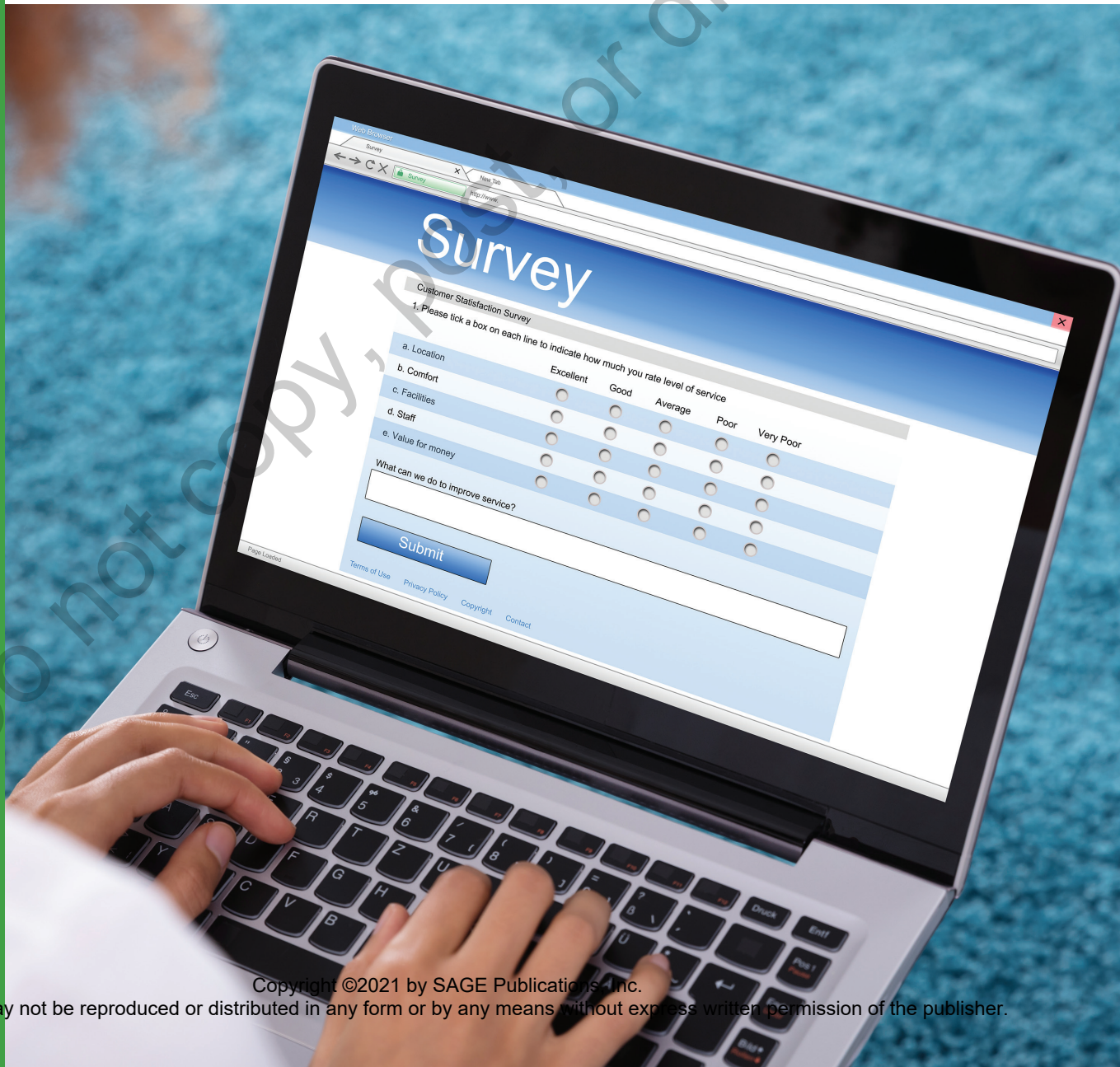# CHAPTER 7

SURVEY RESEARCH

❖ Identify the reasons for the popularity of survey research

❖ Discuss the advantages and disadvantages of including "don't know" and neutral responses among response choices and of using open-ended questions

❖ List the different methods for improving survey questions

❖ Outline a cover letter for a survey that contains each of the required elements

❖ List the strengths and weaknesses of each type of survey design, giving particular attention to response rates

❖ Explain the rationale for a mixed-mode survey

❖ Discuss the key ethical issues in survey research

magine a ladder with steps numbered from 0 to 10, where 0 represents the worst possible life for you and 10 represents the best possible life for you.

On which step of the ladder do you feel you personally stand AT THE PRESENT TIME?

10 – Best possible life
9
8
7
6
5
4
3
2
1
0 – Worst possible life

On which step would you say you stood FIVE YEARS AGO?

——

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Just your best guess, on which step do you think you will stand in the future, say FIVE YEARS FROM NOW?

——

These three questions (with slightly different formatting) began the Pew Research Center's 29th survey of its American Trends Panel sample of the U.S. adult population in September 2017. A majority of respondents placed themselves on step 7 or higher, only 6% felt they were not above step 3, and there was a distinctly upward trend from feelings about five years ago and hopes for five years in the future (Exhibit 7.1). How do your answers compare to those of the Pew sample? Hopefully from the standpoint of a college student you forecast your life as likely to be brighter five years from now!

▼ EXHIBIT 7.1

Feelings of Past, Present, and Future Well-Being
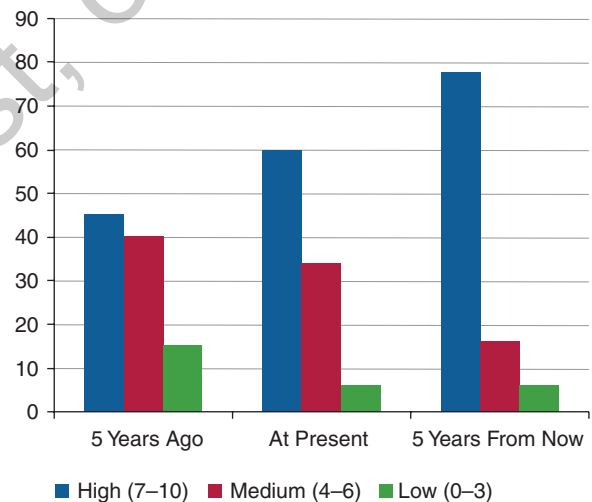
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Pew's American Trends Panel survey provides many examples of questions and other features that illustrate how to collect data with surveys. This chapter reviews the major features of surveys, guidelines for writing survey questions, alternatives in survey design, and related ethical issues. The methods presented here help to reduce error in responding to survey questions and increase the likelihood of survey completion. The section on alternative survey designs provides current data about the implications of different designs for response rates and population coverage.

Survey Research in the Social Sciences

Survey research involves the collection of information from a sample of individuals through their responses to questions. Because it can be used to collect data from a broad spectrum of individuals and social settings, **survey research** has become a multibillion-dollar industry—the Pew Research Center is part of that industry—that shapes what we read in the newspapers, see on television and other media, and find in government reports and social science articles (Tourangeau 2004:776).

Survey research owes its popularity to three advantages: versatility, efficiency, and generalizability. First, survey methods are *versatile*. Politicians campaigning for election use surveys, as do businesses marketing a product, governments assessing community needs, agencies monitoring program effectiveness, and social scientists investigating almost any research question you can think of. Surveys also are popular because they are *efficient*: Data can be collected from many people at relatively low cost and, depending on the survey design, relatively quickly. In addition, survey research is well suited to maximizing *generalizability* of findings, since survey methods lend themselves to sampling from large populations.

One of the most efficient approaches is to use an **omnibus survey** that covers a range of topics of interest, in contrast to a survey that is directed at a specific research question. Many omnibus surveys are funded by the government and are conducted regularly to provide data about such vital social issues as population mobility, income levels, and the unemployment rate, while others are sponsored by professional survey organizations to provide data for analysis in academic research and reporting in popular media. The National Opinion Research Center at the University of Chicago had administered one of the most successful omnibus surveys, the General Social Survey, every year (1972–1993) or every two years (since 1994) to a probability sample of at least 2,000 Americans (2,348 in 2018), with a wide range of questions and topic areas chosen by a board of overseers. Pew manages its American Trends Panel as an omnibus survey, with subsets of questions asked of different segments of the total panel (more than 13,500 participants as of 2018) in different survey waves.

Writing Survey Questions

Questions are the centerpiece of survey research. Because the way questions are worded can have a great effect on the way they are answered, selecting good questions is the single most important concern for survey researchers (Robinson & Leonard 2019). All hope for achieving measurement validity is lost unless the questions in a survey are clear and convey the intended meaning to respondents.

Adherence to a few basic principles will go a long way toward ensuring clear and meaningful questions. Each of these principles summarizes a great deal of research, although none of them should be viewed as an inflexible mandate (Alwin & Krosnick

Survey research: Research in which information is obtained from a sample of individuals through their responses to questions about themselves or others.

Omnibus survey: A survey that covers a range of topics of interest to different social scientists.

1991). Every survey has its own unique requirements and constraints; sometimes violating one principle is necessary to achieve others.

Avoid Confusing Phrasing

There are several ways to avoid confusing phrasing. In most cases, a simple direct approach to asking a question minimizes confusion (Robinson & Leonard 2019:86–88). Use shorter rather than longer words and sentences; for example, "brave" rather than "courageous," "job concerns" rather than "work-related employment issues" (Dillman 2000:52). Breaking up complex issues into simple parts also reduces confusion. Did the Pew opening questions follow these guidelines? What about this Pew question?

In general, thinking about job opportunities where you live, would you say that…

1. There are plenty of good jobs available
2. Good jobs are difficult to find

Also try to keep the total number of words to 20 or fewer and the number of commas to 3 or fewer (Peterson 2000:50). However, questions shouldn't be abbreviated in a way that results in confusion: To ask, "In what city or town do you live?" is to focus attention clearly on a specific geographic unit, a specific time, and a specific person (you); the simple format,

Residential location: _____,

does not do this.

Sometimes, when sensitive issues or past behaviors are the topic, introductory comments or longer questions can provide cues that make the respondent feel comfortable or aid memory (Peterson 2000:51). For example, the introductory statement in the next Pew survey question is intended to make respondents feel more comfortable admitting that they didn't vote in the presidential election before the survey.

In any election, some people are not able to vote because they are sick or busy or have some other reason, and others do not want to vote. Did you vote in the 2012 presidential election between Barack Obama and Mitt Romney?

1. Voted
2. Did not vote (includes too young to vote)

A sure way to muddy the meaning of a question is to use **double negatives**: "Do you *disagree* that there should *not* be a tax increase?" Respondents have a hard time figuring out which response matches their sentiments (Ruel 2019:51). So-called **double-barreled questions** are also guaranteed to produce uninterpretable results because they actually ask two questions but allow only one answer. For example, during the Watergate scandal, Gallup poll results indicated that when the question was "Do you think President Nixon should be impeached and compelled to leave the presidency, or not?" only about a third of Americans supported impeaching President Richard M. Nixon. But when the Gallup organization changed the question to ask respondents if they "think there is

Double negative: A question or statement that contains two negatives, which can muddy the meaning of the question.

Double-barreled question: A single survey question that actually asks two questions but allows only one answer.

enough evidence of possible wrongdoing in the case of President Nixon to bring him to trial before the Senate, or not," more than half answered yes. Apparently, the first, double-barreled version of the question confused support for impeaching Nixon—putting him on trial before the Senate—with concluding that he was guilty before he had had a chance to defend himself (Kagay & Elder 1992:E5). By contrast, in the debate over impeaching President Donald Trump in 2019, American voters were evenly divided over whether Congress should investigate to determine whether to bring impeachment charges (48% yes and 49% no in a nationwide Quinnipiac University Poll in June; Malloy 2019).

