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Programme; Master of sociology

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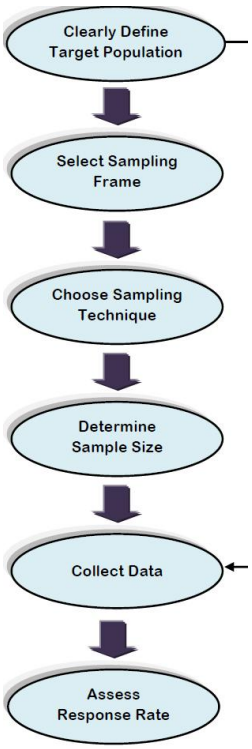
Semester : ii

Course:CC-5

UNIT:4

1.SAMPLING METHODS

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 is called the population. Since, researchers neither have time nor the resources to analysis the entire population so they apply sampling technique to reduce the number of sscases. Figure 1 illustrates the stages that are likely to go through when conducting sampling.



A. 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

B. 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.

C. Stage 3: Choose Sampling Technique

Prior to examining the various types of sampling method, it is worth noting what is meant by sampling, along with reasons why researchers are likely to select a sample. Taking a subset from chosen sampling frame or entire population is called sampling. Sampling can be used to make inference about a population or to make generalization in relation to 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

Before choosing specific type of sampling technique, it is needed to decide broad sampling technique.

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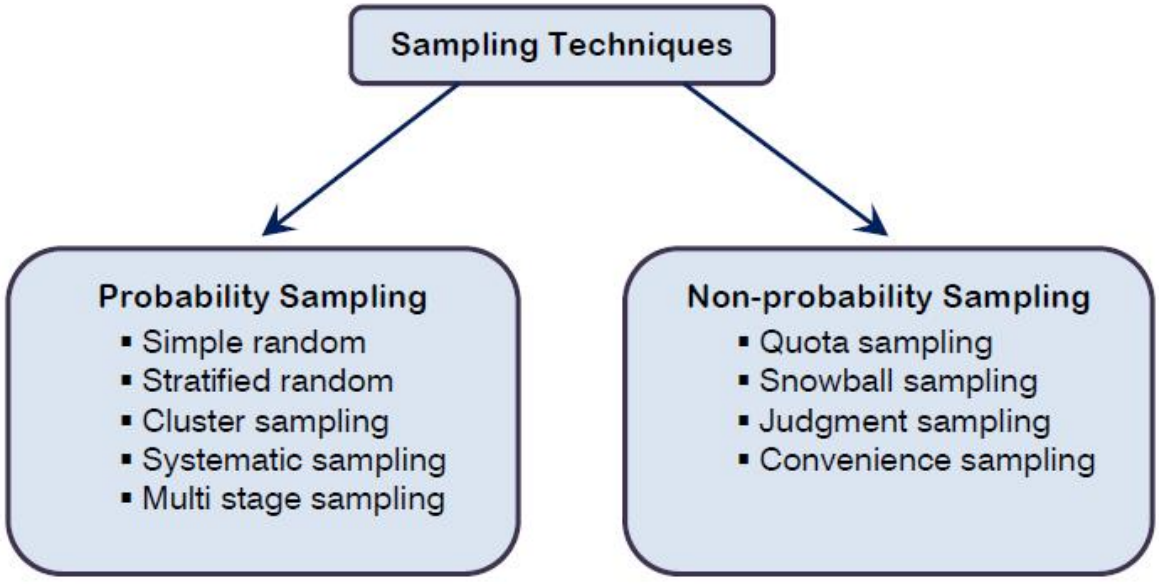

FIGURE I2: SAMPLING TECHNIQUES

1. Probability Sampling

Probability sampling means that every item in the population has an equal chance of being included in sample. One way to undertake random sampling would be if researcher was to construct a sampling frame first and then used a random number generation computer program to pick a sample from the sampling frame .

1.1. Simple random sampling

The simple random sample means that every case of the population has an equal probability of inclusion in sample. Disadvantages associated with simple random sampling include

A complete frame (a list of all units in the whole population) is needed;

In some studies, such as surveys by personal interviews, the costs of obtaining the sample can be high if the units are geographically widely scattered;

The standard errors of estimators can be high.

