

Types of Data
and
Methods of Data Collection

Data is a set of values of subjects with respect to qualitative or quantitative variables. It is raw, unorganized facts that need to be processed. Data can be something simple and seemingly random and useless until it is organized. When data is processed, organized, structured or presented in a given context so as to make it useful, it is called information. Information is necessary for research activities and the choice of type of data depends on the facilities available, the extent of accuracy required in analysis, the expertise of the investigator, the time span of the study and the amount of money and other resources required for data collection.

Data may be classified as i) Primary and ii) Secondary depending upon their source.

Primary Data

- are those which are collected afresh and for the first time,
- original in character,
- collected specially for a research purpose ,
- may be shared publicly to be used for other research,
- often reliable, authentic, and objective

Secondary Data

- are those which have already been collected by someone else and
- which have already been passed through some statistical process.
- are usually once primary data but become secondary when used by someone else.
- are usually easily accessible to researchers and individuals because they are mostly shared publicly.
- the data are usually general and not tailored specifically to meet the researcher's needs .
- Some common sources of secondary data include trade publications, government statistics, journals, etc.

COLLECTION OF PRIMARY DATA

- It is collected during the course of doing experiments in an experimental research and performing surveys during descriptive research .
- It can be obtained either through observation or through direct communication with respondents in one form or another.
- Thus, the several methods of collecting primary data are: (i) observation method, (ii) interview method, (iii) through questionnaires.

Observation Method of data collection

- The investigator just observes and records the behavior as it occurs of an event which he is interested in.
- Sometimes mechanical devices can also be used to record the desired data such.
- This type of method of data collection is best suited for researches which require non-self report descriptive data.
- This method is most appropriate when respondent's behavior is to be understood without asking them so as to record their true behavior in the given setting.

The main ***advantages*** of this method are:

- ❖ Elimination of subjective bias, if accuracy in observation is maintained.
- ❖ The information obtained relates to current happenings.
- ❖ It is not affected by either the past behavior or future intentions.
- ❖ This method is independent of respondents' willingness to respond

Limitations

- ❖ An expensive method.
- ❖ Information provided by this method is very limited.
- ❖ Sometimes unforeseen factors may interfere with the observational task.
- ❖ Some people are rarely accessible to direct observation.

Interview Method

Interviews can be conducted either face to face (Personal Interview) or over telephone (Telephonic Interviews).

Personal interviews

- Requires a person known as the interviewer asking questions generally in a face-to-face contact to the other person or persons (interviewee).
- Usually the interviewer initiates the interview and asks questions and collects the information from the respondent(interviewee).
- This method is particularly suitable for intensive investigations.
- Personal interviews are expensive and time consuming if there is a big sample.
- Interviewers' biases also come in the way.

Telephonic Interview

- ❖ helps establish contact with the respondent spread over distinctly separated geographic locations.
- ❖ One can obtain responses quickly .
- ❖ This method is effective only when the interviewer has specific questions to ask.
- ❖ Interviewer in this case cannot observe the nonverbal responses of the respondent.
- ❖ The respondent if not interested can terminate the interview without informing or explanation
- ❖ It is more flexible in comparison to mailing method.
- ❖ Recall is easy; callbacks are simple and economical.
- ❖ The non-response is generally very low.
- ❖ Replies can be recorded without causing embarrassment to respondents.
- ❖ No field staff is required.

Limitations of Telephonic Interviews

- ❖ Surveys are restricted to respondents who have telephone facilities.
- ❖ Extensive geographical coverage may get restricted by cost considerations.
- ❖ Suitable for intensive surveys where comprehensive answers are required to various questions.
- ❖ Possibility of the bias of the interviewer is relatively more.
- ❖ Questions have to be short and to the point;
- ❖ Probes are difficult to handle.

Questionnaire Method

Questionnaire is as an instrument for research, which consists of a list of questions, along with the choice of answers, printed or typed in a sequence on a form used for acquiring specific information from the respondents. The questionnaire is distributed or mailed to respondents who are expected to reply by writing down their opinion or marking the correct option. The respondents have to answer the questions on their own. The method of collecting data by mailing the questionnaires to respondents is largely used in various economic and business surveys.

Advantages

- ❖ There is low cost even when the universe is large and is spread geographically.
- ❖ It is free from the bias of the interviewer.
- ❖ Answers are in respondents' own words.
- ❖ Respondents have adequate time to give well thought out answers.
- ❖ Large samples can be made use of .
- ❖ The results can be made more dependable and reliable.

Disadvantages of Questionnaires

- ❖ Low rate of return of the duly filled in questionnaire,
- ❖ no-response cannot be anticipated,
- ❖ It can be used only when respondents are educated,
- ❖ The control over questionnaire is lost once it is sent,
- ❖ There is inbuilt inflexibility as the questions or even their order cannot be changed,
- ❖ This method is likely to be the slowest of all.

Advantages of Primary Data

- It is specific to the needs of the researcher at the moment of data collection.
- Researcher is able to control the kind of data that is being collected.
- The data is not subjected to personal bias.
- The researcher has ownership of this type of data. He or she may choose to make it available publicly, patent it, or even sell it.
- It is collected in real-time and not collected from old sources.

Limitations of Primary Data

- It is expensive compared to secondary data.
- It is time-consuming.
- It may not be feasible to collect primary data in some cases due to its complexity and required commitment.

Secondary data

Secondary data it refers to those data which have been collected earlier for some purpose other than the analysis currently being undertaken besides newspapers and business magazines. Other sources of such data are as follows:

External secondary data sources

Government Publications

- The national accounts statistics published by the Central Statistical Organisation.
- Wholesale price index published by the office of the Economic Advisor Ministry of Commerce and Industry.
- Consumer Price Index.
- Reserve Bank of India Bulletin.
- Economic survey.

Non government publications include

- Publications of various industrial and trade associations.
- Various Chambers of Commerce.
- The Bombay Stock Exchange which publishes a directory containing financial account key profitability and other relevant data.
- Various Syndicate Services.
- Operations Research Group.
- The Indian Market Research Bureau

The data generated within an organization in the process of routine business activities are referred to as *Internal Secondary data*. Financial accounts, production, quality control and sales records are examples of such data. However data originating from one department of an organization may not be useful for another department in its original form. It is therefore desirable to condense such data into a form needed by the other.

Advantages of Secondary Data

- It is easily accessible compared to primary data.
- It is available on different platforms that can be accessed by the researcher.
- It is very affordable as it requires little or no cost to acquire them.
- The time spent on collecting secondary data is far less compared to that of primary data.
- It helps to generate new insights into existing primary data.

Limitations of Secondary Data

- Secondary data may not be authentic and reliable. A researcher may need to further verify the data collected from the available sources.
- Researchers may have to deal with irrelevant data before finally finding the required data.
- Some of the data is exaggerated due to the personal bias of the data source.
- Secondary data sources are sometimes outdated with no new data to replace the old ones. .