

SAMPLING METHODS

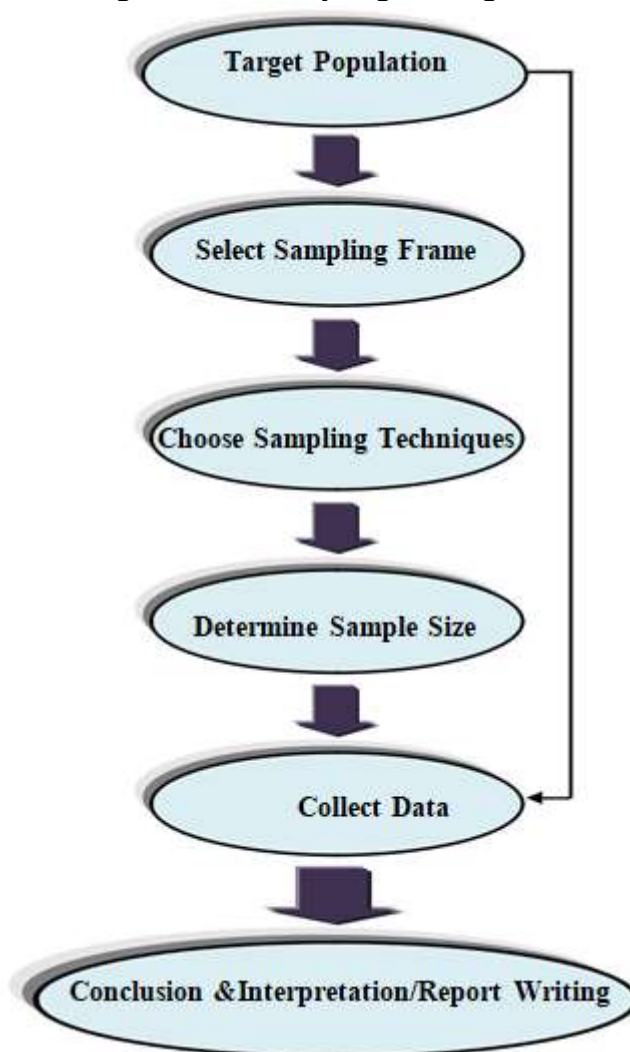
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1. Introduction

In order to answer the research questions, it is doubtful that researcher should be able to collect data from all cases. Thus, there is a need to select a sample. The entire set of cases from which researcher sample is drawn in called the population. Since, researchers neither have time nor the resources to analyze the entire population so they apply sampling technique to reduce the number of cases.

Figure-1: illustrates the stages that are likely to go through when conducting sampling.¹



Steps in Research Process

Through sampling we only make an estimate about the actual situation prevalent in the total population from which the sample is drawn. If we ascertain a piece of information from the total sampling population, and if our method of enquiry is correct, our findings should be reasonably accurate. However, if we select a sample

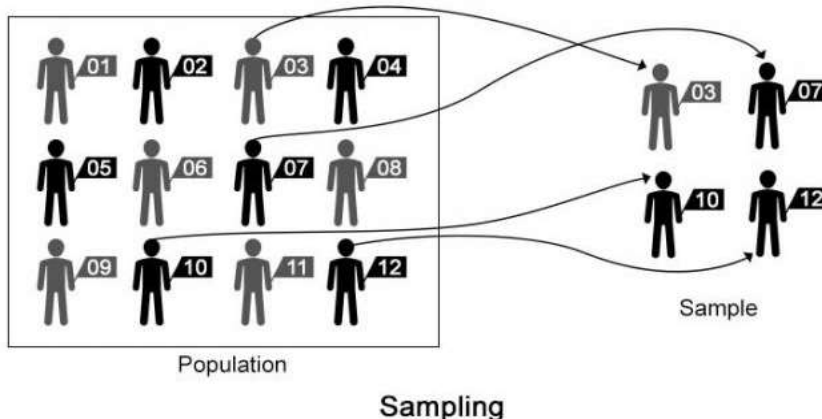
¹HamedTaherdost,*Sampling Methods in Research Methodology; How to Choose a Sampling Technique for Research*,IJARM,2296-1747,18,19-20 (2017).

and use this as the basis from which to estimate the situation in the total population, an error is possible. Tolerance of this possibility of error is an important consideration in selecting a sample.

