

## **TOPIC-METHODS OF DATA COLLECTION,SOURCES OF DATA COLLECTION**

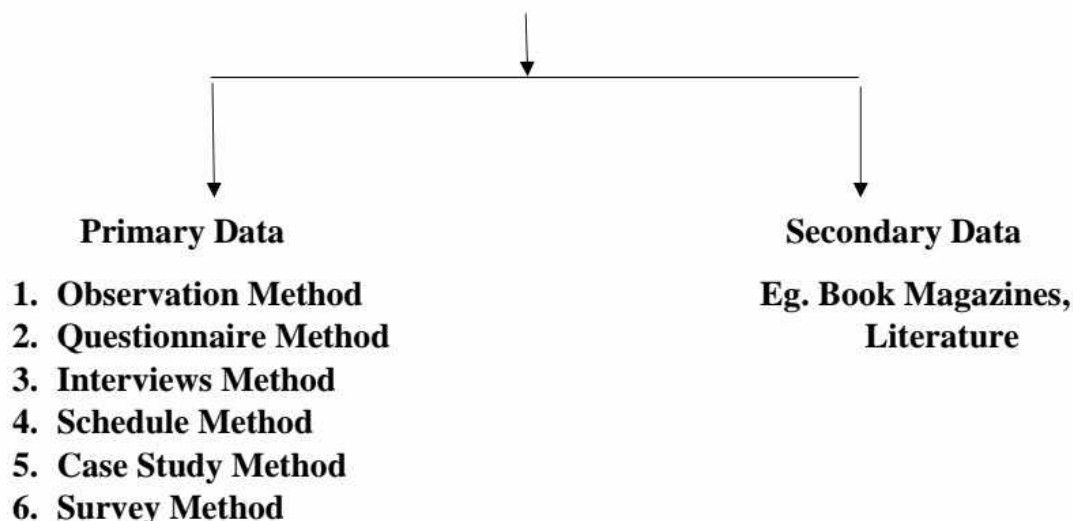
### **CONCEPT OF DATA COLLECTION**

Data collection is the process of gathering and measuring information on variables of interest, in an established systematic fashion that enables one to answer stated research questions, test hypotheses, and evaluate outcomes. The data collection component of research is common to all fields of study including physical and social sciences, humanities, business, etc. While methods vary by discipline, the emphasis on ensuring accurate and honest collection remains the same.

Data collection is one of the most important stages in conducting a research. You can have the best research design in the world but if you cannot collect the required data you will be not be able to complete your project. Data collection is a very demanding job which needs thorough planning, hard work, patience, perseverance and more to be able to complete the task successfully. Data collection starts with determining what kind of data required followed by the selection of a sample from a certain population. After that, you need to use a certain instrument to collect the data from the selected sample.

It enables researcher to get the answer of Research Question, to test Hypothesis, Analysis & Interpretation of data, specially help investigator to arrive at conclusion.

### **SOURCES OF DATA COLLECTION**



**Primary Data-** Data that has been collected from first-hand-experience is known as primary data. Primary data has not been published yet and is more reliable, authentic and objective. Primary data has not been changed or altered by human beings; therefore its validity is greater than secondary data. Importance of Primary Data: In statistical surveys it is necessary to get information from primary sources and work on primary data. For example, the statistical records of female population in a country cannot be based on newspaper, magazine and other printed sources. A research can be conducted without secondary data but a research based on only secondary data is least reliable and may have biases because secondary data has already been manipulated by human beings. One of such sources is old and secondly they contain limited information as well as they can be misleading and biased. Sources of Primary Data: Sources for primary data are limited and at times it becomes difficult to obtain data from primary source because of either scarcity of population or lack of cooperation. Following are some of the sources of primary data.

**1.Observation Method-** The observation method is the most commonly used method specially in studies relating to behavioural sciences. Observation becomes a scientific tool and the method of data collection for the researcher, when it serves a formulated research purpose, is systematically planned and recorded and is subjected to checks and controls on validity and reliability. Under the observation method, the information is sought by way of investigator's own direct observation without asking from the respondent. For instance, in a study relating to consumer behaviour, the investigator instead of asking the brand of wrist watch used by the respondent, may himself look at the watch. The main advantage of this method is that subjective bias is eliminated, if observation is done accurately. Secondly, the information obtained under this method relates to what is currently happening; it is not complicated by either the past behaviour or future intentions or attitudes.

### Use of Observational Method

There are a variety of reasons for collecting observational data. Some of these reasons include -  
 When the nature of the research question to be answered is focused on answering a how- or what-type question.

