

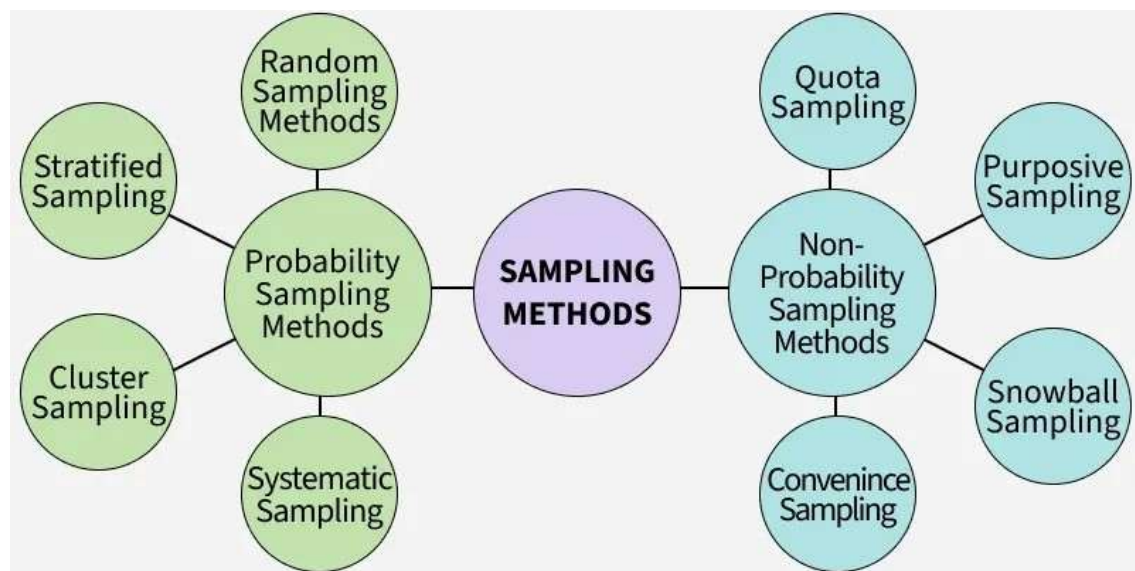
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Topic- Methods of Sampling

Methods of Sampling

Sampling is the process of selecting a small group from a larger population to gather information and make conclusions about the whole group. It's a practical and cost-effective way to collect data, especially when studying when it is not possible.

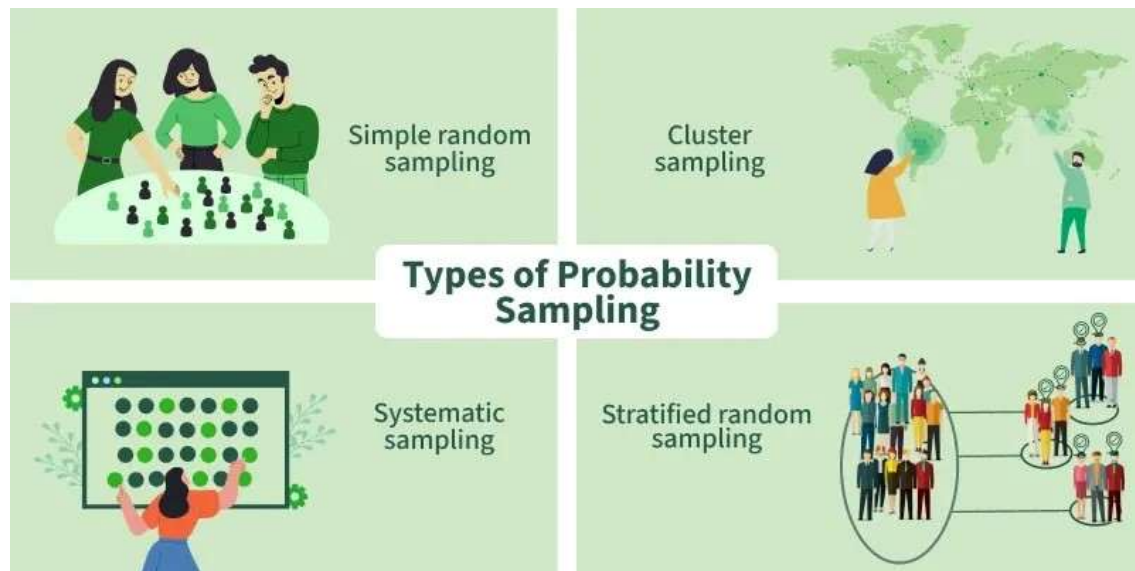
Example:- A man wants to buy mangoes but doesn't inspect each one individually. Instead, he picks 2 to 3 mangoes at random from the pile, checks their quality, and decides that the entire batch is good based on his quick inspection.

There are two types of Sampling Methods: Probability sampling methods and Non-probability sampling methods.



Probability Sampling Methods

Every element has a known, non-zero chance of selection. Here we will discuss in detail three probability sampling methods, such as



Random Sampling Method

Random Sampling is a method where every item or individual in a group has an equal chance of being selected. It's like drawing names from a hat—each name has the same probability of being chosen.

Example: You have a class of 30 students, and you want to randomly select 5 students for a group project. You write each student's name on a separate piece of paper, put them all in a hat, and draw 5 names. Each student has an equal chance of being selected.

Lottery Method: In the Lottery Method, the investigator prepares paper slips for each of the items of the universe and shuffles these slips in a box. After that, some slips are impartially drawn from the box to obtain a sample.

Table of Random Numbers: Use pre-generated tables of random numbers to select items.

Random Sampling and Haphazard Sampling: Random sampling follows a systematic approach based on rules of sampling, whereas haphazard sampling

does not follow any systematic rules or methodology. Additionally, in random sampling, each item has an equal chance of being selected. In contrast, haphazard sampling does not ensure equal chances for each item to be selected.

Stratified or Mixed Sampling

Stratified or Mixed Sampling is a method used when a population has different groups with unique characteristics. In this method, the population is divided into smaller groups, called strata, based on these differences. Then, some items are chosen from each group to represent the whole population.

***Example:-** Surveying 300 customers from an e-commerce site: Split customers into strata (e.g., age groups: 18–30, 31–50, 51+). Randomly sample 100 from each group.*

Stratified Sampling Method is also known as **Mixed Sampling** because it **combines both Purposive and Random Sampling methods**. The population is divided into different strata purposefully, but the items are selected randomly from each stratum.

Systematic Sampling

Systematic Sampling is a method where the population is arranged in a specific order, such as by number or alphabet. Every nth item or person is then selected for the sample. This method is usually easier than randomly picking each item and helps reduce bias.

***Example:** Quality testing in a factory: Take every 20th smartphone off the assembly line. Test it for defects.*

Cluster Sampling

Cluster sampling is a research method where you split a large population into natural groups (like neighborhoods or schools), randomly pick a few of these groups, and study everyone in the chosen groups.

***Example:** To study student lunch habits in a city: Divide all students into clusters by school. Randomly select 5 schools out of 50. Survey every student in those 5 schools.*