**Sampling Methods**

**Read the note on Sampling given below**

It is incumbent on the researcher to clearly define the target population. There are no strict rules to follow, and the researcher must rely on logic and judgment.

The population is defined in keeping with the objectives of the study. Sometimes, the entire population will be sufficiently small, and the researcher can include the entire population in the study. This type of research is called a census study because data is gathered on every member of the population.

Usually, the population is too large for the researcher to attempt to survey all of its members. A small, but carefully chosen sample can be used to represent the population. The sample reflects the characteristics of the population from which it is drawn.

The two main methods used in survey research are **probability** sampling and **nonprobability** sampling. The big difference is that in probability sampling all persons have a chance of being selected, and results are more likely to accurately reflect the entire population. While it would always be nice to have a probability-based sample, other factors need to be considered (availability, cost, time, what you want to say about results). Some additional characteristics of the two methods are listed below:

Probability Sampling

In probability samples, each member of the population has a known non-zero probability of being selected. The advantage of probability sampling is that sampling error can be calculated. Sampling error is the degree to which a sample might differ from the population. When inferring to the population, results are reported plus or minus the sampling error.

With probability sampling:

* You have a **complete sampling frame.** You have contact information for the entire population.  
    
  • You can **select a random sample from your population.** Since all persons (or “units”) have an equal chance of being selected for your survey, you can randomly select participants without missing entire portions of your audience.  
    
  • You can **generalize your results from a random sample**. With this data collection method and a decent response rate, you can extrapolate your results to the entire population.  
    
  • It **can be more expensive and time-consuming** than convenience or purposive sampling.

Probability methods include random sampling, systematic sampling, and stratified sampling.

1. **Random sampling** is the purest form of probability sampling. Each member of the population has an equal and known chance of being selected. When there are very large populations, it is often difficult or impossible to identify every member of the population, so the pool of available subjects becomes biased.
2. **Systematic sampling** is often used instead of random sampling. It is also called an nth. name selection technique. After the required sample size has been calculated, every nth. record is selected from a list of population members. As long as the list does not contain any hidden order, this sampling method is as good as the random sampling method. Its only advantage over the random sampling technique is simplicity. Systematic sampling is frequently used to select a specified number of records from a computer file.
3. **Stratified sampling** is commonly used probability method that is superior to random sampling because it reduces sampling error. A stratum is a subset of the population that share at least one common characteristic. Examples of stratums might be males and females, or managers and non-managers. The researcher first identifies the relevant stratums and their actual representation in the population. Random sampling is then used to select a ***sufficient***number of subjects from each stratum. *"Sufficient"* refers to a sample size large enough for us to be reasonably confident that the stratum represents the population. Stratified sampling is often used when one or more of the stratums in the population have a low incidence relative to the other stratums.
4. **Cluster sampling** is when the population is divided into clusters (e.g., types of manufacturing businesses) so the sampling frame is the complete list of clusters rather than the individual businesses. Then a few clusters would be selected using random sampling and data collected from every case in the selected clusters.
5. **Multi-stage sampling (sometimes called multistage cluster sampling)** is similar to 4 above, except that the sampling within the selected clusters occurs.

Non-probability Sampling

In non-probability sampling, members are selected from the population in some non-random manner. These include convenience sampling, judgment sampling, quota sampling, and snowball sampling. In non-probability sampling, the degree to which the sample differs from the population remains unknown.

Non-probability sampling is:

**Used when there isn’t an exhaustive population list available**. Some units are unable to be selected, therefore you have no way of knowing the size and effect of sampling error (missed persons, unequal representation, etc.).   
  
• **Not random.**   
  
• **Can be effective when trying to generate ideas and getting feedback,** but you cannot generalize your results to an entire population with a high level of confidence.

Non-probability sampling methods include the following:

1. **Convenience sampling** is used in exploratory research where the researcher is interested in getting an inexpensive approximation of the truth. As the name implies, the sample is selected because they are convenient. This non-probability method is often used during preliminary research efforts to get a gross estimate of the results, without incurring the cost or time required to select a random sample.
2. **Judgment sampling (sometimes referred to as purposive sampling)** is a common non-probability method. The researcher selects the sample based on judgment. This is usually an extension of convenience sampling. For example, a researcher may decide to draw the entire sample from one "representative" city, even though the population includes all cities. When using this method, the researcher must be confident   
   that the chosen sample is truly representative of the entire population.
3. **Quota sampling** is the non-probability equivalent of stratified sampling. Like stratified sampling, the researcher first identifies the stratums and their proportions as they are represented in the population. Then convenience or judgment sampling is used to select the required number of subjects from each stratum. This differs from stratified sampling, where the stratums are filled by random sampling.
4. **Snowball sampling** is a special nonprobability method used when the desired sample characteristic is rare. It may be extremely difficult or cost prohibitive to locate respondents in these situations. Snowball sampling relies on referrals from initial subjects to generate additional subjects. While this technique can dramatically lower search costs, it comes at the expense of introducing bias because the technique itself reduces the likelihood that the sample will represent a good cross section from the population.
5. **Self-selection sampling** is when individuals choose to participate – perhaps by responding to an advertisement.