It is also important to ask a question only of the respondents who may have the desired information. Respondents will be annoyed if asked questions that do not apply to them (Schaeffer & Presser 2003:74). Use **filter questions** to create **skip patterns** and indicate that pattern clearly with an arrow or other mark in the questionnaire (or with instructions to the interviewer administering the survey or the computer programmer preparing the survey for the web). For example, in Exhibit 7.2, the PARTY question in the Pew survey serves as a filter question for the next three questions. Respondents who answer *Independent* to the political party question are asked to answer the next question about whether they lean Republican or Democrat, while others skip that question (according to instructions to the programmer for this web-based survey). Those who answer Republican to the PARTY question or the PARTYLN question are asked the GOPDIRCT **contingent question** about the future of the Republican Party, while those who answer Democrat to the PARTY or PARTYLN questions are asked the DEMDIRCT (15) contingent question about the future of the Democratic Party.

Minimize the Risk of Bias

Specific words in survey questions should not trigger biases, unless that is the researcher's conscious intent. Biased or loaded words and phrases tend to produce misleading answers. For example, a 1974 survey near the end of the Vietnam War found that only 18% of respondents supported sending U.S. troops "if a situation like Vietnam were to develop in another part of the world." But when the question was reworded to mention sending troops to "stop a communist takeover"—"communist takeover" being a loaded phrase—favorable responses rose to 33% (Schuman & Presser 1981:285).

Responses can also be biased when response alternatives do not reflect the full range of possible sentiment on an issue. If the response alternatives for a question fall on a continuum from positive to negative, the number of positive and negative categories should be balanced so that one end of the continuum doesn't seem more attractive than the other (Dillman 2000:57–58). The next question from the Pew survey is such a *bipolar* scale. The response options are balanced in terms of extent of possible agreement and disagreement.

HOOD_NHIS How much do you agree or disagree with the following statements about your neighborhood?

a. There are people I can count on in this neighborhood

RESPONSE CATEGORIES:

1. Definitely agree

2. Somewhat agree
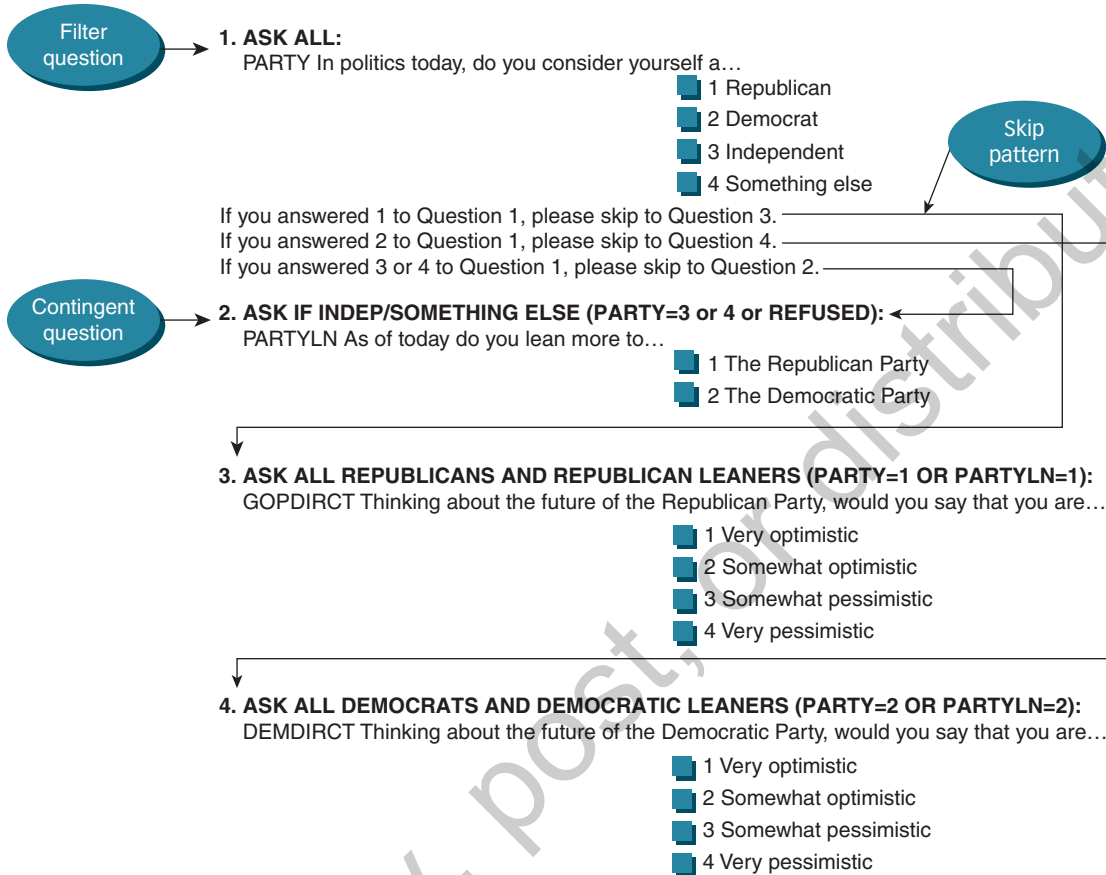
Filter question: A survey question used to identify a subset of respondents who then are asked other questions.

Skip pattern: The unique combination of questions created in a survey by filter questions and contingent questions.

Contingent question: A question that is asked of only a subset of survey respondents.

Filter Questions and Skip Patterns

Filter question →

1. ASK ALL:
PARTY In politics today, do you consider yourself a…

■ 1 Republican
■ 2 Democrat
■ 3 Independent
■ 4 Something else

Skip pattern

If you answered 1 to Question 1, please skip to Question 3.
If you answered 2 to Question 1, please skip to Question 4.
If you answered 3 or 4 to Question 1, please skip to Question 2.

Contingent question →

2. ASK IF INDEP/SOMETHING ELSE (PARTY=3 or 4 or REFUSED):
PARTYLN As of today do you lean more to…

■ 1 The Republican Party
■ 2 The Democratic Party

3. ASK ALL REPUBLICANS AND REPUBLICAN LEANERS (PARTY=1 OR PARTYLN=1):
GOPDIRCT Thinking about the future of the Republican Party, would you say that you are…

■ 1 Very optimistic
■ 2 Somewhat optimistic
■ 3 Somewhat pessimistic
■ 4 Very pessimistic

4. ASK ALL DEMOCRATS AND DEMOCRATIC LEANERS (PARTY=2 OR PARTYLN=2):
DEMDIRCT Thinking about the future of the Democratic Party, would you say that you are…

■ 1 Very optimistic
■ 2 Somewhat optimistic
■ 3 Somewhat pessimistic
■ 4 Very pessimistic

3. Somewhat disagree
4. Definitely disagree

Maximize the Utility of Response Categories

Response choices should be considered carefully because they help respondents to understand what the question is about and what types of responses are viewed as relevant (Clark & Schober 1994). Single questions with fixed response choices must provide one and only one possible response for everyone who is asked the question—that is, the response choices must be exhaustive and mutually exclusive. Ranges of ages, incomes, years of schooling, and so forth should not overlap and should provide a response option for all respondents.

Sometimes, problems with response choices can be corrected by adding questions. For example, if you ask, "How many years of schooling have you completed?" someone who dropped out of high school but completed the requirements for a General Equivalency Diploma (GED) might not be sure how to respond. By asking a second question, "What is the highest degree you have received?" you can provide the correct alternative for those with a GED as well as for those who graduated from high school.

One common approach for measures of attitude intensity is to present a statement and then ask respondents to indicate their degree of agreement or disagreement, as in the HOOD_NHIS question used above to indicate balanced responses. A **Likert item** phrases an attitude in terms of one end of a continuum, so that the responses ranging from "strongly agree" to "strongly disagree" cover the full range of possible agreement. A range of five response choices seems to result in the highest-quality agree/disagree responses (Revilla, Saris, & Krosnick 2013).

Other words used to distinguish points on an ordinal scale of attitude intensity are shown in the response choices in Exhibit 7.3. One important decision is whether to use unipolar distinctions, such as "not at all" to "extremely," or bipolar distinctions, such as "very comfortable" to "very uncomfortable." Responses are more reliable when these categories are labeled (**labeled unipolar response options**), as in the following example from the Pew survey, rather than identified only by numbers (**unlabeled unipolar response options**) (Krosnick 1999:544; Schaeffer & Presser 2003:78). **Bipolar response options** are discussed in the next section.

TALK_CPS In the last 12 months, how often did you talk with any of your neighbors?

1. Basically every day

2. A few times a week

3. A few times a month

4. Once a month

5. Less than once a month

6. Not at all

Avoid Making Either Disagreement or Agreement Disagreeable

People often tend to "agree" with a statement just to avoid seeming disagreeable. This is termed *agreement bias*, **social desirability bias**, or an *acquiescence effect*. Numerous studies of agreement bias suggest that about 10% of respondents will "agree" just to be agreeable, without regard to what they really think (Krosnick 1999:553).

As a general rule, it reduces agreement bias to include both sides of attitude scales in the question itself (Dillman 2000:61–62): "In general, do you believe that *individuals* or *social conditions* are more to blame for crime and lawlessness in the United States?" The response choices themselves should be phrased to make each one seem as socially approved, as "agreeable," as the others (Schaeffer & Presser 2003:80–81). The following Pew survey question about acceptance of people who are transgender reflects this approach (with instructions to the programmer to make sure that neither the positive nor the negative response regularly appears first).

TRANSGEND3 Which of the following statements comes closer to your feelings?

RANDOMIZE RESPONSE OPTIONS 1 AND 2, WITH 3 ALWAYS LAST

1. Our society has GONE TOO FAR in accepting people who are transgender

2. Our society has NOT GONE FAR ENOUGH in accepting people who are transgender

3. Our society has been ABOUT RIGHT when it comes to accepting people who are transgender

Likert item:
A statement followed by response choices ranging from "strongly agree" to "strongly disagree."

Labeled unipolar response options: Response choices for a survey question that use words to identify categories ranging from low to high (or vice versa).

Unlabeled unipolar response options: Response choices for a survey question that use numbers to identify categories ranging from low to high (or vice versa).

Bipolar response options: Response choices to a survey question that include a middle category and parallel responses with positive and negative valence (can be labeled or unlabeled).

Social desirability bias: The tendency to "agree" with a statement just to avoid seeming disagreeable.

▼ EXHIBIT 7.3

Labeled Unipolar, Unlabeled Unipolar, and Bipolar Response Options

Original

How free do you feel to disagree with the person who supervises your work? Are you . . .

<1> Not at all free,

<2> Somewhat free,

<3> Largely but not completely free, or

<4> Completely free to disagree?

<7> NO CODED RESPONSE APPLICABLE

<8> DON'T KNOW

<9> REFUSED

Labeled unipolar version

How comfortable do you feel disagreeing with the person who supervises your work? (Please circle one number to indicate your response.)

1. Extremely comfortable
2. Very comfortable
3. Quite comfortable
4. Somewhat comfortable
5. Not at all comfortable

Labeled bipolar version

Do you feel comfortable or uncomfortable disagreeing with the person who supervises your work? (Please circle one number to indicate your response.)

1. Very comfortable
2. Mostly comfortable
3. Slightly comfortable
4. Feel neither comfortable nor uncomfortable
5. Slightly uncomfortable
6. Mostly uncomfortable
7. Very uncomfortable

Unlabeled unipolar version

Please circle a number from 1 to 10 to indicate how comfortable you feel disagreeing with the person who supervises your work. 1 means "not at all comfortable" and 10 means "extremely comfortable."

How comfortable do you feel disagreeing with the person who supervises your work?

Not at all   Extremely

1   2   3   4   5   6   7   8   9   10

Source: Based on Mirowsky and Ross (2001:9).

