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**" Types and Techniques of Sampling with Examples "**

## **Population vs. sample**

We need to understand the difference between [a population and a sample](https://www.scribbr.com/methodology/population-vs-sample/), and identify the target population of your research.

* The **population** is the entire group that you want to draw conclusions about.
* The **sample** is the specific group of individuals that you will collect data from.

The population can be defined in terms of geographical location, age, income, or many other characteristics.

**A diagram of a group of people

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**Types of sampling**

1. **Probability sampling:** [Probability sampling](https://www.questionpro.com/blog/probability-sampling/) is a sampling technique where a researcher selects a few criteria and chooses members of a population randomly. All the members have an equal opportunity to participate in the sample with this selection parameter.
2. **Non-probability sampling:**In [non-probability](https://www.questionpro.com/blog/non-probability-sampling/) sampling, the researcher randomly chooses members for research. This sampling method is not a fixed or predefined selection process. This makes it difficult for all population elements to have equal opportunities to be included in a sample.

### Types of probability sampling with examples:

[Probability sampling](https://www.questionpro.com/blog/probability-sampling/) is a technique in which researchers choose samples from a larger population based on the theory of probability. This sampling method considers every member of the population and forms samples based on a fixed process.

**For example,** in a population of 1000 members, every member will have a 1/1000 chance of being selected to be a part of a sample. Probability sampling eliminates [sampling bias](https://www.questionpro.com/blog/sampling-bias/) in the population and allows all members to be included in the sample.

**There are four types of probability sampling techniques:**

* **Simple random sampling:** One of the best probability sampling techniques that helps in saving time and resources is the [Simple Random Sampling](https://www.questionpro.com/blog/simple-random-sampling/) method. It is a reliable method of obtaining information where every single member of a population is chosen randomly, merely by chance. Each individual has the same probability of being chosen to be a part of a sample.  
  **For example**, in an organization of 500 employees, if the HR team decides on conducting team-building activities, they would likely prefer picking chits out of a bowl. In this case, each of the 500 employees has an equal opportunity of being selected.
* **Cluster sampling:** [Cluster sampling](https://www.questionpro.com/blog/cluster-sampling/) is a method where the researchers divide the entire population into sections or clusters representing a population. Clusters are identified and included in a sample based on demographic parameters like age, sex, location, etc. This makes it very simple for a survey creator to derive effective inferences from the feedback.  
  **For example**, suppose the United States government wishes to evaluate the number of immigrants living in the Mainland US. In that case, they can divide it into clusters based on states such as California, Texas, Florida, Massachusetts, Colorado, Hawaii, etc. This way of conducting a survey will be more effective as the results will be organized into states and provide insightful immigration data.
* **Systematic sampling:** Researchers use the [systematic sampling method](https://www.questionpro.com/blog/systematic-sampling/) to choose the sample members of a population at regular intervals. It requires selecting a starting point for the sample and [sample size determination](https://www.questionpro.com/blog/determining-sample-size/) that can be repeated at regular intervals. This type of sampling method has a predefined range; hence, this sampling technique is the least time-consuming.  
  **For example**, a researcher intends to collect a systematic sample of 500 people in a population of 5000. He/she numbers each element of the population from 1-5000 and will choose every 10th individual to be a part of the sample (Total population/ Sample Size = 5000/500 = 10).
* **Stratified random sampling:** [Stratified random sampling](https://www.questionpro.com/blog/stratified-random-sampling/) is a method in which the researcher divides the population into smaller groups that don’t overlap but represent the entire population. While sampling, these groups can be organized, and then draw a sample from each group separately.  
  **For example**, a researcher looking to analyze the characteristics of people belonging to different annual income divisions will create strata (groups) according to the annual family income. Eg – less than $20,000, $21,000 – $30,000, $31,000 to $40,000, $41,000 to $50,000, etc. By doing this, the researcher concludes the characteristics of people belonging to different income groups. Marketers can analyze which income groups to target and which ones to eliminate to create a roadmap that would bear fruitful results.

