SPSS

SPSS Survey Tips

A handy guide to help you save time and money as you plan, develop, and execute your surveys

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Preface

Are you currently involved in survey research? Or are you developing a survey for the first time? Regardless of your level of experience, *SPSS Survey Tips* can help you plan, develop, and execute surveys.

This booklet is divided into four major sections, each related to a stage in the survey research process and containing a number of tips to guide you through it. Please remember that these stages are not to be considered in isolation. A decision made at one stage may influence your work at other stages. Also, in some situations you may work on several stages simultaneously, rather than sequentially.

After the tips, you'll find a glossary of terms frequently used in survey research. These terms are **boldfaced** the first time they appear in the text.

As you read, you'll see symbols that will help you better understand the information in this booklet.

This symbol indicates an example illustrating a particular tip.

The § symbol indicates that the figure shown is based on a survey of a very large population, such as a national survey.

This symbol highlights SPSS products that help you perform a particular action or specific survey application more effectively and productively. A list of SPSS survey research products can be found on pages 52—56 of this booklet.

Keep *SPSS Survey Tips* by your side during the survey process and use it to help you save money, execute your survey in a timely manner, and get the highest response rate and the most useful results.

If you have questions about conducting or analyzing your surveys, call your local SPSS office. We offer a variety of training and consulting programs to assist you. Information is available online at **www.spss.com**.

Or, if you have suggestions for improving our survey software, please e-mail us at **suggest@spss.com**.

Stage one: Planning

Define your mission

Do you know why you and your organization want to conduct this survey? If so, use these reasons to develop your survey's mission. Once developed, refer to your mission throughout the survey process to make sure that every action taken supports it.

If you are uncertain about why you and your organization want to conduct the survey, and what you plan to do with the results, you may be collecting unnecessary data.

When questioning your organization, if you get an answer such as, "We do it every year," dig deeper for the real reason.

Outline your research

Develop a plan to implement your mission. Be prepared to know which statistics to run and what initial relationships and patterns you expect to find.

If you want to predict purchase patterns based on known demographic characteristics, you need to specify the demographics you think may be relevant.

Establish a budget

Mapping an action plan helps you justify your study and budget. It also helps determine the scope and size of your survey. Typically, the major costs of a survey are data collection and data entry. Some methods, such as e-mail or online surveys, typically have a lower cost-per-returned-questionnaire and may help you stay within your budget.

Before beginning, be sure to ask how much your survey will cost and how long it will take to complete it and deliver results.

Develop a schedule

If you're new to survey research, assume that the process will take longer than you expect. When creating an entirely new survey, allow time for review and performing a **pilot study**. With any survey, be sure to allow enough time for data collection, analysis, and reporting.

Try to anticipate what tables and graphics should be constructed, so you can begin these early in the process.

Define the population

Before you can develop questions and format your survey, you need to consider the **population** you will be contacting. The age, attention span, and gender of potential respondents will influence the design of your survey and the data collection methods you use.

A young child may be able to pay attention to your questions for as little as five minutes, or may not understand all of the content. Older respondents may not understand new phrases or jargon. One age group may prefer phone or mail surveys, another online surveys.

Consumers reached by phone at home may be distracted by other activities and unwilling to spend more than 10 minutes being surveyed.

If any of your questions are gender-specific, be careful to avoid unintentionally offensive language, and be sure that questions are directed at the right audience.

Determine your sample size

The appropriate **sample** size for your survey is influenced by your purpose in conducting the survey, and by your budget. If your sample size is too small, you could miss important research findings. But if it's too large, you could waste valuable time and resources.

There are software tools that enable you to determine critical variables (anticipated effect size, confidence, statistical power, and sample size) before you spend valuable time and resources.

There is usually no reason to survey more than 1,000 to 1,500[§] respondents. While the precision of results tends to improve as the sample size increases, the increase in precision is negligible when sample size is greater than 1,500[§] respondents.

SamplePower

One approach

A conservative formula you can use to determine the appropriate sample size N is based on the amount of error you are willing to tolerate, stated as a proportion or percent.

$$N = \frac{1}{error^2}$$

For example, if an error of five percent (±5 percent) is acceptable, the formula calculates the required sample size as:

$$N = \frac{1}{.05^2} = \frac{1}{.0025} = 400$$

A second approach

If you have reason to expect a high degree of correlation between variables, then you can use a smaller sample size for your survey. Base the sample size on the minimum adequate sample size of important subgroups in the population.

Many analysts suggest that there should be at least 100[§] cases in each subgroup. If possible, know what proportion of the population (in the real world) is in each subgroup and calculate the total sample size required. Take into account the expected **non-response rate** of this population and increase the sample size by that factor.

You can use a **crosstabulation** or some **nonparametric tests**; in addition, there are procedures, such as **exact tests**, that work very well with small subgroups.

SPSS Base, SPSS Exact Tests

Select a sampling technique

A sample is a part of an entire population that possesses attitudes, opinions, habits, or characteristics that you wish to study. A **census** includes an entire population. Consider the size of the population you're sampling, and then decide whether you want to survey a sample or a census. If you elect to survey a sample, you might use one of the following techniques.

Purposive sampling

Use non-probabilistic or **purposive sampling**, if you want to learn about people with special characteristics. Purposive sampling is often used for **focus groups**.

