## **RESEARCH METHODOLOGY**

## **LECTURE-35**

## Systematic Sampling

The Systematic Sampling is yet another probability sampling technique wherein the starting point from where the element is to be drawn from the population is chosen randomly and then the subsequent items are selected on the basis of the fixed periodic interval between the sample items The systematic sampling is a periodical method wherein the sample members are selected on the basis of the constant interval, called as sampling interval. On dividing the population size by the desired sample size, the kth item to be selected from the list is determined. Such as, if a group of 500 individuals is to be selected from the population of 5,000, then every 10th person will be selected in a sample, since, 5,000/500 = 10.

The systematic sampling can be applied successfully when the complete list of the population from which the samples are to be drawn is available. Also, the sampling units must be arranged in some systematic order such as chronological, alphabetical, geographical order, etc. so that every subsequent element gets an equal chance of being selected in the sample.

## **Multistage Sampling**

The Multistage Sampling is the probability sampling technique wherein the sampling is carried out in several stages such that the sample size gets reduced at each stage. The multistage sampling is a complex form of cluster sampling. The cluster sampling is yet another random sampling technique wherein the population is divided into subgroups called as clusters; then few clusters are chosen randomly for the survey.

While in the multistage sampling technique, the first level is similar to that of the cluster sampling, where the clusters are formed out of the population, but further, these clusters are sub-divided into smaller targeting groups, i.e. subclusters and then the subject from each sub-clusters are chosen randomly. Further, the stages can be added depending on the nature of research and the size of the population under study.

For example, If the government wants to take a sample of 10,000 households residing in Gujarat state. At the first stage, the state can be divided into the

number districts, and then few districts can be selected randomly. At the second-stage, the chosen districts can be further sub-divided into the number of villages and then the sample of few villages can be taken at random. Now at the third-stage, the desired number of households can be selected from the villages chosen at the second stage. Thus, at each stage the size of the sample has become smaller and the research study has become more precise.