

# SAMPLING METHODS IN SOCIAL RESEARCH

Muzammil Haque

Ph.D Scholar

Visva Bharati, Santiniketan, West Bengal

**Sampling** may be defined as the selection of some part of an aggregate or totality on the basis of which a judgement or inference about the aggregate or totality is made. In other words it is the process of obtaining information about an entire population by examining only a part of it. In most of the research work and surveys the usual approach happens to be make generalization or to draw inferences based on samples about the parameters of population from which the population are taken. So we can now define a sample is any number of persons, units or objects selected to represent the population according to some rule or plan. The census method is the enumeration of all the numbers or units of the population to get the idea of the population where as sampling is the method of selecting a fraction of the population in such a way that it represents the whole population.

Sampling is used in practice for a variety of reasons such as

- i) Sampling is cheaper than census method. It is economical too.
- ii) As the magnitude of operations is small in case of sampling, so data collection and analysis can be carried out accurately and efficiently.
- iii) Sampling is the only way when the population is as large as the population of a country.
- iv) Sampling enables the researcher to make a precise estimate of the standard error which helps in obtaining information concerning some characteristic of the population.

## **Sampling methods**

Sampling methods are broadly categorized into two groups:

- i.) Probability sampling methods.**
- ii) Non probability sampling methods.**

## I. PROBABILITY SAMPLING METHODS

In probability sampling methods the universe from which the sample is drawn should be known to the researcher. Under this sampling design every item of the universe has an equal chance of inclusion in the sample. Lottery methods or selecting a student from the complete students names from a box with blind or folded eyes is the best example of random sampling, it is the best technique and unbiased method. It is the best process of selecting representative sample. But the major disadvantage is that for this technique we need the complete sampling frame i.e. the list of the complete items or population which is not always available.

Probability sampling methods are of **three** types-

i) **Simple random sampling**: in this method each element has the equal probability to be selected as a sample. It is bias free. Here an element cannot come twice as sample.

ii) **Stratified random sampling**: In stratified random sampling the population is first divided into different homogeneous group or strata which may be based upon a single criterion such as male or female. Or upon combination of more criteria like sex, caste, level of education and so on. This method is generally applied when different category of individuals constitutes the population viz general. O.B.C, S.C, S.T or upper caste, middle caste, backward caste or small farmers, big farmers, marginal farmers landless farmers etc. To have an actual picture of a particular population about the standard of living, in case of India it is advisable to categorized the population on the basis of caste, religion or land holding otherwise some section may be under-represented or not represented at all.

Stratified random sampling may be of two types..

a) Proportionate stratified random sampling and b) Dis-proportionate stratified random sampling

In case of proportionate random sampling method, the researcher stratifies the population according to known characteristics and subsequently, randomly draws the sample in a similar proportion from each stratum of the population according to its proportion. That is, the population is divided into several sub-populations depending upon some known characteristics, this sub population is called strata and they are homogeneous. Suppose, a Gaon Panchayat consists of 1000 voters among which 60% is Hindus, 30% is Muslims and 10% is schedule tribes. Now the investigator wants to draw a sample of 150 voters from the population as per their proportion. That can be done by multiplying the sample number with their proportion; as per this method the sample size of Hindu voter will be  $150 \times 60\% = 90$ , Muslims will be  $150 \times 30\% = 45$  and S.T will be  $150 \times 10\% = 15$ . So the investigator has to collect the complete voter list of the G.P and *randomly* select the sample from each category as calculated above. In this method the sampling error is minimized and the sample possesses all the required characteristics of the population.

b) Disproportionate stratified random sampling:

In this method the sampling unit in each stratum is not necessarily be as per their population. Suppose for the said G.P the investigator wants to know the voting pattern of male and female of Hindu, Muslim and S.T voters; in that case he must take equal no. of male and female voter from each category. Here the investigator has to give equal weightage to each stratum. This is a biased type of sampling and in this case some stratum is over-represented and some are less-represented; these are not truly representative sampling, still this to be used in some special cases.

