXHIBIT

12.5

## Questionnaire



Hello, I'm \_\_\_\_\_ of \_\_\_\_\_, a marketing and opinion research firm. We are conducting a study with people who have purchased from sporting goods stores during the past year.

- A. Have you purchased from any sporting goods stores during the past year?
- B. IF NO: Has anyone else in your household purchased from sporting goods stores during the past year?

IF NO, TERMINATE.

CONTINUE INTERVIEW WITH A PERSON WHO HAS SHOPPED SPORTING GOODS STORES.

1. To begin, I have some questions about products you may have purchased, either for yourself or for someone else. In the past twelve months, have you purchased any type of athletic shoes?

Yes ..... 1 (ASK Q1A-Q1D)

No ..... 2 (GO TO Q2)

(IF YES)

- 1A. Where did you make your most recent purchase of athletic shoes?  
(STORE) \_\_\_\_\_

- |  |                              |   |
|--|------------------------------|---|
| 1B. What was the most important reason you bought those shoes at (STORE IN Q1A) rather than at another store? (DO NOT READ CATEGORIES) | Price .....                  | 1 |
|  | Sale .....                   | 2 |
|  | Location/convenience .....   | 3 |
|  | Merchandise quality .....    | 4 |
|  | Merchandise selection .....  | 5 |
|  | Salespeople .....            | 6 |
|  | Availability of credit ..... | 7 |
| (_____)  | ←Other (SPECIFY) .....       | 0 |

- 1C. How much did you spend on that purchase?  
(TO NEAREST DOLLAR) \$\_\_\_\_\_

- |   |                         |   |
|---|-------------------------|---|
| 1D. Did you pay cash, use a store charge account, or use another credit card such as a Visa, MasterCard, or American Express? | Paid cash (check) ..... | 1 |
|   | Store charge .....      | 2 |
|   | Other credit card ..... | 3 |

2. In the past twelve months, have you purchased any active sportswear such as tennis clothes, leotards, swimsuits, etc.?

Yes ..... 1 (ASK Q2A-D)

No ..... 2 (GO TO Q3)

(IF YES)

- 2A. Where did you make your most recent purchase of active sportswear?  
(STORE) \_\_\_\_\_

*Continued*



## EXHIBIT

12.5

Questionnaire  
#4—Continued

- 2B. What was the most important reason you made that purchase at (STORE IN Q2A) rather than at another store? (DO NOT READ CATEGORIES)
- ( )
- |                              |   |
|------------------------------|---|
| Price .....                  | 1 |
| Sale .....                   | 2 |
| Location/convenience .....   | 3 |
| Merchandise quality .....    | 4 |
| Merchandise selection .....  | 5 |
| Salespeople .....            | 6 |
| Availability of credit ..... | 7 |
| ←Other (SPECIFY) .....       | 0 |

- 2C. How much did you spend on that purchase?  
(TO NEAREST DOLLAR) \$ \_\_\_\_\_

- 2D. Did you pay cash, use a store charge account, or use another credit card such as a Visa, MasterCard, or American Express?
- |                         |   |
|-------------------------|---|
| Paid cash (check) ..... | 1 |
| Store charge .....      | 2 |
| Other credit card ..... | 3 |

3. In the past twelve months, have you purchased any exercise equipment such as weights, exercycles, rowing machines, etc.?
- |           |               |
|-----------|---------------|
| Yes ..... | 1 (ASK Q3A-D) |
| No .....  | 2 (GO TO Q4)  |

(IF YES)

- 3A. Where did you make your most recent purchase of exercise equipment?  
(STORE) \_\_\_\_\_

- 3B. What was the most important reason you made that purchase at (STORE IN Q3A) rather than at another store? (DO NOT READ CATEGORIES)
- ( )
- |                              |   |
|------------------------------|---|
| Price .....                  | 1 |
| Sale .....                   | 2 |
| Location/convenience .....   | 3 |
| Merchandise quality .....    | 4 |
| Merchandise selection .....  | 5 |
| Salespeople .....            | 6 |
| Availability of credit ..... | 7 |
| ←Other (SPECIFY) .....       | 0 |

- 3C. How much did you spend on that purchase?  
(TO NEAREST DOLLAR) \$ \_\_\_\_\_

- 3D. Did you pay cash, use a store charge account, or use another credit card such as a Visa, MasterCard, or American Express?
- |                         |   |
|-------------------------|---|
| Paid cash (check) ..... | 1 |
| Store charge .....      | 2 |
| Other credit card ..... | 3 |