2. THE CONCEPT OF SAMPLING

Sometimes it is difficult for any researcher to study the entire Universe or the total population (people or things) that he proposes to investigate, it becomes incumbent upon him to select a portion of elements taken from the larger portion or population. Such a portion is referred to as a Sample and the process of drawing these elements from the larger population or Universe is called the Sampling method.¹

Figure-2: illustrates Sampling²–



Sometimes, the entire population will be sufficiently small, and the researcher can include the entire population in the study. This type of research is called a **census study** because data is gathered on every member of the population. Usually, the population is too large for the researcher to attempt to survey all of its members. A small, but carefully chosen sample can be used to represent the population. The sample reflects the characteristics of the population from which it is drawn.³

Let us take a very **simple example** to explain the concept of sampling.

Suppose we have to run a survey about the coffee drinking habits of high school students of India. The population of the students is about 2 million. We cannot even imagine running the survey by asking each and every student to get the relevant data because of requirement of huge amount of time, money and other resources. The cost of the survey in this case would be too monumental to justify the effort. To solve these types of problem, sampling method can be used.

Sampling, therefore, is the process of selecting a few (a sample) from a bigger group (the sampling population) to become the basis for estimating or predicting the prevalence of an unknown piece of information, situation or outcome regarding the bigger group. A sample is a subgroup of the population we are interested in.

This process of selecting a sample from the total population has advantages and disadvantages. The advantages are that it saves time as well as financial and human resources. However, the disadvantage is that we do not find out the information about the population's characteristics of interest to us but only estimate or predict them. Hence, the possibility of an error in our estimation exists.⁴

DISTINGUISHING BETWEEN SAMPLING AND POPULATION

¹R.B.Jain, "Sampling Method in Legal Research", Vol 24 No.2/3, 678

² Dec.11, 10:14 AM, (2018), <https://www.mathstopia.net/sampling/definition-advantages-disadvantages>

³<https://www.statpac.com/surveys/sampling.htm>

⁴Ranjit Kumar, Research Methodology- "A Step By Step Guide For Beginners", 177, (2d ed. 2011)

Sampling and population -The idea of 'sample' is linked to that of 'population'. The whole group from which the sample is drawn is technically known as universe or population and the group actually selected for a study is known as sample. Population refers to all of the cases. Since it is usually difficult for any researcher to study the entire universe or the total population (people or things) he/she proposes to investigate, it becomes incumbent upon him/her to select a portion of elements taken from the larger portion or population. Such a portion is referred as a sample and the process of drawing these elements from the larger population or universe is called the sampling method.¹

Stratification and sub-population: Stratification is a technique of dividing the whole group from which the sample is drawn/the population into a number of strata or groups, and thereby those strata is called sub-population. Again the reason to adopt these techniques may be the vastness of population or other difficulties of ascertaining the universe by taking samples from the whole population.²

Sampling Process Steps³

Stage 1: Clearly Define Target Population

The first stage in the sampling process is to clearly define target population. Population is Commonly related to the number of people living in a particular country.

Stage2: Select Sampling Frame

A sampling frame is a list of the actual cases from which sample will be drawn. The sampling Frame must be representative of the population.

Stage 3: Choose Sampling Technique

Sampling can be used to make an inference about a population or to make generalization in relation to the existing theory. In essence, this depends on choice of sampling technique.

In general, sampling techniques can be divided into two types:

- Probability or random sampling
- Non- probability or non- random sampling

Stage 4: Determine Sample Size

In order to generalize from a random sample and avoid sampling errors or biases, a random sample needs to be of adequate size.

Stage 5: Collect Data

Once target population, sampling frame, sampling technique and sample size have been established, the next step is to collect data.

Stage 6: Assess Response Rate /Report Writing

Response rate is the number of cases agreeing to take part in the study. These cases are taken from original sample. In reality, most researchers never achieve a 100 percent response rate. Reasons for this might include refusal to respond, ineligibility to respond, inability to respond, or the respondent has been located but researchers are unable to make contact. In sum, response rate is important because each non response is liable to bias the final sample. Clearly defining sample, employing the right sampling technique and generating a large sample, in some respects can help to reduce the likelihood of sample bias.

Principles of sampling ⁴

¹Prof (Dr) Khushal Vibhute & Filipos Aynale M, "Legal Research Methods", 151, 2009

² Ibid 5.

³ Hamed Taherdoost, "Sampling Method in Research Methodology; How to Choose a Sampling Technique for Research", Volume 5, Issue 2, 2016, ISSN: 2296-1747.

