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Subject : Statistics for AI&DS Academic Year: 20 23 2024

MODULE - 2

What is sampling?

* Sampling is the process of selecting a representative Group from the population under study.

* The target population is the total group of individuals from which the sample might be drawn.

* A sample is the group of people who take part in the investigation. The people who take part is called as "participants".

Types of Sampling:-

Biased sample

* Convenience Sample

* Voluntary & Response Sample.

Unbiased Sample.

* Stratified Random Sampling

* Multi-stage Sampling.

* Simple Random Sampling.

Biased Sample:-

It occurs when one or more parts of the population are favoured over others.



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Types of Biased Sample:-

Convenience sampling → It only includes people who could reach.

- * The samples are picked up according to the convenience.
- * Only the reachable ones and known people are included in sample. (Refer PPT).

Voluntary Response sample:

- * It consists of people that have chosen to include themselves.
- * The sample consists of people who are interested in that topic.
- * Only voluntary participation of people are the part of the sample. (Refer PPT for example).

UNBIASED SAMPLE -

A good sample is one that is representative of the entire population that gives "each" thing an equal chance of being chosen.

Types of Unbiased Sample:

Stratified Random Simple Random Sampling:

- * It is a type of probability sampling where everyone in the entire target population has an equal chance of being selected.



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For example, it is similar to the national lottery. If the population is everyone who has bought a lottery ticket, then each person has an equal chance of winning the lottery.

- ★ Random sampling requires a way of naming or numbering the target population and then using some type of raffle method to choose those to make up the sample. (Example refer PPT).

Stratified Random Sampling:

- ★ In stratified random sampling, from the entire population, groups of similar people are grouped together.

- ★ These groups are known as strata.

- ★ In each stratum random sampling is applied and the samples are selected. (Refer PPT).

Multistage Sampling:

In multistage sampling it was combination of two or more stages. It divides the population into groups (or clusters) for conducting research. During this sampling method, significant clusters of the selected people are split into sub-groups at various stages to make it simpler for primary data collection.



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Steps to conduct multistage sampling?

Step 1: Choose a sampling frame, considering the population of interest. The researcher allocates a number to every group and selects a small sample of relevant separate groups.

Step 2: Select a sampling ~~frame~~ frame of relevant separate sub-groups. Do this from related, different discrete groups selected in the previous stage.

Step 3: Repeat step 2 if necessary.

Step 4: Using some variations of probability sampling, choose the members of the sample group from the sub-groups.