Photo 7.1 People who view themselves as neutral may skew your results.
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When an illegal or socially disapproved behavior or attitude is the focus, you have to be concerned that some respondents will be reluctant to agree that they have ever done or thought such a thing. In this situation, the goal is to write a question and response choices that make agreement seem more acceptable. For example, Dillman (2000:75) suggests that you ask, "Have you ever taken anything from a store without paying for it?" rather than "Have you ever shoplifted something from a store?" Asking respondents about a variety of behaviors or attitudes that range from socially acceptable to socially unacceptable will also soften the impact on them of agreeing with those statements that are socially unacceptable.

Minimize Fence-Sitting and Floating

Fence-sitters, people who see themselves as being neutral, may skew the results if you force them to choose between opposites. In most cases, about 10% to 20% of such respondents—those who do not have strong feelings on an issue—will choose an explicit middle, neutral alternative (Schuman & Presser 1981:161–178). Having an explicit neutral response option identifies fence-sitters and tends to increase measurement reliability (Schaeffer & Presser 2003:78).

Even more people can be termed **floaters**: respondents who choose a substantive answer when they really don't know or have no opinion. A third of the public will provide an opinion on a proposed law that they know nothing about if they are asked for their opinion in a closed-ended survey question that does not include "don't know" as an explicit response choice. However, 90% of these persons will select the "don't know" response if they are explicitly given that option. On average, offering an explicit response option increases the "don't know" or "no opinion" responses by about one-fifth (Exhibit 7.4; Schuman & Presser 1981:113–160).

Unfortunately, the inclusion of an explicit "don't know" response choice leads some people who do have a preference to take the easy way out—to choose "don't know." This
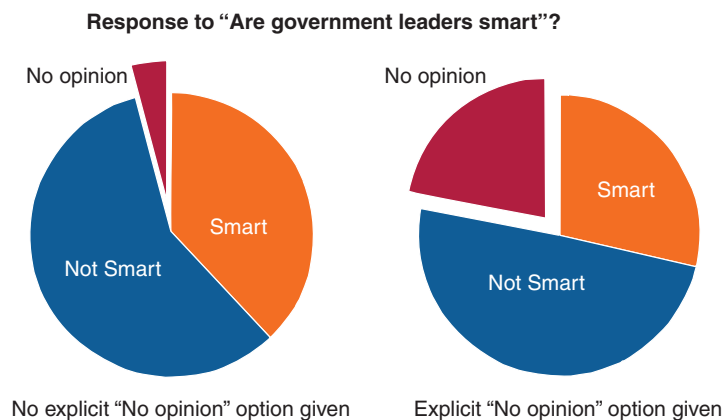
Fence-sitters: Survey respondents who see themselves as being neutral on an issue and choose a middle (neutral) response that is offered.

Floaters: Survey respondents who provide an opinion on a topic in response to a closed-ended question that does not include a "don't know" option, but who will choose "don't know" if it is available.

Forced-choice questions: Closed-ended survey questions that do not include "don't know" as an explicit response choice.

▼ EXHIBIT 7.4

The Effect of Floaters on Public Opinion Polls

Response to "Are government leaders smart"?

No explicit "No opinion" option given

Explicit "No opinion" option given

Source: Based on Schuman and Presser (1981: 121).

is particularly true in surveys of less-educated populations (Schuman & Presser 1981: 113–146). As a result, survey experts recommend use of **forced-choice questions** without a "don't know" or "no opinion" option (Krosnick 1999:558; Schaeffer & Presser 2003:80).

Combine Questions in Indexes

Writing single questions that yield usable answers is always a challenge. Simple though they may seem, single questions are prone to error because of **idiosyncratic variation**, which occurs when individuals' responses vary because of their reactions to particular words or ideas in the question.

In some cases, the effect of idiosyncratic variation can be dramatic. For example, when people were asked in a survey whether they would "forbid" public speeches against democracy, 54% agreed. When the question was whether they would "not allow" public speeches against democracy, 75% agreed (Turner & Martin 1984:chap. 5). Respondents are less likely to respond affirmatively to the question, "Did you see a broken headlight?" than they are to the question, "Did you see *the* broken headlight?" (Turner & Martin 1984:chap. 9).

The best option is often to develop multiple questions about a concept and then to average the responses to those questions in a composite measure termed an *index* or *scale*, as mentioned in Chapter 4. The index can be considered a more complete measure of the concept than can any one of the component questions.

Creating an index is not just a matter of writing a few questions that seem to focus on a concept. Questions that seem to you to measure a common concept might seem to respondents to concern several different issues. The only way to know that a given set of questions does, in fact, form an index is to administer the questions to people like those you plan to study. If a common concept is being measured, people's responses to the different questions should display some consistency. In other words, responses to the different questions should be correlated. You learned in Chapter 4 that this is the measurement criterion of interitem reliability.

Because of the popularity of survey research, indexes already have been developed to measure many concepts, and some of these indexes have proved to be reliable in a range of studies. Use of a preexisting index both simplifies the work involved in designing a study and facilitates comparison of findings to those obtained in other studies.

The questions in Exhibit 7.5 are from a Pew survey set of questions that make up an index to measure perceived pressure for men to act in line with traditional masculine values. Note that each question concerns a different value traditionally associated with masculinity. Individual men may have idiosyncratic reasons for feeling pressured to uphold a particular masculine behavior without feeling that way about masculinity in general; for example, a man who grew up without any contact with sports may feel there is no pressure to be interested in sports. But by combining the answers to questions about several traditionally masculine behaviors, the index score reduces the impact of this idiosyncratic variation. An index score is usually calculated as the arithmetic average or sum of responses to the component questions, so that every question that goes into the index counts equally.

Designing Questionnaires

Survey questions are answered as part of a **questionnaire** (or **interview schedule**, as it's often called in interview-based studies), not in isolation from other questions. The context created by the questionnaire has a major impact on how individual questions are interpreted and whether they are even answered. As a result, survey researchers must

Idiosyncratic variation: Variation in responses to questions that is caused by individuals' reactions to particular words or ideas in the question instead of by variation in relation to the concept that the question is intended to measure.

Questionnaire: The survey instrument containing the questions in a self-administered survey.

Interview schedule: The survey instrument containing the questions asked by the interviewer in an in-person or phone survey.

Example of an Index: Pew Survey Index Questions About Masculinity

ASK MEN ONLY (F_SEX_FINAL=1):

MAN1   In general, how much pressure, if any, do you think MEN face in our country these days to do each of the following? **[RANDOMIZE ITEMS a THROUGH e]**

  a. Be interested in sports

  b. Have many sexual partners

  c. Join in when other men are talking about women in a sexual way

  d. Be willing to throw a punch if provoked

  e. Be emotionally strong

RESPONSE CATEGORIES:

  1. A lot

  2. Some

  3. Not too much

  4. None at all

Source: 2017 Pew Research Center's American Trends Panel. Wave 29, September 14–28, 2017.

give very careful attention to the design of the questionnaire as well as to the individual questions that it includes.

The key principles that should guide the design of any questionnaire are described in the sections that follow.

Build on Existing Instruments

If another researcher already has designed a set of questions to measure a key concept, and evidence from previous surveys indicates that this measure is reliable and valid, then, by all means, use that instrument. Resources such as Delbert Miller and Neil J. Salkind's (2002) *Handbook of Research Design and Social Measurement*, 6th ed. (SAGE Publications), can give you many ideas about existing instruments; your literature review at the start of a research project should be an even better source.

Refine and Test Questions

Adhering to the preceding question-writing guidelines will go a long way toward producing a useful questionnaire. However, simply asking what appear to you to be clear questions does not ensure that people have a consistent understanding of what you are asking. You need some external feedback—the more of it the better. One important form of feedback results from simply discussing the questionnaire content with others. Persons who should be consulted include expert researchers, key figures in the locale or organization to be surveyed (e.g., elected representatives, company presidents, and community leaders), and some individuals from the population to be sampled.

Another increasingly popular form of feedback comes from guided discussions among potential respondents, called *focus groups*, to check for consistent understanding of terms and to identify the range of events or experiences about which people will be asked to report. By listening to and observing the focus group discussions, researchers can validate their assumptions about what level of vocabulary is appropriate and what people are going to be reporting (Fowler 1995). (See Chapter 8 for more about this technique.)

Professional survey researchers also use a technique for improving questions called the **cognitive interview** (Dillman 2000:66–67; Fowler 1995). The researcher asks a

Cognitive interview: A technique for evaluating questions in which researchers ask people test questions and then probe with follow-up questions to learn how they understood the question and what their answers mean.

test question, then probes with follow-up questions about how the respondent understood one or more words in the question, how confusing it was, and so forth (Schaeffer & Presser 2003:82). This method can identify many problems with proposed questions (Presser et al. 2004:109–130).

In a traditional **survey pretest**, interviewers pilot the questionnaire to a small set of respondents (perhaps 15–25) who are similar to those who will be sampled in the planned survey (Robinson & Leonard 2019:176–178). After the interviews are completed, the interviewers discuss the experience with the researcher and, through this discussion, try to identify questions that caused problems.

Add Interpretive Questions

A survey researcher can also include **interpretive questions** in the survey itself to help the researcher understand what the respondent meant by his or her responses to particular questions. For example, the Pew Survey included an interpretive question after the initial questions about life satisfaction.

> We're interested in exploring what it means to live a satisfying life. Please take a moment to reflect on your life and what makes it feel worthwhile—then answer the question below as thoughtfully as you can.
>
> What about your life do you currently find meaningful, fulfilling or satisfying? What keeps you going, and why?

Another example from a study of people with motor vehicle driving violations illustrates the importance of interpretive questions:

> When asked whether their emotional state affected their driving at all, respondents would reply that their emotions had very little effect on their habits. Then, when asked to describe the circumstances surrounding their last traffic violation, respondents typically replied, "I was mad at my girlfriend," or "I had a quarrel with my wife," or "We had a family quarrel," or "I was angry with my boss" (Labaw 1980:71).

Maintain Consistent Focus

A survey (with the exception of an omnibus survey) should be guided by a clear conception of the research problem under investigation. Until the research objective is formulated clearly, survey design cannot begin. Throughout the process of questionnaire design, this objective should be the primary basis for making decisions about what to include and exclude and what to emphasize or treat in a cursory fashion. Moreover, the questionnaire should be viewed as an integrated whole, with a logical division of topics in sections, and each section and every question serving a clear purpose related to the study's objective.

Order the Questions

The order in which questions are presented will influence how respondents react to the questionnaire as a whole and how they may answer some questions (Schwarz 2010:47). The first question deserves special attention because it signals to the respondent what the survey is about, whether it will be interesting, and how easy it will be to complete. For these reasons, the first question should connect to the primary purpose of the survey, be interesting and easy, and apply to everyone in the sample (Dillman 2000:92–94). Did

Survey pretest: A method of evaluating survey questions and procedures by testing them on a small sample of individuals like those to be included in the actual survey and then reviewing responses to the questions and reactions to the survey procedures.

Interpretive questions: Questions included in a questionnaire or interview schedule to help explain answers to other important questions.

you find that the first questions about well-being that began the Pew Survey (and this chapter) interested you in the survey?

The individual questions should be sorted into broad thematic categories, which then become separate sections in the questionnaire. Throughout the design process, the grouping of questions in sections and the ordering of questions within sections should be adjusted to maximize the questionnaire's overall coherence. One or more filter or screening questions may also appear early in the survey to identify respondents for whom the questionnaire is not intended or perhaps to determine which sections of a multipart questionnaire a respondent is to skip (Peterson 2000:106–107). The Pew Survey included sections on well-being and health, then a long section on attitudes about gender roles, interspersed with some questions about economic rewards and about computer usage, and then questions about political involvement.