⁴ Supra, Foot Note No.5, Page-5

The theory of sampling is guided by three principles. To effectively explain these, we will take an extremely simple example. Suppose there are four individuals A, B, C and D. Further suppose that A is 18 years of age, B is 20, C is 23 and D is 25. As we know their ages, we can find out (calculate) their average age by simply adding $18 + 20 + 23 + 25 = 86$ and dividing by 4. This gives the average (mean) age of A, B, C and D as 21.5 years.

Now let us suppose that we want to select a sample of two individuals to make an estimate of the average age of the four individuals. To select an unbiased sample, we need to make sure that each unit has an equal and independent chance of selection in the sample. Randomization is a process that enables you to achieve this. In order to achieve randomization we use the theory of probability in forming pairs which will provide us with six possible combinations of two: A and B; A and C; A and D; B and C; B and D; and C and D.

Let us take each of these pairs to calculate the average age of the sample:

1. $A + B = 18 + 20 = 38/2 = 19.0$ years
2. $A + C = 18 + 23 = 41/2 = 20.5$ years
3. $A + D = 18 + 25 = 43/2 = 21.5$ years
4. $B + C = 20 + 23 = 43/2 = 21.5$ years
5. $B + D = 20 + 25 = 45/2 = 22.5$ years
6. $C + D = 23 + 25 = 48/2 = 24.0$ years.

Notice that in most cases the average age calculated on the basis of these samples of two (sample statistics) is different. Now compare these sample statistics with the average of all four individuals – the population mean (population parameter) of 21.5 years. Out of a total of six possible sample combinations, only in the case of two combinations, there is no difference between the sample statistics and the population mean. Where there is a difference, this is attributed to the sample and is known as sampling error. Again, the size of the sampling error varies markedly.

Factors to be considered while drawing Sample¹

Though the procedure of selecting a sample differs according to the type of the sample selected, certain fundamental rules remain the same. These include:

1. The universe or population must be defined precisely;
2. Before drawing a sample, the unit of the sample should be defined;
3. The appropriate source list which contains the names of the units of universe or population from which the sample is to be selected should be prepared beforehand in case it does not already exist, and
4. The size of the sample to be selected should be pre-determined.

Types of Sampling Techniques

Researchers use two major sampling techniques.

I. Probability Sampling.

This Sampling can be further sub-divided into the following samples:

- a. Simple Random Sampling
- b. Systematic Samples
- c. Stratified Samples
- d. Cluster/Area Samples
- e. Multistage Samples

¹Prof (Dr) Khushal Vibhute & Filipos Aynale M, "Legal Research Methods", 155, 2009

II. Non Probability Sampling.

This Sampling can be further sub-divided into the following samples:

- a. Quota Sampling
- b. Judgement Sampling
- c. Dimensional Sampling
- d. Convenience Sampling
- e. Consecutive Sampling
- f. Purposive Sampling
- g. Opportunistic Sampling
- h. Snowball Sampling

But there are some other types of Samples also. They are as follows:

III. Other Types of Samples.

- a. Time Samples
- b. Heterogeneous Samples
- c. Self – Selected People

I. Probability/Random Sampling Techniques-

Probability Sampling is a sampling technique in which sample from a larger population are chosen using a method based on the theory of probability. For a participant to be considered as a probability sample, he/she must be selected using a random selection. Probability Sampling is also referred to as a **Random Sampling and Representative Sampling**.

The most important requirement of probability sampling is that everyone in our population has a known and an equal chance of getting selected. Therefore in this sampling each and every element have equal chance of being represented.¹

For example: If we have 10 Balls and out of 10 we have to select only 1 Ball. So here we are giving equal opportunity to every 10 balls out of which any of 1 ball can be selected. Hence, Probability sampling gives us the best chance to create a sample that is truly representative of the entire population.

Probability sampling uses statistical theory to select randomly, a small group of people (sample) from an existing large population and then predict that all their responses together will match the overall population.

a. Simple Random Sampling

Simple random sampling is considered as the easiest method of probability sampling. To perform simple random sampling, all a researcher must do is to ensure that all members of the population are included in a master list, and that subjects are then selected randomly from this master list. Simple random sampling creates samples that are highly representative of the population, it can be time consuming and tedious when creating large samples.²

For Example: There is a group of 50 people. Out of this group if we have to select 10 people. Then we can pick any of 10 peoples randomly. This is known as Simple Random Sampling.