iii) Cluster sampling:

This is another type of probability sampling method, in which the sampling units are not individual elements of the population, but group of elements or group of individuals are selected as sample. In cluster sampling the total population is divided into a number of relatively small sub-divisions or groups which are themselves clusters and then some of these cluster are randomly selected for inclusion in the sample. Suppose an investigator wants to study the functioning of mid day meal service in a district in that case he can use some schools clustering in a block or two without selecting

the schools scattering all over the district. Cluster sampling reduces the cost and labour of collecting the data of the investigator but less precise than random sampling.

## II. NON PROBABILITY SAMPLING METHODS

In this type of sampling, items for the sample are selected deliberately by the researcher instead of using the techniques of random sampling. It is also known as purposive or judgment sampling. For instance an investigator wants to verify the profit making and self dependency of the self help groups in their chosen enterprises assisted by the central Govt. fund in a state; then the investigator may select one or two districts having more number of S.H.G, getting comparatively more fund, and researcher having long term experience in that locality. This is a biased type of sampling bears large sampling errors. This type of sampling is rarely adopted in large and important purposes. However for research purpose this may be taken by the research scholar.

Some important techniques of non probability sampling methods are -

- a) **Quota sampling**
- b) **Purposive sampling**
- c) **Systematic sampling**
- d) **Snow ball sampling and**
- v) **Double sampling**

**a) Quota sampling:** This method of sampling is almost same with that of stratified random sampling as stated above, the only difference is that here in selecting the elements randomization is not done instead quota is taken into consideration. In the above example the G.P. consists of 60% Hindu voters; for a sample size 150 the proportion is 90 individual, this number of individual is selected from the voter list of Hindu voters not observing the rule of randomization but as quota, so 90 number voters are selected as per convenience of the investigator. As quota sampling is not random so sampling method is biased and lead to large sampling errors.

**b) Purposive sampling:** this is also non random sampling method; here the investigator selected the sample arbitrarily which he considers important for the

research and believes it as typical and representative of the population. Say, an investigator wants to forecast the chance of coming into the power of a political party in general election; for that purpose he selected some reporters, some teachers and some elite people of the territory and collect their opinions. He considers those are the leading persons and their view are relevant for the chance of coming in to the power of the party. As it is a purposive method it has big sampling errors and carry misleading conclusion.

c) **Systematic sampling:** In this method every  $n$ th element is selected from a list of population having serial number. For a large population (say,one lakh) is taken into study and the sample size is 100, so the investigator is to select every  $n$ th name means 1000<sup>th</sup> name; the starting name may be any one within 1000, so selecting a particular element/person taking the 1000<sup>th</sup> name can not represent the different strata or groups that may exist in that big population. Moreover once the starting number is decided and collected data it can not be changed or switched over the other category as per its definition (systemic). Moreover the list may have the chance to repeat the same category of element by passing the other. It is biased and misleading but useful in homogeneous population.

d) **Snow ball sampling:** This is a sociometric sampling technique generally used to study the small group. All the persons in a group identify their friends who in turn know their friends and colleagues, until the informal relationships converge into some type of a definite social pattern. It is just like the snow ball go on increasing its size when rolling in an ice-field. In case of drug addict people it is difficult to find out who are the drug user but when one person is identified he can tell the names of his partner then each of his partner can tell another 2 or 3 whom he knows uses drug . This way the required number of element/person is identified and collects data. This method is suitable for diffusion of innovation, network analysis, decision making.

e) **Double sampling:** In this method sampling is drawn twice. For the first time a large size of sample is selected and send the mailed questionnaire to the respondents (say 500) after receiving back the answered questionnaire (say 300, as all mailed questionnaire do not come back,) the investigator again randomly draws the required

number of sample (say100) and send the modified questionnaire to the respondents. This method is time consuming and expensive.

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