

Data Collection

The module aims to introduce different methods used by researchers for collection of data. The purpose of research is to make description, explanation and/or predictions about various phenomena. The efficacy of any research depends on the accuracy of the data collected. The paper outlines different methods available for data collection in social science research.

Introduction

Research is a highly specialized activity that is more than just collecting information or writing a description. It involves collection of information in a targeted fashion, which is further analyzed thoroughly to lead to answers of research questions and evaluate results. The collection of data is the heart of any research design, irrespective of the field of study. Any research begins with certain questions, which need to be answered. Data collection is the process of gathering the desirable information carefully, with least possible distortion, so that the analysis may provide answers that are credible and stand to logic (Sapsford & Jupp, 2006).

Types of Data

There are two types of data:

- Primary Data
- Secondary Data

Primary Data:

The data gathered by researcher first-hand is primary data. The researcher collects such data on purpose, because no previous records of the data exist to be accessed by public. Primary data can be collected using a range of methods like surveys, interviews, focus groups, etc. Such data is considered to be highly reliable.

Secondary Data:

The data that have been collected and compiled by someone, and are accessible to the public, are known as secondary data. It is the data used by the investigator from previous studies and other sources. The primary data collected for one research study, becomes secondary data when it is further used for another research. Generally, secondary data includes government reports, census data, departmental records, etc. Using such data is less expensive and faster in comparison to primary

data.

Quantitative and Qualitative Data

The data collection methods can also be classified on the basis of the methods used.

There are two categories of data collection methods:

- Quantitative Data
- Qualitative Data

Quantitative Data

The data that can be quantified and expressed as a number is quantitative data. For example, height of students of a class, marks obtained in a test, number of news stories published on a topic, number of times a particular word has been used in publications, etc. It is feasible to represent such data through ordinal and ratio scales, and are capable of being statistically evaluated.

Qualitative Data

The data that cannot be expressed in the form of a number is qualitative data. Such data can only be expressed through nominal scales, for example, religion, gender, etc. It can also be “descriptions of situations, events, people, interactions and observed behaviours; direct quotations from people and excerpts or entire passages from documents, correspondence, records and case studies” (Patton, 1988). Qualitative data can be best conveyed in the form of words.

Data Collection Techniques

The data can be collected using various techniques. The decision about which tool to use for data collection is guided by the research question. Some methods of data collection are:

- Interview
- Focus Groups
- Field Observation
- Case Study
- Ethnography
- Oral History
- Projective Techniques

Some instruments of data collection are:

- Questionnaire
- Interview Schedule

Interview

An interview is meant to record and analyse people's opinions, experiences, beliefs and ideas on relevant topics. The respondents are required to present more detailed information. This gives a deeper insight into the social phenomena, as compared to the quantitative methods such as surveys and questionnaires. Interviews are also convenient to gather data when the research deals with more sensitive topics, about which the participants may not feel very comfortable to talk openly in a group environment (Gill, Stewart, Treasure, & Chadwick, 2008).

Research interviews can be classified into three categories:

- structured,
- semi-structured and
- unstructured.

Structured interviews follow a strict procedure of asking a list of predetermined questions to the participants, and recording the answers using standardised techniques. The data is administered verbally, leaving little or no scope for follow-up questions to responses that warrant further elaboration. A structured approach means each interviewer is required to answer the same questions in the same sequence. The answers thus recorded can be analysed and evaluated reliably. They are less appropriate for situations where deeper probe is required.

A **semi-structured interview** is more open as compared to a structured interview, allowing the investigator or the respondent to divert, if an idea is to be pursued in more detail. In a semi-structured interview, the researcher proceeds with a general outline of themes, which can be further expanded when needed. The questions can be asked to different participants in different ways, keeping in view the desired context. For example,

Unstructured Interviews do not follow a designated set of questions. These are more informal, free flowing and spontaneous, in comparison to a structured interview. The questions are developed as the interview proceeds, based on the responses of the

interviewee. Unstructured interviews tend to be more time-consuming and difficult to manage. The respondents may feel confused owing to inadequate guidance, because there is a lack of pre-determined questions. These unstructured interviews are most helpful when seeking a 'deep' probe into something. It may pertain to an area about which little knowledge exists, or a different perspective is sought (Bailey, 2008).