You want to survey females between the ages of 18 and 25 who watch television at least 10 hours a week. You'll want to conduct a purposive sample, to be sure that you include all of the relevant characteristics and exclude individuals who don't fit these requirements.

Using every "nth" name

Systematic sampling, the easiest **random sampling** method, generates a multiple of a number: for example, every 5th, 10th, or 34th name from a population list. Beware of hidden patterns in your list that could compromise the integrity of the sample, however. The list may include names sorted by frequency or recency of contact, geographic origin, or similar company size.

Using more than one sampling method

You may use more than one sampling method for your survey.

You may conduct a simple random sample but purposely over-sample one ***stratum****—households with a certain level of income, for example. With these additional data, you can perform two studies: one on the whole population and the other on a specific subset. This type of sample is called a* ***stratified sample****.*

SamplePower

You can take equal numbers of various subgroups—former, current, and new customers, for example—to maximize statistical power in tests.

Choose a survey method

There are two basic methods for conducting a survey: self-administered and interviewer-administered. Self-administered surveys can be written—a paper questionnaire sent by mail, for example—or conducted electronically, either over the Web or through dedicated survey stations. Self-administered surveys can also be oral—as when participants phone in responses to an automated system. Interviewer-administered surveys can be conducted in person or over the phone, with interviewers recording results on paper or electronically.

If questions are personal or require a lot of thought, self-administered surveys are a good choice.

Allocate resources for data entry

Whatever method you choose, be sure to budget time and resources for data entry. With online surveys, your data will already be in an electronic format. Data will also be recorded if you use computer-assisted personal interviewing (CAPI) or computer-assisted telephone interviewing (CATI) solutions. Designing paper surveys so that they can be scanned electronically makes data entry for this type of survey faster and less costly.

SPSS Data Entry, mrInterview, mrPaper, mrScan

Consider the length of your survey

If you must ask a lot of questions, or expect the respondent to spend an hour or more with your survey, an interviewer-administered in-person survey is recommended. If you can't afford to perform in-person surveys, the second-best option is a self-administered survey.

A lengthy mail survey is more likely to be completed than a 20-minute telephone survey. A lengthy online survey is more likely to be completed if respondents can stop and start at will.

Consider your budget

Interviews conducted by phone can be more expensive than other surveys when you consider long-distance phone charges, wages for interviewers, and supervisory costs (in-person interviews also incur many of these charges).

Mail surveys may be economical if you have a large sample or if your sample spans a large geographical area. Remember to consider the method of returning the mail survey. For example, including postage on return envelopes increases expenses but also can increase returns.

Online surveys are another cost-effective method. You save on postage, printing, and wages for interviewers—and you minimize the costs of data entry and data cleansing, since information is already captured in an electronic format. Depending upon the number of surveys your organization conducts, you may find that a survey developed and/or hosted by an application service provider (ASP) is an economical alternative.

SPSS Data Entry,
mrInterview,
mrPaper, mrScan,
Dimensions ASP,
Dimensions Service Bureau

Consider speed

Web and telephone surveys are the fastest methods of conducting surveys. The typical time required for collecting data through a Web or telephone survey ranges from a few days to a few weeks, while mailing a survey can add at least a month to the process.

Consider your survey population

Before you decide upon any form of self-administered survey, you need to consider whether the method is appropriate for the population you are surveying.

If you're thinking of conducting a Web-based survey, make sure you're able to obtain a valid sample population with that method. For example, some populations—such as members of certain professional organizations or students at many universities—have access to the Internet. However, you can't assume that everyone does, or that they are willing to complete a survey online.

In order to get accurate results with Web-based surveys, be aware that with "volunteer" surveys—a popular feature on many Web sites—results may be ***skewed****. For example, if you are trying to learn how many hours per day people surf the Web, heavy Web users will be more likely to respond than the average person. You can minimize this risk by using screening questions to control the number of participants in various subgroups, based on demographic or other qualities or on their responses to questions.*

Stage two: Questionnaire design

Determine your survey's length

The ideal length depends upon the topic and the type of population you need to study. In general, limit the length of your questionnaire to encourage prospective respondents to participate.

Here are some general guidelines:

- *A survey targeting children should take no longer than 5 to 7 minutes to complete*
- *For most populations, self-administered surveys should be no longer than four pages*
- *Web-based surveys should ideally enable participants to answer each question in a single step*
- *Phone interviews should run no longer than 10 minutes*
- *Face-to-face interviews can continue for an hour or longer*

Balance length and information

With a shorter questionnaire, you should get a higher response rate and reduce the chance of error and **missing data**. However, you will also get less information from your respondents and may have a less comprehensive study. The key to a successful survey is to ensure that your questions are concise and easy to understand and give you valid, reliable information.

Keep questions short

Make each question easy to understand and, if possible, less than 25 words in length. Avoid using "double negatives," as this type of phrasing often confuses respondents.

Which of the following questions do you find clearer?

"I agree that snack foods such as candy bars should be available in school vending machines."

"I don't agree that snack foods such as candy bars should not be available in school vending machines."