Figure-3: illustrates Simple Random Sampling³

¹(Dec.11,2018,12:45 PM)https://www.youtube.com/watch?v=bQ5_PPRPjG4

² (Dec.26,2018,12:53 PM)<https://www.surveygizmo.com/resources/blog/probability-sampling/>

³ (Dec.26,2018,1:00 PM)<https://www.questionpro.com/blog/simple-random-sampling/>



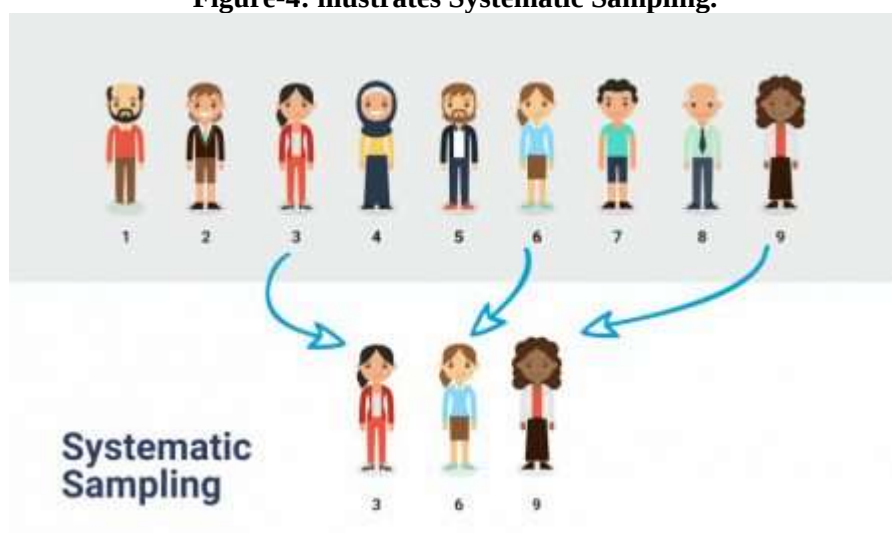
b. Systematic Sampling

This is a Sampling in which we choose every “nth” individual to be a part of the sample.

For **example**, if surveying a sample of consumers and to avoid any kind of biasness and partiality, every 3rd number of consumer may be selected from our sample. The advantage of this sampling technique is its simplicity.

Therefore, we have a well-defined system according to which we are picking up the candidates. So we can pick every 3rd or 6th number of consumer. Hence, this is a kind of Systematic Sampling. Systematic sampling is an extended implementation of the same old probability technique in which each member of the group is selected at regular periods to form a sample. There’s an equal opportunity for every member of a population to be selected using this sampling technique.

Figure-4: illustrates Systematic Sampling.¹



c. Stratified Random Sampling

It is a method where a larger population can be divided into smaller groups that usually don’t overlap but represent the entire population together. While sampling, these groups can be organized and then a sample can be drawn from each group separately.

¹ (Dec.26,2018,1:05 PM) <https://www.questionpro.com/blog/systematic-sampling/>

A common method is to arrange or classify the population by sex, age, ethnicity and similar ways. Splitting subjects into mutually exclusive groups and then using simple random sampling to choose members from groups.

Members in each of these groups should be distinct so that every member of all groups get equal opportunity to be selected using simple probability. This sampling method is also called “**random quota sampling.**”

In the below mentioned Figure, I have stratified this population into different groups as per their age i.e. Older people, younger people and children’s.

Figure-5: illustrates Stratified Random Sampling¹



Now from this strata, if we have to divide people as per their age group, then we can make one group of people who is less than 20 years of age, another group of people who is between 20-25 years of age, next group may be of people above 25 years of age. Now, if we select every 3rd number of people from each age group. We are again giving equal chance to every member, which in itself is a part of probability sampling and is also known as **Stratified Probability Sampling.**

d. Cluster/Area Sampling

When the total area of the research is too large a better way for the researcher is to divide the area into smaller part of the same or equal and then select randomly from the smaller units. Clusters are usually done when the area is widespread.

It is expected that that the total population is to be divided into relatively a smaller number which are still from the clusters of smaller units and then some of this cluster unit will be selected randomly so that it will be included in the general sampling.²

One of the advantages of using the cluster sampling is that it is economical in reducing cost by concentrating on the selected clusters. It gives less precision than the simple random sampling.

