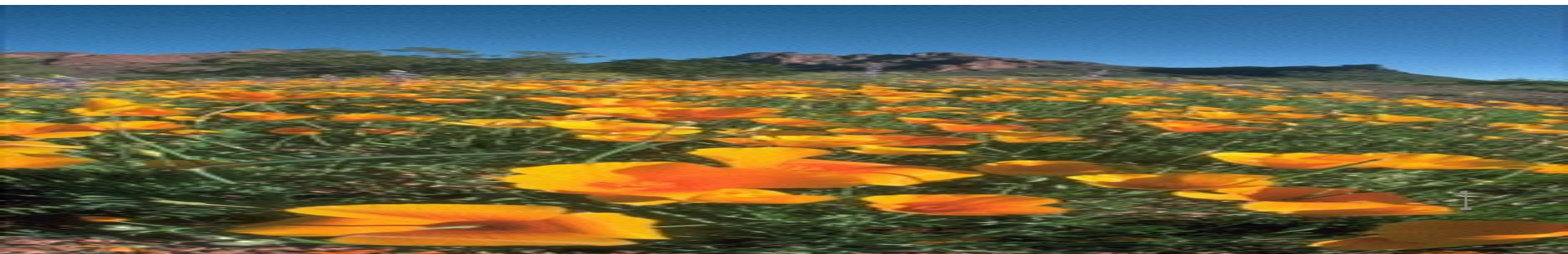


# **Unit Six**

## **Data Collection**



# ***CHAPTER CONTENT***

- ***Primary and Secondary Data***
- ***Collection of Primary Data.***
  - ***Collection of data through questionnaires***
  - ***Collection of data through interview***
  - ***Collection of data through observation***
  - ***Collection of data through focus group discussion (FGD)***
  - ***Collection of data through case study method***
- ***Collection of Secondary Data***
- ***Selection of Appropriate Method for Data Collection***

# **LEARNING OUTCOMES:**

- *By the end of this chapter you should be able to:*
  - identify the different sources of primary and secondary data;
  - identify the full variety of primary and secondary data that are available;
  - appreciate ways in which primary and secondary data can be utilized to help to answer research question (s) and to meet objectives;
  - understand the advantages and disadvantages of using primary and secondary data in research projects;
  - evaluate the suitability of primary and secondary data for answering research question (s) and meeting objectives in terms of coverage, validity, reliability and measurement bias;
  - apply the knowledge, skills and understanding gained to your own research project.

## 6.1. PRIMARY AND SECONDARY DATA

- The task of data collection **begins after** a research problem has been defined and research design/ plan chalked out.
- While deciding about the method of data collection to be used for the study, the researcher should keep in mind two types of data viz., **primary and secondary.**
- **The primary data** are those which are collected afresh and for the first time, and thus happen to be original in character.
- **The secondary data**, on the other hand, are those which have already been collected by someone else and which have already been passed through the statistical process.

## *Primary and...*

- The researcher would have to **decide which sort of data he would be using** (thus collecting) for his study and accordingly he will have to **select one or the other method of data collection.**
- The methods of collecting primary and secondary data differ since primary data are to be originally collected, while in case of secondary data the nature of data collection work is merely that of compilation.
- We describe the different methods of data collection, with the pros and cons of each method.

## 6.2 COLLECTION OF PRIMARY DATA.

There is a wide variety of primary data gathering tools available to researchers in the social sciences; deciding which to use depend on:

- *the particular methodology or type of research that has been selected;*
- *What is feasible in a given research situation;*
- *What is likely to yield the most appropriate information?*

Some of the more important data collecting methods for survey or descriptive research studies are:

- ✓ **questionnaire,**
- ✓ **interview,**
- ✓ **observation,**
- ✓ **focus group discussions and**
- ✓ **case study methods.**

### **6.2.1. Collection of Data Through Questionnaires**

- Quite **popular**, particularly in case of big enquiries.
- **sent** (usually by post) to the persons concerned with a request to answer the questions and return the questionnaire.
- consists of a **number of questions printed or typed** in a definite order on a form or set of forms.
- The respondents have to **answer the questions on their own**.
- The method of collecting data by mailing the questionnaires to respondents is most extensively employed in various **economic and business surveys**.

## ***The **merits** claimed on behalf of this method are as follows:***

1. There is **low cost** even when the universe is large and is widely spread geographically.
2. It is **free from the bias of the researcher**; answers are in respondents' own words.
3. Respondents have **adequate time** to give well thought out answers.
4. Respondents, **who are not easily approachable, can also be reached** conveniently.
5. **Large samples** can be made use of and thus the results can be made more **dependable and reliable**.

## ***The main demerits of this system can also be listed***

1. Low rate of return of the duly filled in questionnaires; bias due to no-response is often indeterminate.
2. It can be used only when respondents are educated and cooperating.
3. The control over questionnaire may be lost once it is sent.
4. There is inbuilt inflexibility because of the difficulty of amending the approach once questionnaires have been dispatched.
5. There is also the possibility of ambiguous replies or omission of replies altogether to certain questions; interpretation of omissions is difficult.
6. It is difficult to know whether willing respondents are truly representative.
7. This method is likely to be the slowest of all.

- Before using this method, it is always advisable to conduct ***'pilot study' (Pilot Survey)*** for testing the questionnaires.
- *In a big enquiry* the significance of pilot survey is felt very much.
- Pilot survey is in fact the *replica and rehearsal* of the main survey.
- Such a survey, being conducted by experts, *brings to the light the weaknesses* (if any) of the questionnaires and also of the survey techniques.
- From the experience gained in this way, *improvement can be effected*.

