

## Module – 2

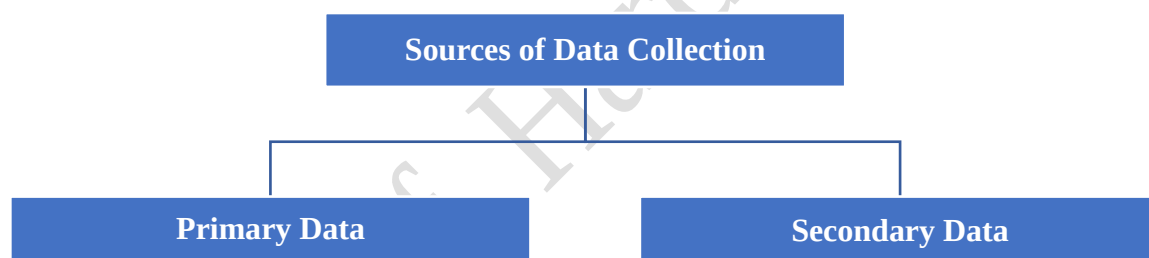
### Data Collection and Processing

#### 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 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



#### 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. 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 is some of the sources of primary data.

## **Module – 2**

### **Data Collection and Processing**

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.
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.
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 –
  - 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.
  - 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.
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

## **Module – 2**

### **Data Collection and Processing**

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.

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 analysed to seek patterns and causes for behaviour. 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.

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 behaviour, 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:**

## **Module – 2**

### **Data Collection and Processing**

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 starts 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.