For example: When we are having huge village and we have to pick students from each and every corner of village. Practically, it’s not possible for the researcher to go around and to study each and every group individually. So in this case researcher would create clusters from village itself based upon direction.i.e. From northern side, from eastern, western and from south direction. Since we have created clusters. So now researcher will pick any two clusters like of northern and eastern which is now ready as sample clusters.

¹ (Dec.26,2018,1:07 PM) <https://www.questionpro.com/blog/stratified-random-sampling/>

²EtikanI, *Sampling and Sampling Methods*, Vol.5(6):00149,2017,p.29

Let us take another example, if we want to choose 100 participants from the entire population of the U.S., it is likely impossible to get a complete list of everyone. Instead, the researcher randomly selects areas (i.e. cities or counties) and randomly selects from within those boundaries.

Cluster sampling usually analyzes a particular population in which the sample consists of more than a few elements, for example, city, family, university etc. The clusters are then selected by dividing the greater population into various smaller sections.

Figure-6: illustrates Cluster Sampling¹



e. Multistage Sampling²

This is an extension of cluster sampling. This method is generally used in selecting a sample from a very large area. It involves selecting the sample in stages, i.e. taking samples from samples.

Example: One might take a random sample of schools, then a random sample of the classes within each of the schools, and then from within selected classes choose a sample of children.³

Steps involved in Probability Sampling

- 1. Choose your population of interest carefully:** Carefully think and choose from the population, people you think whose opinions should be collected and then include them in the sample.
- 2. Determine a suitable sample frame:** Your frame should include a sample from your population of interest and no one from outside in order to collect accurate data.
- 3. Select your sample and start your survey:** It can sometimes be challenging to find the right sample and determine a suitable sample frame. Even if all factors are in your favor, there still might be unforeseen issues like cost factor, quality of respondents and quickness to respond. Getting a sample to respond to true probability survey might be difficult but it is not impossible.

Advantages of Probability Sampling⁴

In most cases, drawing a probability sample will save our time, money, and a lot of frustration. You probably can't send surveys to everyone but you can always give everyone a chance to participate, this is what probability sample is all about.

- 1. It is Cost-effective:** This process is both cost and time effective. It is quick and thus saves time. The time saved can thus be used to analyze the data and draw conclusions. Here, larger sample can be chosen based on numbers assigned to the samples and then choosing random numbers from the bigger sample.

¹ (Dec.26,2018,1:10 PM) <https://www.questionpro.com/blog/cluster-sampling/>

² (Dec.11,2018,1:17 PM) https://www.youtube.com/watch?v=bQ5_PPRPjG4

³ Supra, Foot Note No.5

⁴ (Dec.26,2018,2:04 PM) <https://www.questionpro.com/blog/probability-sampling/>

2. **It is simple and easy:** Probability sampling is an easy way of sampling as it does not involve a complicated process.
3. **It is non-technical:** This method of sampling doesn't require any technical knowledge because of the simplicity with which this can be done. This method doesn't require complex knowledge and it is not at all lengthy.
4. **Comparatively easier way of sampling:** Probability sampling does not involve any complex and long process. Thus this is an easier way for sampling.
5. **Less time consuming:** This process is a simple and short process. This takes lesser time to complete. The saved time can be used for analysis and interpretation.
6. **Can be done even by non- technical persons:** Assignment of Random number can be done by any kind of person after a short briefing as this does not involve any lengthy, complex and crucial process.

Disadvantages of Probability Sampling¹

1. **Complex:** This process is having higher complexity compared to non-probability sampling.
2. **Time Consuming:** This process is more time consuming if the size of population is large.
3. **Expensive:** This process is usually more expensive than non-probability sampling.
4. **Chances of selecting specific class of samples only:** If a surveyor is appointed to survey about any data relating to family members, there is likely chances that he will develop a trend of starting to number from the eldest member to the youngest and numbers will be only increasing or decreasing only. In this case, only oldest or the latest generations will be taken as samples.
5. **Redundant and monotonous work:** As we know that the surveyor is asked to do a repetitive job to assign the numbers and to take the information, there is likely chances that the surveyor suffers from monotony and the effectiveness of the system will be reduced.

II. Non-Probability/Non Random Sampling Techniques

Non-probability sampling implies where each and every element is not having an equal chance of being represented. It is a sampling technique where the samples are gathered in a process that does not give all the individuals in the population equal chances of being selected. Non-probability sampling is a sampling technique in which the researcher selects samples based on the personal judgment of the researcher rather than random selection.