When the topic is relatively unexplored and little is known to explain the behavior of people in a particular setting.

When understanding the meaning of a setting in a detailed way is valuable

When it is important to study a phenomenon in its natural setting.

### Classification of Observational Method

**Participant and Non Participant Observation:** Participation by the observers with the various types of operations of the group under study refers to the participant type of observation. In participant observation, the degree of the participation is largely affected by the nature of the study and it also depends on the type of the situation and also on its demands. But in the non participant type of observation, no participation of the observer in the activities of the group takes place and also there occurs no relationship between the researcher and the group.

Undisguised participant observation is often used to understand the culture and behavior of groups of individuals. Disguised participant observation is often used when researchers believe individuals would change their behavior if they knew it was being recorded. Participant observation allows researchers to observe behaviors and situations that are not usually open to scientific observation. Participant observers may sometimes lose their objectivity or may unduly influence the individuals whose behavior they are recording

**2.Questionnaire Method-** A questionnaire is a research instrument consisting of a series of questions and other prompts for the purpose of gathering information from respondents. Although they are often designed for statistical analysis of the responses, this is not always the case. The questionnaire was invented by Sir Francis Galton (1822 - 1911). Questionnaires have advantages over some other types of surveys in that they are cheap, do not require as much effort from the questioner as verbal or telephone surveys, and often have standardized

answers that make it simple to compile data. As a type of survey, questionnaires also have many of the same problems relating to question construction and wording that exist in other types of opinion poll.

### **Basic Rules for Questionnaire Item Construction:**

The basic rules are –

- Use statements which are interpreted in the same way by members of different subpopulations of the population of interest.
- Use statements where persons that have different opinions or traits will give different answers.
- Think of having an 'open' answer category after a list of possible answers.
- Use only one aspect of the construct you are interested in per item.
- Use positive statements and avoid negatives or double negatives.
- Do not make assumptions about the respondent.
- Use clear and comprehensible wording, easily understandable for all educational levels.
- Use correct spelling, grammar and punctuation.
- Avoid items that contain more than one question per item (e.g. Do you like strawberries and potatoes?).
- Question should not be biased or even leading the participant towards an answer

### **3. Interviews Method**

Interviewing involves asking questions and getting answers from participants in a study. Interviewing has a variety of forms including: individual, face-to-face interviews and face-to-face group interviewing. The asking and answering of questions can be mediated by the telephone or other electronic devices (e.g. computers).

Interviews can be –

**(a) Personal interviews:** Personal interview method requires a person known as the interviewer asking questions generally in a face-to-face contact to the other person or persons. (At times the interviewee may also ask certain questions and the interviewer responds to these, but usually the interviewer initiates the interview and collects the information.) This sort of interview may be in the form of direct personal investigation or it may be indirect oral investigation. In the case of direct personal investigation, the interviewer has to collect the information personally from the sources concerned.

**(b) Telephone interviews:** This method of collecting information consists in contacting respondents on telephone itself. It is not a very widely used method, but plays important part in industrial surveys, particularly in developed regions. The chief merits of such a system are:

1. It is more flexible in comparison to mailing method.
2. It is faster than other methods i.e., a quick way of obtaining information.
3. It is cheaper than personal interviewing method; here the cost per response is relatively low.
4. Recall is easy; call-backs are simple and economical.
5. There is a higher rate of response than what we have in mailing method; the non-response is generally very low.
6. Replies can be recorded without causing embarrassment to respondents.
7. Interviewer can explain requirements more easily.
8. At times, access can be gained to respondents who otherwise cannot be contacted for one reason or the other.
9. No field staff is required.
10. Representative and wider distribution of sample is possible.

**4. Schedule Method-** This method of data collection is very much like the collection of data through questionnaire, with little difference which lies in the fact that schedules (proforma containing a set of questions) are being filled in by the enumerators who are specially appointed for the purpose. These enumerators along with schedules, go to respondents, put to them the questions from the proforma in the order the questions are listed and record the replies in the space meant for the same in the proforma. In certain situations, schedules may be handed over to respondents and enumerators may help them in recording their answers to various questions in the said schedules. Enumerators explain the aims and objects of the investigation and also remove the difficulties which any respondent may feel in understanding the implications of a particular question or the definition or concept of difficult terms.

