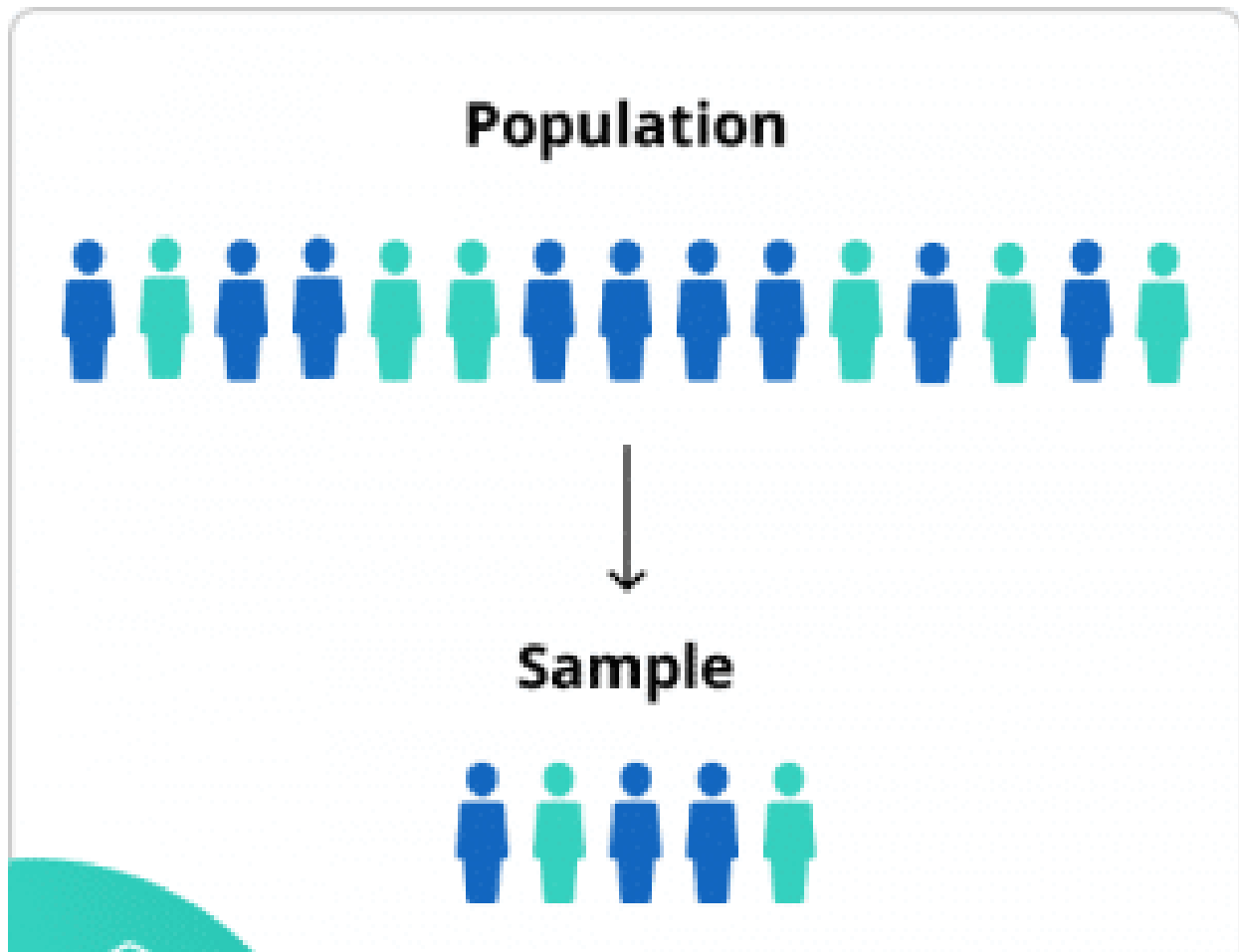


RESEARCH METHODOLOGY



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Samples

Usually it is not possible to study the entire population in which one is interested, it is therefore; necessary to consider a sample and relate its characteristics to the total population.

Sampling must be carried out in such a way that it is possible to generalize from the sample to the study population.

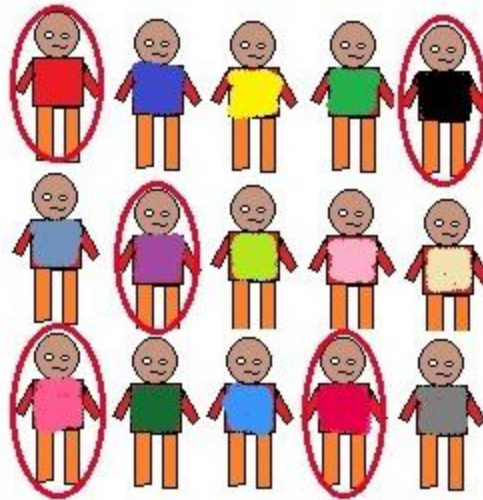
Sampling methods:

1. Simple random sampling

A sample may be defined as random if every individual in the population being sampled has an equal chance of being individual.

In order to select a simple random sample from the whole population it is:

- a. Necessary to identify all individual from who the selection will be made, and to assign a number for each individual.
- b. Select member by reference to random table.