#### A diagram of a group of people Description automatically generated

#### Types of non-probability sampling with examples

The [non-probability method](https://www.questionpro.com/blog/non-probability-sampling/) is a sampling method that involves a collection of feedback based on a researcher or statistician’s sample selection capabilities and not on a fixed selection process. In most situations, the output of a survey conducted with a non-probable sample leads to skewed results, which may not represent the desired target population. But, there are situations, such as the preliminary stages of research or cost constraints for conducting research, where non-probability sampling will be much more useful than the other type.

* **Convenience sampling:** This method depends on the ease of access to subjects such as surveying customers at a mall or passers-by on a busy street. It is usually termed as [convenience sampling](https://www.questionpro.com/blog/convenience-sampling/) because of the researcher’s ease of carrying it out and getting in touch with the subjects. Researchers have nearly no authority to select the sample elements, and it’s purely done based on proximity and not representativeness. This non-probability sampling method is used when there are time and cost limitations in collecting feedback. In situations with resource limitations, such as the initial stages of research, convenience sampling is used.  
  **For example**, startups and NGOs usually conduct convenience sampling at a mall to distribute leaflets of upcoming events or promotion of a cause – they do that by standing at the mall entrance and giving out pamphlets randomly.
* **Judgmental or purposive sampling:** [Judgmental or purposive samples](https://www.questionpro.com/blog/judgmental-sampling/) are formed at the researcher’s discretion. Researchers purely consider the purpose of the study, along with the understanding of the target audience. For instance, when researchers want to understand the thought process of people interested in studying for their master’s degree. The selection criteria will be: “Are you interested in doing your masters in …?” and those who respond with a “No” are excluded from the sample.

**For example** , You want to know more about the opinions and experiences of disabled students at your university, so you purposefully select a number of students with different support needs in order to gather a varied range of data on their experiences with student services.

* **Snowball sampling:** [Snowball sampling](https://www.questionpro.com/blog/snowball-sampling/) is a sampling method that researchers apply when the subjects are difficult to trace. For example, surveying shelterless people or illegal immigrants will be extremely challenging. In such cases, using the snowball theory, researchers can track a few categories to interview and derive results. Researchers also implement this sampling method when the topic is highly sensitive and not openly discussed—

**for example**, surveys to gather information about HIV Aids. Not many victims will readily respond to the questions. Still, researchers can contact people they might know or volunteers associated with the cause to get in touch with the victims and collect information.

* **Quota sampling:**  In [Quota sampling](https://www.questionpro.com/blog/quota-sampling/), members in this sampling technique selection happens based on a pre-set standard. In this case, as a sample is formed based on specific attributes, the created sample will have the same qualities found in the total population. It is a rapid method of collecting samples.

**For example** , You want to gauge consumer interest in a new produce delivery service in Boston, focused on dietary preferences. You divide the population into meat eaters, vegetarians, and vegans, drawing a sample of 1000 people. Since the company wants to cater to all consumers, you set a quota of 200 people for each dietary group. In this way, all dietary preferences are equally represented in your research, and you can easily compare these groups.You continue recruiting until you reach the quota of 200 participants for each subgroup.

* **Voluntary response sampling**

Similar to a convenience sample, a voluntary response sample is mainly based on ease of access. Instead of the researcher choosing participants and directly contacting them, people volunteer themselves (e.g. by responding to a public online survey).

Voluntary response samples are always at least somewhat [biased](https://www.scribbr.com/faq-category/research-bias/), as some people will inherently be more likely to volunteer than others, leading to [self-selection bias](https://www.scribbr.com/research-bias/self-selection-bias/).

* **For Example**: Voluntary response sampling

A diagram of a group of people

Description automatically generatedYou send out the survey to all students at your university and a lot of students decide to complete it. This can certainly give you some insight into the topic, but the people who responded are more likely to be those who have strong opinions about the student support services, so you can’t be sure that their opinions are representative of all students.