

## Unit - 2.

### Sampling.

- In nearly all research - draw inferences regarding the well-specified and identified group on the basis of some selected measures
- well specified and identified group is called population or universe
- a selected number of people or object is known as sample.
- The population is called as well identified and specified group of individuals  
for eg - All primary school teachers, all college teachers, all university teachers.
- There are 4 types of population.
  - finite - which can be counted
  - infinite - which can not be counted (fishes in river)
- real - which actually exist
- imaginary - which ~~do~~ <sup>only</sup> exist in imagination.
- Sample is a number of persons selected on the basis of some rules or plan

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→ from population.

— Types — to study types first understand probability probability is equivalent to relative frequency.

eg probability of coming tail in coin toss is  $1/2$  or  $0.5$ .

— Blalock divided sampling methods into types

- ① Probability Samp. Meth.
- ② Non probability Samp. Method.

① Probability Sampling Method (sample random sampling / chance sample)  
Conditions

① Size of population or universe from which sample is to be taken should be known to the investigator

② Each individual in the popu should have equal chance to be selected

③ The desired sample size should be specified clearly

eg 500 sample  
 $1/500$  chance of being selected

# Types

## 1) Simple Random Sampling

eg each one has equal chance to be selected without dependent upon the selection of other.

eg 40 students → sample 10

↳ ran hit system

1/40 → Sampling with replacement (hit returns to pop)  
 } → Sampling without replacement (hit + no. of hit selected)  
 ↳ difference is number of possible samples

## 2) Stratified Random Sample

- population divided into 2 or more strata which may be based upon 2 single criteria (such as sex) or 2 or more criteria (sex, graduation), yielding 4 strata (female graduates, females ungraduates, male graduates and male ungraduates)

- This divided population is called sub populations which non-overlapping and together become whole population.

- divided population considered homogeneous internally then Simple Random Sampling is used

## Conditions

- ① Stratification of population
- ② After this a person or group of people is appointed to supervise the sampling in each unit.

There are 2 types.

- → Proportionate Simple Random Sampling
- - Disproportionate Simple Random Sampling

eg 10000 individuals divided into  
6000 males  
4000 females.

∴ if investigator divided  $\frac{600}{400}$  from a set of 1000 individuals  
it is proportionate Simple Random Sampling

∴ and if investigator divided  $\frac{500}{500}$  from a set of 1000 individuals  
it is disproportionate Simple random sampling  
because he is underrepresenting males and overrepresenting females.

## Cluster / Area Sampling

used in agriculture.

effect of fertilizer, soil treatments  
in the field

eg. assess the attitude of Tamil Nadu  
toward family planning.

— map required

— divide section acc. to vertical &  
horizontal grids

— no. each grid section from 1 to N

— draw specified no. of sample sections  
to constitute the sample to be  
study.

— interview all persons and/or members  
of family in those section

— if any draw section contain  
different type of family again,  
a random selection from among  
those families can be done  
and finally interviewed.

— This sub division and selection  
of sample is called multiple  
class sampling.

②

# Non-probability Sampling Method.

— does not afford any basis for estimating the probability that each item in the population has of being included in the sample.

— In other words investigators purposely choose a particular unit of the universe for the constitution of the sample on the basis that ~~the~~ the small mass that they so select out of a huge one will be representative of whole.

- Also called as -
  - deliberate sampling
  - purposive sampling
  - judgment sampling

Eg to study the economic condition of the state population in the state are to be studied a few towns & villages are purposely selected for study on the principle that it will represent the entire state.



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## Judgemental / Purposive Sampling

- based on the typicality of the cases to be included in the sample.
- The ~~investigator~~ investigator have some belief that the sample being selected is typical of the population or is very good representation of the population.
- A purposive sample is also a judgemental sample because the impression of the investigator is the basis of the judgment regarding the concerned cases to be selected by the sample from the population.

To study the attitude towards any national issue, the sample may journalist, teachers or dignitaries ~~to~~ may be taken as an example because they can more reasonably expected to represent the correct attitude of that other classes of persons residing

→ Heiman

(Convenience Sampling)

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Accidental Sampling / Incidental Sampling  
 (Opportunity Sampling) →

↓ ↑  
 Pennington

- Investigator selects people according to his convenience.

→ Sample selected people here are also willingly available and suitable to take part and are target members of the target population.

→ Investigator does not care about any designated or specific trait, rather it is guided by his convenience and economy.