Choose appropriate question formats

Some questions can be easily answered with a single answer, but others may require multiple choices—a scale or, perhaps, a grid. And some may best be answered through an open-ended text response. Choosing an appropriate format will make it easier for respondents to answer questions clearly.

SPSS Data Entry, mrInterview, mrPaper, mrScan

Avoid "double-barreled" questions

Double-barreled questions ask for opinions about two subjects at the same time. For example, "Are you satisfied with the amount and kind of information you receive from your benefits administrator?" When analyzing responses to such a question, you won't be able to tell which part of the question the respondent is answering.

Avoid "leading" and "loaded" questions

Leading questions indicate—subtly or not so subtly—the desired or acceptable answer. For this reason, they discredit the objectivity of your results.

Loaded questions are also to be avoided. These questions use emotionally charged words like "crisis," "failure," or "superb," and tend to elicit more strongly emotional responses than questions phrased in emotionally neutral terms.

Be specific

If questions include vague qualifiers like "few," "many," or "usually," or undefined qualifiers like "good" and "bad," the meaning of respondents' answers may be difficult to quantify.

Consider how responses might vary to the following questions:

"Do you think the president is doing a good job of handling foreign policy?"

"Do you think the president is doing a good job of handling the current foreign policy crisis?"

"Please rate how the president handles foreign policy."

The third version has the most balanced phrasing and avoids both loaded terms and vague qualifiers.

Don't lead with responses

In interviewer-administered surveys, avoid beginning questions with a phrase like "Do you very often, frequently, seldom, or never..." Since people pay attention to what they hear first, respondents listening to a question with this structure will focus on the choices, and not the question.

Organize questions in logical groups

This provides a sense of order for respondents and makes it easier for them to recall experiences and express their views.

In online surveys, group similar questions on a single screen or use grids to minimize complexity and encourage survey completion.

Avoid antagonizing respondents

Respondents are more likely to respond if they feel their answer is socially acceptable. Give respondents a way out of answering questions to which they might feel they may not have the "right" answer.

The question, "Did you vote in the last election?" is more likely to alienate a non-voter than the following phrasing: "There are many reasons why people might not vote in a given election. Sometimes they are ill, or very busy, or have to take care of an emergency. Thinking back to the last election, did you happen to vote?"

Offer respondents a choice of languages

In certain situations, your survey can be conducted in a single language. It's increasingly common, however, to create and field surveys in multiple languages. You'll want to provide questions, response lists, and instructions in the languages preferred by respondents while simplifying data analysis as much as possible.

mrTranslate

Consider using open-ended questions

Most survey questions are **closed-ended**, meaning that you provide response choices for participants. **Open-ended** questions allow people to express themselves in their own words. Open-ended questions allow you to explore a greater breadth of respondent attitudes and preferences. There are two types of open-ended questions. With one type, there is a predetermined set of answers that you expect to receive. With the second, there is a wider range of potential answers.

A question might be, "Which breakfast cereals have you eaten in the past month?" In this example, you already know the breakfast cereals on the market; yet you have not supplied a list for the respondent.

The question, "Are there additional features you'd like to see in our product?" will generate comments that are not so quickly classified as a simple list might be. The benefit to this approach is that it may uncover preferences or views your organization might not have considered suggesting. In this example, it might lead to your organization developing features that you may not have imagined customers wanting.

SPSS Text Analysis for Surveys

Place open-ended questions at the end

If your survey is divided into sections, place open-ended questions at the end of a section. This gives you greater flexibility and more room to record verbatim responses. Be careful not to overuse open-ended questions, as they can take more time for respondents to answer than questions in other formats. This may cause some respondents to quit before completing your survey.

Design your response choices

If you provide a scale or choice of answers for the respondent, it's important that the provided answers accurately reflect the respondent's intended response.

Likert scales—should you offer a middle choice?

The Likert scale is a ranked list of responses, often five or seven, ranging from one pole to an opposite pole.

Many researchers include a middle response option in a scale. The middle answer offers a comfortable response for subjects who have legitimately divided or neutral opinions.

Alternatively, if you prefer to force respondents to make a choice, you can use a four-point scale that offers no middle choice.

Note that the items above are not interval-scaled. Interval-scaled means that the distance between “strongly agree” and “agree” is the same as the distance between “agree” and “neither agree nor disagree.” Treating ordinal variables as if they were interval-scaled can lead to biased statistical results by skewing the **weighting** of each response. However, there are statistical packages that can correctly do statistical analysis of such items.

mrInterview,
SPSS Categories

Offering “Don’t know” as a response option

Should you offer “Don’t know” as a response option? By including it, you provide a response choice for respondents who genuinely don’t know. However, including this alternative enables some respondents to avoid stating an opinion.

Research has shown that using “Don’t know” doesn’t affect the relative proportion of other responses. You might, however, find patterns in the groups of people that responded “Don’t know” to specific questions.

Statistical software can help you find and understand patterns in the respondents who answer “Don’t know,” so that you can determine if they share similar characteristics.

SPSS Base, SPSS Missing Value Analysis, SPSS Classification Trees

Offering “Couldn’t say” or “Not applicable”

Depending on the question, you could offer respondents the option not to answer, if you prefer that the opinions they express be grounded in experience. Then the respondent can tell you, “I couldn’t say” or “Not applicable,” rather than “I don’t know.” By giving respondents the opportunity to give a more precise answer, you will gain more information about them.

