Sampling – meaning and typology

Sampling definition: A sample refers to a smaller, manageable version of a larger group. It is a subset containing the characteristics of a larger population. in other words, sampling is a process, which allows us to study a small group of people from the large group to derive inferences that are likely to be applicable to all the people of the large group. This is done as When a researcher conducts a research, it's rarely possible to collect data from every person in that group or to study the whole population. Instead, the researcher selects a sample. Hence, a sample is the group of individuals who will actually participate in the research. In order to get a clearer picture we must first differentiate between population and a sample.

- The population is the entire group that a researcher wants to draw

  conclusions about.

- The sample is the specific group of individuals that a researcher will collect data from.

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

Types of sampling:

sampling methods Sampling are basically of two types – probability sampling and non-probability sampling.

1. **Probability sampling/ Random sampling:** Probability sampling is defined as a sampling technique in which the researcher chooses samples from a larger population using a method based on the theory of probability. The researcher sets a few criteria and chooses members of a population randomly. This is done so that all the members have an equal opportunity to be a part of the sample with this selection parameter.

2**. Non-probability sampling/ Non-random sampling**: It is a sampling technique where the samples are chosen deliberately and not randomly. Non-probability sampling is defined as a sampling technique in which the researcher selects samples based on the subjective judgment of the researcher rather than random selection. It is a less stringent method. This sampling method depends heavily on the expertise of the researchers. It is carried out by observation, and researchers use it widely for qualitative research. Non-probability sampling is a sampling method in which not all members of the population have an equal chance of participating in the study, unlike probability sampling. Each member of the population has a known chance of being selected. Non-probability sampling is most useful for exploratory studies like a pilot survey (deploying a survey to a smaller sample compared to pre-determined sample size). Researchers use this method in studies where it is impossible to draw random probability sampling due to time or cost considerations.

Types of probability sampling with examples:

There are four types of probability sampling techniques. They are -simple random sampling, stratified random sampling, cluster sampling, and systematic sampling

Simple random sampling:

Simple random sampling as the name suggests, is an entirely random method of selecting the sample. A simple random sample is a is a randomly selected subset of a population in which each member of the subset has an equal probability of being chosen to be a part of a sample. As such, a simple random sample is an unbiased surveying technique. It is one of the best probability sampling techniques that helps in saving time and resource. It is a reliable method of obtaining information where every single member of a population is chosen randomly, merely by chance. It could be more accurately called a randomly chosen sample. Random samples are used to avoid bias and other unwanted effects. However, it isn't quite as simple as it seems; choosing a random sample isn't as simple as just picking 100 people from 10,000 people. One has to be sure that one's random sample is truly random and fairly homogenous. 'Lottery method' is

one example of random sample where the selection of items entirely depends on luck or probability, and therefore this sampling technique is also sometimes known as a method of chances. Another example of simple random sampling is the 'use of random numbers.' The use of random numbers is an alternative method that also involves numbering the population. The use of a number table similar to the one below can help with this sampling technique.

Stratified random sampling:

Stratified random sampling is a method of sampling that involves dividing a population into smaller sub-groups called strata. The groups or strata are organized based on the shared characteristics or attributes such as gender, age, income range, job profile, or educational attainment, etc. of the members in the group. While sampling, a researcher organises these groups and then sample is drawn from each group separately using simple random sampling method. Stratified random sampling is also known as quota random sampling and proportional random sampling.

For example, the company has 800 female employees and 200 male employees. You want to ensure that the sample reflects the gender balance of the company, so you sort the population into two strata based on gender. Then you use random sampling on each group, selecting 80 women and 20 men, which gives you a representative sample of 100 people. Another example of stratified random sampling is, suppose we conduct a national survey. We might divide the population into groups or strata, based on geography - north, east, south, and west. Then, within each stratum, we might randomly select survey respondents.

Types of non-probability sampling with examples

There are four types of non-probability sampling; they are- Convenience sampling, Judgmental or purposive sampling, Quota sampling and Snowball sampling.

Judgmental or purposive sampling:

Judgemental or purposive sampling method, researchers select the samples based purely on the researcher's discretion, knowledge and credibility. In other words, researchers choose only those people who they deem fit to participate in the research study. In purposive sampling, we sample with a purpose in mind. We usually would have one or more specific predefined groups we are seeking. Judgmental or purposive sampling is not a scientific method of sampling, and the downside to this sampling technique is that the preconceived notions of a researcher can influence the results. Thus, this research technique involves a high amount of ambiguity. The purposive sampling technique is most effective when one needs to study a certain cultural domain with knowledgeable experts within. Purposive sampling may also be used with both qualitative and quantitative research techniques. TV reporters stopping certain individuals on the street in order to ask their opinions about certain political changes constitutes the most popular example of this sampling method. However, it is important to specify that the TV reporter has to apply certain judgment when deciding who to stop on the street to ask questions; otherwise it would be the case of random sampling technique. Alternatively, purposive sampling method may prove to be effective when only limited numbers of people can serve as primary data sources due to the nature of research design and aims and objectives. For example, for a research analysing effects of personal tragedy, the researcher may use his/her own judgment in order to choose senior level managers who could particulate in indepth interviews.

Snowball sampling:

Snowball sampling is a sampling method that researchers apply when the subjects are inaccessible or hard to find. In snowball sampling, the researcher begins by identifying someone who meets the criteria for inclusion in the study at hand and the researcher asks them to recommend others who they may know who also meet the criteria. This sampling system works like the referral program. Snowball sampling is especially useful when the sample size is small and we are trying to reach populations that are difficult to trace. Researchers also implement this sampling method in situations where the topic is highly sensitive and not openly

discussed—for example, surveys to gather information about individuals with 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. In other words, snowball sampling is particularly appropriate when the population you are interested in is hidden and/or hard-to-reach. Other examples include populations such as drug addicts, homeless people, prostitutes etc.

Quota sampling:in quota sampling, a quota is assigned

Quota sampling is a non-probabilistic form of stratified sampling. In this sampling method, the population is divided into strata or into mutually exclusive sub-groups that are similar or homogenous and from which the sample items are selected on the basis of a given quota or proportion. In quota sampling, care is taken to maintain the correct proportions representative of the population. For example, if the population consists of 45% female and 55% male, the sample should reflect those percentages. Quota sampling is based on the researcher's judgment. This type of sampling technique is used when, for instance, a company is short of time or the budget of the researcher is limited. Quota sampling can also be used at times when detailed accuracy is not important. To create a quota sample, knowledge about the population and the objective should be well understood so that the researcher can choose the relevant stratification; next is to calculate quota from each section of the population and at the end keep on adding samples until the quota for each section is met. Quota sampling has many benefits. It is easy to administer; it is fast to create and complete; it is inexpensive; it takes into account population proportions, if desired and lastly can be used if probability sampling techniques are not possible.