

Pondicherry University
Directorate of Distance Education

MBA 1ST SEMESTER
Research Methodology

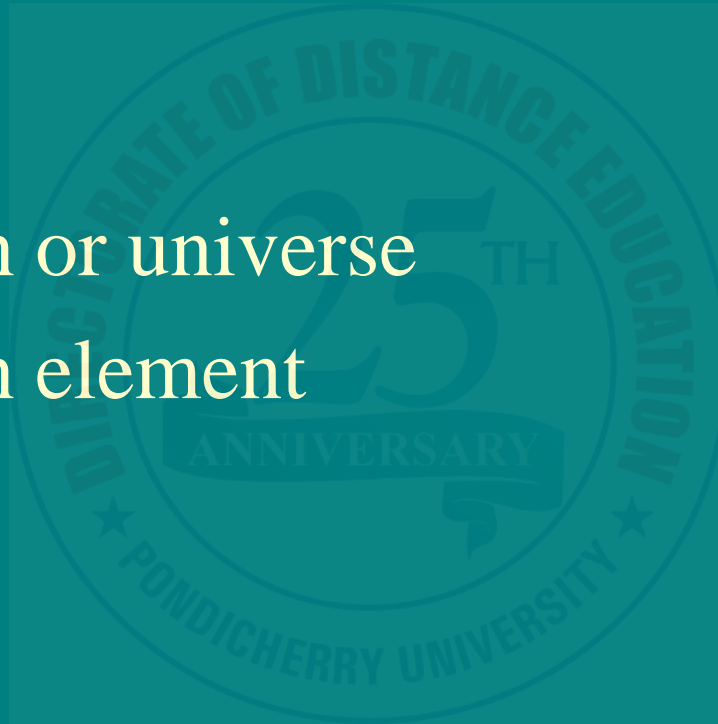
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Sample Designs and Sampling Procedures

