

# Survey Guidebook

The material presented in this guidebook offers guidance for planning, designing, and administering assessment and institutional effectiveness surveys at VCU.

A GUIDE FOR  
EFFECTIVELY  
ADMINISTERING  
SURVEYS ON CAMPUS

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## GETTING STARTED

### WHAT IS A SURVEY?

A survey is a research method for collecting information from a selected group of people using standardized questionnaires or interviews. The survey process typically includes selecting a sample, determining delivery methods, developing a questionnaire, pre-testing the questionnaire, checking the reliability and validity of the questionnaire, and analyzing results.

### IS A SURVEY NECESSARY?

The time and resources needed to successfully administer and analyze a survey can be significant, so it is important to evaluate whether you have a clear objective and whether a survey is the most appropriate tool for collecting the information you need. A survey may be most useful when you have already defined key issues, want to know the frequency with which an answer is given, need to make decisions based on numbers, wish to measure things that cannot be observed (such as attitudes and beliefs), and expect people to respond and provide thoughtful answers. In other instances, focus groups, direct observations, case studies, tests of abilities, and existing data and surveys may provide the needed information (see VCU Inventory for information about VCU surveys). If a survey is administered on a regular basis, extending the time between administrations can reduce costs, minimize survey fatigue, and provide a longer period in which to address problems identified by respondents.

## SURVEY DESIGN

### WHAT STEPS SHOULD BE TAKEN WHEN DEVELOPING OR SELECTING A QUESTIONNAIRE?

Developing or purchasing a survey involves several steps: articulating goals, identifying topics, developing and revising questions, pre-testing the survey, and assessing the reliability and validity of the questionnaire. Depending on the assessment needs of the institution or unit, purchasing a standard survey or having one designed by survey consultants may offer advantages over designing your own: the questionnaire is typically designed by survey or subject matter experts and evaluated for reliability and validity; benchmark data from other institutions may be available; and standard reports may reduce the time you spend analyzing results. However, opportunities to customize the content of the questionnaire may be limited and the relevancy of the benchmark data will depend on the number and types of institutions that participate. If a survey is purchased, the products and services of several vendors should be evaluated to determine which best meet your needs.

### ARE THERE GENERAL GUIDELINES FOR DEVELOPING SURVEY QUESTIONS?

Some general guidelines for developing survey questions are as follows:

1. Ask questions that are clear and specific. Make sure concepts are clearly defined to minimize varying interpretations.
2. Use simple and concrete language that is commonly used by respondents. Avoid using double negatives (e.g., do you oppose *not* allowing students to stay in the dorms during the summer) and unfamiliar abbreviations or jargon.
3. Use as few words as possible to pose the question.
4. Avoid questions that ask respondents to evaluate more than one concept.
5. Be as precise as possible. Words like “often” and “rarely” can mean different things to different people.
6. Ask questions about behaviors that are easily recalled because they are recent or memorable (rather than regular and mundane).
7. Do not ask leading questions which are worded in a manner that suggests an answer.
8. Avoid using words that may be viewed as biased, offensive, or provocative.

### ARE THERE GUIDELINES FOR DEVELOPING CLOSE-ENDED QUESTIONS?

Some general guidelines for developing close-ended survey questions are as follows:

1. When relevant, state both positive and negative sides in the question stem (e.g., to what extent do you agree or disagree with the following).
2. Include all reasonable responses in the list of response options and make sure the options do not overlap (i.e., response options should be exhaustive and mutually exclusive).
3. Ask respondents to rank only a few items at once rather than providing a long list.
4. Choose an appropriate scale length that represents the entire continuum without offering so many categories that differentiation becomes difficult or meaningless.
5. Identify the primary construct of interest (e.g., satisfaction, importance, agreement, frequency, duration, intensity, etc.) and make sure that the scale corresponds to the construct.

6. For rating scales, make sure your scale is balanced (i.e., provide an equal number of positive and negative response options).

