Types of Sampling Techniques

Sampling Techniques

Random Sampling Methods
- Simple Random Sampling
- Stratified Random Sampling
- Systematic Random Sampling
- Multi-stage Sampling
- Cluster Sampling

Non-Random Sampling Methods
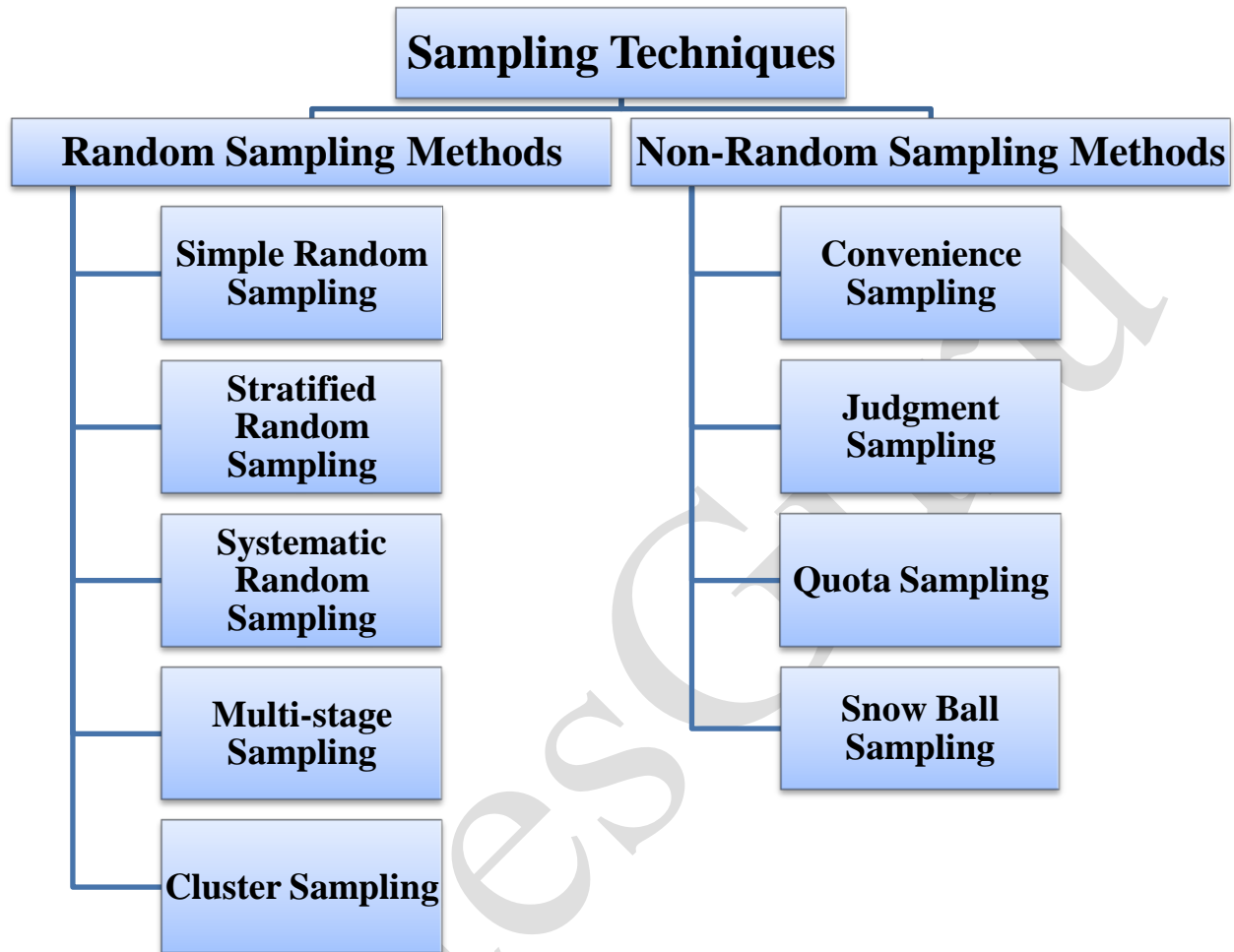- Convenience Sampling
- Judgment Sampling
- Quota Sampling
- Snow Ball Sampling

1. Random Sampling Methods

The first statistical sampling method is simple random sampling. In this method, each item in the population has the equal chances of being selected as part of the sample as any other item. For example, in a population of 1000 members, each of these members will have 1/1000 chances of being selected to be a part of a sample. It gets rid of bias in the population and gives a fair chance to all members to be included in the sample.

a. **Simple Random Sampling:** Every element has an equal chance of getting selected to be the part sample. It is used when we don't have any kind of prior information about the target population.