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Sampling Terminology

- Sample
- Population or universe
- Population element
- Census



Sample

- Subset of a larger population

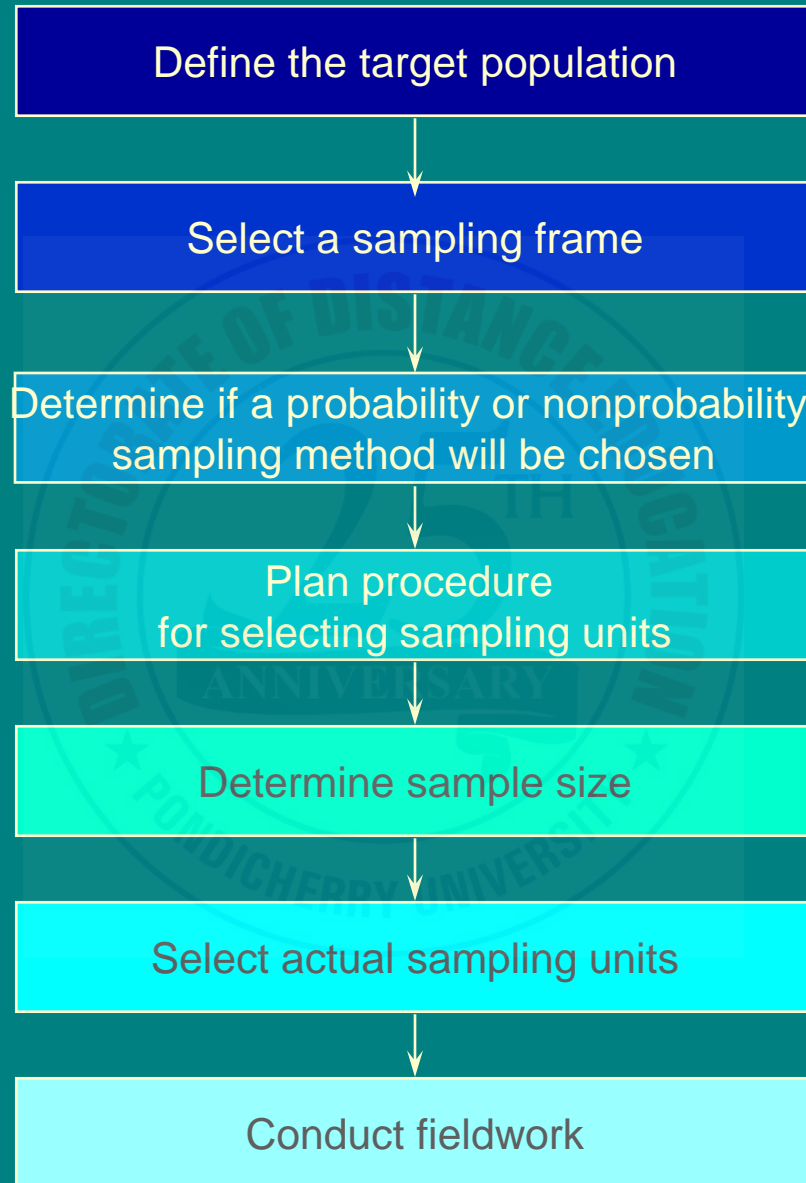


Population

- Any complete group
 - People
 - Sales territories
 - Stores

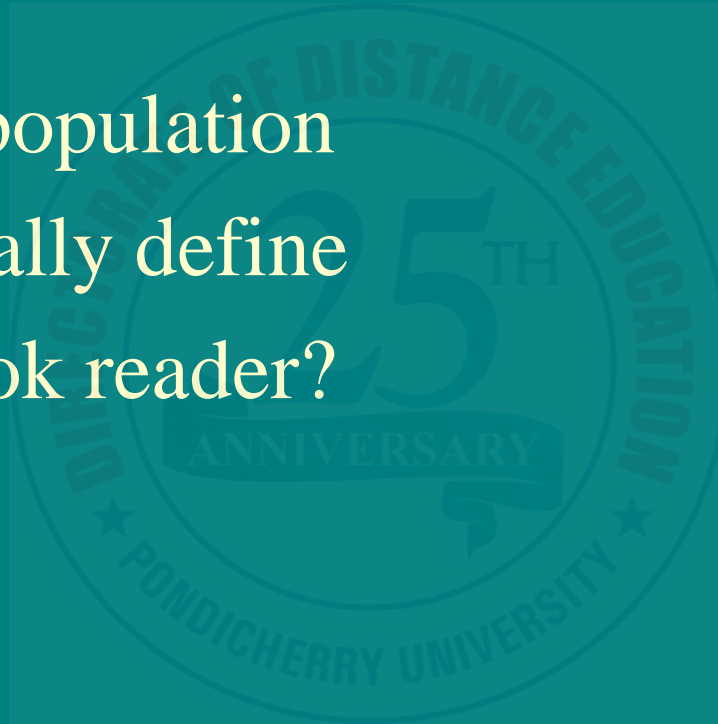


Stages in the Selection of a Sample



Target Population

- Relevant population
- Operationally define
- Comic book reader?



Sampling Frame

- A list of elements from which the sample may be drawn
- Working population
- Mailing lists - data base marketers
- Sampling frame error

