**Sample Survey- Note:2**

**B.A 6th sem (M)**

**1. TYPES OF SAMPLING**

According to the method of selection of sample, the sampling schemes can be categorised as follows:

1. Non-probability sampling;

2. Probability or random sampling; and

3. Mixed sampling.

**1.1 Non-Probability Sampling**

In this method, the sample is selected with a definite purpose in view and the choice of the sampling units depends entirely on the discretion and judgment of the investigator. While selecting a sample, investigator tries to include each and every characteristics of population in sample.

Non-Probability Sampling scheme can be classified as:

1. **Purposive Sampling**

In this sampling the sample is selected with definite purpose in view and the choice of sampling units depends entirely on the discretion of the surveyor. This sampling suffers from drawback of favoritism and nepotism of the surveyor.

2. **Judgment Sampling**

In judgment sampling respondents are selected on the judgment of the surveyor with the hope that they will meet requirements of the study. The underlying assumptions are that the respondent truly represents the entire population. To find out the potential guide for the food and catering technology a researcher go to the teachers of Hotel Management Department may be the example of judgment sampling.

3. **Deliberate Sampling**

In deliberate sampling, deliberate selection of sample is made so that any important unit could not be lef tout.

4. **Convenience Sampling**

In convenience sampling method, a surveyor selects the sample at his/her own convenience, often as the study is being conducted. Convenience sampling is based on the assumption that the target population is homogeneous and the individuals selected and interviewed yields similar information with regard to the characteristics under study. If persons selected from restaurants to collect the information about quality of the food, service, etc. are supposed to represent the population of food takers. Such a sampling is known as convenience sampling.

5. **Quota Sampling**

If the cost of selected random samples in each stratum is very high in stratified sampling then the sampling units are assigned in a quota (fixed number of units) in each stratum and the actual selection of units is left at the decision of the surveyor.

**Merits of Non-Probability Sampling**

1. This method of sampling is very simple;

2. After sample size determination with the help of planning, a suitable sample may possibly be obtained; and

3. Important units or members may be included in the sample.

**Demerits of Non-Probability Sampling**

1. Predetermined view of selector effects the selection of sample which adulterates the result. This affects directly or indirectly the process of sampling;

2. There is no place for probability in selection of units therefore sampling

error cannot be obtained;

3. There is no guaranty of validity of the results from the sample selected by

this method; and

4. The attitude and bias of the investigator also affect the selection of sample that’s why the results obtained by this method are not reliable scientifically.

**Significance of Non-Probability Sampling**

1. When the number of units in population is less and there is possibility that

the important units may be left;

2. When sample size is to be kept small;

3. When the deep study of the important unit (purposive unit) is to be done;

4. When the investigator has the experience of obtaining a correct sample;

5. This method can be used in pilot survey.

**1.2 Random or Probability Sampling**

The technique of random sampling is of fundamental importance in the application of Statistics. The estimation theory is based on the assumption of random sampling. Probability sampling is the scientific method of selecting samples accordingly to some laws of chance in which each unit in the population has some definite pre-assigned probability of being selected in the sample. The following are the different types of probability sampling:

1. Where each unit has an equal chance of being selected;

2. Sampling units have different probabilities of being selected; and

3. Probability of selection of a unit is proportional to the sample size.

**Merits of Random or Probability Sampling**

1. **No Plan for Selection**

There is no need to make any detailed plan for the selection of units.

2. **Less Expensive**

In this method, money, time and hard work are very less.

3. **Unbiased**

In this method there is no space for any bias. Every unit has the same chance of selection.

4. **Inspection of Purity**

Inspection of purity of one sample can be done by other sample. In this method measure of statistical error can also be done.

5. **Random Selection**

Selector has to select units at random.

6. **True Representation of Population**

In this method real characteristics can be represented through sample because it is based on the law of statistical regularity and law of inertia. In real, it becomes a small part of population.

**Demerits of Random or Probability Sampling**

1. **Inappropriate**

This method is not appropriate where some units are so important to be included necessarily in the sample.

2. **Less Representative**

It may be possible that sample could not represent the population if sample is not sufficiently large.

3. **Less Independency**

This method is useless if the units of the population are dependent.

**Limitations/Demerits of Random Sampling**

1. If investigation area is small then results may not be reliable;

2. If all the units are heterogeneous then sample cannot be true representative;

3. The elements of the population should be independent; and

4. The results would not be reliable if the investigator is biased.

**1.3 Difference between Probability and Non-probability Sampling** (Important**)**

1. In non-probability sampling the selection of units are pre-decided while

 probability sampling is based on chances.

2. Non-probability sampling is biased but probability sampling is unbiased.

3. In non-probability sampling, the errors are cumulative in nature whereas

in probability sampling errors are less.

4. If a sample, from a population with homogeneous and important units, is to

be selected then non-probability sampling is appropriate where as probability sampling is used in various kinds of population.

**1.4 Mixed Sampling**

If the samples are selected partly according to some laws of chance and partly according to a fixed rule, they are called mixed samples and the method of

selecting such samples is known as mixed sampling. The merits of this sampling are the mixture of the merits of both sampling. Selection of units is more reliable in this method because that is the representation of various stages of population. In mixed sample no important characteristics is left which is to be selected in the sample.

**1.5 OBJECTIVES OF SAMPLING (very important)**

Sampling investigation can be performed to achieve the following objectives:

1. **Checking of Validity of Census**

Validity of results obtained from census investigation is to be checked by

sampling. To check the validity of the census results, the sample survey are

to be organized after census.

2. **Checking of Difference between the Measurements of a Sample and**

**Population**

There is always a difference between the measurements of population and

its sample whether the sample is suitable enough. Even, there is always a

difference between the measures of two samples of the same population.

Inspection of authenticity of these differences is the main objective of

sampling.

3. **Checking of Characteristics of Population**

This is the main objective of a sampling study that all the characteristics of

the population can be found in less time, through less effort and with least cost. More information can be obtained about the whole population through sampling.

4.  **Estimation of Parameters of Population**

The measure of the population is to be obtained on the basis of statistical

measures of sample mean; sample standard deviation, sample correlation,

etc. In this way the objective of the sampling is to find out the most probable values of the parameters. The measures of the population are called parameters and the measures of sample are called statistic.

5. **Fulfillment of Special Objective and for Continuous Information**

Sampling methods are applied to fulfill the specific objective. Social, economic and behavioral surveys come under this. Continuous information about the behavior of the unit is needed for some population. Through sampling, corrections are to be done regularly in the results of the previous sample survey as in Medical Sciences and Quality Control.

**2. PROBLEMS OF SAMPLING METHODS**

**1. Determination of Base of Sampling**

Sample should neither be too small nor too big. This is to be noted that a sample would not be a representative only by size. Sample size depends on the following points:

1. Homogeneity or heterogeneity of population;

2. Nature of investigation;

3. Practical things like money, time, hard work by trained supervisors, etc.

4. Level of authenticity; and

5. Sampling method.

**2. Reliability in Sampling**

This can be done in following ways:

1. Comparison of sample after dividing in two equal parts;

2. Selection of another sample of same size from the same population and

comparison; and

3. Comparison of the result of a sub-sample to the result of the sample

itself.

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