In non-probability sampling, not all members of the population have a chance of participating in the study unlike probability sampling, where each member of the population has a known chance of being selected.²

For **Example:** Suppose there are 10 balls out of which 2 balls are of red colour which has been reserved. So here researcher is not giving equal chance to every ball to come in this category. He has reserved only red colour balls for his research.

Non-probability sampling is most useful for exploratory studies like pilot survey (a survey that is deployed to a smaller sample compared to pre-determined sample size). Non-probability sampling is used in studies where it is not possible to draw random probability sampling due to time or cost considerations.

Non-probability sampling is a less stringent method, this sampling method depends heavily on the expertise of the researchers. Non-probability sampling is carried out by methods of observation and is widely used in qualitative research.

Figure-7: illustrates Non-probability Sampling³

¹Supra, Foot Note No.19

² (Dec.11,2018,1:15 PM) <https://www.questionpro.com/blog/non-probability-sampling/>

³ Dec.11(2018)8:11 AM, <https://www.questionpro.com/blog/non-probability-sampling/>

**a. Quota Sampling**

In many large-scale applications of sampling procedures, it is not always possible or desirable to list all members of the population and randomly select elements from that list. The reasons for using any alternative procedures include cost, timeliness, and convenience. One alternative procedure is **quota sampling**.¹

For Example: If there is 100 vacancies for the post of Assistant Professors in Law in which 3% Quota is for Jews, 4% Quota is for minority group and 10% Quota is available for women. So there are 17 seats (3+4+10) as reserved and 83 seats which are open for the other candidate.

So in this example we can clearly see that it is not giving equal chance to everyone. Hence, it is a part of Non-Probability sampling.

Hypothetically consider, a researcher wants to study the career goals of male and female employees in an organization. There are 500 employees in the organization. These 500 employees are known as population. In order to understand better about a population, researcher will need only a sample, not the entire population. Further, researcher is interested in particular strata within the population. Here is where quota sampling helps in dividing the population into strata or groups. Which means there should be 250 males and 250 females.

b. Judgement Sampling

Judgement Sampling is something which we are having by our own intuition. In judgemental sampling, the samples are selected based purely on researcher's knowledge and credibility. In other words, researchers choose only those who he feels are a right fit (with respect to attributes and representation of a population) to participate in research study.²

For Example: The researcher has the judgement that farmers would come and sell fresh vegetables directly to the country side area. But if he moves to city center or urban areas, it is difficult to find fresh fruits. So this becomes his Judgement Sampling that in country side area, he will get fresh vegetables but in urban areas we cannot.

This is not a scientific method of sampling and the downside to this sampling technique is that the results can be influenced by the preconceived notions of a researcher. Thus, there is a high amount of ambiguity involved in this research technique.

For example, this type of sampling method can be used in pilot studies.

Merits

1. If this method is properly followed even a small sample can be representative.

¹ (Dec.11,2018,1:17 PM)https://www.youtube.com/watch?v=bQ5_PPRPjG4

²Supra, Foot Note No.20

2. In this method the researcher has the final say on the election.

Demerits

1. The selection is biased and prejudiced.
2. The results drawn are unscientific and inaccurate.

c. Dimensional Sampling

It is an extension of quota sampling. The various dimensions thought to be of important in a survey are incorporated into the sampling procedure in such a way that at least one representative of every possible combination of these factors or dimension is included.¹

d. Convenience Sampling

This is a non-probability sampling technique where samples are selected from the population only because they are conveniently available to researcher. These samples are selected as per our convenience. These samples are selected only because they are easy to recruit and researcher did not consider selecting sample that represents the entire population.

It is quick and inexpensive because it involves selecting individuals who are readily available at the time of the study (such as introductory psychology students). The disadvantage is that convenience samples are generally less representative than random samples; therefore, results should be interpreted with caution.

Ideally, in research, it is good to test sample that represents the population. But, in some research, the population is too large to test and consider the entire population. This is one of the reasons, why researchers rely on convenience sampling, which is the most common non-probability sampling technique, because of its speed, cost-effectiveness, and ease of availability of the sample.

For **Example**: If we are going out for a survey and we have to do a village survey and we have to fill 10 questionnaires per day, then what we will do? We will fill out the first 10 people whom I meet and fill out the 10 questionnaires. So this is a kind of Convenience Sampling which I am not doing based on random population group.