Sampling Units

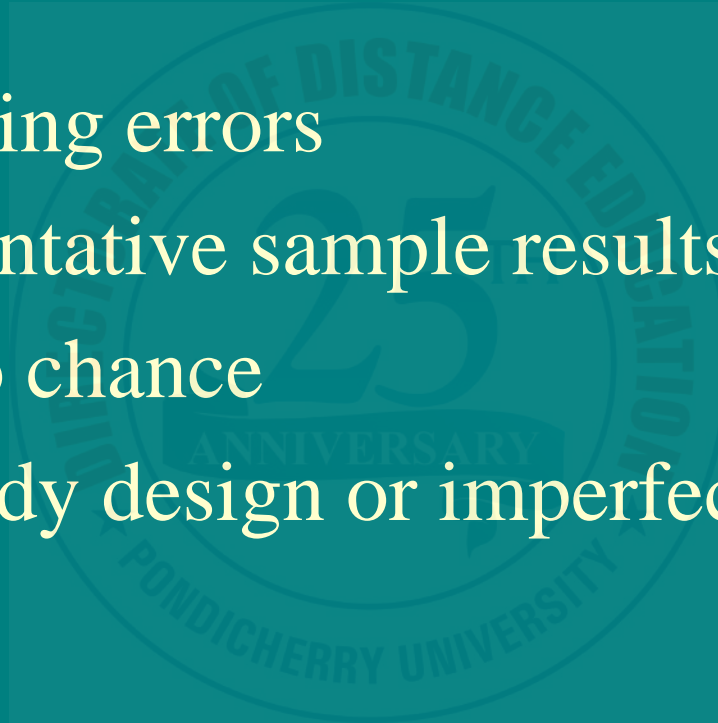
- Group selected for the sample
- Primary Sampling Units (PSU)
- Secondary Sampling Units
- Tertiary Sampling Units

Random Sampling Error

- The difference between the sample results and the result of a census conducted using identical procedures
- Statistical fluctuation due to chance variations

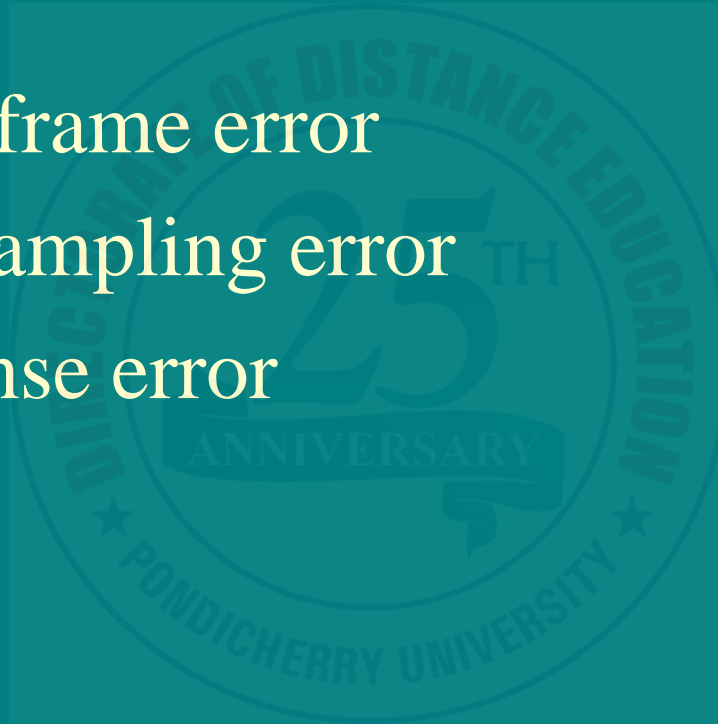
Systematic Errors

- Nonsampling errors
- Unrepresentative sample results
- Not due to chance
- Due to study design or imperfections in execution



Errors Associated with Sampling

- Sampling frame error
- Random sampling error
- Nonresponse error



Two Major Categories of Sampling

- Probability sampling
 - Known, nonzero probability for every element
- Nonprobability sampling
 - Probability of selecting any particular member is unknown