Question order can lead to **context effects** when one or more questions influence how subsequent questions are interpreted (Schober 1999:88–89). For example, when a sample of the general public was asked, "Do you think it should be possible for a pregnant woman to obtain a legal abortion if she is married and does not want any more children?" 58% percent said yes. However, when this question was preceded by a less permissive question that asked whether the respondent would allow abortion of a defective fetus, only 40% said yes. Asking the question about a defective fetus altered respondents' frame of reference, perhaps by making abortion simply to avoid having more children seem frivolous by comparison (Turner & Martin 1984:135). Context effects have also been identified in the measurement of general happiness, in what is termed a **part-whole question effect** (Peterson 2000:113). Married people tend to report that they are happier "in general" if the general happiness question is preceded by a question about their happiness with their marriage (Schuman & Presser 1981:23–77). You may have noticed that several of the Pew survey questions included instructions to the programmer to randomize the order of presentation of particular questions within an index. This is one way to minimize effects of question order.

Some questions may be presented in a *matrix* format. **Matrix questions** are a series of questions that concern a common theme and that have the same response choices. The questions are written so that a common initial phrase applies to each one (Exhibit 7.5). This format shortens the questionnaire by reducing the number of words that must be used for each question. It also emphasizes the common theme among the questions and so invites answering each question in relation to other questions in the matrix. It is very important to provide an explicit instruction to "Check one response on each line" in a matrix question, because some respondents will think that they have completed the entire matrix after they have responded to just a few of the specific questions. Exhibit 7.6 is a good example of a set of survey questions presented in a matrix format. Many of the questions in the Pew Survey could have been formatted in this way (such as those in Exhibit 7.5), but since they could be presented individually on the web, the matrix approach was not useful.

Make the Questionnaire Attractive

An attractive questionnaire is more likely to be completed and less likely to confuse either the respondent or, in an interview, the interviewer. An attractive questionnaire also should increase the likelihood that different respondents interpret the same questions in the same way.

Context effects: Effects that occur when one or more survey questions influence how subsequent questions are interpreted.

Part-whole question effects: Effects that occur when responses to a general or summary survey question about a topic are influenced by responses to an earlier, more specific question about that topic.

Matrix questions: A series of questions that concern a common theme and that have the same response choices.

REBECCA HOOPER, POPULATION HEALTH AND QUALITY ANALYTICS COORDINATOR

Rebecca Hooper entered her undergraduate institution with little idea as to what her major would be. With the guidance of a dedicated professor, she decided to double major in sociology and health sciences. This undergraduate experience led her to pursue a master's degree in medical sociology, the perfect combination of her two previous majors. Hooper is currently striving toward a Ph.D. in medical sociology as well, during which she hopes to research topics pertaining to population health and health equity.

Her current employer is a local community health center, where she holds the position of population health and quality analytics coordinator. In this position, Hooper is focused on data trends in health and healthcare in order to create the best outcomes for the health center's patients. Her highly quantitative background has been put to use in this position, in which data analysis is a major component. Hooper is using her medical sociology degree in her workplace as she looks beyond hereditary/ genetic health issues to also explore the impact of social context on health. She is currently working with a group within the health center focused on the importance of children's behavioral health and why this is so impactful on physical well-being. Her advice to students would be to "Find faculty that are willing to invest in you as students—this can make all the difference in the college experience. It led me to sociology!"

▼ EXHIBIT 7.6

Example of an Index: Selected Questions From the Perceived Drug Risk Index

	No Risk	Slight Risk	Moderate Risk	Great Risk
a. Marijuana	☐	☐	☐	☐
b. Narcotics (such as Methadone, Opium, Morphine, Codeine, Oxycontin, Percodan, Demerol, Percocet, Ultram, and Vicodin from prescriptions that aren't your own)	☐	☐	☐	☐
c. Ritalin or Adderall (from prescriptions that aren't your own)	☐	☐	☐	☐
d. Tranquilizers (such as Valium, Xanax, Klonopin, Ativan, and Librium from prescriptions that aren't your own)	☐	☐	☐	☐
e. Inhalants (sniffing glue, breathing the contents of aerosol spray cans, or inhaling any paints or sprays to get high)	☐	☐	☐	☐
f. Heroin	☐	☐	☐	☐

Source: Center for Survey Research. 2013. *Massachusetts Youth Health Survey.* Boston: Center for Survey Research, University of Massachusetts Boston. Reproduced by permission.

💬 RESEARCH IN THE NEWS

WHY EXPANDING HEALTH-CARE ACCESS MUST INCLUDE IMMIGRANTS

Largely left out of the benefits of the Affordable Care Act were 23 million noncitizens. Medha Makhlouf, a professor at Penn State University's Dickinson School of Law, argues that this is not just bad for immigrants but also for public health more generally. As *Pacific Standard*'s contributor David M. Perry explains, when immigrants get sick and can't obtain treatment, those they work and live with are also put at risk of infection.

Although Makhlouf's article focuses on legal issues, it suggests questions that should be explored with survey research methods. For example, how many people support the following possible rationales for excluding immigrants from health care programs: (1) cost of coverage of immigrants; (2) policy implications of rewarding immigrants in the country without authorization with free health care; (3) less

"deservingness" for publicly funded health care, compared with citizens?

For Further Thought?

1. What other questions would you suggest should be included in a survey of the general population about the exclusion of unauthorized immigrants from publicly funded health care?

2. What particular challenges for interviewers might arise in a survey of the population about these issues?

Perry, David M. 2019. "Why Expanding Health-Care Access Must Include Immigrants." *Pacific Standard Magazine,* March 1. Retrieved from https://psmag.com/ideas/why-expanding-health-care-access-must-include-immigrants

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Printing a multipage questionnaire in booklet form usually results in the most attractive and simple-to-use questionnaire (Dillman 2000:80–86). An attractive questionnaire does not look cramped; plenty of white space—more between questions than within question components—makes the questionnaire appear easy to complete. Response choices are distinguished clearly and consistently, perhaps by formatting them with light print (while questions are formatted with dark print) and keeping them in the middle of the pages. Response choices are listed vertically rather than horizontally across the page. The proper path through the questionnaire for each respondent is identified with arrows or other graphics and judicious use of spacing and other aspects of layout as well as with clear instructions (Dillman & Christian 2005:43–48).

Exhibit 7.7 is a page from the Youth Health Survey (Center for Survey Research 2013) that illustrates the questionnaire features reviewed here: It has an attractive, open layout, with clear instructions, logical sections, vertical arrangement, and a distinctive format for response choices. The Pew Survey is attractively formatted for administration on the web, but examining the question text in print does not illustrate this feature.

Consider Translation

Should the survey be translated into one or more languages? In the 21st century, no survey plan in the United States or many other countries can be considered complete until this issue has been considered. In the United States in 2017, 44.4 million people—13.6% of the population—were born in another country, and about half of the foreign-born (above the age of 5) are not proficient in English (Radford 2019).

A Page From the Youth Health Survey

34. Did you do any of the following in the past 12 months?

	YES	NO
a. Bully or push someone around	☐	☐
b. Use texting, e-mail, or social networking sites to make fun of, threaten, or insult another kid, or try to hurt another kid's reputation	☐	☐
c. Threaten to hurt, physically hurt, or try to hurt a date or someone you were going out with	☐	☐

QUESTIONS ABOUT YOUR FAMILY AND PEERS

35. How would your parent(s) react if they found out you regularly drank alcohol. Would they be:

- ☐ Extremely Upset
- ☐ Fairly Upset
- ☐ A Little Upset
- ☐ Not Upset at All

36. Do you think most people your age do the following?

	YES	NO
a. Drink alcohol	☐	☐
b. Smoke cigarettes	☐	☐
c. Smoke marijuana	☐	☐
d. Use other illegal drugs	☐	☐
e. Bully, threaten, or push around other kids	☐	☐

QUESTIONS ABOUT ALCOHOL

The next 7 questions ask about drinking alcohol. This includes drinking beer, wine, wine coolers, hard lemonade, hard cider, and liquor such as rum, gin, vodka, or whiskey. For these questions, drinking alcohol does not include drinking a few sips of wine for religious purposes.

37. During your life, on how many days have you had at least one drink of alcohol?

- ☐ 0 days
- ☐ 1 or 2 days
- ☐ 3 to 9 days
- ☐ 10 to 19 days
- ☐ 20 to 39 days
- ☐ 40 to 99 days
- ☐ 100 or more days

38. How old were you when you had your first drink of alcohol other than a few sips?

- ☐ I have never had a drink of alcohol other than a few sips ⟶ **If you have NEVER had alcohol, go to Question 42**
- ☐ 8 years old or younger
- ☐ 9 or 10 years old
- ☐ 11 or 12 years old
- ☐ 13 or 14 years old
- ☐ 15 or 16 years old
- ☐ 17 years old or older

39. During the past 30 days, on how many days did you have at least one drink of alcohol?

- ☐ 0 days
- ☐ 1 or 2 days
- ☐ 3 to 5 days
- ☐ 6 to 9 days
- ☐ 10 to 19 days
- ☐ 20 to 29 days
- ☐ All 30 days

40. During the past 30 days, on how many days did you have 5 or more drinks of alcohol in a row, that is, within a couple of hours?

- ☐ 0 days
- ☐ 1 day
- ☐ 2 days
- ☐ 3 to 5 days
- ☐ 6 to 9 days
- ☐ 10 to 19 days
- ☐ 20 or more days

Source: Center for Survey Research. 2013. *Massachusetts Youth Health Survey.* Boston: Center for Survey Research, University of Massachusetts Boston. Reproduced by permission.

Errors in Survey Research

Now that you have learned the key principles of survey design and seen some good examples of professional surveys, it's time to take a look at the dark side: the errors that survey researchers need to do their best to avoid. Organizations and individuals often decide that a survey will help solve some important problem because it seems so easy to write up some questions and distribute them, without following the guidelines you have learned. Unfortunately, without careful attention to sampling, measurement, and overall survey design, a survey is likely to be a flop. Such flops are too common for comfort, so the responsible survey researcher must take the time to design surveys properly and, when necessary, to convince sponsoring organizations that this time is worth the effort (Turner & Martin 1984:68).

For a survey to succeed, it must minimize four types of error (Groves 1989:vi, 10–12): (1) poor measurement, (2) nonresponse, (3) inadequate coverage of the population, and (4) sampling error.

Poor Measurement

Measurement error was a key concern in Chapter 4, but there is much more to be learned about how to minimize these errors of observation in the survey process. The theory of satisficing can help us understand the problem. It takes effort to answer survey questions carefully: Respondents have to figure out what each question means, then recall relevant information, and finally decide which answer is most appropriate. Survey respondents satisfice when they reduce the effort required to answer a question by interpreting questions superficially and giving what they think will be an acceptable answer (Krosnick 1999:547–548). Presenting clear and interesting questions in a well-organized questionnaire will help reduce measurement error by encouraging respondents to answer questions carefully and to take seriously the request to participate in the survey. Tailoring questions to the specific population surveyed is also important. In particular, persons with less education are more likely to satisfice in response to more challenging questions (Holbrook, Green, & Krosnick 2003; Narayan & Krosnick 1996). Following the guidelines in this chapter will help to minimize error due to poor measurement.

Photo 7.2 Would you answer a call from an unknown number?
©iStockphoto.com/Oleksii Spesyvtsev

Nonresponse

Nonresponse is a major and growing problem in survey research in the United States and Western Europe. The biggest culprits are the widespread use of telemarketing—a turnoff to answering the phone—and the ease of screening out calls from unknown parties with answering machines and caller ID. In addition, since some cell phone plans require users to pay for usage time, the ratio of costs to benefits worsens for surveys attempting to reach persons using cell phones (Nagourney 2002). Decreasing levels of civic engagement and longer work hours may also explain some of the decline in survey response rates (Groves, Singer, & Corning 2000; Krosnick 1999:539–540). The

next section presents more details on declining response rates for different survey designs and provides suggestions for maximizing response rates.

