

Survey Sampling & Survey Incentive Best Practices

Learn how selecting the right size sample and motivating response will build valid, accurate, and actionable results.

CONTRIBUTING EDITOR

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YOU WILL LEARN

- Three reasons why proper sample design affects your research
- How to determine the optimum sample size you need for valid results
- How to pick the most appropriate sampling method for your research
- How to use incentives to maximize response rate
- How to be a pro at sampling in the cost-effective online survey environment
- How real companies like Starbucks built industry-leading positions by defining the right survey sample for their market research.

Executive Summary

The right sample is key to ensuring that you accurately represent your targeted survey population. And it's essential to making the best business decisions possible. Learn how to capture the perfect size sample for your research in order to produce quality data you can trust.

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THREE REASONS WHY SAMPLE DESIGN IMPACTS YOUR RESEARCH—AND YOUR BUSINESS DECISIONS

To make sound decisions, you need a **complete** picture of the business environment around you. Through quality sample design, you produce research results that provide a reliable and accurate picture of the total population you're interested in serving—and that informs your strategic decisions. Sample design is so critical because of the Three C's

1. **CHARACTERISTICS.** With the right planning and selection, a sample population will have the same characteristics—demographics, preferences, attitudes and opinions—as the whole target population.
2. **CONFIDENCE.** A decision-maker can draw inferences and conclusions based on the information provided by the sample population and feel **confident** that any decisions made will have a positive and predictable effect on the population as a whole.
3. **COST EFFECTIVENESS.** Research conducted using a sample population is much more **cost effective**, and requires much less time and effort, than research examining every member of a large group of interest.

Defining a sample population accurately can mean the difference between sound decisions based on true perceptions, or faulty decisions based on misleading information.

How to Define a Valid Sample

In order to define a valid sample—one you can be confident in basing decisions on— let's start by defining what constitutes **a sample**. There are two basic ways that a researcher can obtain information about the characteristics or parameters of a population of interest. They can

Sample Design Impact: Starbucks

Famed coffee outlet Starbucks wanted to increase their product mix. They needed to assess their brand equity to determine what type of products would be successful under the Starbucks name. Starbucks built a sample population from patrons of their various coffee shops and retail outlets, as this was the core market for the new product line extensions.

The results of a survey administered to this sample population revealed a tremendous potential to extend the Starbucks name to ice cream. Starbucks responded to this business intelligence by developing a line of ice cream that delivers on the intense flavor of Starbucks coffee.

According to data from Information Resources, Inc., the product became the nation's **number-one brand** of coffee ice cream **three months after it was introduced**¹.

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- Take a **census**, which makes a complete count of every person within that population, or
- Take a **sample**, which is a sub-group of a population, and use it to extrapolate information about the whole group.

Why Use a Sample?

There are certain, limited situations where taking a complete census is your best option. This usually involves business-to-business research where the target population is so specialized that the complete group is very small, like the number of astrophysics researchers interested in commissioning radio satellite arrays for deep space exploration outside the Milky Way galaxy. In a group numbering dozens, like that one, you would invest in a census poll.

In most research situations, however, time and budget constraints make taking a sample the preferred method of research. The conditions that favor taking a sample as opposed to performing a complete census are:

- The cost of **sampling error** (defining a sample that is not truly representative of the whole population) is low.
- The cost of **non-sampling error** (mistakes in accurately collecting and tabulating data across thousands—or even millions—of respondents) is high.
- There is not a huge variance in the characteristics of the members of the population.
- The destruction or consumption of a product occurs during the survey itself (as in taste testing), making the cost of providing the product for the entire population high.
- Spending additional time with individual respondents might be desirable.

Sample vs. Census³

Factors	Sample	Census
<i>Budget</i>	Small	Large
<i>Time available</i>	Short	Long
<i>Population size</i>	Large	Small
<i>Variance in the characteristic</i>	Small	Large
<i>Cost of sampling error</i>	Low	High
<i>Cost of nonsampling errors</i>	High	Low
<i>Nature of measurement</i>	Destructive (to product)	Nondestructive (to product)
<i>Attention to individual cases</i>	Yes	No

Five Steps to Defining a Successful Sample

Once you've determined that using a sample is the correct course of action for your survey, there are five basic steps to follow to ensure that you are defining a sample that is right for your situation⁴:

1. Define the **target population**—Translate the research problem into a precise statement of who should, and who should not, be included in the sample in order to obtain the information sought. If you are surveying your employees to find out retention incentives, then you would survey the population of those types of employees that you prefer to keep long term. If you are surveying potential customers, then it is the type of potential customer that your firm finds most appealing. That is the "target population" for you research.
2. Determine the **sampling frame**—This is the list containing members of the sample population, or a set of directions to identify members. It could be anything from industry association listings to a purchased mailing list or simply numbers in the phone book.
3. Determine the **sample size**—Define the size sample that will provide an accurate representation of the target population. More on this in the next section—defining the size sample you need is a mathematical exercise.
4. Select the **sampling technique**— Common techniques include both probability and nonprobability sampling. More on this later in this paper as well . . .
5. Execute the **sampling process**— Define the specific rules for researchers to follow when executing the survey. Examples of typical

questions that need to be answered include: What is the definition of a “household” or a “heavy user”? Should any qualifying questions be

asked? In other words, are there any further qualifying attributes to someone we wish to include in the sample aside from their inclusion in the general target demographic and sampling frame? A study on buying habits of women in middle income families might ask the qualifying question, for example, “Are you female?” These qualifications would become part of the sampling process. An additional sampling process qualification might be how to determine what “middle income” means.

Determining the optimal sample size for your project

Determining the right size sample is a critical issue for all researchers.

Consider:

- **Statistical Inference** - the process of generalizing the sample results to the general population results. Statistics such as **means** and **proportions** are the basis for making inferences about the population as a whole from the research conducted on your sample. The correct sample size needs to be determined so that these statistics are calculated accurately for the entire population.
- The **Confidence Interval** - the interval within which a fixed proportion of the sample means will fall. Example: a confidence interval of 95% means that the probability of finding the true mean for the total population within the sample mean is 95%. In other words, if the sample population preferred flavor A to flavor B by a significant margin, you can be 95% confident that the entire population prefers flavor A. By

Sample Design in Action: Levi's

Styles were changing, and Levi's wanted to capture the shift in perception in terms of what consumers now defined as quality jeans. They designed a sample with the following parameters:

- Target Population—Male and female consumers, between 13-25 years of age
- Sampling Frame—A computer program to randomly select participants
- Sampling Technique—Probability
- Sample Size—3,000, with 500 interviews conducted in six major cities
- Execution—If more than one person in the household is 13-25 years old, select the one with the closest birthday

Based on the results of this survey, Levi's introduced Levi's Engineered Jeans, a reinvention of the classic 5-pocket jean, securing their brand position as a trendconscious company. Designing the right sample enabled Levi's to stay connected to a young and hip markets.

determining the desired confidence interval in advance, you can calculate the sample size necessary to meet that goal.

When determining sample size, it is important to realize that your initial sample size will probably be larger than the final sample group. This is due to two factors⁷:

- The **Incidence Rate** is the rate of occurrence of persons within a sample that are actually eligible to participate. It is influenced by the proportion of people under study who have the desired characteristics. A characteristic with a low Incidence Rate requires that more people need to be surveyed in order to screen out those who do not meet the survey requirements. For example, in a survey of sexually active women, you may wish to survey those who use IUDs (inter uterine devices) as their primary method of birth control. Finding adults who use birth control may not be an issue in generating your sample—but finding those who primarily rely on IUDs (not condoms, birth control pills, or other methods) might be an incidence rate factor.
- The **Completion Rate** is the percentage of qualified respondents who actually complete the survey. The fact that some people might refuse to take the survey or bail out in the middle needs to be accounted for, and the sample size adjusted accordingly.

The good news is, the precise sample size for a survey can be calculated to adjust for all of these factors.

The formulas are usually complex, requiring the help of a firm with market research expertise to accurately define the right sample size parameters.

Here are some basic sample size guidelines to follow with typical marketing research projects.

Thumb Rules for Sample Size⁸

Type of Study	Minimum Size	Typical Size Range
Problem identification research (ex: market potential)	500	1000-2500
Problem solving researching (ex: product pricing)	200	300-500
Product testing	200	300-500

Test-marketing studies	200	300-500
TV/radio/print advertising (per commercial or ad tested)	150	200-300
Test-market audits	10 stores	10-20 stores
Focus groups	2 groups	10-15 groups

Note: These are guidelines only. The right sample size for actual projects may vary.