Nonprobability Sampling

- Convenience
- Judgment
- Quota
- Snowball



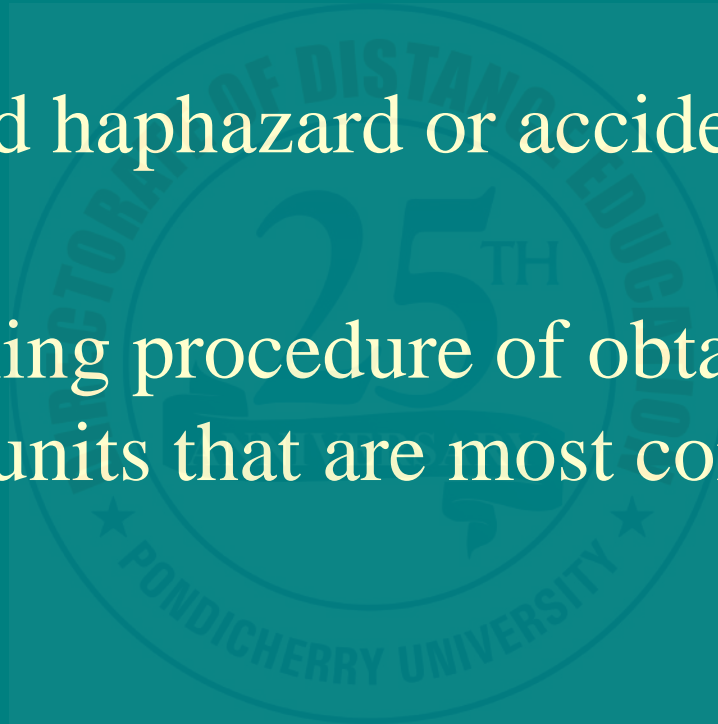
Probability Sampling

- Simple random sample
- Systematic sample
- Stratified sample
- Cluster sample
- Multistage area sample



Convenience Sampling

- Also called haphazard or accidental sampling
- The sampling procedure of obtaining the people or units that are most conveniently available



Judgment Sampling

- Also called purposive sampling
- An experienced individual selects the sample based on his or her judgment about some appropriate characteristics required of the sample member

Quota Sampling

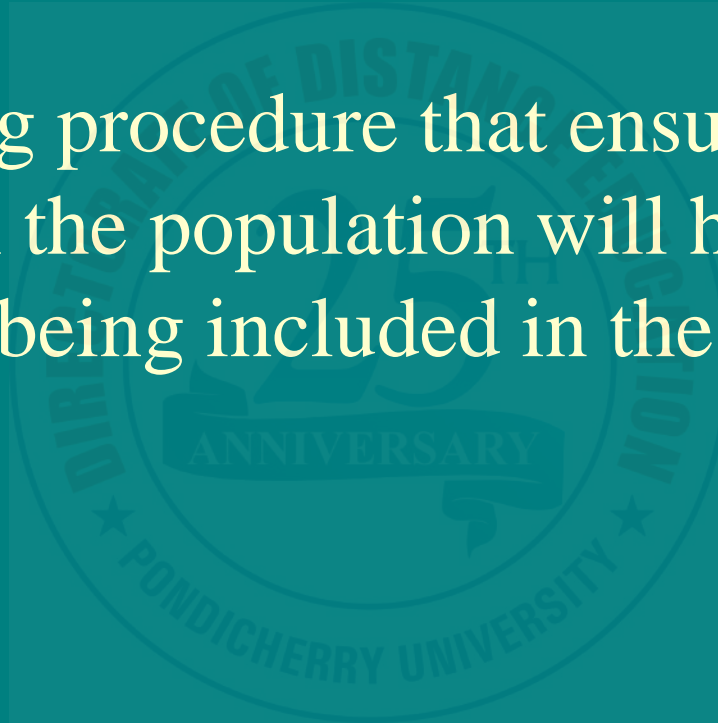
- Ensures that the various subgroups in a population are represented on pertinent sample characteristics
- To the exact extent that the investigators desire
- It should not be confused with stratified sampling.