Inadequate Coverage of the Population

A poor sampling frame can invalidate the results of an otherwise well-designed survey. The importance of a good sampling frame was considered in Chapter 5. The next section in this chapter reviews special coverage problems related to each of the particular survey methods.

Sampling Error

The process of random sampling can result in differences between the characteristics of the sample members and the population simply on the basis of chance. You learned about this problem in Chapter 5 and how probability-based sampling designs can reduce this source of error through increasing the numbers sampled and stratifying the sample on key characteristics.

Organizing Surveys

With these potential sources of error in mind, we are now ready to review the five basic social science survey designs: (1) mailed, self-administered (2) group-administered, (3) phone, (4) in-person, and (5) web. Survey researchers can also combine elements of two or more of these basic designs in mixed-mode surveys.

Differences by Survey Type

Different designs are most appropriate for different purposes and populations, and their relative merits have been affected in different ways by the development of modern information technology. Exhibit 7.8 summarizes the typical features of the five basic survey designs.

Manner of Administration

The five survey designs differ in the manner in which the questionnaire is administered (Exhibit 7.8). Mailed, group, and web surveys are completed by the respondents themselves. During phone and in-person interviews, the researcher or a staff person asks the questions and records the respondent's answers. However, new mixed-mode surveys break down these distinctions. For example, in audio computer-assisted self-interviewing (or audio-CASI), the interviewer gives the respondent a laptop and a headset (Tourangeau 2004:790–791). The respondent reads the questions on the computer screen, hears the questions in the headset, and responds by choosing answers on the computer screen.

Questionnaire Structure

Survey designs also differ in the extent to which the researcher structures the content and order of questions in advance. Most mailed, group, phone, and web surveys are highly structured, fixing in advance the content and order of questions and response choices. Some of these types of surveys, particularly mailed surveys, may include some open-ended questions (respondents write in their answers rather than checking off one of several response choices). In-person interviews are often highly structured, but they may include many questions without fixed response choices. Moreover, some interviews may proceed from an interview guide rather than a fixed set of questions. In these relatively

Typical Features of the Five Survey Designs

Design	Manner of Administration	Setting	Questionnaire Structure	Cost
Mailed survey	Self	Individual	Mostly structured	Low to moderate
Group survey	Self	Group	Mostly structured	Very low
Phone survey	Professional	Individual	Structured	Moderate
In-person interview	Professional	Individual	Structured or unstructured	High
Web survey	Self	Individual	Mostly structured	Low

unstructured interviews, the interviewer covers the same topics with respondents but varies questions according to the respondent's answers to previous questions. Extra questions are added as needed to clarify or explore answers to the most important questions (Tourangeau 2004:789).

Setting

Most surveys are conducted in settings in which only one respondent completes the survey at a time; most mail and web surveys and phone interviews are intended for completion by only one respondent. The same is usually true of in-person interviews, although sometimes researchers interview several family members at once. A variant of the standard survey is a questionnaire distributed simultaneously to a group of respondents, such as students in a classroom, who complete the survey while the researcher (or assistant) waits.

Cost

As mentioned earlier, in-person interviews are the most expensive type of survey. Phone interviews are much less expensive, although costs are rising because of the need to make more calls to reach potential respondents. Surveying by mail is cheaper yet. Web surveys can be the least expensive method because there are no interviewer costs, no mailing costs, and, for many designs, almost no costs for data entry. However, extra staff time and programming expertise are required to prepare web surveys (Tourangeau, Conrad, & Couper 2012).

Mailed, Self-Administered Surveys

A **mailed survey** is conducted by mailing a questionnaire to respondents, who then administer the survey themselves. The central concern in a mailed survey is maximizing the response rate. Even an attractive questionnaire full of clear questions will probably be returned by no more than 30% of a sample unless extra steps are taken to increase the rate of response. Fortunately, the conscientious use of a systematic survey design method can be expected to lead to an acceptable 70% or higher rate of response to most mailed surveys (Dillman 2000).

Sending follow-up mailings to nonrespondents is the single most important requirement for obtaining an adequate response rate to a mailed survey. The follow-up mailings explicitly encourage initial nonrespondents to return a completed questionnaire; implicitly, they convey the importance of the effort. Dillman (2000:155–158, 177–188) has demonstrated the effectiveness of a standard procedure for the mailing process:

Mailed survey:
A survey involving a mailed questionnaire to be completed by the respondent.

- A few days before the questionnaire is to be mailed, send a brief letter to respondents that notifies them of the importance of the survey they are to receive.
- Send the questionnaire with a well-designed, personalized cover letter (see the following description); a self-addressed, stamped return envelope; and, if possible, a token monetary reward (Dillman 2000:174–175).
- Send a reminder postcard, thanking respondents and reminding nonrespondents, to all sample members 2 weeks after the initial mailing. The postcard should be friendly in tone and must include a phone number for those people who may not have received the questionnaire.
- Send a replacement questionnaire with a new cover letter only to nonrespondents, 2 to 4 weeks after the initial questionnaire mailing. This cover letter should be a bit shorter and more insistent than the original cover letter. It should note that the recipient has not yet responded, and it should stress the survey's importance. Of course, a self-addressed, stamped return envelope must be included.
- The final step is taken 6 to 8 weeks after the initial survey mailing. This step uses a different mode of delivery (either priority or special delivery) or a different survey design—usually an attempt to administer the questionnaire over the phone. These special procedures emphasize the importance of the survey and encourage people to respond.

The **cover letter** for a mailed questionnaire is critical to the success of a mailed survey. This statement to respondents sets the tone for the questionnaire. A carefully prepared cover letter should increase the response rate and result in more honest and complete answers to the survey questions; a poorly prepared cover letter can have the reverse effects.

The cover letter or introductory statement must be

- *Credible:* The letter should establish that the research is being conducted by a researcher or organization that the respondent is likely to accept as a credible, unbiased authority. Government sponsors, well-known universities, and recognized research organizations tend to elicit high rates of response. Publishing firms, students (sorry!), and private associations elicit the lowest response rates.
- *Personalized:* The cover letter should include a personalized salutation (using the respondent's name, e.g., not just "Dear Student"), close with the researcher's signature (blue ballpoint pen is best because that makes it clear that the researcher has signed personally), and refer to the respondent in the second person ("Your participation . . .").
- *Interesting:* The statement should interest the respondent in the contents of the questionnaire. Try to put yourself in the respondent's shoes before composing the statement, and then test your appeal with a variety of potential respondents.
- *Responsible:* Reassure the respondent that the information you obtain will be treated confidentially, and include a phone number to call if the respondent has any questions or would like a summary of the final report. Point out that the respondent's participation is completely voluntary (Dillman 1978:165–172).

Exhibit 7.9 is an example of a cover letter for a questionnaire.

Cover letter: The letter sent with a mailed questionnaire that explains the survey's purpose and auspices and encourages the respondent to participate.

Sample Questionnaire Cover Letter

University of Massachusetts Boston
Department of Sociology

Jane Doe
AIDS Coordinator
Shattuck Shelter

Dear Jane:

AIDS is an increasing concern for homeless people and for homeless shelters. The enclosed survey is about the AIDS problem and related issues confronting shelters. It is sponsored by the Life Lines AIDS Prevention Project for the Homeless—a program of the Massachusetts Department of Public Health.

As an AIDS coordinator/shelter director, you have learned about homeless persons' problems and about implementing programs in response to those problems. The Life Lines Project needs to learn from your experience. Your answers to the questions in the enclosed survey will improve substantially the base of information for improving AIDS prevention programs.

Questions in the survey focus on AIDS prevention activities and on related aspects of shelter operations. It should take about 30 minutes to answer all the questions.

Every shelter AIDS coordinator (or shelter director) in Massachusetts is being asked to complete the survey. And every response is vital to the success of the survey: The survey report must represent the full range of experiences.

You may be assured of complete confidentiality. No one outside of the university will have access to the questionnaire you return. (The ID number on the survey will permit us to check with nonrespondents to see if they need a replacement survey or other information.) All information presented in the report to Life Lines will be in aggregate form, with the exception of a list of the number, gender, and family status of each shelter's guests.

Please mail the survey back to us by Monday, June 4, and feel free to call if you have any questions.

Thank you for your assistance.

Yours sincerely,

Russell K. Schutt

Russell K. Schutt, PhD
Project Director

Stephanie Howard

Stephanie Howard
Project Assistant

Even in the era of the internet, mailed questionnaires can still be a good survey option and may be simpler to organize than a mixed-mode survey needed to overcome problems with phone survey response (see below). Among new mothers previously surveyed by phone in a health survey in Britain, for example, 87% returned a mailed questionnaire, compared to 71% who completed a computer-assisted telephone interview (described later in this chapter) (Rocheleau et al. 2012).

Group-Administered Surveys

A **group-administered survey** is completed by individual respondents assembled in a group. The response rate is not usually a major concern in surveys that are distributed and collected in a group setting because most group members will participate. With the exception of students, employees, members of the armed forces, and some institutionalized populations, most populations cannot be surveyed in this way.

A standard introductory statement should be read to the group that expresses appreciation for their participation, describes the steps of the survey, and emphasizes (in classroom

Group-administered survey: A survey completed by individual respondents who are assembled in a group.

Introductory Statement in Youth Health Survey

Massachusetts Youth Health Survey

Sponsored by:

Massachusetts Department of Public Health
and

Massachusetts Department of Elementary and
Secondary Education

Conducted by:

Center for Survey Research
University of Massachusetts Boston

Before you begin, there are a few important things you need to know.

- Your answers are completely **anonymous**. There are no markings anywhere on the questionnaire that allows you to be identified. Please do not place your name or any other personal information on the questionnaire. Your answers will be combined with other answers for statistical analysis.
- The purpose of the survey is to gather information from school students in Massachusetts about health topics such as the use of tobacco, alcohol and drugs, in and out of school activities, diet and exercise and coping with stress. This information will be used to better understand the concerns and health practices of current students.
- It is important that you answer each question as honestly and accurately as you can.
- If there is any question that you would prefer not to answer, please just skip that question and go on to the next question.
- Your participation is, of course voluntary. If you find the survey upsetting, you may stop answering the questions.
- Answer each question by filling in the circles like this: Incorrect marks: ⊗ ⊙ ⊘ Correct mark: ●

You must use a number 2 pencil.

- Arrows (→) will direct you to answer follow-up questions or to skip over certain questions.
- When you are finished with the survey, simply place it in the box located at the front of the class.
- Your participation is greatly appreciated, as this is one of the only ways for students like yourself to anonymously report on health issues that may concern you.

Thank you for your time and cooperation

Source: Center for Survey Research. 2013. Massachusetts Youth Health Survey. Boston: Center for Survey Research, University of Massachusetts Boston. Reproduced by permission.

surveys) that the survey is not the same as a test. A cover letter like the one used in mailed surveys also should be distributed with the questionnaires. To emphasize confidentiality, respondents should be given an envelope in which to seal their questionnaires after they are completed. The introductory statement for the Youth Health Survey administered in Massachusetts high schools and middle schools appears in Exhibit 7.10.

Phone Surveys

In a **phone survey**, interviewers question respondents over the phone and then record respondents' answers. Procedures can be standardized more effectively, quality

Phone survey:
A survey in which interviewers question respondents over the phone and then record their answers.

control maintained, and processing speed maximized when phone interviewers use **computer-assisted telephone interviews (CATI)**.

Computerized **interactive voice response (IVR)** survey technology allows even greater control over interviewer–respondent interaction. In an IVR survey, respondents receive automated calls and answer questions by pressing numbers on their touch-tone phones or by speaking numbers that are interpreted by computerized voice-recognition software. These surveys can also record verbal responses to open-ended questions for later transcription. IVR surveys have been used successfully with short questionnaires and when respondents are highly motivated to participate (Dillman 2000:402–411).