Four Rules for Using Incentives

Incentives are used to boost response and completion rates, and to help researchers attract the exact sample population that they are looking for. When planning an incentive to deploy as part of the survey process, there are four rules to keep in mind:

1. **Direct cash incentives** are

more effective than sweepstakes-type offers (although sweepstakes are easier to implement logistically). Respondents prefer to know they are getting a reward for participating as opposed to a chance of winning, even if the prize amount is larger. And direct cash offers tend to generate better response than free product samples.

Incentives in Action: Incentive Logic

Incentive Logic's client was a global market research firm that needed to increase consumer panel participation. The firm created a loyalty points program, executed through a client-branded customer rewards website to motivate survey completion¹¹.

The Results

- Panel attrition lowered by 20%
- Panel completion increased by 25%
- Response boosted by 25%

- 2. Base the size of the incentive on the audience.** A teenager will be more willing to give up their free time than a busy doctor or executive.
- 3. Swift surveys succeed.** If a survey takes longer than 10 minutes to complete, you'll need to dramatically increase your incentive, or face a major drop-off in response rates.
- 4. Survey entertainment value matters.** If the subject matter is dry and boring, or if it's personal in nature, a larger incentive is required as opposed to a survey that is light and fun to take.

Why the online environment reduces sample size cost effectively

By deploying an online survey, you can reduce the cost of your incentive programs.

- Sending incentive notifications through email reduces time and cost, and allows the use of a larger sample population.
- Online surveys are more engaging and fun than a phone survey or personal interview. By reducing respondent boredom, you can reduce the size of the incentive needed to ensure participation.

Infosurv Insight

Our own internal research has uncovered two unique insights:

- Going from no incentive at all to offering an incentive generates a higher response than those firms who already use an incentive and simply increase its value.
- For general population, ages 18 and up, the standard successful cash incentive is \$2.00 for taking a survey, or a \$200.00 prize with a 1 in 100 chance of winning.

How to Pick the Right Sampling Technique for Your Research

There are two primary techniques used to generate how respondents are selected to become part of the sample population, **Probability Sampling** and **Nonprobability Sampling**. The method used can have a substantial impact of the validity of your survey sample.

Develop a Valid Sample with the Probability Technique

With probability sampling all respondents are selected by random chance, with each element of the sample population having a fixed probability of being selected for the survey. The advantage of this method is that you can generate a statistically valid sample that mirrors your target population, ensuring a successful analysis of your results that in turn gives you valid, actionable information.

Probability sampling can be further classified into several techniques. The methods are listed in increasing order of precision, which also has a trade-off in increasing complexity and cost:

- **Simple Random Sampling**—Completely random selection where each individual has a known and equal probability of selection.
- **Systematic Sampling**—The sample is chosen by selecting a random starting point within a population, then picking individuals at a fixed sampling interval (every 100th person is selected, etc.).

- **Stratified Sampling**—This technique uses a two-step process. First, the population is divided into subgroups, with each subgroup sharing common characteristics. Then, individuals are selected from each subgroup through a random procedure.
- **Cluster Sampling**—This method divides the population into subgroups that are mutually exclusive and collectively exhaustive. Then, individuals are selected from each subgroup through a random procedure¹².

The method that will yield the best results for a particular survey depends on what type of survey analysis is used, and how much time and cost can be devoted to generating the sample.

Nonprobability Sampling

Nonprobability sampling relies on the personal judgment of the researcher, rather than random chance, to select each survey participant. This method can introduce significant bias into the sample, as the researcher might make selections on arbitrary considerations, such as someone that happens to be nearby at the time of the survey. This means there is no way to objectively evaluate the precision of the sample results. And that leads to uncertainty about the sample population characteristics, as they apply to the population as a whole.

Probability Versus Nonprobability Sampling¹³

Factors	Nonprobability Sampling	Probability Sampling
Nature of research	Exploratory	Conclusive
Relative magnitude of error	Nonsampling errors are larger	Sampling errors are larger
Variable characteristics in the sample	Low	High
Statistical analysis	Unfavorable	Favorable
Logistical considerations of obtaining sample	Easy	More difficult

How Online Technologies Build Value in the Sampling Process

The online environment delivers the most statistically valid sample populations available today. The reason is that Internet adoption is growing faster than ever, and has exceeded the telephone in terms of the representative audience it can reach.

