CENSUS AND SAMPLE INVESTIGATION

Types of Sampling

Types of Sampling

❖**Two Types of Sampling**

A. **Random / Probability Sampling**: This is the systematic methods of selecting sample according to some laws of probability in which each unit in the population has some definite pre-assigned probability of being selected in the sample.

B. **Non Random Sampling**: sample is selected with certain purpose in view and the choice of the sampling units depends on the judgment or convenience or other criteria of the investigator but not on chance.

Types of Sampling

❖Types of Random Sampling

1. Simple Random Sampling
2. Systematic Random Sampling
3. Stratified Random Sampling
4. Cluster Sampling

Types of Sampling

❖ Types of Non Random Sampling

1. Judgement Sampling
2. Convenience Sampling
3. Quota Sampling

1. Simple Random Sampling

- Simple Random Sampling: A method in which each item or person in the population has the same chance of being included in the sample.
- In a population of N units, the probability of any specified unit of the population being selected is 1/N.
- Random sample can be obtained by any of the following methods.

  1. Lottery System.
  2. Random Number Method

1. Simple Random Sampling

1. **Lottery System:** In order to select 'x' number of items from population of 'N', following steps can be followed:
   - Prepare 'N' number of homogeneous slips of every item
   - Mixed them in a container
   - Blindly draw 'x' number of slips one by one
   - The drawn slips will form the sample

1. Simple Random Sampling

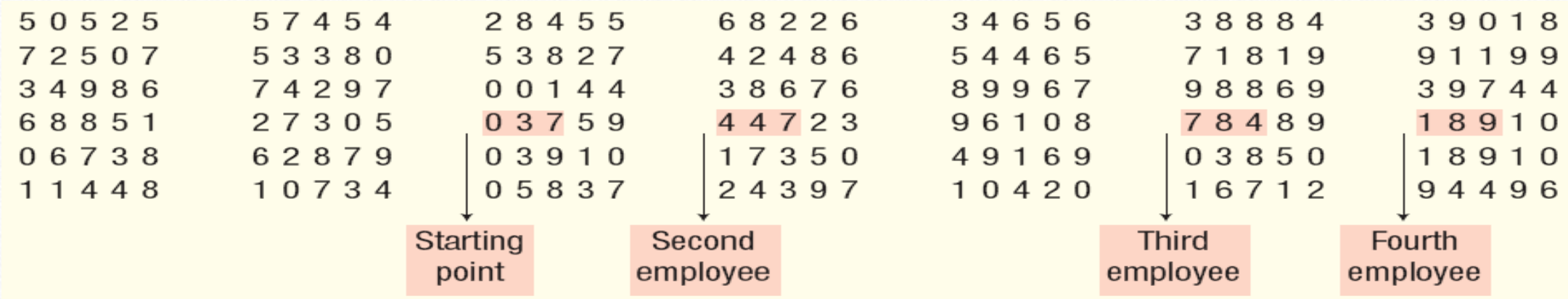
2. **Random Numbers Method:** Tippet's table of random numbers is another popular method of getting random sample.

➢ **Steps**

- Identify all units in the population with the numbers 1 to N.
- Choose any page of the random number tables and start the numbers from any row or column or diagonal at random.
- The population units corresponding to the numbers selected in step (2) constitutes the random sample.

1. Simple Random Sampling

- A population consists of 845 employees of Tata Industries. A sample of 52 employees is to be selected from that population.
- A more convenient method of selecting a random sample is to use the identification number of each employee and a **table of random numbers such as**



1. Simple Random Sampling

- **Merits:**
  - Absence of personal bias or prejudice of enumerators.
  - More representative. With increase in size f the sample, it becomes more representative.
  - Accuracy of estimate can be easily calulated.
- **Demerits**
  - Need completely catalogueduniversefrom which to draw sample.
  - Larger sample is required to give reliable result.
  - More expensive and time consuming when universe is widely dispersed geographically.
  - Some times results look more non-random.

2. Systematic Random Sampling

- **Systematic Random Sampling**: The items or individuals of the population are arranged in some order. A random starting point is selected and then every *k*th member of the population is selected for the sample.
- EXAMPLE

A population consists of 845 employees of Tata Industries. A sample of 52 employees is to be selected from that population.

First, *k* is calculated as the population size divided by the sample size. $K = \frac{Population\ Size\ (N)}{Sample\ size\ (n)}$

For Tata Industries, we would select every 16th (845/52) employee list. If *k* is not a whole number, then round down. Random sampling is used in the selection of the first name. Then, select every 16^{th} name on the list thereafter.

2. Systematic Random Sampling

❖ Merits:

- Simple and convenient to adopt.
- Less time and work involved.
- Generally satisfactory result.
- Reliable results if population is sufficiently large.

❖ Limitations:

- Less representative if population has hidden periodicities.
- Possibility of getting more of certain type of elements selected if population is ordered in a systematic way with respect to characteristics.