# ONE

# SURVEY PRACTICE

It would be difficult to name another social science method that has so quickly and pervasively penetrated our society as the sample survey. In fewer than two generations, the notion of relying on relatively small samples to measure attitudes and behaviors has grown from a little-noted curiosity to the dominant data collection practice. Surveys are used by academic researchers, governments, businesses, political parties, media, and anyone who wants insights into what people are thinking and doing. Survey data underlie our knowledge regarding

- demographic characteristics of the population;
- economic variables such as household incomes, unemployment rates, business hiring intentions, and consumer confidence;
- education variables such as levels of educational attainment, dropout rates, and educational practices in schools;
- health variables such as access to health care, immunization rates, nutritional practices, obesity rates, and engagement in health risk behaviors;
- political variables such as party identification, candidate preferences, voting intentions, and public opinions on policy issues;
- marketing variables such as product preferences and purchase intentions;
- and many more.

The requirements of these diverse survey applications have naturally spawned a wide range of performance practices. How a survey is designed and implemented for a federal agency is vastly different than one for a newspaper poll.

A large and rapidly expanding survey literature reflects both the numerous applications of survey data collection and the inherently multidisciplinary nature of survey research. To successfully design and implement a survey, we need to understand the basics of a few disciplines and techniques. At some points, we can rely on scientific understanding and training; at others, we need a knowledge of accepted practices and, throughout the process, a healthy dose of common sense.

## WHAT IS A SURVEY?

Surveys collect information by interviewing a sample of respondents from a well-defined population. The survey population may comprise individuals, households, organizations, or any element of interest. The boundaries of the population may be defined by demographic characteristics (e.g., persons 18 years of age or older), geographic boundaries (residing in Maryland), behaviors (who voted in the last election), intentions (and intend to vote in the next election), or other characteristics. The population should be defined so that its members can be unequivocally identified. In addition, we must be convinced that the majority of respondents will know the information we ask them to provide. It makes little sense to ask people questions, such as the net worth of their family that many in the targeted population, maybe most, will not be able to answer.

Surveys can be conducted in person, by phone, by mail, or over the Internet, among other methods. The identifying characteristic of a survey interview is the use of a fixed questionnaire with prespecified questions. The questions are most often, but not always, in a closed format in which a set of response alternatives is specified. Using a fixed questionnaire allows a researcher to control the interview without being present, which allows the interview to be conducted at relatively low cost, either through self-administration by respondents (as in Internet or mail surveys) or through administration by interviewers who, although trained, are typically paid at a modest rate. The resulting data are then entered into a data file for statistical analysis.

Surveys are, of course, not the only method used by social researchers to gather data. Alternatives include observation, depth interviews, focus groups, panels, and experiments. Key points of comparison between surveys and other

methods, as well as examples of how other methods are sometimes used to support survey design, are as follows:

- As the term suggests, we gather observational data by observing events rather than by asking questions. Observation can capture information about inanimate phenomena that can't be questioned directly, and observation doesn't suffer from respondents misunderstanding the question, forgetting what happened, or distorting their answers to make a good impression. However, for observational data to be feasible, the phenomenon of interest must be observable; mental states such as attitudes or intentions are out. After an election, we can observe how precincts voted, but before the election, we cannot observe how they intend to vote. We can observe how precincts voted, but not *why* they voted that way. It also may not be cost-effective to gather observational data. We can observe how someone uses public transportation by following that person for a month, but it is much less costly to ask him or her about last month's behavior.

  In some situations, observation may be used to learn more about a particular population while developing plans for a survey. For example, in preparing for a survey of parents about their children's dietary habits, we observed kids at a few school lunches. Behaviors such as discarding, sharing, or exchanging foods between children led to some improvements in the parent survey. More important, it showed that some of the children's eating could not be fully reported by the parents.

- Depth interviews, like surveys, gather data through questioning. However, depth interviews do not use a fixed questionnaire. The interviewer usually has a list of topics to be covered and may use fixed questions to get respondents started on these topics, but the overall goal is to let respondents express their thoughts freely and to probe as needed. This approach is good for getting deep, detailed, complex information that doesn't work well in a survey. However, these interviews usually must be administered in person, and a highly skilled interviewer is needed to manage the unstructured interaction, resulting in much higher cost than a survey interview and consequently less ability to interview a broad sample. So, for example, if you want to know how top officials in city government interact and make decisions, then you might do depth interviews with a small number of city leaders, but if you want to know how the broad electorate rates the performance of city government using standard questions, a survey will be more useful.