## HOW SHOULD QUESTIONS BE ORGANIZED?

The questionnaire should be designed to motivate people to respond and complete the survey. Here are some tips:

1. Group questions by topic and in a logical order. People find it easier to respond to questions about events in the order in which they occurred.
2. Begin the survey with simple and interesting questions to engage and motivate participants. The first question is particularly important: it should apply to all respondents, and should be easy to read, comprehend and answer. Place sensitive or potentially objectionable questions near the end of the questionnaire.
3. Understand the potential impact that question order can have on responses: questions posed early in a survey can bring to mind material that is then more accessible for answering later questions, early questions may set a standard to which later questions are compared, and responses to later questions may be adjusted to seem fair or consistent with earlier responses.
4. Minimize the use of complex matrixes.
5. Have general questions about a topic precede specific questions to avoid conditioning.
6. Use identical question wording and, when possible, the same question order when you wish to compare results from different surveys.
7. For web surveys, create interesting, informative, and appealing welcome and closing screens; do not require responses to questions unless absolutely necessary for the survey; allow respondents to stop and resume a survey; and test the survey using different platforms and browsers.

## WHY SHOULD YOU PRE-TEST A SURVEY?

It is good practice to pre-test a survey with a small sample of people from the survey population before surveying the entire group. A pretest allows survey administrators to solicit information about the clarity of questions, the flow of the questionnaire, the ease of accessing the questionnaire (if online), and the amount of time it takes to complete.

## IS THE SURVEY INSTRUMENT VALID AND RELIABLE?

In order for a survey to provide sound, consistent, and relevant evidence for continuous improvement, the information it provides must be both reliable and valid.

- *Reliability* means the questions elicit the same type of information each time they are asked. Ideally, each question will mean the same thing to everyone. This takes careful design and refinement (see "[Survey Design](#)"). Survey reliability can be assessed by having the same respondents complete a survey twice over a short period of time to see how stable the responses are, comparing the results for different items or forms that measure the same attribute, and examining correlations among similar items in a questionnaire.

- *Validity* is the extent to which a survey question or scale (group of related items) measures the property or construct it is supposed to measure. It can be assessed through an organized review of the survey by subject matter experts and through statistical techniques such as factor analysis.



## SAMPLING

### WHAT IS A SAMPLE AND WHY IS IT USED?

A sample is a portion of the population and a census is everyone in the population. While online surveys have made surveying an entire population possible with relative ease, this approach can contribute to survey fatigue. Surveying a sample will generally produce meaningful results without impacting an entire population and inferences about a population can be made when the sample is representative of the population.

### WHEN DOES IT MAKE SENSE TO SURVEY AN ENTIRE POPULATION?

The power of statistics means we typically do not need to attempt a census for any survey unless the group of interest is very small. If the population is small or the results will be analyzed within small sub-groups (for instance, by major), a census survey or oversampling may yield more representative results. In some cases, a census survey may be conducted to give every member of a population the opportunity to provide input.

### WHAT IS OVERSAMPLING?

You can oversample members of a subgroup by selecting more people from that group than would typically be selected if everyone in the sample had an equal chance of being selected. Because the margin of error is greater for small samples, increasing the sample size for a particular subgroup through oversampling allows for more reliable estimates. This approach can be used if you need to report reliable estimates for a subgroup or if a lower response rate is expected for a certain group. If oversampling is used, the results should be weighted so statistics computed from the survey data are more representative of the population (see [“Survey Results”](#) for information on weighting).

### WHAT SIZE SAMPLE SHOULD I USE?

Several factors will help you determine the desired sample size:

- **Tolerance for error / Degree of Precision** – Sampling error results from collecting data from only a subset of, rather than all, members of the population. No sample will be perfect so you need to decide how much error you can accept, or how precise you want your estimates to be. The less error you are willing to accept, the larger your sample must be. The *margin of error* is the plus-or-minus figure that is often reported with a survey statistic (e.g., 80% +/-5%) and the *confidence interval* is two times the margin of error.
- **Level of confidence** – The confidence level reflects the probability that the confidence interval contains the population value. If a 95% confidence level is used with a +/-5% margin of error, you can be sure that the estimate of interest will be within +/-5% of the true population value 95% of the time. Most researchers use a 95 percent confidence level.
- **Size of the population** – The size of the sample, not the proportion of the population sampled, affects precision. Therefore, within small populations, greater proportions of the population need to be surveyed to achieve an estimate within a given margin of error. As the population size increases, a smaller percentage of respondents is needed for the same level of accuracy.

