



# Sampling Techniques

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## DATA IS COLLECTED IN TWO WAYS

- COMPLETE ENUMERATION OR CENSUS
- SAMPLE SURVEY

## POPULATION

The term population means all members/items that meet a set of specifications or a specified criterion.

A single member/item of any given population is referred to as an element. Number of elements in the population is the size of the population.

when all elements are studied and analysed, we call it a census.

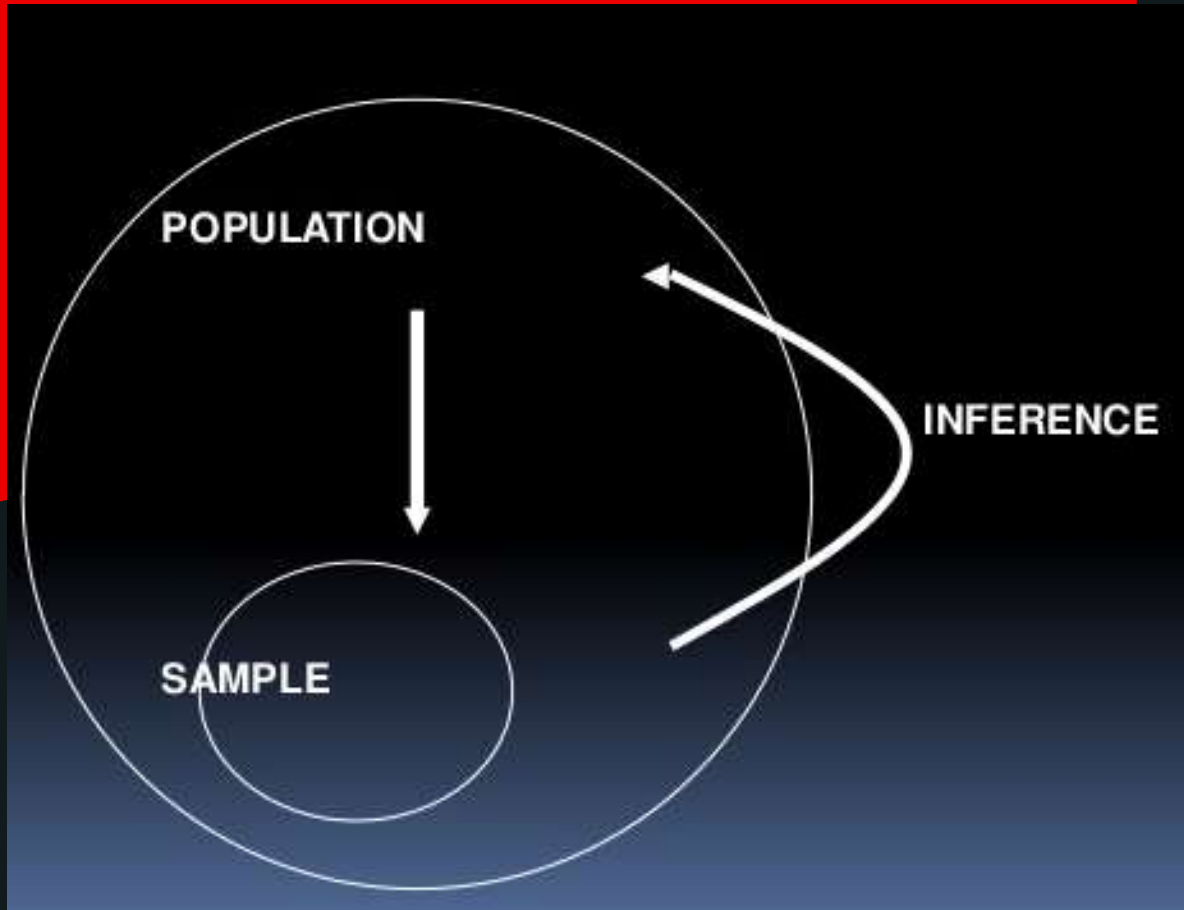
## SAMPLE

When only some members/items are selected from a population to draw some inferences about the characteristics of the population it is called as a sample. Number of elements in the sample is the sample size.

A good sample is subset and proper representative of the population.



# WHY SAMPLING





# SAMPLING

When we want to make certain inferences about the population and instead of studying or analysing whole population we study a small portion of the population selected by an appropriate technique. It is called Sampling.



Population



Sample



# Use of Sampling

Sampling has been considered as an efficient and economical way of providing statistical data on various subjects for both research and administrative purposes.

Sampling is a method that helps to infer information about a population based on results from a sample. Reducing the number of elements in a study reduces the cost, workload and time consumed.

Sampling makes it easier to obtain high quality information as data is extensive and detailed. Lesser number of elements make it easy to calculate and organize.





## Principle of Statistical Regularity



when a large number of items is selected at random from the universe, then it is likely to possess the same characteristics as that of the entire population. This principle emphasises on two factors

1. Sample Size Should be Large
2. Samples Must be Drawn Randomly

## PRINCIPLE OF SAMPLING

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## Principle of Inertia of Large Numbers



Large numbers are relatively more stable in their characteristics than small numbers.

This principle states that, under similar conditions, as the sample size get large enough, the statistical inference is likely to be more accurate and stable

## PRINCIPLE OF SAMPLING

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ABOVE



# Steps in Sample Survey

- Objective of Sample Survey
- Define the target population.
- Select the sampling frame, method and sample size
- Develop the questionnaire
- Recruit and train the field investigators
- Obtain information as per the questionnaire
- Scrutinize the information gathered
- Analyse and interpret the information



# Potential sources of error

in estimating a population distribution using a sample

**Sampling error**

**Because the sample is not the whole population**

**Non-sampling error**

**Poor sampling method**

**Questionnaire or measurement error**

**Behavioural effects**