Statistical software can help you find and understand patterns in the groups of people that answer “I couldn’t say” or “Not applicable,” so that you can determine if they share similar characteristics.

SPSS Base, SPSS Missing Value Analysis, SPSS Classification Trees

Use professional formatting

You don’t have to start from scratch when developing your survey. You can borrow styles from large, well-known surveys such as the General Social Survey developed by the United States’ NORC (National Opinion Research Center). Look into survey research books that provide examples for business, academic, or government environments, or for your particular industry. Using pre-existing questions not only saves time, it is also likely to improve the effectiveness of your survey.

If the Gallup organization groups income categories in a certain way, those breaks may be good for your survey, too.

SPSS Data Entry, mrInterview

Distinguish questions from answers

Make it as easy as possible for your respondents to fill out self-administered surveys.

For example, you can format questions in upper- and lower-case text and responses in all-capital letters and boldface type.

Did you purchase a car in the last year?
(Please circle one choice)
YES NO

Use checkboxes rather than blanks

Make it obvious where the respondent is supposed to make marks so it's easy for respondents to complete the survey. Instead of leaving a blank space, use:

- Boxes ❑
- Parentheses ( )
- Brackets [ ]
- Circles ◯

Leave enough space for comments

If you ask respondents to make comments, be sure you provide enough room for them to write them.

At the end of your survey, you may want to ask respondents for general comments and thank them for their assistance.

Don't use lines

If you use open-ended questions, don't supply lines on which respondents can write their response. The lines limit the amount of feedback you'll receive and don't allow for different sizes of handwriting. Instead, leave plenty of **white space**.

Make your survey look attractive

The presentation of a survey can either encourage or deter a person from responding.

Make a paper survey inviting by:

- Including plenty of white space, so that the document does not appear intimidating
- Including color, if possible—but no more than two colors
- Using no more than two typefaces

With an online survey, you can include elements that cannot be included in a paper survey. These include animations, video, and sound files that make an online survey vibrant and engaging. Such elements enable you to pose questions in different ways—simulating a shopping experience, for example—and can elicit different types of responses than other types of surveys.

SPSS Data Entry, mrPaper, mrScan, mrInterview

Make your survey look professional

Spending extra time and money to produce a professional document shows that you take your research seriously. This increases the likelihood that your respondents will take the same attitude. If your paper survey is several pages long, print it as a booklet. If you staple several pages together, you risk losing pages that get separated.

If you are creating an online survey, use images, sound, and animation, where appropriate, to make your survey engaging. If it is more than just a few items long, you can improve the response rate if respondents can take the survey in stages, without having to re-enter answers.

Convey a consistent image by following corporate style guidelines, whether you're creating surveys for your own organization or for your clients. To save time, develop templates that can be applied to multiple surveys, or use a service that can do this for you.

mrPaper, mrScan,
mrInterview,
Dimensions ASP,
Dimensions Service Bureau

Conduct a pilot study

Pretesting, or conducting a **pilot study**, is like a dress rehearsal for your survey. Although it takes time, conducting a pilot study saves time in the long run because it helps you identify potential problems with your survey's design while there is still time to fix them.

Conduct at least two pilot studies for all new surveys. With the first, focus on correcting problems with the questionnaire, openly asking for help and comments. Then conduct the second as if it were the "real" survey, looking for additional problem areas.

If you plan a mail survey, it's a good idea to mail the surveys to a test sample to gauge response time and other factors.

How large a sample should you use for a pilot study?

Usually, no more than 75[§] respondents are needed for a pilot study. The pilot study population should be similar in characteristics, though not in size, to the population of the planned survey.

Finding problems in your survey

The following tactics will help you find flaws in your survey.

- Read questions aloud or to someone else and observe how they sound. If the subject or sentence is complicated, split the question in two or rephrase it.
- Look for overuse of conjunctions such as "and," "or," and "but" that create compound sentences. Eliminate compound sentences when possible.
- Minimize the use of common prepositions such as "with," "except," and "by" as phrase connectors. These also can lead to complicated sentences.

Ask respondents to write in comments and additional responses. This may suggest response options you never previously considered. You can then add these to your response lists, minimizing the number of write-in or "other" responses.

Common survey problems

Look for the following common problems in surveys:

- Interviewers have problems reading questions or recording answers
- Many questions are left unanswered
- The layout of the survey is cluttered and confusing
- Instructions are confusing
- Completing the survey takes longer than anticipated
- There are unintentionally repeated or redundant questions
- There is too little space for responses to open-ended questions

Other problems to watch for

When analyzing the responses from a pilot study, you may find the following problems:

- Little or no variance among responses
- Too many "don't know" responses
- Too many "other" responses
- Unclear **skip patterns** or **branching**
- Misinterpretation of open-ended questions

If you find these problems, consider the wording of a question, and its relevance to the topic.

Stage three: Data collection

Use incentives as appropriate

The most appropriate incentive depends upon your population. In general, monetary rewards are often an effective incentive. By studying previous survey efforts and the effect of incentives, you can get a clearer picture of what kinds of incentives motivate the respondents you're hoping to reach.