Reaching Sample Units

Procedures and problems differ if the survey involves only landline phones or mobile phones or both. Most surveys to landline phones use random digit dialing at some point in the sampling process (Lavrakas 1987). A machine calls random phone numbers within the designated exchanges, whether or not the numbers are published. When the machine reaches an inappropriate household (such as a business in a survey directed to the general population), the phone number is simply replaced with another. Most survey research organizations use special methods to identify sets of phone numbers that are likely to include working numbers and so make the random digit dialing more efficient (Tourangeau 2004:778–780). In surveys of landline phones, interviewers must ask a series of questions after the phone is answered to ensure that they are speaking to the appropriate member of the household; this is generally not done when calling cell phones.

Cell phones must be included in phone surveys to obtain adequate coverage of most populations. Ninety-six percent of American adults owned a cell phone in 2019 (81% owned a smartphone; https://www.pewinternet.org/fact-sheet/mobile/), and as of 2016, more than half of adults lived in households with a cell phone but no landline phone (Blumberg & Luke 2017; Exhibit 7.11). The Pew Research Center, one of the largest survey organizations, now makes two thirds of its calls in typical national phone surveys to cell phone numbers, and the University of Michigan's Survey of Consumers is calling only cell phones (Keeter 2015). Current federal law in the United States prohibits random digit dialing of cell phone numbers, so the use of more dialing by interviewers is increasing the cost of phone interviews, but leaving out cell phone–only households can result in severe survey biases, since cell-phone-only households are much more likely to be poor and tend to be younger than those that also have landlines (Blumberg & Luke 2017).

Maximizing Response to Phone Surveys

Because people often are not home, multiple callbacks will be needed in landline phone surveys for many sample members. Those with more money and education are more likely to be away from home; such persons are more likely to vote Republican, so the results of political polls can be seriously biased if few callback attempts are made (Kohut 1988).

Since the late 1970s, the average response rate in phone surveys has plummeted from a historic high of about 75% (Tourangeau 2004:781–783; see Exhibit 7.12). The Pew Research Center reports a decline in the response rate based on all those sampled, from 36% in 1997 to only 6% in 2018. The number of callbacks needed to reach respondents by phone has increased greatly, with increasing numbers of single-person households, dual-earner families, and out-of-home activities. High-effort phone surveys can improve the response somewhat, but even with extended callbacks, monetary incentives for respondents, letters to nonrespondents, and the use of the most skilled

Computer-assisted telephone interview (CATI): A phone interview in which a questionnaire is programmed into a computer, along with relevant skip patterns, and only valid entries are allowed; incorporates the tasks of interviewing, data entry, and checking data for invalid responses.

Interactive voice response (IVR): A survey in which respondents receive automated calls and answer questions by pressing numbers on their touch-tone phones or speaking numbers that are interpreted by computerized voice-recognition software.

▼ EXHIBIT 7.11

Percentages of Adults and Children Living in Households With Only Wireless Telephone Service: United States, 2003–2016
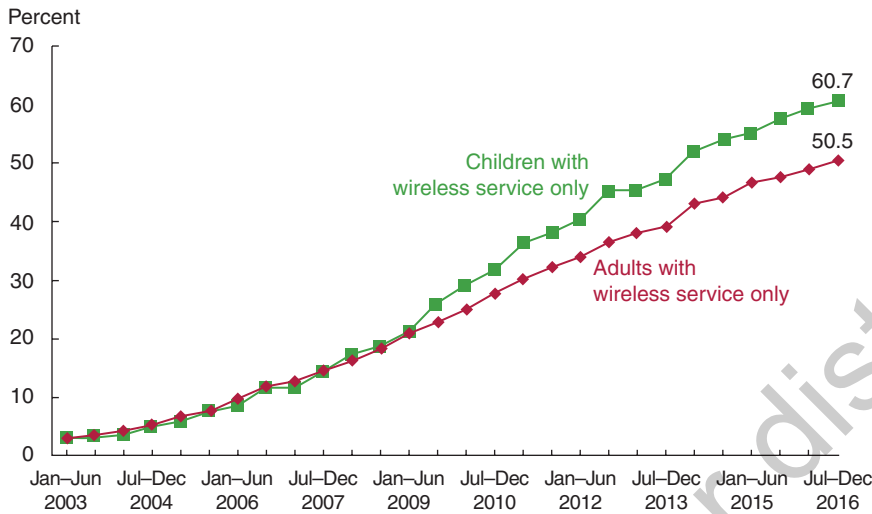
Note: Adults are aged 18 and over; children are under age 18.
Source: Blumberg and Luke. 2017.

interviewers, the response rate improves only from about 1 in 10 to 1 in 5 (Kohut et al. 2012). In Pew's American Trends Panel, about 10% of those called agreed to participate in one survey, and half of those agreed to join the panel (Abt Associates et al. 2017). For the Wave 28 survey we have used in this chapter, three-quarters of those invited to participate who were still active in the panel responded to the survey. You can see that the key issue is willingness to respond in the first place.
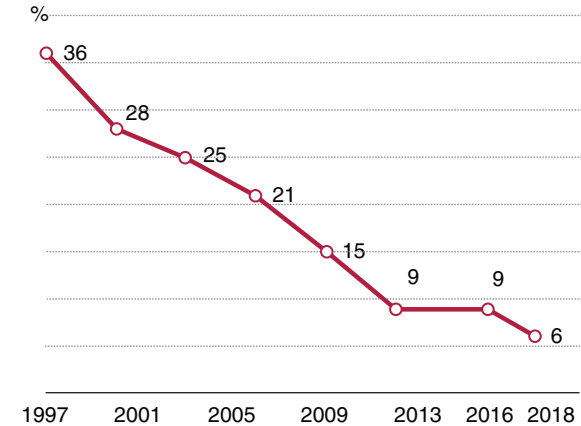
In-Person Surveys

What is unique to the **in-person survey**, compared with the other survey designs, is the face-to-face social interaction between interviewer and respondent. If money is no object, in-person interviewing is often the best survey design, because people are more likely to agree to be interviewed and are less likely to end prematurely.

▼ EXHIBIT 7.12

After Brief Plateau, Telephone Survey Response Rates Have Fallen Again

Response rate by year (%)

Source: Kennedy and Hartig. 2019.

But researchers must be alert to some special hazards resulting from the presence of an interviewer. Respondents should experience the interview process as a personalized interaction with an interviewer who is very interested in the respondent's experiences and opinions. At the same time, however, every respondent should have the same interview experience—asked the same questions in the same way by the same type of person, who reacts similarly to the answers (de Leeuw 2008:318). Careful training and supervision are essential, because small differences in intonation or emphasis on particular

In-person survey: A survey in which an interviewer questions respondents face-to-face and records their answers.
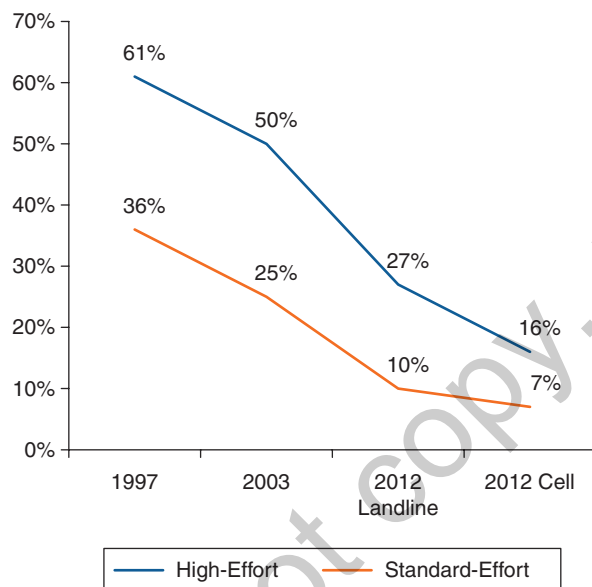
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Photo 7.3 How might the presence of an interviewer affect the results of an in-person survey?

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▼ EXHIBIT 7.13

Reasons for Nonresponse in Personal Interviews (1990 General Social Survey)

Source: Data from Davis and Smith (1992:54).

Computer-assisted personal interview (CAPI): A personal interview in which a laptop computer is used to display interview questions and to process responses that the interviewer types in, as well as to check that these responses fall within allowed ranges.

words can alter how respondents interpret questions (Groves 1989:404–406; Peterson 2000:24).

As with phone interviewing, computers can be used to increase control of the in-person interview. In a **computer-assisted personal interview (CAPI)** project, interviewers carry a laptop computer that is programmed to display the interview questions and to process the responses that the interviewer types in, as well as to check that these responses fall within allowed ranges (Tourangeau 2004:790–791). Interviewers seem to like CAPI, and the data obtained are comparable in quality to data obtained in a noncomputerized interview (Shepherd et al. 1996).

Exhibit 7.13 displays the breakdown of nonrespondents to the 1990 General Social Survey (GSS). Of the total original sample of 2,165, only 86% (1,857) were determined to be valid selections of dwelling units with potentially eligible respondents. Among these potentially eligible respondents, the response rate was 74%. The GSS is a well-designed survey using carefully trained and supervised interviewers, so this response rate indicates the difficulty of securing respondents from a sample of the general population even when everything is done "by the book." More recent research suggests that the reasons for nonresponse in face-to-face interviews have not changed much (NRC 2013).

Web Surveys

Web surveys have become an increasingly useful survey method for two reasons: growth in the fraction of the population using the internet—90% in 2019—and technological advances that make web survey design relatively easy (Hewson et al. 2016). Many specific populations have very high rates of internet use, so a web survey can be a good option for groups such as professionals, residents of middle-class communities, and, of course, college students. Because of the int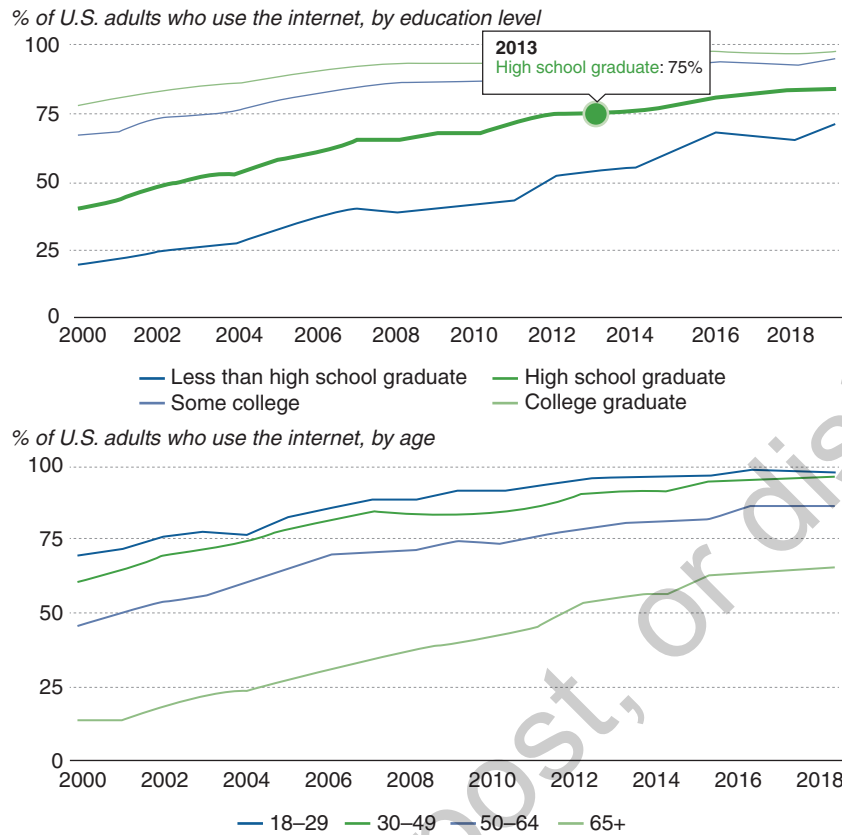ernet's global reach, web surveys also make it possible to conduct large, international surveys. However, coverage remains a problem with some segments of the population: About 10% of U.S. adults were not connected to the internet in 2019 (https://www.pewinternet.org/fact-sheet/internet-broadband/).