In planning a survey, depth interviews can be used to uncover issues that are important to include in the questionnaire, learn how potential respondents think about the topic, develop response alternatives, and learn how the population might react to survey procedures (such as those for gaining cooperation). This can be especially useful when the population and/or topics are not familiar to the researcher.

- Focus groups, like depth interviews, do not use a fixed questionnaire. Unlike depth interviews, which are conducted one-on-one, focus groups facilitate interaction among group participants. This interaction can inform the researcher about reasons for differences in a population on an issue, or other social dynamics. As with depth interviews, focus groups are sometimes used in the survey planning process to uncover issues that are important to include in the questionnaire, learn how potential respondents think about the topic, develop response alternatives, and learn how the population might react to survey procedures.

- Panels are groups of research participants that provide information over time. This information can be collected through observation or self-reports, including diaries where people record their behavior over time or repeated surveys of the same respondents. The greatest strength of panels is that measures of change over time are precise and not subject to variation due to shifting samples of respondents. The greatest weakness of panel research is the fact that many people are not willing to accept the commitment required by a panel, while many others drop out after a short stay, so it is difficult to keep panels representative of the population. Also, panels tend to be more expensive than most onetime surveys because panel members must be given some reward for their ongoing effort, while most surveys do not reward respondents. Therefore, if a researcher wants to study how political preferences evolve through a campaign, she might recruit a panel of registered voters and track them, but if her focus is on accurate estimates of candidate preference at any given point in time, she is more likely to use a series of independent surveys.

- An experiment is a study in which the researcher actively manipulates one or more experimental variables, then measures the effects of these manipulations on a dependent variable of interest, which can be measured by either observation or self-report. For example, a researcher interested in knowing which of two advertisements has a stronger effect on willingness to buy a

product could conduct a survey that measures respondents' awareness of each ad and willingness to buy, and correlate willingness to buy with awareness of each ad. Alternately, the researcher could show participants either one ad or the other, with random assignment, and measure subsequent willingness to buy. The goal of experimentation is to verify that the observed relationships are causal, not just correlational.

In survey research, experiments have proved to be powerful tools for studying effects of survey question wording on response. Much of what we know about how to write good survey questions is a product of experimental research, in which alternative versions of questions intended to measure the same construct are compared. For example, through experimentation, researchers learned that asking whether respondents thought a certain behavior should be "allowed" or "forbidden" can produce different response distributions, even when the alternative wordings logically mean the same thing. There is a very large literature on this response effects research. Classic works include Sudman and Bradburn (1974), Schuman and Presser (1981), and Tourangeau, Rips, and Rasinski (2000).

Exhibit 1.1 summarizes how surveys relate to other data collection methods.

**Exhibit 1.1 Other Data Collection Methods**

| *Method* | *Strength vs. Surveys* | *Weakness vs. Surveys* |
|---|---|---|
| Observation | Not subject to reporting bias | Can't measure mental states; not efficient for measuring infrequent behaviors |
| Depth interviews | Can probe freely and go into depth | Expensive, poor population coverage |
| Focus groups | Can probe freely and go into depth; can see social dynamics | Expensive, poor population coverage |
| Panels | Shows changes over time | Expensive; a limited number of people will participate |
| Experiments | Strong test of causation | Difficult to do outside lab |

## THE COMBINATION OF DISCIPLINES

Survey research is inherently interdisciplinary. Sampling and estimation have a theoretical basis in probability theory and statistics; to select an efficient sample requires some knowledge of those areas. Data collection involves persuasion of respondents and then, on some level, social interaction between them and interviewers. Developing questionnaires and conducting interviews require writing skills to construct questions that elicit desired information using language that respondents can easily understand and do not find too difficult to answer. Interviews or questionnaires that use computers or the Internet require programming or other specialized skills. Very few survey professionals have hands-on expertise in all of these areas, but they do have a basic understanding of what needs to be done to successfully implement each part of a survey.