→ For

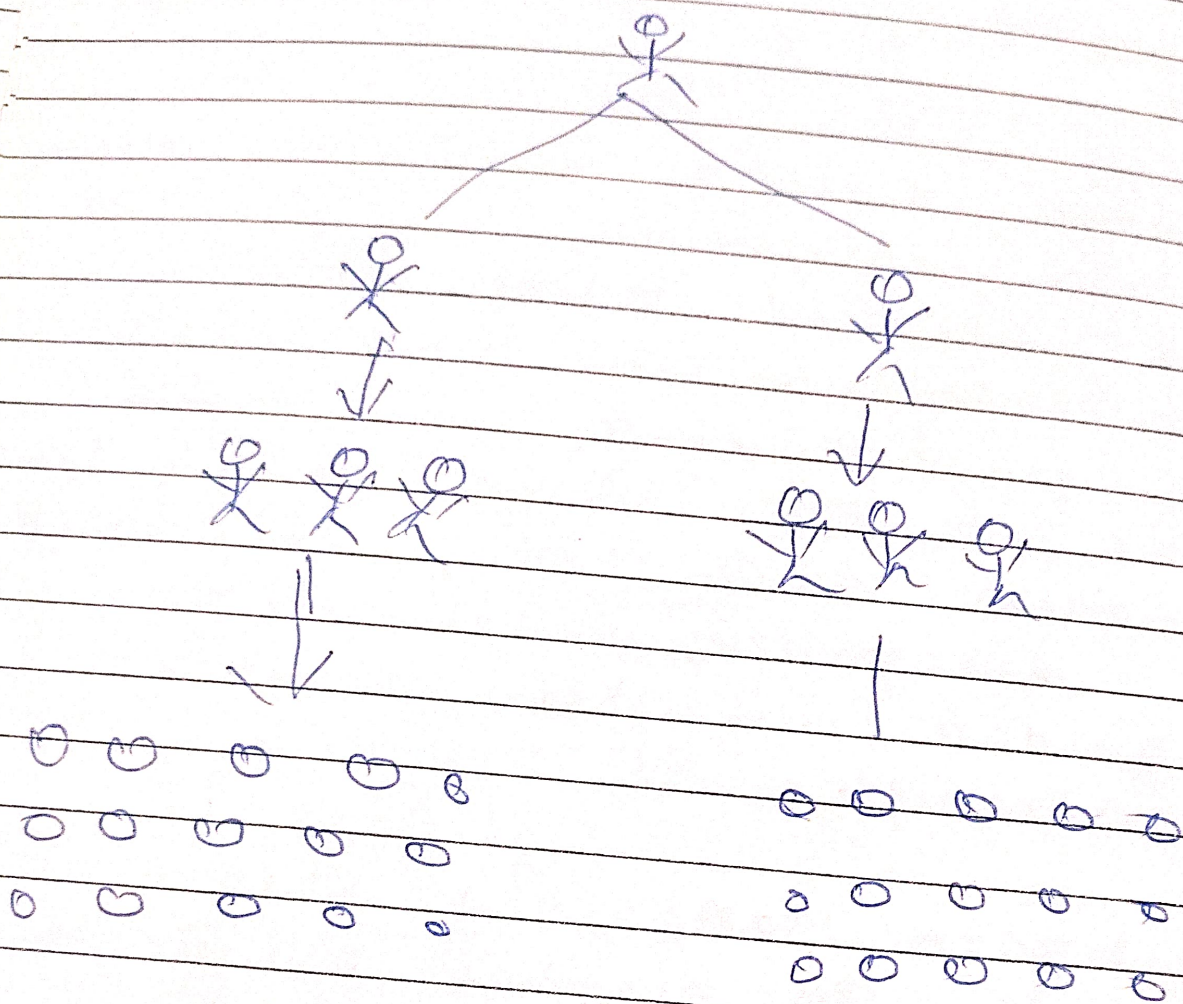
Investigator take the students of class X in his/her research plan because the class teacher happens to be his/her friend.

1) Snowball Sampling  
 (Chain referral sampling)

- Similar basically randomly sociometric process using networks of friends and known.

- process in which investigator select his/her friends etc.

— It makes a social parties



— It is usually done on hidden population i.e. drug dealers, criminals etc.

— Investigator finds on potential subject and through he obtains names and address of other subjects and from them he obtain about so that the growth of the sampling increase to the needed size.

## ② Saturation Sampling and Dense Sampling.

Colman - these 2 are used less frequently as compared to other.

— Saturation Sampling is drawing all individuals having characteristics of interest to the investigator.

eg - Drawing all the physicians having at least age of 45 (from a small community) would be called as saturation sampling.

— Dense Sampling is researcher selects 50% or more than from the population and takes majority of individuals having specified traits or characteristics which are interest to him.

for eg -

research selects 500 to 600 students from 1000 top students ~~who~~ all having distinction marks in any one exam paper is called dense sampling.

★

## Double Sampling.

- drawing a sample of individuals from another sample of them
- Suppose 1000 from a population having  $N = 100,000$ . From these 1000 individuals, he again randomly draws a sample of 300 for further study

Eg - Research mailed 1000 questionnaires to newly married couples to know their attitude toward family planning. From those 400 returned (40%) and from those he ~~selected~~ draw ~~so~~ randomly sample of 100 and mailed them another questionnaire to know in depth knowledge towards the diff. techniques of family planning

### 3) Mixed Sampling.

- It has characteristics of both probability and non probability samplings Type.

### ① Systematic Sampling

- drawing or selecting every  $n^{\text{th}}$  ~~pro~~ person from a predetermined list of individuals.

- Selecting every  $5^{\text{th}}$  Roll no in the class of 60 students will be systematic sampling.

- like wise drawing <sup>every</sup>  $8^{\text{th}}$  no. @ in the tele phone directory.

- It is quick method

- simple, easy to check that every  $n^{\text{th}}$  individual is selected or not

- But error increases if the list is organized in a particular order.

### Method of Drawing Random Samples.

- Fish bowl method
- Table of Random Numbers
- Computer determined Randomness

## Factors influencing the decision of sampling

① Size of population  
if 300 he may not do sampling as select all but if 10,000 he may do sample as

larger the population, increase the sampling importance

② Cost.  
if the cost is and the research is able to pay or spend then he/she may go ahead with sample if not then he/she may postpone it.

③ Convenience & accessibility of individuals  
- if he need college girls with premarital sex relations he may not be able to find or trace such girls, who may open tell about the affairs.