1.2. Systematic sampling

Systematic sampling is where every nth case after a random start is selected. For example, if surveying a sample of consumers, every fifth consumer may be selected from your sample. The advantage of this sampling technique is its simplicity.

1.3. Stratified random sampling

Stratified sampling is where the population is divided into strata (or subgroups) and a random sample is taken from each subgroup. A subgroup is a natural set of items. Subgroups might be based on company size, gender or occupation (to name but a few). Stratified sampling is often used where there is a great deal of variation within a population. Its purpose is to ensure that every stratum is adequately represented.

1.4. Cluster sampling

Cluster sampling is where the whole population is divided into clusters or groups. Subsequently, a random sample is taken from these clusters, all of which are used in the final sample (Wilson, 2010). Cluster sampling is advantageous for those researchers whose subjects are fragmented over large geographical areas as it saves time and money (Davis, 2005). The stages to cluster sampling can be summarized as follows:

Choose cluster grouping for sampling frame, such as type of company or geographical region

Number each of the clusters

Select sample using random sampling

1.5. Multi-stage sampling

Multi-stage sampling is a process of moving from a broad to a narrow sample, using a step by step process. For example Malaysian automobile magazine were to conduct a survey, it could simply take a random sample of automobile owners within the entire Malaysian population. Obviously, this is both

expensive and time consuming. A cheaper alternative would be to use multi-stage sampling. In essence, this would involve dividing Malaysia into a number of geographical regions. Subsequently, some of these regions are chosen at random, and then subdivisions are made, perhaps based on local authority areas. Next, some of these are again chosen at random and then divided into smaller areas, such as towns or cities. The main purpose of multi-stage sampling is to select samples which are concentrated in a few geographical regions. Once again, this saves time and money.

2. Non probability Sampling

Non probability sampling is often associated with case study research design and qualitative research. With regards to the latter, case studies tend to focus on small samples and are intended to examine a real life phenomenon, not to make statistical inferences in relation to the wider population. A sample of participants or cases does not need to be representative, or random, but a clear rationale is needed for the inclusion of some cases or individuals rather than others.

2.1. Quota sampling

Quota sampling is a non random sampling technique in which participants are chosen on the basis of predetermined characteristics so that the total sample will have the same distribution of characteristics as the wider population.

2.2. Snowball sampling

Snowball sampling is a non random sampling method that uses a few cases to help encourage other cases to take part in the study, thereby increasing sample size. This approach is most applicable in small populations that are difficult to access due to their closed nature, e.g. secret societies and inaccessible professions .

2.3. Convenience sampling

Convenience sampling is selecting participants because they are often readily and easily available. Typically, convenience sampling tends to be a favored sampling technique among students as it is inexpensive and an easy option compared to other sampling technique. Convenience sampling often helps to overcome many of the limitations associated with research. For example, using friends or family as part of sample is easier than targeting unknown individuals.

2.4. Purposive or judgmental sampling

Purposive or judgmental sampling is a strategy in which particular settings persons or events are selected deliberately in order to provide important information that cannot be obtained from other choices (Maxwell, 1996). It is where the researcher includes cases or participants in the sample because they believe that they warrant inclusion.

Table 1 illustrates strengths and weaknesses associated with each respective sampling technique.

TABLE 1: STRENGTHS AND WEAKNESSES OF SAMPLING TECHNIQUES

SOURCE: Technique	Strengths	Weaknesses
Convenience sampling	Least expensive, least time-consuming, most convenient	Selection bias, sample not representative, not recommended by descriptive or casual research
Judgment sampling	Low-cost, convenient, not time-consuming, ideal for exploratory research design	Does not allow generalization, subjective
Quota sampling	Sample can be controlled for certain characteristics	Selection bias, no assurance
Snowball sampling	Can estimate rare characteristics	Time-consuming
Simple random sampling	Easily understood, results projectable	Difficult to construct sampling frame, expensive, lower precision, no assurance of representativeness
Systematic sampling	Can increase representativeness, easier to implement than simple random sampling, sampling frame not always necessary	Can decrease representativeness
Stratified sampling	Includes all important sub-population, precision	Difficult to select relevant stratification variables, not feasible to stratify on many

		variables, expensive
Cluster sampling	Easy to implement, cost-effective	Imprecise, difficult to compute an interpret results

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