A number of another examples of convenience sampling can be given. Phone surveys may be based on anyone answering the phone between the hours of 9 A.M. and 5 P.M. Politicians use convenience sampling to determine the attitudes of those they represent when they report on the number of letters voluntarily sent to them by their constituents.²

e. Consecutive Sampling

This non-probability sampling technique is very similar to convenience sampling, with a slight variation. Here, the researcher picks a single person or a group of sample, conducts research over a period of time, analyzes the results and then moves on to another subject or group of subject if needed.³

Consecutive sampling gives the researcher a chance to work with many subjects.

f. Purposive Sampling

Purposeful Sampling is a broader term that includes numerous types of Sampling. In this sampling we are selecting information rich cases. So all the cases who have good number of information will become part of purposeful sampling.

Types of Purposive Sampling⁴

1. Extreme /Typical/Critical/Deviant Case Sampling

These are the samplings which are very rare to find.

¹Supra, Foot Note No.20

² Nov.8,2018,10.07 PM),<http://uca.edu/psychology/files/2013/08/Ch7-Sampling-Techniques.pdf>

³Supra, Foot Note No.20

⁴ Ibid, Foot Note No. 24

For **Example:** From a set of normal population, we will find at least 1,000 or 100,000 of population suffering from down syndrome. So this is a kind of extreme or deviant case which is different and rare from the rest of the population.

2. Intensity

It depicts how strongly or intensely researcher is working for his sampling.

For **Example:** If I work around the average students. So I would take the below average and the above average students who are very close to the average group of students. So I am focusing on intensity.

3. Maximum Variation

Maximum Variation Case means where researcher tries to bring out maximum variation in his data.

For **Example:** While doing my research if I am asked to fill questionnaires again which has to be done in garden area where numerous people are walking around, I will try to pick up people who are educated, those who are uneducated, those who are from different nationality, different religious groups

4. Homogeneous Sampling

Under this sampling, researcher picks up data from only those who are of similar groups.

For **example:** If researcher divide population according to religion wise, he can pick up only Hindus, only Muslims, only Christians and so on. So it will be a kind of homogeneous group or similar group of people.

5. Mixed Sampling

It is again a multistage sampling which is a combination of the above mentioned samplings.

For **example:** Researcher can intensify along with variation, variation along with extreme and so on.

6. Sampling politically important cases

This category includes research of politically important cases.

For **example:** Sampling out the areas of Jammu and Kashmir, the line of control(LOC) and so on.

g. Opportunistic Sampling

In this kind of sampling the researcher tries to take advantage of the new case or new opportunity that comes in.¹

For **example:** Nowadays we have mobile phones in contrast of landline phones. So when there was a time of landlines and a new element of mobile phone that came in. Now, if we take two cases of mobile phones along with discussing hundred cases of landlines, we take out an opportunistic sampling because that's as opportunity as it has recently came into market and we can include it as a part of our research

h. Snowball Sampling

This type of sampling helps researcher to find sample when they are difficult to locate. Researchers use this technique when the sample size is small and not easily available. In this case, researcher picks out small group and then try to bring this small group into further contact. This sampling system works like the referral program. Hence, Snowball sampling is also known as **Chain- Referral**. Once the researchers find suitable subjects, they are asked for assistance to seek similar subjects to form a considerably good size sample.²

For **example:** If we have nominated five students, A, B, C, D and E. Each five students will bring one reference. A will bring one reference, B will bring another reference and so on. So from existing nominated groups, we will have further contacts that would come in which is known as snowball sampling.

Another **Example:** this type of sampling can be used to conduct research involving a particular illness in patients or a rare disease. Researchers can seek help from subjects to refer other subjects suffering from the same ailment to form a subjective sample to carry out the study.

¹Supra, Foot Note No.20

²Supra, Foot Note No.20

When to use non-probability sampling?¹

- This type of sampling is used to indicate if a particular trait or characteristic exists in a population.
- This sampling technique is widely used when researchers aim at conducting qualitative research, pilot studies or exploratory research.
- Non-probability sampling is used when researchers have limited time to conduct research or have budget constraints.
- Non-probability sampling is conducted to observe if a particular issue needs in-depth analysis.

