

## SAMPLING TECHNIQUES/ THEORY

1. Sampling Techniques: Census versus sample survey.
2. Pilot and large-scale sample surveys.
3. Role of NSS organization.
4. Simple random sampling with and without replacement.
5. Stratified sampling and sample allocations.
6. CoVs and Variance functions.
7. Ratio and Regression methods of estimation.
8. Sampling with probability proportional to size.
9. Cluster, double, multiphase, multistage, and systematic sampling.
10. Interpenetrating sub-sampling.
11. Non-sampling errors

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- Sampling Techniques: Census versus sample survey.

### Stages of Sampling

Sample:

Population:

Results:

Inference:

X: Weight (w), age(yr)

Random variable (x is a r.v / randomly chosen.....): Randomness ensures equal probability of variables

Population: Entire set of elements under study

Sample Size: Total number of samples (n)

Population size: Total number of Population (N) = 1/N

Probability of choosing 1 sample out of N number of elements (people, trees etc)

$1/N$  = Same for all the samples: Randomness of Sampling

Random variable: Variables are chosen in such a way, so that the probability of each variable being selected are same.

Population Study:

Census: Census Department, Govt: Population

Census happen once in every 10 years

Eg, 2001, 2011

Sample Study:

National Sample Survey Organisation (NSSO):

- Pilot and large-scale sample surveys.
- Role of NSS organization.