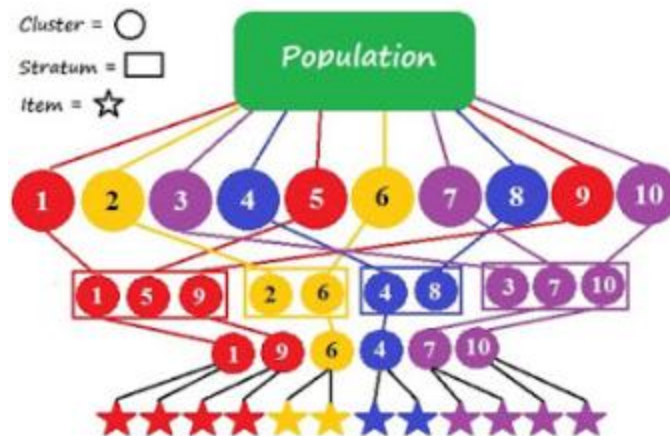
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2. Systematic sampling:

Is to take a systematic sample in which every person is selected from a list or from some other ordering .it enables a sample to be drawn without an initial listing of all persons among whom the selection will be made.



3. **Multi stage sampling** Initial sample may be taken from units of the population such as villages. The villages are listed and a random sample of the required number selected then listing of individuals within the chosen villages is made and sample taken from them. this method has the advantage that listing of persons only required for only the relatively small units from which to the final selection.

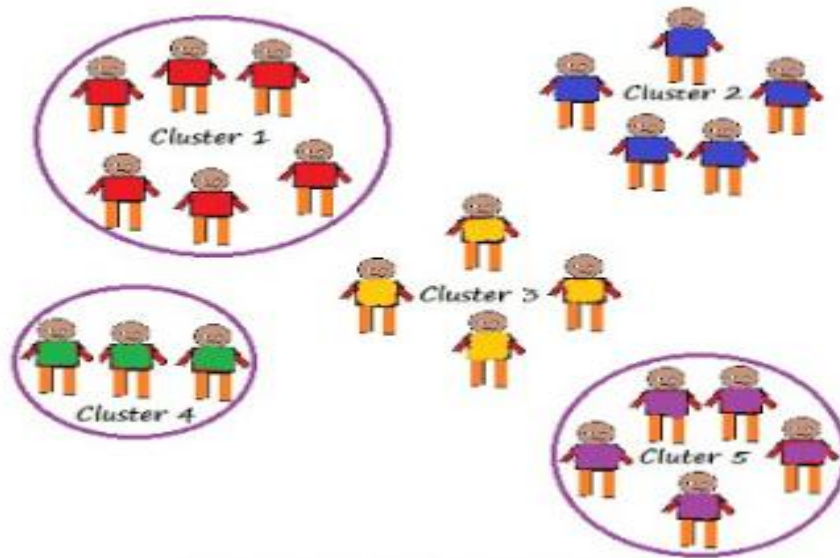


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4. Clustered sampling

If the initial sub individual of the population are made on the basis of geographical distribution the result in a sample, for example number of villages is a cluster sample, so called because the individuals selected are clustered in one place.

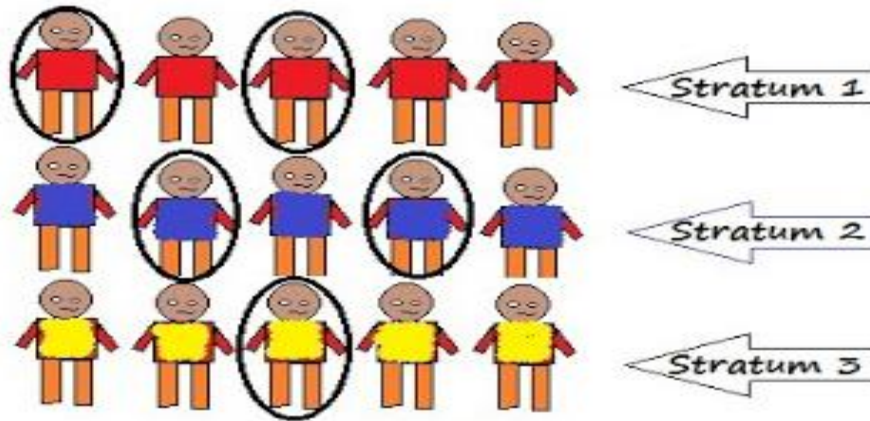
Cluster sample of population is liable to cause errors if the disease, attribute or variable being studied is itself clustered in the population.



5. Stratified sampling:

If a disease is un eveny distributed within a population in respect of sex, age, or other variable it may be better to choose a stratified sample. To obtain sample stratified by age, for example the study population is sub individual into age groups such as 0-14 years ,15-49 years and 50 and over a different fraction of age group is then selected as the sample by simple random sampling or systematic sampling. if the disease declines in frequency with the increasing age then in order to include in the sample sufficient numbers of cases among older age one might select 1 in 8 of 0-14 years' group ,1 in 6 of the 15-49 years' group and 1in 4 of 50 years and over group.

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Main cause of error in sampling are:

1. Selection bias which is caused by using a sample population with the measurement characteristics that are not representative of the target population which can be minimized by using randomized selection process.
2. Random variation error: is measurement error attributable simply to chance and thus not controllable.

Sample size:

Estimation of sample size is performed before conducting of the study to assess the feasibility and constrains of performing the study (like time and funding) but an adequate sample size may lead to lack of statistic significances in result out data.

Factors affecting sample size are:-

1. The significance level when make smaller sample size will increase.
2. Power of the study as increase sample size will increase.

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