For example, in an organization of 500 employees, if the HR team decides on conducting team building activities, it is highly likely that they would prefer picking chits out of a bowl. In this case, each of the 500 employees has an equal opportunity of being selected.

b. **Stratified Random Sampling:** This technique divides the elements of the population into small subgroups (strata) based on the similarity in such a way that the elements within the group are homogeneous and heterogeneous among the other subgroups formed e.g. students of college can be divided into strata on the basis of gender, courses offered, age, etc. And then the elements are randomly selected from each of these strata. We need to have prior information about the population to create subgroups.

c. **Systematic Random Sampling:** Using systematic sampling method, members of a sample are chosen at regular intervals of a population. It requires selection of a starting point for the sample and sample size that can be repeated at regular intervals. This type of sampling method has a predefined interval and 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. Each element of the population will be numbered from 1-5000 and every 10th individual will be chosen to be a part of the sample (Total population/ Sample Size = 5000/500 = 10).

d. **Multi-stage Sampling:** It is the combination of one or more methods described above. Population is divided into multiple clusters and then these clusters are further divided and grouped into various sub groups (strata) based on similarity. One or more clusters can be randomly selected from each stratum. This process continues until the cluster can't be divided anymore.

For example, country can be divided into states, cities, urban and rural and all the areas with similar characteristics can be merged together to form a strata.

e. **Cluster Sampling:** Cluster sampling is a method where the researchers divide the entire population into sections or clusters that represent a population. Clusters are identified and included in a sample on the basis of defining demographic parameters such as age, location, sex etc. which makes it extremely easy for a survey creator to derive effective inference from the feedback.

Cluster sampling can be done in following ways:

- **Single Stage Cluster Sampling:** When all elementary sampling units contained in one or more clusters, selected at random, are studied.

- **Two Stage Cluster Sampling:** Here first we randomly select clusters and then from those selected clusters we randomly select elements for sampling.

2. Non-Random Sampling Methods

The non-random sampling methods are often called non-probability sampling methods. In a non-random sampling method, the probability of any particular unit of the population being chosen is being unknown. It does not rely on randomization. This technique is more reliant on the researcher's ability to select elements for a sample. Outcome of sampling might be biased and makes difficult for all the elements of population to be part of the sample equally.

a. **Convenience Sampling:** This method is dependent on the ease of access to subjects such as surveying customers at a mall or passers-by on a busy street. In this the researcher has the freedom of choosing any respondent based on his convenience.

   For example, in surveys conducted at a retail outlet or shopping mall interviews, people who happen to be at these places at the time the response was being taken become a part of the sample.

b. **Judgment Sampling:** Judgment Sampling is a purposive sampling where those respondents are deliberately made a part of sample, which meet research purpose based on researcher's own judgment.

   For example, if a survey is being conducted on finding out what is takes to be a student union leader, then it is the people who are in this position i.e. student union leaders, or those who frequently interact with such people, who can give first hand information.

c. **Quota Sampling:** In Quota sampling, selection of members in this sampling technique happens on basis of a pre-set standard. In this case, as a sample is formed on basis of specific attributes, the created sample will have the same attributes that are found in the total population. It is an extremely quick method of collecting samples.

d. **Snow Ball Sampling:** This technique is used in the situations where the population is completely unknown and rare. Therefore we will take the help from the first element which we select for the population and ask him to recommend other elements who will fit the description of the sample needed. So this referral technique goes on, increasing the size of population like a snowball.

   For example, it will be extremely challenging to survey shelter less people or illegal immigrants. In such cases, using the snowball theory, researchers can track a few of that particular category to interview and results will be derived on that basis.