SPSS Classification Trees, mrInterview

Examples of tangible incentives

Incentives that may be appropriate for your survey population include:

- Cash
- Gift certificates
- Chances to win prizes
- Promotional or premium items, such as key chains or calendars

- *A nine or ten-year-old might participate in an hour-long study in exchange for a video game or movie pass.*
- *A businessperson might participate in exchange for a chance to win a useful business tool, such as a laptop computer or PDA.*
- *Academics and some business audiences are motivated by the promise to share survey results.*

Examples of intangible incentives

Some respondents will react more favorably to intangible incentives.

"Help our organization better understand this learning disability for the benefit of other sufferers," is an example of an intangible incentive. So is the following: "By telling us how you feel about our products, you will help us better understand consumers' needs, which will lead to the development of better, more useful products."

Give clear instructions

Begin your survey by briefly explaining its purpose. Let respondents know how the data will be used, and that their privacy will be protected. In online surveys, you can also let respondents see how far they've progressed, which encourages them to complete the survey.

To minimize confusion and errors, tell the respondent at the beginning of a written self-administered survey what instrument (pen or pencil) to use. At the beginning of each section, give instructions on how to respond to the questions. Also, don't forget to tell the respondent how to return the form when it's completed.

Provide respondents with examples

On printed surveys, show respondents:

- How to fill in their address
- How to shade in a circle
- How many circles or boxes to mark

Special considerations for interviewer-administered surveys

With phone or in-person surveys, respondents can't reread items on a page, so it's particularly important that both questions and response options are as clear as possible.

- Keep questions short—no more than 25 words
- Limit the number of response options—no more than five
- Limit the number of items to rank—no more than three

Use good interviewers

A good interviewer is essential to a successful telephone or in-person survey. A good interviewer:

- Understands respondents and is empathetic
- Listens well
- Maintains an attitude of genuine interest
- Is articulate
- Can be objective
- Accepts rejection—doesn't take "no" personally
- Doesn't let mood affect performance

Special considerations for telephone surveys

For telephone interviews, script the entire call, from the greeting through the closing. Make the script clear and direct. You want to make sure that the interviewer can easily follow the script, because simple blunders in speech can affect the confidence respondents have in your survey and, therefore, affect the overall results.

mrInterview CATI

Break long phone surveys into sections

You need to keep respondents interested and alert during a long stretch of questions in an interviewer-administered survey. Breaking your survey into sections will help accomplish this. Even if there is not a logical subject change, find a way to make a break.

Prompt the interviewer

There are tactics the interviewer can use to help the respondent answer the questions. In the interviewer's script, tell him or her to:

- Mention response alternatives within the question (but not at the beginning)
- Repeat a portion of the question for items in a series so that respondents don't forget what is being asked

Give your respondents a chance to remember

Respondents may have a hard time remembering details about past behavior. Give them time to reflect if you are conducting a phone or in-person survey. Help them fix a time period in their minds by referring to events or specific dates rather than "in the past five years." Ask them to check personal records.

Help the interviewer

During an interview-administered survey, interviewers have a lot to do: They must talk, listen, and record responses. To make their job easier and receive more accurate responses:

- Clearly differentiate questions and responses from instructions (anything NOT to be read to the respondent)
- Arrange the questionnaire's check-boxes or other response options so that it's easy for interviewers to record data
- For in-person paper-based surveys, provide a list of common answers to questions so that interviewers don't have to write out the same response multiple times

- Conduct a practice session so you can listen to the interviewer and provide feedback
- Coach the interviewer on how to answer common questions that may arise

Use numbers to record answers when respondents rate something on a scale, so that the interviewers don't have to write lengthy answers.

Anticipate unavailability of respondents

Give the interviewer a long list of names to contact, in case certain individuals aren't available or are unwilling to participate. To be safe, you should have between seven and 15 times more names than the number of completed surveys you want.

You can often increase the response rate by giving respondents a choice of ways to respond—in person, by mail, or online, for example. To make data analysis simpler, use survey research tools that allow you to store data collected in multiple modes in a single database.

mrInterview,
mrPaper, mrScan

Reduce the barriers to interview response

Lack of respondent availability and lack of cooperation are the main barriers to response for telephone and in-person interviews. To compensate for lack of availability, interviewers must keep contacting prospective respondents. To help the interviewer, keep the introduction

concise. Also, at the beginning, mention any incentives being offered to survey respondents. If the person does not want to participate, don't press them; say "Thank you," and move on to another individual.

Special considerations for self-administered mailed surveys

To increase the response rate, write a straightforward cover letter, no longer than one page, explaining:

- Who is sponsoring the survey
- What is the purpose of the survey
- The seriousness/importance of the survey
- How the respondent's opinions will be used
- How their privacy will be protected
- How the respondent benefits from participating

If possible, have an important or influential person sign the letter to give the survey greater legitimacy.

Certified mail can increase response rate

Although it increases costs, sending a survey by certified mail can greatly increase the response to a lengthy questionnaire.

Express mail and e-mail improve response and timeliness

Both express mail and e-mail can be effective when sending a survey to a business. These methods improve both the response rate and the timeliness of the survey's return.

Notify respondents in advance

Send respondents an e-mail or postcard to alert them that the survey will arrive in approximately one week. **Pre-notification** will increase the likelihood of response because the respondents are more likely to recognize the survey when it arrives. The note may also spark curiosity in the respondents, and they will look for the survey.