Focus Groups

A focus group refers to a group of people who have been purposefully assembled at a place to take part in a discussion on a topic of relevance. It is a method of collecting information by studying people's collective views, opinions, experiences and reactions, and also to understand the meanings implied by them (Morgan, 1998). The participants of a focus group are chosen keeping in view certain common characteristics that relate them to the topic of discussion. The environment in a focus group is open and interactive, so that the participants feel free to express their ideas and opinions. Focus groups provide a lighter and open arena for discussion, as compared to a personal interview. They are more similar to a semi-structured interview, but the objective is more than just collection of data from many respondents simultaneously.

The data thus collected is analysed carefully and systematically to arrive at conclusions regarding the collective opinion of people. This method was originally used for market research, but in due course it was also used in public sector marketing, political analysis, and health education campaigns, among others (Bloor, Frankland, Thomas, & Robson, 2001).

Questionnaire and Schedule

Questionnaires and schedules are devices used to collect data through a series of questions and other similar prompts from a group of respondents. In case of a questionnaire, the respondents comprise heterogeneous and widely scattered groups of people. Therefore, the questions are prepared keeping in mind the fact that the participants will have to fill the answers to questions themselves. Therefore, it is feasible to even mail or email the questionnaire to the target group, or it can be given to them by hand and be collected after some time.

The schedule, on the other hand, is a structure of a set of questions on a given topic, which the researcher asks the respondent personally. The sequence and language of questions remains unchanged. A schedule is administered usually in cases where the questions may create some confusion in the mind of the respondent, and therefore may require further explanation.

Questionnaires and schedules both include open-ended questions and close-ended questions. In open-ended questions, the respondent has greater freedom in giving his response. In close-ended questions there is a limit of responses for a respondent to choose from. A schedule consumes more time as compared to a questionnaire and therefore a questionnaire is likely to be less expensive.

Observation

Observation is defined as “the systematic description of events, behaviours, and artefacts in the social setting chosen for study” (Marshall & Rossman, 1989). Through the mode of observation, the researcher gets to describe situations as they exist, by making use of five senses, thus presenting a sketch of a situation under study (Erlandson, Harris, Skipper, & Allen, 1993).

The researcher observes the behaviour of participants and records the results of these observations. Observation method is roped in by the researcher to develop an overall understanding of the phenomena being investigated, in the most objective and accurate way possible (De Walt and De Walt, 2002).

For example, in an interview method, the participants may become conscious of their responses being monitored. They may give responses that may deviate from what they may do in real life, as they want to portray themselves in a favourable light. On the contrary, observation technique allows for noting people’s behaviour when they are not aware of it (Cargan, 2007)

Observation method lets the researcher to look for nonverbal cues about feelings, check the pattern of interaction (who talks to whom), observe how participants interact, and also record the time they spend in different activities (Schmuck, 1997).

Some characteristics of observation are:

- Observations are guided by the research questions. Therefore the observations are conscious and planned. They differ from casual everyday

observations of behaviour which are often casual, selective, and inaccurate.

- Observations are systematically recorded, often using an observation check list.
- Data are analyzed using both quantitative and qualitative data analysis methods.

Case Study

A case study is an in-depth investigation about a person, group, situation or occurrence. It involves collection of data from various sources employing a mix of different methods, whichever appropriate. Case studies are used in researches where a deep probe and understanding of the issue is required.

This method is used widely in many social science studies, especially in conducting research on issues relating to “education, sociology, and community based problems such as poverty, unemployment, drug addiction, illiteracy”, among others (Zainal, 2007).

Advantages of using case studies are (McLeod, 2008):

- They give detailed information.
- They provide cues for further research.
- They allow probing of situations which are difficult to investigate.

Disadvantages of using case studies are (McLeod, 2008):

- The results cannot be generalised to a bigger population.
- There are chances of researcher's own inclinations to creep in.
- The study cannot be replicated.
- The process is more time-consuming.

Ethnography

Ethnography is the study of societies and cultures in a systematic way. It observes, records and analyses people belonging to a society in their natural ‘environment’ settings or ‘fields’. The data is gathered by methods aimed to capture their regular activities and social meanings related to them. The researcher may not get involved in the activities, but participates directly in the setting, for the purpose of collecting data. The information is recorded, being careful to not impose the meaning on the

participants externally (Brewer, 2000). Ethnography is one of the chief methods used for collection of qualitative data in social sciences. They provide specific and in-depth accounts of the customs, traditions, habits, and mutual differences of different societies and cultures.