The extent to which the population of interest is connected to the web is the most important consideration when deciding whether to conduct a survey through the web. Exhibit 7.14 illustrates that rates of internet usage are considerably lower among those who are older and those with a high school education or less (Pew 2019). How might the use of the internet shown in Exhibit 7.14 skew the results of a web survey? There

% of U.S. adults who use the internet, by education level

2013
High school graduate: 75%

- Less than high school graduate
- High school graduate
- Some college
- College graduate

AU: Title for exhibit?

% of U.S. adults who use the internet, by age

— 18–29   — 30–49   — 50–64   — 65+

Source: https://www.pewinternet.org/fact-sheet/internet-broadband/

are also differences in internet use in the United States by income, race and ethnicity, and city type (rural lower than urban) but not by gender.

Internationally, internet usage varies dramatically by region, with a low in 2014 of 37.3% in Africa and a high of 89.4% in North America (Exhibit 7.15).
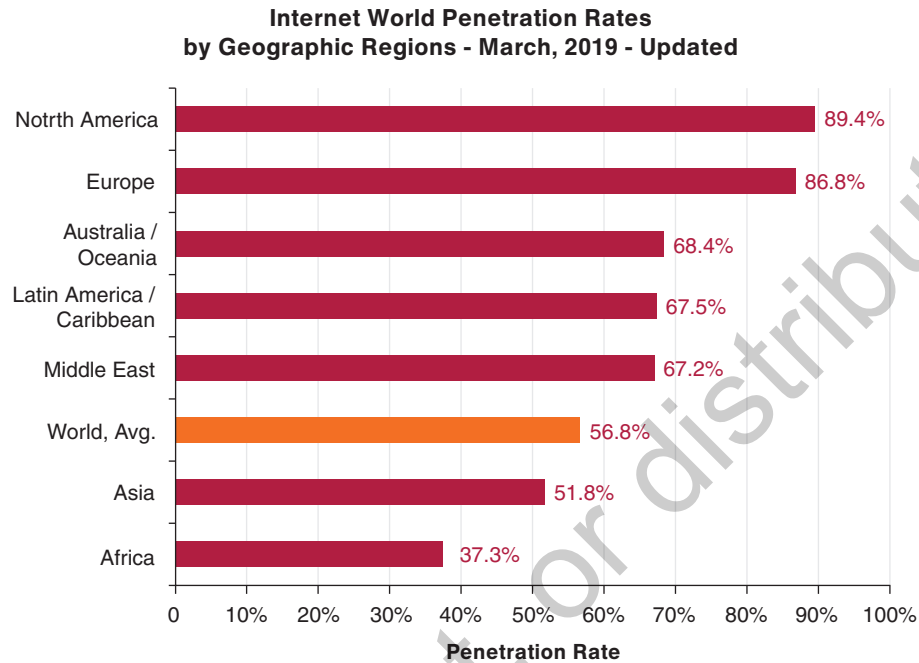
There are several different approaches to engaging people in web surveys, each with unique advantages and disadvantages and somewhat different effects on the coverage problem. Many web surveys begin with an e-mail message to potential respondents that contains a direct "hotlink" to the survey website (Gaiser & Schreiner 2009:70). It is important that such e-mail invitations include a catchy phrase in the subject line as well as attractive and clear text in the message itself (Sue & Ritter 2012:110–114). This approach is particularly useful when a defined population with known e-mail addresses is to be surveyed. The researcher can then send e-mail invitations to a representative sample without difficulty. To ensure that the appropriate people respond to a web survey, researchers may require that respondents enter a personal identification number (PIN) to gain access to the web survey (Dillman 2000:378; Sue & Ritter 2012:103–104).

Web surveys that use volunteer samples may instead be linked to a website that is used by the intended population, and everyone who visits that site is invited to complete

Web survey: A survey accessed and responded to on the World Wide Web.

Worldwide Internet Penetration Rates by Region, 2019

**Internet World Penetration Rates
by Geographic Regions - March, 2019 - Updated**

Region	Penetration Rate
Notrth America	89.4%
Europe	86.8%
Australia / Oceania	68.4%
Latin America / Caribbean	67.5%
Middle East	67.2%
World, Avg.	56.8%
Asia	51.8%
Africa	37.3%

Penetration Rate

Source: Internet World Stats, www.internetworldstats.com/stats.htm. Copyright © 2019, Miniwatts Marketing Group. Reprinted with permission.

the survey. Although this approach can generate a large number of respondents (50,000 persons completed Survey 2000), the resulting sample will necessarily reflect the type of people who visit that website (middle-class, young North Americans in Survey 2000) and thus be a biased representation of the larger population (Couper 2000:486–487; Dillman 2000:355).

Web surveys have some unique advantages for increasing measurement validity (Selm & Jankowski 2006; Tourangeau et al. 2012). Pictures, sounds, and animation can be used as a focus of particular questions, and graphic and typographic variation can be used to enhance visual survey appeal. Definitions of terms can also "pop up" when respondents scroll over them (Dillman 2007:458–459). Questionnaires completed on the web can elicit more honest reports about socially undesirable behavior or experiences, including illicit behavior and victimization in the general population and failing course grades among college students, when compared with results with phone interviews (Kreuter, Presser, & Tourangeau 2008; Parks, Pardi, & Bradizza 2006). A study by the Pew Research Center found that white Americans were more likely to agree with the response choice that blacks face "a lot of discrimination" when they were asked by a phone interviewer than when they responded in a web survey, while black Americans were less likely to agree that they face "a lot of discrimination" when interviewed on the phone than when they answered the question in a web version of the same survey (Exhibit 7.16).

Coverage bias is the single biggest problem with web surveys of the general population and of segments of the population without a high level of internet access, and none of the different web survey methods fully overcomes this problem. Although providing computers and internet access to all who agree to participate in a web survey panel reduces coverage bias, many potential respondents do not agree to participate in such

surveys: The rate of agreement to participate was 57% in one Knowledge Networks survey and just 41.5% in a survey of students at the University of Michigan (Couper 2000:485–489). In addition, this approach increases the cost of the survey considerably, so it is typically used as part of creating the panel of respondents who agree to be contacted for multiple surveys over time. The start-up costs can then be spread across many surveys (Couper & Miller 2008:832–833).

Research continues into the ways that the design of web surveys can influence rates of initial response, the likelihood of completing the survey, and the validity of the responses (see Exhibit 7.17; Couper, Traugott, & Lamias 2001; Kreuter et al. 2008; Porter & Whitcomb 2003; Tourangeau et al. 2012). With about two-thirds of Americans owning a smartphone and about half saying it is something they "couldn't live without," many surveys are now conducted on smartphones and via text messages, as well as through social media such as Facebook (Bhutta 2012; Sue & Ritter 2012:119–122), in spite of differences in ownership rates by education and other social characteristics (Pew Research Center 2015:2,7).

▼ EXHIBIT 7.16

Racial Divide on Discrimination Against Blacks in Society, by Survey Mode, 2014

% who say blacks face "a lot of discrimination"

Source: "From Telephone to the Web: The Challenge of Mode of Interview Effects in Public Opinion Polls," Pew Research Center, Washington, DC (May, 2015). http://www.pewresearch.org/2015/05/13/from-telephone-to-the-web-the-challenge-of-mode-of-interview-effects-in-public-opinion-polls/.
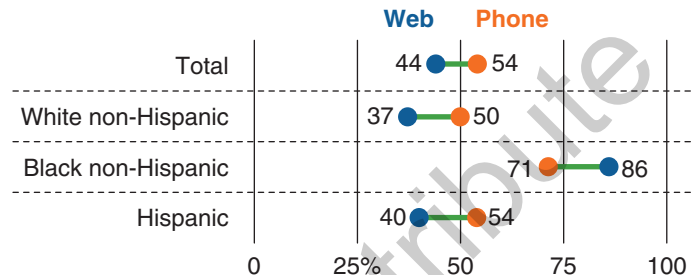
Mixed-Mode Surveys

Survey researchers increasingly are combining different survey designs to improve the overall participation rate and to take advantage of the unique strengths of different methods. **Mixed-mode surveys** allow the strengths of one survey design to compensate for the weaknesses of another, and they can maximize the likelihood of securing data from different types of respondents (Dillman 2007:451–453; Selm & Jankowski 2006). For example, a survey may be sent electronically to sample members who have e-mail addresses and mailed to those who don't. Phone reminders may be used to encourage responses to web or paper surveys, or a letter of introduction may be sent in advance of calls in a phone survey (Guterbock 2008). Alternatively, nonrespondents in a mailed survey may be interviewed in person or over the phone. In one comparative study, the response rate to a phone survey rose from 43% to 80% when it was followed by a mailed questionnaire (Dillman 2007:456). Mixing modes in this way can reduce total costs by starting with the cheapest method and then adding more effort as needed, and some research indicates that measurement reliability is not lessened by mixing modes (Cernat 2015).

Mixing modes does not guarantee high response rates, however. Only about one-third of internet users contacted in phone surveys agree to provide an e-mail address for a web survey, and then only one-third of those actually complete the survey (Couper 2000:488). In the Pew American Trends Panel, the cumulative participation rate taking into account agreement to an initial survey, then joining the panel, and then responding to a panel survey was just under 4% (Pew 2015). Web surveys that take more than 15 minutes are too long for most respondents (de Leeuw 2008:322). Some researchers have found that when people are sent a mailed survey that also provides a link to a web survey alternative, they overwhelmingly choose the paper survey (Couper 2000:488).
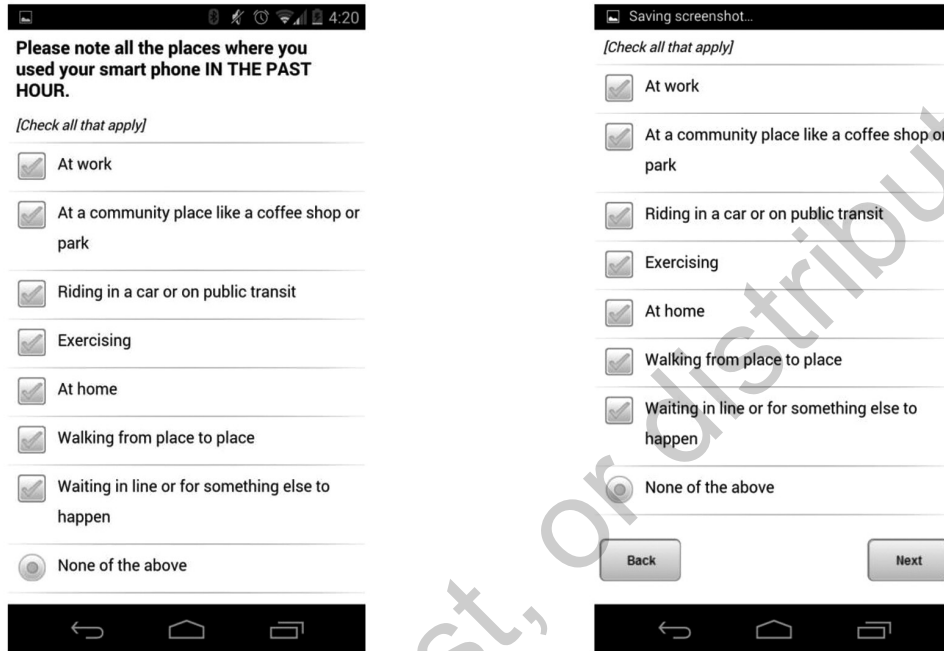
Mixed-mode survey: A survey conducted by more than one method, allowing the strengths of one survey design to compensate for the weaknesses of another and maximizing the likelihood of securing data from different types of respondents; for example, nonrespondents in a mailed survey may be interviewed in person or over the phone.