4. In the past twelve months, have you purchased any hunting, fishing, or camping equipment, either for yourself or for someone else?
- |           |               |
|-----------|---------------|
| Yes ..... | 1 (ASK Q4A-D) |
| No .....  | 2 (GO TO Q5)  |

(IF YES)

**4A.** Where did you make your most recent purchase of hunting, fishing, or camping equipment?

(STORE) \_\_\_\_\_

<b>4B.</b> What was the most important reason you made that purchase at (STORE IN Q4A) rather than at another store? (DO NOT READ CATEGORIES)	Price .....	1
	Sale .....	2
	Location/convenience .....	3
	Merchandise quality .....	4
	Merchandise selection .....	5
	Salespeople .....	6
	Availability of credit .....	7
(_____)	←Other (SPECIFY) .....	0

**4C.** How much did you spend on that purchase?  
(TO NEAREST DOLLAR) \$ \_\_\_\_\_

<b>4D.</b> Did you pay cash, use a store charge account, or use another credit card such as a Visa, MasterCard, or American Express?	Paid cash (check) .....	1
	Store charge .....	2
	Other credit card .....	3

<b>5.</b> In the past twelve months, have you purchased any other type of sporting equipment including balls, bats, rackets, gloves, helmets, or anything we've not mentioned so far?	Yes .....	1 (ASK Q5A-D)
	No .....	2 (GO TO Q6)

(IF YES)

**5A.** What sort of sporting equipment did you purchase most recently?  
(DESCRIPTION) \_\_\_\_\_

**5B.** Where did you purchase that equipment?  
(STORE) \_\_\_\_\_

<b>5C.</b> What was the most important reason you made that purchase at (STORE IN Q5A) rather than at another store? (DO NOT READ CATEGORIES)	Price .....	1
	Sale .....	2
	Location/convenience .....	3
	Merchandise quality .....	4
	Merchandise selection .....	5
	Salespeople .....	6
	Availability of credit .....	7
(_____)	←Other (SPECIFY) .....	0

**5D.** How much did you spend on that purchase?  
(TO NEAREST DOLLAR) \$ \_\_\_\_\_

Continued

## EXHIBIT

12.5

Questionnaire  
#4—Continued

- 5E. Did you pay cash, use a store charge account, or use another credit card such as a Visa, MasterCard, or American Express?
- |                         |   |
|-------------------------|---|
| Paid cash (check) ..... | 1 |
| Store charge .....      | 2 |
| Other credit card ..... | 3 |

6. I have some specific factors that might influence where you would shop for athletic shoes, sportswear, and sporting equipment. As I read each one, please tell me whether you generally consider that factor to be very important, somewhat important, or not important in choosing a store for this type of merchandise. How about . . .

	Very important	Somewhat important	Not important
The convenience of store locations?	1	2	3
The store's prices? .....	1	2	3
Special sales? .....	1	2	3
Whether the store takes credit cards such as Visa, MasterCard, and American Express? .....	1	2	3
Whether the store has its own charge accounts? .....	1	2	3
The quality of merchandise carried by the store? .....	1	2	3
The selection of merchandise? ....	1	2	3
The availability of your desired brand names? .....	1	2	3
How often the store is out of stock on the merchandise you want? ...	1	2	3
The helpfulness of the salespeople?	1	2	3
The speed of service? .....	1	2	3

7. In total, about how much have you spent in the past twelve months on sporting goods including athletic shoes and sportswear?

(TO NEAREST DOLLAR) \$ \_\_\_\_\_

(IF RESPONDENT SPENT MORE THAN \$0)

- 7A. About how much of that did you spend at Smith's Stores?

(TO NEAREST DOLLAR) \$ \_\_\_\_\_

8. Do you have a Smith's charge account? Yes ..... 1 (ASK Q8A,B)  
No ..... 2 (GO TO Q9)

(IF YES)

- 8A. During the past twelve months, More ..... 1 (ASK Q8A1)  
would you have spent more, Same ..... 2  
about the same, or less at Less ..... 3 (ASK Q8A1)  
Smith's Stores if you did  
not have a charge account?

(IF MORE OR LESS)

- 8A1. How much do you think you would have spent at Smith's  
Stores?

(TO NEAREST DOLLAR) \$ \_\_\_\_\_

- 8B. A minute ago, you estimated that you spent (SEE Q7A) at Smith's  
Stores in the past twelve months. About how much of that was  
charged to your Smith's account?

