

Sample

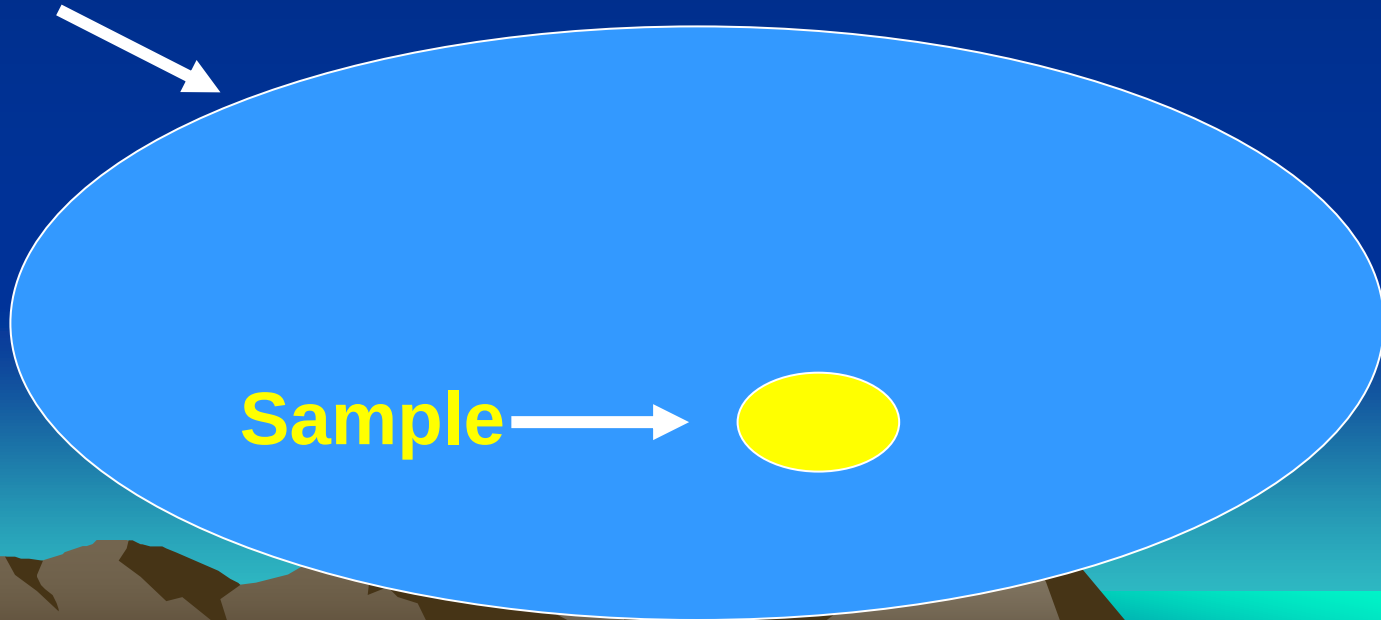
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- **Population:** a data set representing the *entire entity* of interest
- **Sample:** a data set representing a *portion* of a population

Population



- **Sample:** It is a part of the population. Characteristic of population called parameter, and of sample called statistics. The differences between probability and non probability sampling, the results in probability can be generalized, and in non probability sampling can not.
- 1. Sample of entities.
- 2. Sample of value.



sampling

- Usually impossible to measure entire population
- We assume that our samples are representative of the population we are studying
- Therefore, we can make conclusions about the population of interest based on our *sample* results



Factors commonly influencing the choice between these designs include:

- * Nature and quality of the frame
- * Availability of auxiliary information about units on the frame
- * Accuracy requirements, and the need to measure accuracy
- * Whether detailed analysis of the sample is expected
- * Cost/operational concerns



- **Types of sample:**
- **A. Probability sample:**
- **A.1. Simple random sampling:** Each member of population has an equal possibility of being chosen for the sample with chance alone responsible for selection of any member can be chosen by table of random number. Simple random sampling (not haphazard) selected by the following methods:
 - **1. Lottery method.**
 - **2. computer generated random sampling.**
 - **3. Using the random number table.**



- **A.2. Systematically sample:** A random starting point at the beginning of sample chosen according to the predominant selection schedule e.g. 100 students are ranked by age then begin with 4th students and every 10th student chosen (4th, 14th, 24th,...).



- **Disadvantages of random and systematically sampling:** They can't ensure that the structure of the sample will be similar to the structure of the population regarding certain characteristics (e.g. to study anemia among medical students, I might choose males more than females as a number of sample therefore may no anemia or less while female anemic



- **A.3.Stratified sampling:** The population is divided into sampling unites that contain individuals and then a random sample of individuals proportionate to the size of the sampling unites. E.g. in your college four classes then chose 20% from each class.
- **A.4. Clustered sampling:** The population is divided into unites (or groups) not individuals , then a random sample of these clusters will be chosen, clusters include e.g. schools, districts, hospitals, villages, clinics, factories....



- **A.5. Multistage sampling:** This procedure is carried out in phases (stages) and can involve more than one of the above sampling methods. It is used on a very large number of population. E.g. as if we study Iraqi people so we divide them into governments, then districts, village, and so on.



- **B. Non probability sample:**
- **B.1. Convenience sample:** Members of population are chosen for the sample, or e.g. If a doctor wants to study typhoid he will not study each patient with typhoid, but chose cases that reach him in his clinic.
- **B.2. Quota sampling:** The composition of the sample regarding certain characteristics is decided from the beginning, & the only requirement is to find the right number of people to fill these quotas.
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