Unlike some scientific or scholarly enterprises, surveys are usually a team effort of many people with diverse skills. One can find examples of surveys designed and implemented by the lone researcher, but they are the exception. Even if the researcher who formulates the research questions also designs the questionnaire and analyzes the data, that person will almost always use help in sample design, data collection, and database construction. Whether a survey is done by a research organization or as a class project, there is division of labor, coordination of tasks, and management of the costs.

To design and implement a quality survey within available resources, the practitioner relies on a relatively small number of statistical principles and practical guidelines. The goal of this book is to explain those fundamentals and illustrate how they are applied to effectively conduct small- to moderate-scale surveys.

## THE SOCIAL AND SOCIETAL CONTEXT

Survey practices and methodology change as our knowledge grows and our experience increases. And, of course, just as in every other field, changes in technology affect survey design and implementation. It is also important to be sensitive to the impact of societal, demographic, and cultural changes on survey practice.

For example, 40 years ago, most national surveys in the United States were conducted only in English. The proportion of the population that was

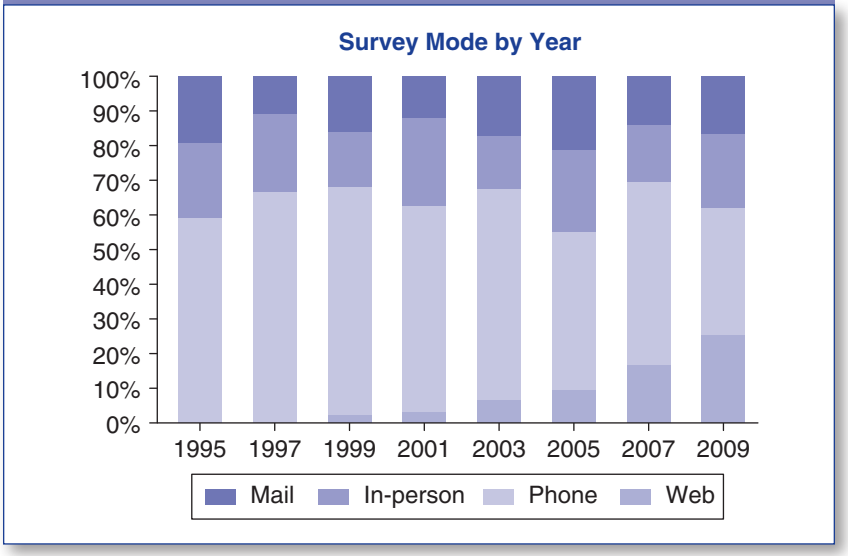
fluent only in some other language was considered small enough that the cost of interviewing in those languages could not be justified. The decrease in coverage was too small to be of concern. Today, any important national survey allows for, at a minimum, Spanish-language interviews and often interviews in additional languages. This allows inclusion of both people who do not speak English at all and those who, although they can communicate in English, are much more at ease in their first language. Likewise, many states, or smaller areas, have large enclaves of non-English-language groups. The California Health Interview Survey is conducted in several Asian languages, partly for reasons of coverage of the entire state population, but also because of the need to sample enough people in some of these groups for their separate analysis.

The need to accommodate different languages is just part of a larger imperative to be aware of different cultural norms. A more detailed discussion is beyond the scope of this book, but this is just one example of how changes within society affect how we go about conducting surveys.

General social norms can also have important effects. People's willingness to allow a stranger into their homes has greatly changed since the middle of the last century when in-person household interviews were the norm. Such surveys are still conducted, but the costs and procedures necessary to make them successful have limited the practice to only the most well-funded programs. Similarly, in recent decades, the rise of telemarketing and telephone screening devices has affected researchers' success in contacting members of the general population by telephone and, once contacted, securing their participation in telephone surveys. The rise of cell phones and the Internet continues the accelerating technological change that can be a benefit or an obstacle to conducting surveys. One indicator of the impact of these factors on survey practice can be seen in the shifting proportions of surveys administered by mail, phone, web, or in person, as shown in Figure 1.1.