Snowball Sampling

- A variety of procedures
- Initial respondents are selected by probability methods
- Additional respondents are obtained from information provided by the initial respondents

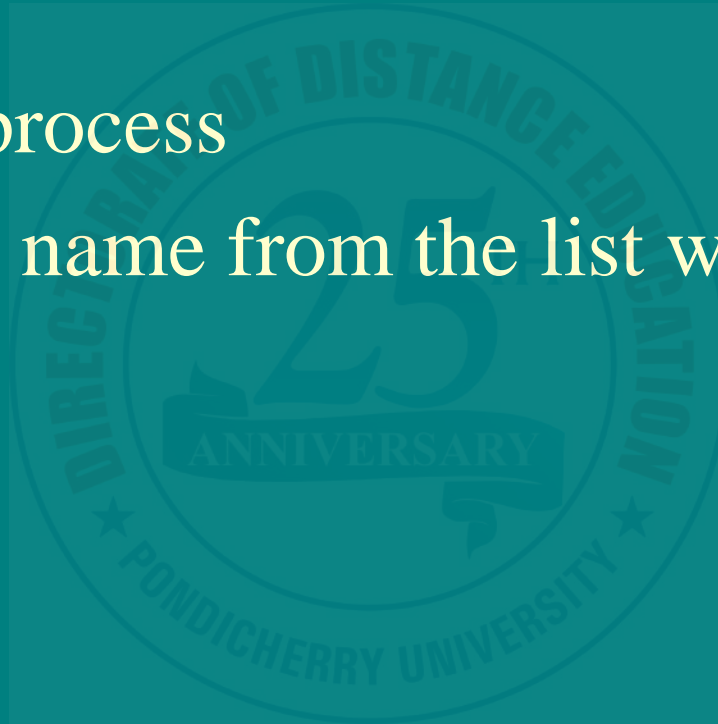
Simple Random Sampling

- A sampling procedure that ensures that each element in the population will have an equal chance of being included in the sample



Systematic Sampling

- A simple process
- Every n th name from the list will be drawn



Stratified Sampling

- Probability sample
- Subsamples are drawn within different strata
- Each stratum is more or less equal on some characteristic
- Do not confuse with quota sample

Cluster Sampling

- The purpose of cluster sampling is to sample economically while retaining the characteristics of a probability sample.
- The primary sampling unit is no longer the individual element in the population
- The primary sampling unit is a larger cluster of elements located in proximity to one another

Examples of Clusters

Population Element

Possible Clusters in the United States

U.S. adult population

States
Counties
Metropolitan Statistical Area
Census tracts
Blocks
Households

Examples of Clusters

Population Element

Possible Clusters in the United States

College seniors

Colleges

Manufacturing firms

Counties

Metropolitan Statistical Areas

Localities

Plants

Examples of Clusters

Population Element

Possible Clusters in the United States

Airline travelers

Airports
Planes

Sports fans

Football stadiums
Basketball arenas
Baseball parks

What is the Appropriate Sample Design?

- Degree of accuracy
- Resources
- Time
- Advanced knowledge of the population
- National versus local
- Need for statistical analysis

Internet Sampling is Unique

- Internet surveys allow researchers to rapidly reach a large sample.
- Speed is both an advantage and a disadvantage.
- Sample size requirements can be met overnight or almost instantaneously.
- Survey should be kept open long enough so all sample units can participate.

Internet Sampling

- Major disadvantage
 - lack of computer ownership and Internet access among certain segments of the population
- Yet Internet samples may be representative of a target populations.
 - target population - visitors to a particular Web site.
- Hard to reach subjects may participate

Web Site Visitors

- Unrestricted samples are clearly convenience samples
- Randomly selecting visitors
- Questionnaire request randomly "pops up"
- Over- representing the more frequent visitors

Panel Samples

- Typically yield a high response rate
 - Members may be compensated for their time with a sweepstake or a small, cash incentive.
- Database on members
 - Demographic and other information from previous questionnaires
- Select quota samples based on product ownership, lifestyle, or other characteristics.
- Probability Samples from Large Panels

Internet Samples

- Recruited Ad Hoc Samples
- Opt-in Lists