(TO NEAREST DOLLAR) \$ \_\_\_\_\_

Now, for classification purposes only . . .

9. What is your age category? Is it Under 18? ..... 1  
18-24? ..... 2  
25-34? ..... 3  
35-49? ..... 4  
50-64? ..... 5  
65 and over? ..... 6  
(DO NOT READ) Refused ..... 7

10. Which of the following categories best describes your family income  
before taxes for 1996? Would it be . . .

Under \$10,000? ..... 1  
\$10,000-\$14,999? ..... 2  
\$15,000-\$24,999? ..... 3  
\$25,000-\$49,999? ..... 4  
Over \$50,000? ..... 5

(DO NOT READ) Refused ..... 6

11. What is your Zip Code? (NUMBER) \_\_\_\_\_

12. (DON'T ASK) Sex Male ..... 1  
Female ..... 2

Those are all of our questions. Thanks for your help.

## Critical Thinking Skills

**F**or each of the revised questions in Exhibit 12.6, explain why the question was revised, whether or not you find our revision an improvement, and what alternative version you suggest.

ensure that every respondent answers with respect to at least one category or to show the chain how its competitors vary across merchandise categories. These are worthwhile motives, but they can be achieved by simply asking about the respondent's most recent purchase and identifying the type of merchandise bought at that time.

4. Note that the questionnaire screens respondents for purchases at sporting goods stores. The screening criterion should be changed to sporting goods purchases, because this would allow the pickup of purchases from all competing stores, not just sporting goods stores. Then the type of merchandise bought on the most recent purchase should be asked, followed by the questions currently listed as questions 1A to 1D in connection with that purchase. These questions would no longer be part of a branching sequence, because the overall questionnaire screen would ensure that all respondents would answer these questions.
5. Some minor definitional points could be added in a couple of places.
6. A question on respondents' ownership of third-party credit cards that are accepted by the chain should be added.

## Questionnaire Revision

Exhibit 12.6 shows a revised questionnaire that reflects these comments.

### EXHIBIT

## 12.6

### Questionnaire #4 Revised

Hello, I'm \_\_\_\_\_ of \_\_\_\_\_, a marketing and opinion research firm. We are conducting a study with people who have purchased sporting goods, including athletic shoes or sportswear, during the past year.

- A. Have you purchased any sporting goods, including athletic shoes or sportswear, during the past year?
- B. IF NO: Has anyone else in your household purchased any sporting goods, including athletic shoes or sportswear, during the past year?  
IF NO, TERMINATE.

### CONTINUE INTERVIEW WITH A PERSON WHO HAS BOUGHT SPORTING GOODS

1. On your most recent purchase of sporting goods, including athletic shoes or sportswear, what merchandise did you buy?  
(MERCHANDISE) \_\_\_\_\_
2. At what store did you make this purchase?  
(STORE) \_\_\_\_\_

3. What was the most important reason you bought that merchandise at (STORE IN Q1A) rather than at some other store? (DO NOT READ CATEGORIES)

Price .....	1
Sale .....	2
Location/convenience .....	3
Merchandise quality .....	4
Merchandise selection .....	5
Salespeople .....	6
Availability of credit .....	7

( ) ←Other (SPECIFY) ..... 0

4. How much did you spend on that purchase? (TO NEAREST DOLLAR)

\$ \_\_\_\_\_

5. Did you pay cash, use a store charge account, or use another credit card such as a Visa, MasterCard, or American Express?

Paid cash (check) .....	1
Store charge .....	2
Other credit card .....	3

6. I have some specific factors that might influence where you would shop for sporting goods, including athletic shoes or sportswear. As I read each one, please tell me whether you generally consider that factor to be very important, somewhat important, or not important in choosing a store for this type of merchandise. How about . . .

	Very important	Somewhat important	Not important
The convenience of store locations? .....	1	2	3
The store's prices? .....	1	2	3
Special sales? .....	1	2	3
Whether the store takes credit cards such as Visa, MasterCard and American Express? .....	1	2	3
Whether the store has its own charge accounts? .....	1	2	3
The quality of merchandise carried by the store? .....	1	2	3
The selection of merchandise? .....	1	2	3
The availability of your desired brand names? .....	1	2	3
How often the store is out of stock on the merchandise you want? . . .	1	2	3
The helpfulness of the salespeople? .	1	2	3
The speed of service? .....	1	2	3

*Continued*

## EXHIBIT

12.6

Questionnaire  
#4 Revised—  
Continued

7. In total, about how much have you spent in the past twelve months on sporting goods including athletic shoes and sportswear?