- **How varied a population is with respect to the characteristic of interest** – If most individuals (e.g., 90%) in a population have the same trait or opinion, there is little variability and you can use a smaller sample size. However, when there is greater variability (e.g., only 50% of a population shares the same trait or opinion), you must use a larger sample to have the same level of confidence in the results. (Note: When the proportion is unknown because the survey has not been conducted, 50 percent is typically used to determine sample size because it represents the maximum variability.)

The following website provides calculators that can be used to determine sample size (or margin of error if you already know the sample size): <http://www.custominsight.com/articles/random-sample-calculator.asp>. To translate a target sample size into a surveying strategy, you also need to take into account the expected *response rate* for your survey. For example, if your target sample size is 322 and you expect that only 25 percent of those surveyed will respond, you need to send 1,288 surveys ( $322/0.25$ ) to achieve a completed sample size of 322.

It is important to note that margin of error calculations assume the sample is randomly selected. If a sample is not random, due to sampling methodology or nonresponse bias, an accurate margin of error cannot be calculated.

## RESPONSE / NONRESPONSE

### WHAT IS A RESPONSE RATE?

The response rate refers to the number of people who respond to a survey divided by the number of people who received the survey. For example, if 100 surveys were sent and 25 people completed the survey, the response rate would be 25 percent.

### WHY IS RESPONSE RATE IMPORTANT?

The response rate for a survey is important for two key reasons:

- (1) Having an adequate number of responses to obtain a desired sample size is important to make inferences about a population (see "[Sampling](#)").
- (2) A low response rate can give rise to *nonresponse bias*. Nonresponse is often systemic, meaning there is an underlying reason why certain individuals fail to complete a survey. If respondents differ from non-respondents in terms of their responses, this can skew or bias the data.

### HOW CAN YOU MINIMIZE NONRESPONSE?

The following are several techniques that may reduce survey or item nonresponse:

- Personalize invitations: Research suggests personalizing survey invitations can boost response rates. Invitations should also include the contact person, why the survey is important, the estimated completion time, how responses will be used and protected, the value of and odds of winning an incentive, and the deadline. Having a sponsor that participants recognize may be helpful.
- Send reminders: Reminders can be very effective at boosting response rates. Many individuals receive a survey invitation and decide to complete it later but need an additional impetus to return to it.
- Keep it salient: Surveying individuals about a matter that is timely and important to them may boost participation.
- Keep it short: Use of shorter questionnaires may reduce survey fatigue, increase the time respondents spend answering each question, and reduce item nonresponse.
- Consider timing: Identify events or factors which could prevent the target population from completing the survey. Minimize duplication and overlapping survey requests of the same target population (see "VCU's Survey Calendar")
- Offer incentives: Small guaranteed prizes awarded in advance have generally been found to be effective in increasing response rates for mail surveys. Larger prizes awarded based on a lottery are often offered as an incentive for completing web surveys, but research about their effectiveness is somewhat mixed.
- Promote the survey: Ideas for promoting surveys on campus include the use of flyers, press releases, articles in the school newspaper, announcements on websites and social media, messages on computer and TV screens, and information booths or tables around campus.
- Consider oversampling: If there are certain subgroups that a researcher suspects will have lower response rates, a common technique is to oversample that group (see "[Sampling](#)")

- Use weights to correct for nonresponse bias: Once data collection is complete, researchers may weight results to account for uneven response rates (see [“Survey Results”](#)).