Societal changes can occur at different rates in different parts of the population. Some new technologies, for example, may be initially adopted more heavily by younger than older people or by the more affluent than less affluent. Such patterns can become fixed or be only a step along the way to wider diffusion through the population. How important it is for a survey designer to take account of some technical development or changing social norm may depend on what population the survey targets.

**Figure 1.1 Survey Mode by Year**




*Source:* Adapted from information in the newsletter *Survey Research,* a publication of the Survey Research Laboratory, University of Illinois, Chicago and Urbana-Champaign.

## ETHICAL TREATMENT OF SAMPLE MEMBERS

A subtext in the discussion of the societal context of a survey is that the survey designer must accommodate the potential survey respondents. Respondents are volunteers we depend on. They are not obligated to participate, but the extent to which they agree to participate affects the survey's success, its cost, and, in some ways, its quality. Later, we will consider in detail methods to elicit the cooperation of sample members. However, the methods we can use are not just determined by their effectiveness. There are ethical boundaries we cannot cross. There are two concepts central to our treatment of respondents: informed consent and protection of confidentiality.

While we apply extensive efforts to obtain respondents' cooperation in the survey, the respondents' agreement must be reasonably informed. This means that we must not mislead respondents as to the nature and purpose of the research. We must honestly answer their questions about the project, including who is sponsoring it, its major purposes, the amount of time and effort that will be required of respondents, the general nature of the subject matter, and the

use that will be made of the data. We must not badger or try to intimidate respondents either into participating or into answering particular questions after they agree to be interviewed.

Once respondents have agreed to be interviewed, we then assume an obligation to protect the confidentiality of their answers. This is true whether or not we have explicitly told respondents we will do so. Results or data sets that permit the identification of individual respondents should never be made available to others.

These ethical guidelines are recognized by the major professional organizations of survey researchers and are typically overseen by human subjects review committees at universities and other organizations that engage in population research.

These obligations are no less applicable when a project is conducted by a class or a large team of researchers than when a single researcher is involved. In fact, additional cautions may need to be observed in the former situation because there are additional opportunities for inadvertent breaches of these ethical guidelines when many people are privy to the sample and the data.

Revealing or discussing an individual respondent's answers outside of the research group is inappropriate. Also, it is not proper to recontact survey respondents for purposes not related to the research for which they originally agreed to participate. The sample list used for a survey should not be made available to others (even other legitimate researchers) without the additional consent of the respondents. If the data are made available to another party, all identifiers that would permit linking answers to individuals should be removed.

## APPROACH AND OVERVIEW

The main concern in designing and conducting a survey is to achieve the research or other data collection objectives within available resources. Sometimes the initial objectives may be adjusted along the way to accommodate resource constraints or practical obstacles, but we must not lose sight of them. For example, assume that during planning, we determine that the budget is insufficient for both the preferred sample size and number of survey questions. In such a circumstance, it may be necessary either to reduce the sample size and forego separate analyses of some subgroups that will not be

possible with fewer respondents or to reduce the length of the interview and eliminate topics of secondary interest. But we still proceed toward a clear set of objectives. Along with those objectives, we need a sense of how good the survey needs to be for our purposes.

"Good" can be specified in a number of ways, which we will return to. Many conceptions of survey quality involve the idea of accuracy or, conversely, of error. In the next chapter, we consider the types of error surveys are subject to. Following this, we provide an overview of survey planning and implementation, from determining the main survey methods to the decisions and tasks at each stage of carrying out the survey. The means of collecting the data is, along with sample size, the main factor in survey cost. Factors in choosing a method of data collection are covered in the next chapter. Three chapters each are devoted to sampling and then to questionnaire development. Following these topics is a chapter on conducting data collection while controlling the main sources of error in that stage of the survey. The last chapter describes the key post–data collection activities, including preparing a report of the survey methodology.

Two Methodology Appendixes deal with topics of particular importance, at a greater level of detail: Questionnaire Evaluation Workshop and Cognitive Interviewing Workshop. Two other Methodology Appendixes focus on Using Models in Sampling and An Overview of Organization Surveys. Throughout the book, we emphasize the value of resources available on the Internet. Appendix D lists several sources that are of particular importance themselves or that provide links to additional information.