The basic objective of employing ethnography method is to obtain thorough and holistic understanding of people's actions and opinions, along with the kind of location they live in, by way of observing and interviewing in detail. According to Hammersley, "The task (of ethnographers) is to document the culture, the perspectives and practices, of the people in these settings. The aim is to 'get inside' the way each group of people sees the world" (Reeves, Kuper, & Hodges, 2008).

Ethnography has the following characteristics (Hammersley, 1983):

- It observes people's behaviour in 'ordinary' or 'everyday' settings, instead of any artificial settings created by the researcher.
- The principal method of gathering data is participant-observation. Some other methods are also used.
- Any external influence on people is avoided and their natural activities are focussed on. The mode of data collection is unstructured to make it flexible.
- A small scale group is studied at a time in one setting.
- The data is aimed to describe and analyse the meanings associated with everyday human actions.

Oral History

Oral history is the method of recording, preserving and interpreting historical information obtained from first-hand from people, from their past experiences and memories. People are interviewed and their accounts are documented, which are then preserved as an aural record for future. The researcher can make use of audio and video tapes, and transcriptions from interviews.

The interview is carried out by the researcher by spending extended time with the participant, listening to the accounts through storytelling and narration.

Oral history, though seems to be similar to in-depth interviews, but the two are different from each other. Interviews, be structured, semi-structured or unstructured,

focus a specified topic and follow an interview guide. The questions asked to the respondents are similar or different depending upon the requirement. However, oral history does focus on a particular topic, yet it is far less organised than the interview method.

For instance, if one aims to study the body image issues in women at workplace, it may be apt to conduct interviews to obtain their opinions about the issue. In this method, they may also be able to explain qualitatively, how and what they feel about it and related issues. In case the researcher wants to study body image issues among working women, as a part of their life altogether, based on their experiences from childhood till present, oral history may be the suitable method. This may allow the respondent to recount personal experiences and stories.

Projective Techniques

Projective techniques are methods of eliciting someone's internal ideas, values, attitudes, needs and opinions by responding to stimuli using external objects. When a person is asked a particular question, the answers received tend to be more socially favourable and consciously framed. On the contrary, when a person is subjected to ambiguous stimuli, the responses are likely to be closer to reality.

Projective technique is based on the principle that the degree of ambiguity of a stimulus, is directly proportional to the respondent expressing his emotions, attitudes and beliefs more accurately. In an unambiguous technique, like a survey questionnaire, the answers are often presented to portray oneself in a positive light. For example, a rich doctor is asked the reason for his purchasing an expensive car. He may tell that he bought it because of its comfortable ride, excellent mileage and other benefits. But, on being asked why his brother, who is equally rich, had purchased a costly car, he would say that he is a status-seeker. Thus, a person tends to speak the truth, when he is given a mask (Ahuja, 2015).

There are different types of projective measures used by researchers. They are (Ahuja, 2015):

Pictorial techniques

In this method, ten standard cards, each having an inkblot representing different diagnostic categories, are given to subjects. They are then asked to describe what they

see. The responses are recorded for further analysis. The analysis reveals the subject's personality traits.

Thematic appreciation test: This method uses showing a series of pictures relating to the topic of research, to the respondents. They are asked to describe the pictures, and responses are noted. The answers are analysed afterwards to reflect the personality characteristics of the respondents.

Pictures

b. Verbal techniques

- **Story or sentence completion:** The subjects are given some incomplete sentences or stories, and are asked to complete them in their own way.

The answers are interpreted later.

- **Word association test:** A list of words is given to the respondents, one word at a time. They are asked to link each word with the word that immediately came to their mind. The responses are recorded and interpreted to reveal the inner feelings of the subjects.

c. Play techniques

- **Doll play:** These methods are used to study children's behaviour. Situations are created using dolls, and the child is asked for his or her opinion regarding it.

d. Psycho-drama or socio-drama technique

- **Role playing:** This technique involves the subject playing certain roles, that is, they act out someone else's behaviour in a specific setting. For example, mock parliament sessions in colleges, where different students assume the roles of different leaders. These methods are also used in studying inter-personal relationships.

6. Summary

The module presents a holistic view of the various tools and techniques employed by researchers for collection of data. Beginning with a description of primary and secondary data, qualitative and quantitative data; each method of data collection has been described elaborately. The different methods that have been explained include interview,

focus groups, questionnaire and schedule, observation, case study, ethnographies, oral history and projective techniques.