(TO NEAREST DOLLAR) \$ \_\_\_\_\_

(IF RESPONDENT SPENT MORE THAN \$0)

- 7A. About how much of that did you spend at Smith's Stores?

(TO NEAREST DOLLAR) \$ \_\_\_\_\_

8. Do you have a Smith's charge account?

Yes ..... 1 (ASK Q8A,B)

No ..... 2 (GO TO Q9)

(IF YES)

- 8A. During the past twelve months, would you have spent more, about the same, or less at Smith's Stores if you did not have a Smith's charge account?

More ..... 1 (ASK Q8A1)

Same ..... 2

Less ..... 3 (ASK Q8A1)

(IF MORE OR LESS)

- 8A1. How much do you think you would have spent at Smith's Stores?

(TO NEAREST DOLLAR) \$ \_\_\_\_\_

- 8B. A minute ago, you estimated that you spent (SEE Q7A) at Smith's Stores in the past twelve months. About how much of that was charged to your Smith's account?

(TO NEAREST DOLLAR) \$ \_\_\_\_\_

9. Which of these other credit cards do you have? (CIRCLE ALL THAT APPLY)

Visa? ..... 1

MasterCard? ..... 2

American Express? ..... 3

Now for classification purposes only . . .

10. What is your age category? Is it . . .

Under 18? ..... 1

18-24? ..... 2

25-34? ..... 3

35-49? ..... 4

50-64? ..... 5

65 and over? ..... 6

(DO NOT READ) Refused ..... 7

11. Which of the following categories best describes your family income before taxes for 1996? Would it be . . .

Under \$10,000? . . . . .	1
\$10,000–\$14,999? . . . . .	2
\$15,000–\$24,999? . . . . .	3
\$25,000–\$49,999? . . . . .	4
Over \$50,000? . . . . .	5
(DO NOT READ) Refused . . . . .	6

12. What is your home Zip Code?

(NUMBER) \_\_\_\_\_

13. (DON'T ASK) Sex

Male . . . . . 1

Female . . . . . 2

Those are all of our questions. Thanks for your help.

## Summary

This chapter illustrated questionnaire design by evaluating four questionnaires. The following points were covered:

### 1. How can a questionnaire be evaluated?

The first step in evaluating a questionnaire is to consider the research objectives and how the market works. Is the questionnaire consistent with the market context? (Remember, as noted in Chapter 3, the first step in planning a project is to establish this background information.) Is the questionnaire consistent with the research objectives? Will the answers to the questions provide clear guidance for the marketing decisions at issue?

Next, consider the individual questions. Are they clear and easy to understand? Will respondents interpret the questions in the way intended? Will respondents be willing and able to answer the questions?

Now think about the overall questionnaire. Does the questionnaire have a beginning and an end? Does it start with an easy, nonthreatening question? Is the question sequence appropriate? Is the physical format easy to use?

Finally, consider how the questionnaire will be administered. Is the length of the questionnaire appropriate for the method of administration? Are question formats consistent with the method of administration? Are potential problems with data security controlled? Are the instructions for administering the questionnaire and coding the responses clear?

### 2. How should a questionnaire be revised?

In revising a questionnaire, start with the research objectives and the business situation. If the current questionnaire and research design reflect a proper understanding of the business and fit the research objectives, you simply need to fine-tune the



questionnaire to eliminate any technical defects. However, if the questionnaire or the research design reflects flawed assumptions about the business or is poorly suited to the objectives, fundamental revisions are needed and you may have to scrap the existing questionnaire.

In “fine-tuning” the questionnaire (or developing a new questionnaire), follow the principles described in Chapters 10 and 11. If your revised questionnaire satisfies these principles, meets the research objectives, and reflects a proper understanding of the business, you should be successful. Of course, the specific wording of the questions and the specific arrangement of the questionnaire will reflect your own style and will not be exactly the same as what someone else would do.

Remember to keep your focus on the research objectives. If a revised question is better written than the original but isn't as well suited to the research objectives, it isn't a better question. An important issue in this regard is *data continuity*. If the existing question has been used in previous research and there is value to be gained from comparing the new results to the old results, the question should generally be left as is.



## Discussion Questions

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This chapter includes examples of questionnaires. The discussion questions from Chapter 11 apply here.



## Internet Exercise

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This chapter showed a questionnaire used by the Houston Astros baseball team for an “in stadium” fan survey. How, if at all, would you change this questionnaire if it were to be administered via the Internet?