

SAMPLING STRATEGIES

DEFINITION

The Sampling is a statistical process of selecting few representatives from the population, called as a sample, on the basis of which the characteristics of the total population can be ascertained.

Random Sampling Methods: The random sampling is also called as a probability sampling since the sample

selection is done randomly so the laws of probability can be applied. Following are the important methods of Random Sampling:

- ❖ Simple Random Sampling
- ❖ Stratified Sampling
- ❖ Systematic Sampling
- ❖ Multi-Stage Sampling

Non-Random Sampling Methods. In the case of non-random sampling, the selection is done on the basis

other than the probability considerations, such as judgment, convenience, etc. The non-random sampling is subject to sampling variability, but however there is no certain pattern of variability in the process.

What is Sampling Variability? Since the results are obtained from the sample rather than the population, there is a possibility of variations in the published estimates and

the actual. This variation is called as Sampling Variability. The methods of non-random sampling are given below:

Stratified Sampling

Definition: The Stratified Sampling is a sampling technique wherein the population is sub-divided into homogeneous groups, called as 'strata', from which the samples are selected on a random basis.

Type of Sampling	When to use it	Advantages	Disadvantages
Probability Strategies			
Simple Random Sampling	When the population members are similar to one another on important variables	Ensures a high degree of representativeness	Time consuming and tedious
Systematic Sampling	When the population members are similar to one another on important variables	Ensures a high degree of representativeness, and no need to use a table of random numbers	Less random than simple random sampling
Stratified Random Sampling	When the population is heterogeneous and contains several different groups, some of which are related to the topic of the study	Ensures a high degree of representativeness of all the strata or layers in the population	Time consuming and tedious
Cluster Sampling	When the population consists of units rather than individuals	Easy and convenient	Possibly, members of units are different from one another, decreasing the techniques effectiveness
Non-Probability Sampling			
Convenience Sampling	When the members of the population are convenient to sample	Convenience and inexpensive	Degree of generalizability is questionable
Quota Sampling	When strata are present and stratified sampling is not possible	Insures some degree of representativeness of all the strata in the population	Degree of generalizability is questionable

Non-probabilistic sampling

This type of sampling would be useful to an archaeologist interested in known sites. Their placement may be recorded in documentary sources, part of local knowledge, or they may simply be visible in the landscape. For example, here the historic wagon trail is clearly visible on the aerial photo.

In this case, the areas excavated are only those around the two historic sites which were already known to the archaeologist. The six

prehistoric sites have not been discovered.

Simple random sampling

This strategy is the simplest form of probabilistic sampling.

Sampling units are selected on a completely random basis. The greatest drawback to this strategy is that, depending on the dispersion of the randomly selected numbers, large parts of the region may be left out of the sampling completely. For example, note the concentration of units towards the bottom of the aerial photo and the

relatively sparse areas in the center.

In this case, the sampling uncovered five of the eight sites: the historic wagon trail, the Palaeoindian quarry, an archaic burial site and settlement, and the historic homestead.

However, note that if different random numbers had been used to determine sampling units, there could have been an entirely different result.

Systematic sampling

In this probabilistic strategy, sample units are evenly distributed throughout the

sample universe. The areas of low sample concentration that can be a problem in random sampling are avoided in systematic sampling.

However, in an unusual situation in which the sites are regularly spaced in a pattern approximating the layout of the sample units but slightly offset from it, it is possible to miss every site.

In this case, the sampling uncovered four of the eight sites: the historic wagon trail, an archaic burial site.