Use commitment cards or e-mails to estimate response

Commitment cards and commitment e-mails ask prospective respondents to indicate that they agree to participate in the survey. This will allow you to estimate the response rate to your survey.

Reminders increase the response rate

Send a reminder by postcard or e-mail one or two weeks after the initial survey mailing. These reminders should thank people who have completed the survey while reminding those who have not yet responded to do so. Research shows this greatly increases a survey's response rate.

Re-mail surveys to increase response

Send out duplicate surveys to non-respondents (or to the entire sample) 10 to 14 days after the thank you/reminder postcard.

Telephone follow-up also improves response

Telephone follow-up also can increase the response rate, when those making the calls are properly trained. The personal contact tends to emphasize the importance of the survey and encourages people to participate. This does increase survey costs, however.

Special considerations for online surveys
When designing surveys for fielding online, minimize the number of screens respondents must click through and the amount of scrolling they must do to answer a question. But do not try to fit all your questions on a single screen, as this can be intimidating. Graphics and images increase the attractiveness of online surveys. Also, allowing respondents to partially complete a survey, stop, and finish it at a later time is a convenience that helps increase response rates.

Survey field times
A survey conducted online may be completed in a day—even in a few hours. Those conducted in person or by phone may take a few days. With mailed surveys, it may take weeks to receive all responses. You can begin processing and analyzing data even before all responses have been received. Doing so can help you identify questions that may be unclear to respondents and also gauge whether you are reaching the right subgroups within your sample.

mrInterview,
Dimensions ASP,
Dimensions Service Bureau

What is an "ideal" response rate?
There is no ideal **response rate** for surveys. Many factors affect the response rate to a survey, including:

- Subject matter
- Method of administration
- Presence of incentives/perceived rewards

- Level of difficulty of the survey
- Aesthetic appeal of the survey
- Perceived cost of completion

What does non-response imply?

Non-response, by itself, should not be a cause for concern. But if non-respondents differ from respondents in relevant ways, this may introduce error into your results. Software tools can help you analyze missing data patterns and account for non-response variables. If you find that respondents are systematically different from non-respondents:

- Weight your results so that the sample matches known population values
- Draw conclusions more carefully due to missing responses

SPSS Missing Value Analysis

Stage four: Analysis and reporting

Use a unique identification variable

Analysis delivers the value from your survey data. There are several steps in the process, and several ways to evaluate your data. Begin by placing a unique identification number on each survey or record returned. This unique number, sometimes called a "case ID," will help you track down problems in data cleaning as well as flag cases of particular interest during analysis.

Clean and verify your data

If you've collected data using electronic methods, your data may already be clean and ready for analysis. When collecting data entered manually, however, allow time to perform data verification and cleaning. As the analyst, you should have an idea of how your file should look. Software is available that can streamline the data cleaning process.

SPSS Base, SPSS Data Entry, SPSS Tables, SPSS Missing Value Analysis

When cleaning data, you'll want to make sure that the answers to these questions are consistent with your experience:

- *How many people should be managers, how many staff*
- *The average number of years of education of the sample*
- *The proportion of missing cases you should have for a question that did not pertain to everyone*

Run a series of crosstabulations before doing further analysis to look for:

- Inconsistent relationships (such as someone saying she is a female, but whose relationship to the head of household is "son")
- Unexpected averages
- A large number of missing values

Analyze open-ended questions
Developing a **coding scheme** for open-ended questions can be time-consuming and may require data entry personnel who have a good understanding of the subject matter. However, there are techniques available that make reliable analysis of open-ended survey responses fast and efficient. With these tools, it's easier to turn unstructured text responses into information you can analyze along with other quantitative data.


SPSS Text Analysis for Surveys

Keep track of your analyses
When performing complex analyses, keep a record of the procedures you perform or the ways you create new variables. This record will help you reconstruct your analyses, if necessary, as you write your final report.


SPSS Base

What are your data like?
Different statistical procedures are appropriate for different variables, depending on what you want to learn and the **level of measurement** of the variable.


SPSS Base, SPSS Categories

Using categorical variables

Categorical or **nominal variables** provide a list of choices with no meaningful order to the list.

Examples include gender, hair color, and the type of organization that a person works for.

An **arithmetic mean** of a categorical variable is meaningless. Instead, use the **mode** and run **frequencies** and crosstabulations using categorical variables. To display this type of data, use pie charts or bar charts.

SPSS Tables, SPSS Classification Trees, mrTables

Using ordinal variables

Ordinal variables have an implied order between the response choices.

When asking opinions about an issue, a code of 1 (strongly agree) means more agreement than a code of 2 (somewhat agree), but how much more is unknown.

Examine the **median** and **mode** for these variables and run crosstabulations. Bar charts display the choices well.

SPSS Base, SPSS Categories, SPSS Advanced Models
mrTables

Using interval or continuous variables

Interval or **continuous variables** have an implied order and an implied distance between the response options.

With a variable such as age in years, a one-unit difference is the same throughout the distribution.

Interval or continuous variables lend themselves to a much broader range of statistics than do nominal or ordinal variables.