## SURVEY RESULTS

### HOW CAN SURVEY RESULTS BE USED?

Surveys and survey results can be used to: identify respondent needs, evaluate a program or service, solicit ideas and suggestions, set goals and priorities, demonstrate effectiveness, and guide decision-making. Results should be shared with relevant stakeholders so that strengths can be built on, celebrated, and promoted and challenges can be addressed through new or improved programs and services.

### CAN I HAVE CONFIDENCE IN MY RESULTS?

Several factors should be considered when interpreting and using survey results. The size and representativeness of the sample are key factors in determining how confident you can be that results from the sample accurately reflect the behaviors, attitudes, opinions, or preferences of the broader population (see [“Sampling”](#) and [“Response/Nonresponse”](#)). Likewise, having a well-designed survey is key to collecting meaningful and reliable information (see [“Survey Design”](#)). Finally, viewing results from surveys in conjunction with the results of other assessments and observations (i.e., triangulating) provides stronger evidence to guide decision-making – if multiple methods lead to the same conclusions you can be more confident that the results are meaningful.

Sometimes, despite careful planning and implementation, you receive a poor response rate to your survey. In these cases, results can be used but should be interpreted with caution. Use suggestive language (e.g., “it appears”) rather than decisive language when reporting results, clearly describe who the results represent and do not represent, consider weighting results, and do not generalize findings to the entire group.

### WHAT TYPES OF STATISTICS SHOULD BE REPORTED?

It is common for researchers to report *descriptive* and *inferential* statistics for survey responses. Descriptive statistics provide numerical summaries while inferential statistics answer questions about how groups of responses compare to each other. When reporting these statistics, it is important to use the right type of statistical test for your data.

- **Nominal and ordinal measures:** These measures consist of discrete categories or classifications. With ordinal measures, the categories are logically ordered (e.g., strongly disagree, disagree, neither agree nor disagree, agree, strongly agree). The proper descriptive statistics for nominal or ordinal measures are frequencies (counts) and percentages. Means are sometimes calculated for ordinal data by assigning numeric values to each ordered category, but they can be misleading and difficult to interpret. A Chi-square test can be used to compare frequencies across groups.
- **Interval measures:** With interval measures, the intervals between categories or values have meaning (such as age and GPA). The value of a response is important not just in terms of whether or not it is higher than another value, but also how much higher it is. Means and standard deviations are commonly reported descriptive statistics for interval measures. The standard deviation is a measure of the amount of variation or dispersion from the average: a low standard deviation indicates the data points tend to be very close to the mean, whereas a high standard deviation indicates the data points are spread out over a

large range of values. With interval data, the t-test and Analysis of Variance (ANOVA) are commonly used to examine differences between groups.

## WHAT IS A SURVEY WEIGHT?

A weight is a value assigned to each case in the data file to make statistics computed from the data more representative of the population. They are used when respondents do not represent the population well, either due to disproportionate sampling or uneven response rates. The value indicates how much a case will count in a statistical procedure. For example, a weight of 2 means the case counts as two cases. A weight of 0.5 means the case counts half as much as a case with a weight of 1.

There are two common types of weights:

- A *design weight* is used to compensate for the sampling strategy that was used, such as oversampling. Design weights are calculated based on the sampling fraction or over-sampling amount for a given group. For instance, if you sample twice as many minority group members, then each case would get a design weight of 0.5 when calculating statistics that you want to be representative of the population.
- *Non-response weights* are used to compensate for the fact that individuals with certain characteristics may be less likely to respond to a survey. For instance, if male students are less likely to respond to a survey, they may be under-represented in the sample. To calculate a non-response weight, divide the population proportion by the sample proportion. For example, if males represent 50 percent of the population but 40 percent of the sample, divide 0.5 by 0.4 to calculate a weight of 1.25. Weights can be more complex if they take multiple variables into account.

## HOW SHOULD RESULTS BE STORED?

Units that administer surveys should identify appropriate and secure locations to store results. Regardless of which survey tool is used to collect data, it is good practice to export and save results in case the use of the tool is discontinued in the future. A centralized and secure survey repository for all administrative surveys may be available in the future to facilitate better use of survey data and more efficient retrieval of results for documenting institutional effectiveness.

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