Advantages of non-probability sampling²

1. Non-probability sampling is a more conducive and practical method for researchers deploying survey in the real world. Although statisticians prefer probability sampling because it yields data in the form of numbers. However, if done correctly, non-probability sampling can yield similar if not the same quality of results.
2. Getting responses using non-probability sampling is faster and more cost-effective as compared to probability sampling because sample is known to researcher, they are motivated to respond quickly as compared to people who are randomly selected.

Disadvantages of non-probability sampling³

1. In non-probability sampling, researcher needs to think through potential reasons for biases. It is important to have a sample that represents closely the population.
2. While choosing a sample in non-probability sampling, researchers need to be careful about recruits distorting data. At the end of the day, research is carried out to obtain meaningful insights and useful data.

III. Other Types of Samples⁴

- a. **Time Samples** - Sampling across time. It is commonly used in observational studies.
- b. **Heterogeneous Samples**- A deliberate strategy of selecting individuals varying widely on the characteristic (s) of interest.
- c. **Self-Selected People**- Sometimes a sample is not actually selected but people themselves opt to be included or not to be included in a sample. For example, when an enquiry is to be made about the opinion of people about a particular legislation and an announcement to this effect is made on the radio, the sample is also not fixed.

Importance of Sampling in Social/Legal Research

The sampling technique is very widely used nowadays. Due to the following factors it has occupied an important place in social research:

1. With the help of this method a large number of units can be studied. When the area is very large this method can be applied easily.
2. This method saves a lot of time, energy and money.
3. When all the units of an area are homogenous sampling technique is very useful.
4. Intensive study is possible through this method.
5. When the data are unlimited, the use of this method is very useful.
6. When cent per cent accuracy is not required the use of sampling technique becomes inevitable.

¹ (Dec.26,2018,1:25 PM),<https://www.questionpro.com/blog/non-probability-sampling/>

² Ibid, Foot Note No. 28

³Supra, Foot note No.28

⁴Supra, Foot note No.5

The Advantages of Sampling¹

The advantages of sample surveys are usually summed up as follows:

1. Sampling saves time to a great extent by reducing the volume of data. We need not to go through each of the individual items.
2. Sampling avoids monotony in works. We do not have to repeat the query again and again to all the individual data.
3. Sampling provides more accurate and comprehensive information.
4. When we have limited time, survey without using sampling becomes impossible. It allows us to get near-accurate results in much lesser time.
5. When we use proper methods, we are likely to achieve higher level of accuracy by using sampling than without using sampling in some cases due to reduction in monotony, data handling issues etc.
6. By using sampling, we can get detailed information on the data even by employing small amount of resources.

Disadvantages of Sampling²

Every coin has two sides. Sampling also have some demerits. Some of the disadvantages are as follows:

1. Since choice of sampling method is a judgmental task, there exist chances of biasness as per the mindset of the person who chooses it.
2. Improper selection of sampling techniques may cause the whole process redundant.
3. Selection of proper size of samples is a difficult job.
4. Sampling may exclude some data that might not be homogenous to the data that are taken. This affects the level of accuracy in the results.

Sampling Error

A sampling error is a statistical error that occurs when the researcher does not select a sample that represents the entire population of data and the results found in the sample do not represent the results that would be obtained from the entire population. Sampling is an analysis performed by selecting a number of observations from a larger population, and the selection can produce both sampling errors and non-sampling errors.³

The most frequent cause of the said error is a biased sampling procedure. Every researcher must seek to establish a sample that is free from bias and is representative of the entire population. In this case, the researcher is able to minimize or eliminate sampling error.⁴

Reducing Sampling Error by Increasing Sample Size

Sampling error can be eliminated when the sample size is increased and also by ensuring that the sample adequately represents the entire population.⁵

CONCLUSION

So we can conclude by stating that by using sampling technique in research our lot of time is saved as well as money also, if suitable sampling strategy is used, appropriate sample size is selected and necessary

¹ (Dec.26,2018,1:45 PM),<https://accountlearning.com/advantages-and-disadvantages-of-sampling/>

² (Dec.26,2018,1:45 PM),<https://www.mathstopia.net/sampling/definition-advantages-disadvantages>

³ (Dec.26,2018,1:50 PM) <https://www.investopedia.com/terms/s/samplingerror.asp>

⁴ (Dec.26,2018,1:54 PM) <https://explorable.com/sampling-error>

⁵ Ibid, Foot Note No.34

precautions are taken to minimize sampling errors. A Sample fulfilling these requirements provides us with reliable information.