Use continuous variables where appropriate; they will give you more information. If necessary, you can always collapse a continuous variable into a categorical variable.

Regression

Regression is one of the more popular statistical procedures using interval-level variables. **Scatterplots** and **histograms** are appropriate graphical displays for these kinds of variables.

SPSS Base, SPSS Advanced Models, SPSS Regression Models, SPSS Complex Samples, Amos

Crosstabulation

Performing a crosstabulation is appropriate when you have two or more categorical variables. (Continuous variables don't lend themselves to crosstabulation, since you would get as many rows or columns as there are different responses.)

When looking at crosstabulations, if the probability of a chi-square is .05 or less, it is usually small enough for the analyst to feel that the distribution did not result from chance.

The chi-square statistic does not measure the strength of the relationship; instead, it measures whether a relationship is likely due to chance. The smaller the probability of the chi-square statistic, the more comfortable you can be that the patterns you see are "real." If your chi-square statistic is significant, you must then follow up with a column proportion test to indicate the reasons for differences that you see in the table.

SPSS Tables, SPSS Complex Samples, mrTables

Factor analysis

In survey research, factor analysis can be helpful. It can be used to show the underlying structure of a large number of variables, to simplify the discussion of the data, or even to suggest new, combined variables for use in other analytic procedures.

SPSS Base

Differences in the mean

Use a ***t* test** to learn about differences in **means** between two groups.

Are men who receive a certain surgical procedure more likely to be younger than women receiving the same procedure? A t *test can help you analyze data to answer questions like this.*

You can determine the average age for each group, but you need a procedure like a *t* test to confirm if the observed difference is due to chance, or if it can be considered "real." If the significance is less than .05, you will usually conclude that the differences in the observed averages are not due to chance, and that they reflect real population differences.

When presenting the results of a *t* test, use a bar chart in which the height of each bar is the average score for each group. **Error bar charts** show both the group means and the precision with which the mean was estimated (often the 95 percent **confidence band**). If you have more than two groups that you would like to compare, use the **ANOVA** procedure instead of a *t* test.

SPSS Base, SPSS Complex Samples

Design readable reports

Keep your audience in mind when reporting survey results. Organize your report logically, write clearly, and avoid jargon that may be confusing of unfamiliar to your readers. You may want to create report templates, not only to save time but also so that the look of your reports supports your organization's brand, or that of your clients.

mrInterview

Use graphs and tables to communicate results

It's well known that using graphs and charts helps people understand data more easily. So show your results in appropriate visual formats. What's appropriate depends upon the kinds of questions you've asked in your survey and the nature of the data you've collected.

Number graphs and tables so that your audience can find them easily. Also, be sure to label axes and other elements. You may find that by adjusting scales or by dividing overall results into subgroups that reveal interesting differences, you can give your graphs greater impact and communicate results more clearly.

SPSS Base, SPSS Tables, SPSS Maps, mrTables

Deliver timely reports

You conducted your survey because people wanted information. Deliver results to them faster and they'll be able to put that information to use sooner. To save time, you might want to use templates to standardize reports or presentations. You can use software that enables you to provide analysts or clients with online access to real-time results, or even develop customized applications to deliver information wherever it's needed.

SPSS WebApp Framework, SmartViewer Web Server, mrInterview, mrStudio

Conclusion

This booklet has briefly touched on a number of the things you'll want to bear in mind as you plan and conduct survey research projects. Some related topics, such as predictive modeling, are beyond the scope of this booklet. If you want to explore this, or study any of the topics covered here in greater detail, we recommend you seek out a college-level textbook on marketing and survey research tools and practices. Or attend an SPSS training course in the application of our products to survey research. Information on these courses can be found at **www.spss.com/training**.

Glossary

Analysis of variance (ANOVA) — A method of analysis used when dealing with a continuous or integral dependent variable and one or more categorical or nominal variables

Arithmetic mean —The sum of all observations divided by the number of observations. Also known as the **mean**.

Branching — See **skip pattern**

Categorical variable — A variable for which numbers are simply identifiers and do not have mathematical properties, such as order. For example, the sales territory in which a company's customer lives (Central, North, South) is a categorical variable. Also called a **nominal variable**.

Census — An accounting of an entire population, as opposed to a survey of a sample of that population

Chi-square — A statistic often used in crosstabulations to test the hypothesis that the row and column variables are independent; that is, whether the observed distribution is likely due to chance

Closed-ended question — A question for which response categories are provided

Coding scheme — A method for assigning a code (usually in the form of a number) to responses to a question. For example, if you are researching customers' opinions of a certain product feature, you might devise a coding scheme to identify a positive opinion with a 1, a negative one with a 2, and a neutral one with a 3. Coding schemes are also used to turn open-ended text responses into data that can be analyzed.

Commitment card — A card that asks respondents to commit to participating in a survey

Confidence band or **interval confidence** — A specified range around a survey result for which there is a high statistical probability that it includes the value that would be calculated from the whole population (if that were possible). Such confidence intervals are commonly calculated for confidence levels of 0.95 or 0.99.

Continuous variable — A variable whose response options have an implied order and distance and for which one unit represents the same quantity throughout the scale. For example, age in years or weight in pounds or kilograms. Also called an **interval variable**.

