What are the different types of samples used in statistics?

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There are several types of samples that are commonly used in statistics. These include random samples, stratified samples, cluster samples, systematic samples, and convenience samples.

A random sample is a subset of the population in which each member has an equal chance of being selected. This type of sample is often used to generalize the findings to the entire population.

Stratified samples involve dividing the population into different subgroups or strata and then taking a random sample from each group. This helps to ensure that all subgroups are represented in the sample.

Cluster samples involve dividing the population into clusters and then randomly selecting clusters to be included in the sample. This method is often used when it is difficult to obtain a list of all members of the population.

Systematic samples involve selecting every nth member from a population. This method is useful when the population is too large to be sampled in its entirety.

Convenience samples are samples that are chosen based on convenience and availability. This type of sample is often used when it is difficult to obtain a random or representative sample.

In summary, the different types of samples used in statistics serve different purposes and are selected based on the specific research objectives and practical constraints.

Statistics - Sample Types

A study needs participants and there are different ways of gathering them.

Some methods are better than others, but they might be more difficult.

Different Types of Sampling Methods

Random Sampling

A random sample is where every member of the population has an **equal chance** to be chosen.

Random sampling is the best. But, it can be difficult, or impossible, to make sure that it is completely random.

Note: Every other sampling method is compared to how close it is to a random sample - the closer, the better.

Convenience Sampling

A convenience sample is where the participants that are the easiest to reach are chosen.

Note: Convenience sampling is the easiest to do.

In many cases this sample will not be **similar** enough to the population, and the conclusions can potentially be useless.

Systematic Sampling

A systematic sample is where the participants are chosen by some regular system.

For example:

The first 30 people in a queueEvery third on a listThe first 10 and the last 10

Stratified Sampling

A stratified sample is where the population is split into smaller groups called 'strata'.

The 'strata' can, for example, be based on demographics, like:

Different age groupsProfessions

Stratification of a sample is the first step. Another sampling method (like random sampling) is used for the second step of choosing participants from all of the smaller groups (strata).

Clustered Sampling

A clustered sample is where the population is split into smaller groups called 'clusters'.

The clusters are usually natural, like different cities in a country.

The clusters are chosen randomly for the sample.

All members of the clusters can participate in the sample, or members can be chosen randomly from the clusters in a third step.