Mobile Web Survey Screen

Mobile web browser screen shots

[Check all that apply]

Please note all the places where you used your smart phone IN THE PAST HOUR.

- At work
- At a community place like a coffee shop or park
- Riding in a car or on public transit
- Exercising
- At home
- Walking from place to place
- Waiting in line or for something else to happen
- None of the above

[Check all that apply]

- At work
- At a community place like a coffee shop or park
- Riding in a car or on public transit
- Exercising
- At home
- Walking from place to place
- Waiting in line or for something else to happen
- None of the above

Back   Next

"App vs. Web for Surveys of Smartphone Users," Pew Research Center, Washington, DC (April, 2015) http://www.pewresearch.org/files/2015/03/2015-04-01_smartphones-METHODS_final-3-27-2015.pdf.

Comparing Survey Designs

Which survey design should be used when? Group-administered surveys are similar, in most respects, to mailed surveys, except that they require the unusual circumstance of having access to the sample in a group setting. We therefore don't need to consider this survey design by itself; what applies to mailed surveys applies to group-administered survey designs, with the exception of sampling issues. The features of mixed-mode surveys depend on the survey types that are being combined. Thus, we can focus our comparison on the four survey designs that involve the use of a questionnaire with individuals sampled from a larger population: (1) mailed surveys, (2) phone surveys, (3) in-person surveys, and (4) web surveys. Exhibit 7.18 summarizes their strong and weak points.

The most important consideration in comparing the advantages and disadvantages of the four methods is the likely response rate they will generate. Declining rates of response to phone surveys

Photo 7.4 Are you more likely to respond to a survey on your computer or on your smartphone?
©iStockphoto.com/alubalish

Advantages and Disadvantages of the Four Survey Designs

Characteristics of Design	Mail Survey	Phone Survey	In-Person Survey	Web Survey
Representative sample				
Opportunity for inclusion is known				
For completely listed populations	High	High	High	Medium
For incompletely listed populations	Medium	Medium	High	Low
Selection within sampling units is controlled (e.g., specific family members must respond)	Medium	High	High	Low
Respondents are likely to be located				
If samples are heterogeneous	Medium	Medium	High	Low
If samples are homogeneous and specialized	High	High	High	High
Questionnaire construction and question design				
Allowable length of questionnaire	Medium	Medium	High	Medium
Ability to include				
Complex questions	Medium	Low	High	High
Open questions	Low	High	High	Medium
Screening questions	Low	High	High	High
Tedious, boring questions	Low	High	High	Low
Ability to control question sequence	Low	High	High	High
Ability to ensure questionnaire completion	Medium	High	High	Low
Distortion of answers				
Odds of avoiding social desirability bias	High	Medium	Low	High
Odds of avoiding interviewer distortion	High	Medium	Low	High
Odds of avoiding contamination by others	Medium	High	Medium	Medium
Administrative goals				
Odds of meeting personnel requirements	High	High	Low	Medium
Odds of implementing quickly	Low	High	Low	High
Odds of keeping costs low	High	Medium	Low	High

Source: Adapted from Dillman (1978 and 2007). *Mail and Telephone Surveys: The Total Design Method.* Reprinted by permission of John Wiley & Sons, Inc.

have reduced the appeal of this method below that of mailed surveys. In-person surveys are preferable in the possible length and complexity of the questionnaire itself, as well as with respect to the researcher's ability to monitor conditions while the questionnaire is completed. Mailed and web surveys often are preferable for asking sensitive questions, although this problem can be lessened in an interview by giving respondents a separate sheet to fill out or a laptop on which to enter their answers. Some survey organizations have also switched to having in-person interviews completed entirely by the respondents on a laptop as they listen to prerecorded questions.

The advantages and disadvantages of web surveys must be weighed in light of the population that is to be surveyed and the capabilities at the time the survey is

to be conducted. At this time, too many people lack internet connections for survey researchers to use the internet to survey the general population.

The "best" survey design for any particular study will be determined by the study's unique features and goals rather than by any absolute standard for the best survey design.

Ethical Issues in Survey Research

Survey research usually poses fewer ethical dilemmas than do experimental or field research designs. Potential respondents to a survey can easily decline to participate, and a cover letter or introductory statement that identifies the sponsors of and motivations for the survey gives them the information required to make this decision. Current federal regulations to protect human subjects allow survey research to be exempted from formal review unless respondents can be identified and disclosure of their responses could place them at risk.

Confidentiality is most often the primary focus of ethical concern in survey research. Many surveys include some essential questions that might, in some way, prove damaging to the subjects if their answers were disclosed. To prevent any possibility of harm to subjects because of the disclosure of such information, the researcher must preserve subject confidentiality. Nobody but research personnel should have access to information that could be used to link respondents to their responses, and even that access should be limited to what is necessary for specific research purposes.

Not many surveys can provide true **anonymity**, so that no identifying information is ever recorded to link respondents with their responses. The main problem with anonymous surveys is that they preclude follow-up attempts to encourage participation by initial nonrespondents, and they prevent panel designs, which measure change through repeated surveys of the same individuals. In-person surveys rarely can be anonymous because an interviewer must, in almost all cases, know the name and address of the interviewee. However, phone surveys that are meant only to sample opinion at one point in time, as in political polls, can safely be completely anonymous. When no future follow-up is desired, group-administered surveys also can be anonymous. To provide anonymity in a mail survey, the researcher should omit identifying codes from the questionnaire but could include a self-addressed, stamped postcard so that the respondent can notify the researcher that the questionnaire has been returned without creating any linkage to the questionnaire itself (Mangione 1995:69).

Conclusions

Survey research is an exceptionally efficient and productive method for investigating a wide array of social research questions. One or more of the six survey designs reviewed in this chapter (including mixed mode) can be applied to almost any research question. But the relative ease of conducting at least some types of survey research leads many people to imagine that no particular training or systematic procedures are required. Nothing could be further from the truth. As a result of this widespread misconception, however, you will encounter a great many nearly worthless survey results. You must be prepared to examine carefully the procedures used in any survey before accepting its findings as credible. And if you decide to conduct a survey, you must be prepared to invest the time and effort that proper procedures require.

Confidentiality: Provided by research in which identifying information that could be used to link respondents to their responses is available only to designated research personnel for specific research needs.

Anonymity: Provided by research in which no identifying information is recorded that could be used to link respondents to their responses.

KEY TERMS

HIGHLIGHTS

- Surveys are the most popular form of social research because of their versatility, efficiency, and generalizability. Data from many surveys, such as the GSS, are available for social scientists to use in teaching and research.
- Omnibus surveys cover a range of topics of interest and generate data useful to multiple sponsors.
- Survey designs must minimize the risk of poor measurement, nonresponse, inadequate coverage of the population, and sampling error.
- Questions must be worded carefully to avoid confusing respondents, encouraging a less-than-honest response, or triggering biases. Inclusion of "don't know" choices and neutral responses may help, but the presence of such options also affects the distribution of answers. Open-ended questions can be used to determine the meaning that respondents attach to their answers. Answers to any survey questions may be affected by the questions that precede them in a questionnaire or interview schedule.
- Sets of questions that comprise an index can reduce idiosyncratic variation in measurement of a concept.
- Interpretive questions should be used in questionnaires to help clarify the meaning of responses to critical questions.
- A survey questionnaire or interview schedule should be designed as an integrated whole, with each question and section serving some clear purpose and complementing the others.
- The cover letter for a mailed questionnaire should be credible, personalized, interesting, and responsible.

- Response rates in mailed surveys are typically well below 70% unless multiple mailings are made to nonrespondents and the questionnaire and cover letter are attractive, interesting, and carefully planned. Response rates for group-administered surveys are usually much higher.
- Phone interviews using random digit dialing allow fast turnaround and efficient sampling. Multiple callbacks are often required, and the rate of nonresponse to phone interviews is rising. Response rates to phone surveys have declined dramatically due to cell phones and caller ID.
- In-person interviews have several advantages over other types of surveys: They allow longer and more complex interview schedules, monitoring of the conditions when the questions are answered, probing for respondents' understanding of the questions, and high response rates. However, the interviewer must balance the need to establish rapport with the respondent with the importance of maintaining control over the delivery of the interview questions.
- Electronic surveys may be e-mailed or posted on the web. Interactive voice response (IVR) systems using the phone are another option. At this time, use of the internet is not sufficiently widespread to allow web surveys of the general population, but these approaches can be fast and efficient for populations with high rates of computer use.
- Mixed-mode surveys allow the strengths of one survey design to compensate for the weaknesses of another. However, questions and procedures must be designed carefully to reduce the possibility that responses to the same question will vary as a result of the mode of delivery.

- In deciding which survey design to use, researchers must consider the unique features and goals of the study. In general, in-person interviews are the strongest but most expensive survey design.
- Most survey research poses few ethical problems because respondents are able to decline to participate— an option that should be stated clearly in the cover letter or introductory statement. Special care must be taken when questionnaires are administered in group settings (to "captive audiences") and when sensitive personal questions are to be asked; subject confidentiality should always be preserved.

CHAPTER QUESTIONS

1. Response rates to phone surveys are declining, even as phone usage increases. Part of the problem is that lists of cell phone numbers are not available, and wireless service providers may not allow outside access to their networks. Cell phone users may also have to pay for incoming calls. Do you think regulations should be passed to increase the ability of survey researchers to include cell phones in their random digit dialing surveys? How would you feel about receiving survey calls on your cell phone? What problems might result from "improving" phone survey capabilities in this way?

2. In-person interviews have for many years been the "gold standard" in survey research because the presence of an interviewer increases the response rate, allows better rapport with the interviewee, facilitates clarification of questions and instructions, and provides feedback about the interviewee's situation. However, researchers who design in-person interviewing projects are now making increasing use of technology to ensure consistent questioning of respondents and to provide greater privacy for respondents answering questions. But having a respondent answer questions on a laptop while the interviewer waits is a very different social process from asking the questions verbally. Which approach would you favor in survey research? What trade-offs might there be in quality of information collected, rapport building, and interviewee satisfaction?

3. Group-administered surveys are easier to conduct than other types of surveys, but they always raise an ethical dilemma. If a teacher allows a social research survey to be distributed in his or her class, or if an employer allows employees to complete a survey on company time, is the survey truly voluntary? Is it sufficient to read a statement to the group members stating that their participation is entirely up to them? How would you react to a survey in your class? What general guidelines should be followed in such situations?

4. Patricia Tjaden and Nancy Thoennes (2000) sampled adults with random digit dialing to study violent victimization from a nationally representative sample of adults. What ethical dilemmas do you see in reporting victimizations that are identified in a survey? What about when the survey respondents are under the age of 18? What about children under the age of 12?

PRACTICE EXERCISES

1. What is survey research used for? This question can be answered through careful inspection of survey projects designed by survey research organizations. Check out the projects at Cornell University's Survey Research Institute—https://sri.cornell.edu/sri/projects/index .cfm—or at the University of Massachusetts Boston's Center for Survey Research—https://www.umb.edu/csr/ research—or at the National Opinion Research Center— http://www.norc.org/Research/Projects/Pages/default .aspx. Spend some time reading about some of the different survey projects and then write a brief summary of the projects.

2. Go to the Research Triangle Institute site at www.rti.org . Click on the "Insights Blog" link. Read about the methods they used in different surveys and the insights they have gleaned about survey methods. What does this information add to the chapter's treatment of these methods?

3. Go to the UK Data Service at http://discover .ukdataservice.ac.uk/variables. In the search box, enter topics of interest such as "health" or "inequality." Review five questions for two topic areas and critique them in terms of the principles for question writing that you have learned. Do you find any question features that might be attributed to the use of British English?

STUDENT RESOURCES

$SAGE edge™

The student resource site, available at **edge.sagepub.com/schuttusw2e** offers useful study materials, such as eFlashcards, eQuizzes, and curated research articles.