## **RESEARCH METHODOLOGY**

## LECTURE-38

## **Non-Sampling Error**

The Non-Sampling Error is the statistical error that arises due to the factors other than the ones that occur when the inference is drawn from the sample. Simply, the errors caused due to the defective methods of data collection, faulty definition, incomplete population coverage, wrong tabulations, etc. when the complete enumeration of all the items in the universe is surveyed is called the non-sampling error.

Often, investigator expects that the research will be free from errors when all the items in the population are studied, but practically, this is not possible. As it is very difficult to avoid the errors of observations and ascertainment and also the tabulation errors while processing the data can invalidate the results obtained.

Due to the complete enumeration survey, the non-sampling errors are likely to be more than the ones arising out of the sample survey. But, however, the nonsampling errors can be reduced to a great extent if organized and trained personnel are used at the field and tabulation stages With an increase in the sample size, the non-sampling errors are likely to increase, which is opposite to the behavior of a sampling error that reduces with the increase in the sample size.

Some of the major reasons that lead to the non-sampling errors are:

- Inadequate data specification or data being inconsistent with the objective of survey or census.
- Inadequate methods of data collection.
- Duplication of a subject in the survey.
- Lack of trained investigators.
- Lack of supervision of primary staff.
- Errors committed while tabulating the data.
- Inadequate scrutiny of primary data.
- Errors due to non-response of the subject.
- Errors in data processing Viz. Coding, punching, verification, tabulation, etc.

## **Sampling Error**

The Sampling Error refers to the statistical error occurred when the subset of the population (sample) deviates from the true characteristics, attributes and behavior of the total population. Simply, when the sample selected from the population differs from the actual attributes of the target population, then the sampling error arises. Sampling Error

Basically, there are two types of Sampling Errors:

Biased Errors: When the selection of a sample is based on the personal prejudice or bias of the investigator then the results are prone to bias errors. Such as, if the investigator is required to collect the sample using the simple random sampling and instead he used the non-random sampling, then personal prejudice is introduced in the research process that will lead to the biased errors.

The personal prejudice or bias arises due to the faulty methods used for collection, selection and analysis of the data obtained from the target population.

Unbiased Errors: The Unbiased Errors arise due to a chance, i.e. the investigator has not intentionally tampered with the sample and that the difference between the population and sample have occurred by chance.

Even though the utmost care has been taken in the selection of a sample, the sampling error may occur because the subjects drawn from the population have individual differences. And therefore, the investigator must keep in his mind that only the subset of the population is selected, and hence there will be a difference between the population and a sample.