## DIFFERENCE BETWEEN QUESTIONNAIRES AND SCHEDULES

Both questionnaire and schedule are popularly used methods of collecting data in research surveys. There is much resemblance in the nature of these two methods and this fact has made many people to remark that from a practical point of view, the two methods can be taken to be the same. But from the technical point of view there is difference between the two. The important points of difference

are as under:

1. The questionnaire is generally sent through mail to informants to be answered as specified in a covering letter, but otherwise without further assistance from the sender. The schedule is generally filled out by the research worker or the enumerator, who can interpret questions when necessary.
2. To collect data through questionnaire is relatively cheap and economical since we have to spend money only in preparing the questionnaire and in mailing the same to respondents. Here no field staff required. To collect data through schedules is relatively more expensive since considerable amount of money has to be spent in appointing enumerators and in importing training to them. Money is also spent in preparing schedules.
3. Non-response is usually high in case of questionnaire as many people do not respond and many return the questionnaire without answering all questions. Bias due to non-response often remains indeterminate. As against this, non-response is generally very low in case of schedules because these are filled by enumerators who are able to get answers to all questions. But there remains the danger of interviewer bias and cheating.
4. In case of questionnaire, it is not always clear as to who replies, but in case of schedule the identity of respondent is known.

**5. Case Study Method-** Case studies are in-depth investigations of a single person, group, event or community. Typically data are gathered from a variety of sources and by using several different methods (e.g. observations & interviews). The case study research method originated in clinical medicine (the case history, i.e. the patient's personal history). The case study method often involves simply observing what happens to, or reconstructing 'the case history' of a single participant or group of individuals (such as a school class or a specific social group), i.e. the idiographic approach. Case studies allow a researcher to investigate a topic in far more detail than might be possible if they were trying to deal with a large number of research participants (nomothetic approach) with the aim of 'averaging'.

In a case study, nearly every aspect of the subject's life and history is analyzed to seek patterns and causes for behavior. The hope is that learning gained from studying one case can be generalized to many others. Unfortunately, case studies tend to be highly subjective and it is difficult to generalize results to a larger population.

### Characteristics of Case Study Method

- Case study research is not sampling research. Selecting cases must be done so as to maximize what can be learned in the period of time available for the study.
- The unit of analysis is a critical factor in the case study. It is typically a system of action rather than an individual or group of individuals. Case studies tend to be selective, focusing on one or two issues that are fundamental to understanding the system being examined.
- Case studies are multi-perspectives analyses. This means that the researcher considers not just the voice and perspective of the actors, but also of the relevant groups of actors and the interaction between them. This one aspect is a salient point in the characteristic that case studies possess. They give a voice to the powerless and voiceless.

## 6. Survey Method

Survey research is often used to assess thoughts, opinions, and feelings. Survey research can be specific and limited, or it can have more global, widespread goals. Today, survey research is used by a variety of different groups. A survey consists of a predetermined set of questions that is given to a sample. With a representative sample, that is, one that is representative of the larger population of interest, one can describe the attitudes of the population from which the sample was drawn. Further, one can compare the attitudes of different populations as well as look for changes in attitudes over time. A good sample selection is key as it allows one

to generalize the findings from the sample to the population, which is the whole purpose of survey research. Surveys provide a means of measuring a population's characteristics, self-reported and observed behavior, awareness of programs, attitudes or opinions, and needs. Repeating surveys at regular intervals can assist in the measurement of changes over time. These types of information are invaluable in planning and evaluating government policies and programs. Unlike a census, where all members of a population are studied, sample surveys gather information from only a portion of a population of interest.

## **Secondary Data**

Secondary data is the data that is collected from the primary sources which can be used in the current research study. Collecting secondary data often takes considerably less time than collecting primary data where you would have to gather every information from scratch. It is thus possible to gather more data this way. Secondary data can be obtained from two different research strands –

- Quantitative: Census, housing, social security as well as electoral statistics and other related databases.
- Qualitative: Semi-structured and structured interviews, focus groups transcripts, field notes, observation records and other personal, research-related documents.

Secondary data is often readily available. After the expense of electronic media and internet the availability of secondary data has become much easier. Published Printed Sources: There are varieties of published printed sources. Their credibility depends on many factors. For example, on the writer, publishing company and time and date when published. New sources are preferred and old sources should be avoided as new technology and researches bring new facts into light. Books: Books are available today on any topic that you want to research. The use of books start before even you have selected the topic. After selection of topics books provide insight on how much work has already been done on the same topic and you can prepare your literature review. Books are secondary source but most authentic one in secondary sources. Journals/periodicals: Journals and periodicals are becoming more important as far as data collection is concerned. The reason is that journals provide up-to-date information which at times books cannot and secondly, journals can give information on the very specific topic on which you are researching rather talking about more general topics. Magazines/Newspapers: Magazines are also effective but not very reliable. Newspapers on the other hand are more reliable and in some cases the information can only be obtained from newspapers as in the case of some political studies.