Crosstabulation — A table that shows the relationship between two or more variables by presenting all combinations of categories of variables

Error bar chart — A chart that plots the confidence intervals, standard errors, or standard deviations of individual variables

Exact tests — Tests that calculate the probabilities exactly, rather than by using estimates, to determine if there is a relationship between variables. Exact tests are necessary when you have small datasets, small subgroups, or unbalanced distributions.

Factor analysis — An analytic technique that groups quantitative variables according to their degree of correlation

Focus group — A moderated group discussion about a particular topic. The discussion typically lasts about two hours and is led by a moderator who follows a topic guide but does not use a fixed questionnaire.

Frequencies — A table showing what number or percentage of respondents gave each answer to a question

Histogram — A bar chart in which continuous variables are shown in groups

Imputation — A methodical process for making an assumption about the value of missing data. For example, if certain demographic information is missing from a respondent's questionnaire, a model can be built comparing information that is available to data provided by other respondents. The model would then assign a likely value to the missing data.

Interval variable — See continuous variable

Level of measurement —The way in which a question may be answered. There are four levels of measurement: nominal, ordinal, interval, and ratio. (See separate entries for descriptions.)

Mean — See **arithmetic mean**

Median — A measure of central tendency for continuous or ordinal data, defined for ungrouped data as the middle value when data are arranged in order of magnitude

Missing data — Incomplete or invalid data. Data can be missing for a number of reasons: for example, questions left unanswered, marked incorrectly, or marked "Don't know." Missing data are usually excluded when calculating percentages. However, sometimes missing values can be assigned using **imputation**.

Mode — The value of a variable that occurs more frequently than any other value

Nominal variable — See **categorical variable**

Nonparametric tests — Statistical tests that require either no assumptions or very few assumptions about a population's distribution

Non-response rate — The proportion of sample population that did not respond to a survey

Open-ended question — A question for which no response list is provided. Respondents are expected to supply a response in their own words.

Ordinal variable — A variable whose response options have an implied order but no implied distance. For example, a scale that ranges from "strongly agree" to "strongly disagree."

Pilot study — The administration of a questionnaire under field conditions to a small sample in order to time it and/or uncover problems. Also called a **pretest**.

Population — The totality of things or people that you wish to study

Pre-notification card — A card alerting prospective respondents that a survey will arrive

Pretest — See **pilot study**

Purposive sampling — A sampling procedure in which each element of the population is purposely selected for some characteristic or characteristics of interest

Questionnaire — A set of questions designed to generate data necessary to accomplish the objectives of the research project

Random digit dialing — The technique of dialing random numbers in working telephone exchanges so that people with unlisted phone numbers are not excluded from a sample population

Random sampling — A sampling procedure that selects population elements based on chance. This ensures that the sample accurately represents the population.

Ratio variables — Variables that have order among points, equal distances between adjacent points, and an absolute zero

Regression — An estimation of the linear relationship between a dependent variable and one or more independent variables

Response rate — The proportion of a sample population that responded to a survey

Sample — A subset of a population from which information is collected in order to obtain information and draw conclusions about the total population

Scatterplot — A graph of data points based on two continuous variables. One variable defines the horizontal axis and the other variable defines the vertical axis.

Simple random sampling — (SRS) A sampling procedure by which population members are selected directly from the sampling frame. This results in there being an equal probability of selection for all population members that appear in the frame.

Skewed — A distribution whose frequency curve is not symmetrical about its mean, having one "tail" longer than the other

Skip pattern — A method of questionnaire design that enables respondents to skip questions, based on their response to a previous question. Also called **branching.**

Strata — (Plural of stratum) In sampling, groups defined by certain characteristics (See **stratified sampling.**)

Stratified sampling — A sampling procedure in which respondents are separated into subgroups or according to characteristics of interest, and samples drawn from each subgroup. Income level, race, and business title are examples of characteristics that might be used to create a stratified sample.

Systematic sampling — A random sampling method that is equivalent to a simple random sample

Survey — The process of collecting information about a topic or issue by means of sampling and interviewing selected individuals

***t* test** — A hypothesis test that uses the *t* statistic to determine whether or not two means are equal in the population

Weighting — Assigning a numerical coefficient to an item to express its relative importance in a frequency distribution

White space — On a printed page, an area that contains no text or graphics

About SPSS Inc.

For more than 35 years, SPSS Inc. (NASDAQ: SPSS) has helped commercial, academic, and government organizations maximize productivity and accuracy through every phase in the survey research process, from ad hoc research projects to high-volume, complex programs. SPSS Inc. offers a broad range of end-to-end survey and market research tools to support survey design, authoring, and sampling, as well as data collection, analysis, and publishing.

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American Airlines

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Process Specialist
Haworth Furniture

"With SPSS, I save about two weeks of time each quarter (along with $20,000 in annual consulting fees) from data input to number crunching."

– *Julie Frandsen*
Assistant Editor
Aspen Publishers

"SPSS Text Analysis for Surveys' ability to distinguish between positive and negative open-end responses is the 'Holy Grail' of survey text analysis."

– *Bob Muenchen*
Manager, Statistical Consulting Center
The University of Tennessee Office of Information Technology

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ISBN 1-56827-090-9 Printed in the U.S.A.

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