There are many new online sampling techniques that can enable you to cost effectively obtain a large sample population. They include:

- **Online panels** that mirror the general public with exact precision, with all participants in the panel pre-screened to ensure panel integrity.
 - If 2% of the general population makes less than \$30,000/yr, you can find an online survey panel where the 2% of the sample makes less than \$30,000/yr.
- **Online Recruitment** where the sample population responds to an online banner ad or other recruitment tool. Known as “river sampling,” this method is not recommended. While it is very cost effective, the resulting sample is usually non-representative and poor in quality.
- **Online Intercept** involves a pop-up or other message that appears while a user is web surfing, prompting participation in a survey. Selection can be based on simple random or systematic random sampling, but the only way this is valid for a probability sample is if the population is defined as “website users¹⁴”.
- **List Rentals** function the same as purchasing a pre-existing list for a telephone or mail survey. The quality of the sample depends on the quality of the original list.

Sample Sources for Online Research¹⁵

Source	2004	2005	2006
External Internet Panel	31%	29%	37%
Client database or file	35%	32%	24%
Internally-owned Internet panel	14%	19%	19%
Phone/mail invitation	6%	5%	6%
High-traffic Internet portal	0%	1%	<1%
Single website	1%	1%	<1%
Other	13%	13%	13%

Online Benefits to Respondents that Increase Completion Rate

Another benefit of the online environment is the respondent-centric features that motivate response and boost completion rates. Web surveys simply make more sense for reasons such as:

- **Convenience**—A respondent is more motivated to complete a survey when they can do it in the comfort of their own home.
- **Privacy**—With password protection and online security features, a user is more comfortable providing personal information than if they were sitting directly across from a researcher.
- **Communication**—Email greatly reduces the cost of initial contact, reminders and follow-up messages to drive research participation. And less cost translates into a higher frequency of contact to ensure survey completion.
- **Participation**—A popular trend is to post aggregate survey results for the user access after they complete a survey. This enables respondents to see how others responded, and allows B2B survey participants to see what others in their industry are doing. Combine this with the engaging nature of an interactive survey, and you greatly enhance the interest level of completing the survey.

Online Sample Design Builds Response: Harvard Medical School

Harvard Medical School launched a study targeting adolescents to examine health issues and risk factors for various diseases. Infosurv supported this study with a custom-tailored medical research survey, executed through a statistically valid sample of America's adolescent community. Designed to gather reliable and valid health-related data, the survey methodology protected respondent's health data and ensured their anonymity through embedded Personal Access Codes (PACs). The use of PACs also prevented duplicate and invalid survey responses.

The Results

- Infosurv obtained over 2000 total responses, resulting in a 99% confidence level and +/-3% confidence interval.
- Infosurv provided numerous computer-generated reports and custom analysis to Harvard Medical School including detailed demographic data.
- Infosurv identified multiple trends and presented definitive conclusions regarding the health of America's youth to Harvard Medical School.

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Valid Sample=Valid Results

When you have a valid sample, you have an accurate window into your entire survey population—where insight into a few is insight into all.

The keys are proper definition of sample size, methodology, and the right incentives to guarantee participation of critical respondents.

Infosurv is ready to help in planning a solid strategy for cost-effective, valid and rewarding sample design that delivers results your business can act on. Contact an Infosurv research consultant today and be sure to read our other informative papers in the Infosurv Insider series.

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Jared Heyman is the founder and president of Infosurv, a full-service market research firm specializing in design, administration, and analysis of online and telephone employee, customer, and other market research studies. He leverages years of marketing research expertise to build for his clients the high-value, actionable intelligence they are searching for to facilitate the success of their strategic-level decisions.

Jared Heyman is the one companies listen to when they are planning their own marketing initiatives. He is quoted as a marketing research industry expert in everything from trade publications such as Quirks and Marketing News, to marketing research blogs such as Web Analytics World, to major media outlets such as the Chicago Tribune. Marketing professionals often rely on Jared Heyman's keen insights into the marketing research industry.

Jared Heyman is a fourth-generation entrepreneur, with a lineage of successful start-up companies contained within the family scrapbook. Heyman administered his first market research survey while at Collective Technologies in 1998. It was this experience that made him realize that there was definitely room for improvement in the marketing research arena. Jared Heyman left Collective to launch Infosurv just months later.

With an initial startup cost of less than \$3K, Infosurv has since experienced exponential growth over the past nine years. Infosurv currently has a client base of over 200, including dozens of Fortune 500 and major government agencies, and continues to specialize in market research, customer surveys, employee surveys, and online surveys.

Jared Heyman graduated from the University of Texas at Austin with a BBA, double majoring in Business and Marketing Research. He also has an extensive international profile, with cultural experience in Greece, Turkey, Spain and Southeast Asia.

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