

MB0050: "Research Methodology"**ASSIGNMENT- Set 1****Q1. a. Distinguish between Double sampling and multiphase sampling.****Answer:**

DOUBLE SAMPLING: A standard form of sample design for industrial inspection purposes. In accordance with the characteristics of a particular plan, two samples are drawn, n_1 and n_2 , and the first sample inspected. The batch can then be accepted or rejected upon the results of this inspection or the second sample be inspected and the decision made upon the combined result.

Context:

The term has also been used somewhat loosely for what is called multi-phase sampling and the two-stage version of multi-stage sampling. There is a further usage whereby a first sample provides a preliminary estimate of design parameters which govern the size of the second sample to achieve a desired overall result.

MULTI-PHASE SAMPLING: It is sometimes convenient and economical to collect certain items of information from the whole of the units of a sample and other items of usually more detailed information from a sub-sample of the units constituting the original sample. This may be termed two-phase sampling, e.g. if the collection of information concerning variate, y , is relatively expensive, and there exists some other variate, x , correlated with it, which is relatively cheap to investigate, it may be profitable to carry out sampling in two phases.

At the first phase, x is investigated, and the information thus obtained is used either (a) to stratify the population at the second phase, when y is investigated, or (b) as supplementary information at the second phase, a ratio or regression estimate being used.

Two-phase sampling is sometimes called "double sampling".

Context:

Further phases may be added if desired. It may be noted, however, that multiphase sampling does not necessarily imply the use of any relationships between variates x and y . The expression is not to be confused with multi-stage sampling.

b. Replicated or interpenetrating sampling: Interpenetrating Sampling: interpenetrating sampling (IPS), also known as interpenetrating sub sampling and replicated sampling. IPS was introduced in the pioneering contribution of P.C. Mahalanobis. It was originally proposed in assessing the non sampling errors as the so-called “interviewer errors”. IPS provides a quick, simple, and effective way of estimating the variance of an estimator even in a complex survey. In fact, IPS is the foundation of modern re-sampling methods like Jackknife, bootstrap, and replication methods. In IPS, three basic principles of experimental designs, namely, randomization, replication, and local control, are used. IPS is used extensively not only in agriculture, but also in social sciences, demography, epidemiology, public health, and many other fields.

Q2. What are the differences between observation and interviewing as methods of data collection? Give two specific examples of situations where either observation or interviewing would be more.

Answer: Observation means viewing or seeing. Observation may be defined as a systematic viewing of a specific phenomenon in its proper setting for the specific purpose of gathering data for a particular study. Observation is classical method of scientific study.

Observation as a method of data collection has certain characteristics.

1. It is both a physical and a mental activity: The observing eye catches many things that are present. But attention is focused on data that are pertinent to the given study.
2. Observation is selective: A researcher does not observe anything and everything, but selects the range of things to be observed on the basis of the nature, scope and objectives of his study. For example, suppose a researcher desires to study the causes of city road accidents and also formulated a tentative hypothesis that accidents are caused by violation of traffic rules and over speeding. When he observed the movements of vehicles on the road, many things are before his eyes; the type, make, size and colour of the vehicles, the persons sitting in them, their hair style, etc. All such things which are not relevant to his study are ignored and only over speeding and traffic violations are keenly observed by him.
3. Observation is purposive and not casual: It is made for the specific purpose of noting things relevant to the study. It captures the natural social context in which persons behaviour occur. It grasps the significant events and occurrences that affect social relations of the participants.

4. Observation should be exact and be based on standardized tools of research and such as observation schedule, social metric scale etc., and precision instruments, if any.

Interviewing is one of the prominent methods of data collection. It may be defined as a two way systematic conversation between an investigator and an informant, initiated for obtaining information relevant to a specific study. It involves not only conversation, but also learning from the respondent's gesture, facial expressions and pauses, and his environment. Interviewing requires face to face contact or contact over telephone and calls for interviewing skills. It is done by using a structured schedule or an unstructured guide. Interviewing may be used either as a main method or as a supplementary one in studies of persons. Interviewing is the only suitable method for gathering information from illiterate or less educated respondents. It is useful for collecting a wide range of data from factual demographic data to highly personal and intimate information relating to a person's opinions, attitudes, values, beliefs past experience and future intentions. When qualitative information is required or probing is necessary to draw out fully, and then interviewing is required. Where the area covered for the survey is a compact, or when a sufficient number of qualified interviewers are available, personal interview is feasible. Interview is often superior to other data-gathering methods. People are usually more willing to talk than to write. Once rapport is established, even confidential information may be obtained. It permits probing into the context and reasons for answers to questions. Interview can add flesh to statistical information. It enables the investigator to grasp the behavioral context of the data furnished by the respondents.

Observation is suitable for a variety of research purposes. It may be used for studying

- (a) The behavior of human beings in purchasing goods and services.: life style, customs, and manner, interpersonal relations, group dynamics, crowd behavior, leadership styles, managerial style, other behaviors and actions;
- (b) The behavior of other living creatures like birds, animals etc.
- (c) Physical characteristics of inanimate things like stores, factories, residences etc.
- (d) Flow of traffic and parking problems
- (e) movement of materials and products through a plant.

Q3. How case study method is useful to Business Research?**Answer: Case Study as a Method of Business Research**

In-depth analysis of selected cases is of particular value to business research when a complex set of variables may be at work in generating observed results and intensive study is needed to unravel the complexities. For instance, an in-depth study of a firm's top sales people and comparison with the worst sales people might reveal characteristics common to stellar performers. The exploratory investigator is best served by the active curiosity and willingness to deviate from the initial plan, when the finding suggests new courses of enquiry, might prove more productive.

Advantages of Case Study Method

Case study of particular value when a complex set of variables may be at work in generating observed results and intensive study is needed to unravel the complexities. For example, an in-depth study of a firm's top sales people and comparison with worst salespeople might reveal characteristics common to stellar performers. Here again, the exploratory investigation is best served by an active curiosity and willingness to deviate from the initial plan when findings suggest new courses of inquiry might prove more productive. It is easy to see how the exploratory research objectives of generating insights and hypothesis would be well served by use of this technique.

Case study is a method of exploring and analyzing the life of a social unit or entity, be it a person, a family, an institution or a community. The aim of case study method is to locate or identify the factors that account for the behaviour patterns of a given unit, and its relationship with the environment. The case data are always gathered with a view to attracting the natural history of the social unit, and its relationship with the social factors and forces operative and involved in this surrounding milieu. In short, the social researcher tries, by means of the case study method, to understand the complex of factors that are working within a social unit as an integrated totality. Looked at from another angle, the case study serves the purpose similar to the clue-providing function of expert opinion. It is most appropriate when one is trying to find clues and ideas for further research.

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