## ***Main aspects of a questionnaire:***

- Quite often questionnaire is considered as the *heart of a survey operation*. Hence, it should be *very carefully constructed*. If it is not properly set up, then the survey is *bound to fail*.
- This fact requires us to study the *main aspects of a questionnaire viz.*, the:
  - **general form**,
  - **question sequence** and
  - **question formulation and wording**.
- Researcher should note these three main aspects of a questionnaire:

# 1. General form:

- It can either be **Structured** or **Unstructured** questionnaire.

## a) **Structured questionnaires:**

- are those questionnaires in which there are **definite, concrete** and **pre-determined** questions.
- The questions are presented with exactly the same wording and in the same order to all respondents.
- Resort is taken to this sort of standardization to ensure that all respondents reply to the same set of questions.
- The form of the question may be either closed (i.e., of the type 'yes' or 'no') or open (i.e., inviting free response).
- Structured questionnaires may also have fixed alternative questions in which responses of the informants are limited to the stated alternatives.
- Thus a highly structured questionnaire is one in which all questions and answers are specified and comments in the respondent's own words are held to the minimum.

## **Structured ...**

- Simple to administer and relatively inexpensive to analyze.
- The provision of alternative replies, at times, helps to understand the meaning of the question clearly.
- But such questionnaires have *limitations too*. For instance,
  - *wide range of data cannot be obtained with structured questionnaires.*
  - *They are usually considered inappropriate to probe for attitudes and reasons for certain actions or feelings.*
  - *They are equally not suitable when a problem is being first explored and working hypotheses sought.*
- In such situations, unstructured questionnaires may be used effectively. Then on the basis of the results obtained in pretest operations from the use of unstructured questionnaires, one can construct a structured questionnaire for use in the main study.

## ***b) Unstructured questionnaires:***

- In an unstructured questionnaire, the interviewer is provided with a general guide on the type of information to be obtained,
- But the exact question formulation is largely his own responsibility and the replies are to be taken down in the respondent's own words to the extent possible; in some situations tape recorders may be used to achieve this goal.

## 2. Question sequence:

- The question-sequence must be clear and smoothly-moving,
- The first few questions are particularly important
- The opening questions should be such as to arouse human interest. Therefore, **avoid**,
  - ***questions that put too great a strain on the memory or intellect of the respondent;***
  - ***questions of a personal character;***
  - ***questions related to personal wealth, etc.***
- Following the opening questions, we should have questions that are really vital to the research problem and a connecting thread should run through successive questions.
- Relatively difficult questions must be put towards the end
- Thus, question-sequence should usually go from the general to the more specific.

### **3. Question formulation and wording:**

- question must be very clear for any sort of misunderstanding can do irreparable harm to a survey.
- Question should also be impartial in order not to give a biased picture of the true state of affairs.
- Questions should be constructed with a view to their forming a logical part of a well thought out tabulation plan.
- In general, all questions should meet the following standards —
  - a) should be easily understood;
  - b) should be simple i.e., should convey only one thought at a time;
  - c) should be concrete and should conform as much as possible to the respondent's way of thinking.
    - ***(For instance, instead of asking. "How many razor blades do you use annually?" The more realistic question would be to ask, "How many razor blades did you use last week?")***

- Concerning the form of questions, we can talk about two principal forms, viz.,
  - ***close-end /multiple choice questions and***
  - ***open-end question.***

### ***a) Close-end question.***

- In the close-end questions, the respondent selects one of the alternative possible answers put to him, *whereas*, in the open-end questions he has to supply the answer in his own words.
- The question with only two possible answers (usually 'Yes' or 'No') can be taken as a special case of the multiple choice question, or can be named as a 'closed question.'

## *Close-end questions have the following advantages and disadvantages:*

- **advantages :**
  - Easy handling, simple to answer, quick and relatively inexpensive to analyze.
  - They are most amenable to statistical analysis.
  - helps to make clear the meaning of the question.
- **drawback:**
  - “Putting answers in people’s mouths”.
  - They are not appropriate when the issue under consideration happens to be a complex one and also when the interest of the researcher is in the exploration of a process.

# *Answer categories in the questionnaire*

- In view of Bailey (1982:128), the basic rule for writing answer categories is to provide all possible answers in as clear and uncluttered a fashion as possible.
  - *Nominal scales.*
  - *Inventory method.*
  - *Grid format*
  - *Ordinal/ Likert scales.*
  - *Semantic differential responses.*
  - *Ranked responses.*
  - *Interval scales.*

*(Reading)*

## ***b) Open-end question.***

- Open-ended questions which are designed to permit a free response from the respondent rather than one limited to certain stated alternatives are considered appropriate.
- ***Advantages and disadvantages:***  
Permit a free response from the respondent rather than limited to certain stated alternatives.
- Such questions give the respondent considerable latitude in phrasing a reply.
- Getting the replies in respondent's own words.

### **But;**

- from an analytical point of view, open-ended questions are more difficult to handle, raising problems of interpretation, comparability and interviewer bias.

- In practice, one rarely comes across a case when one questionnaire relies on one form of questions alone.
- The various forms complement each other. As such questions of different forms are included in one single questionnaire.
  - For instance, multiple-choice questions constitute the basis of a structured questionnaire, particularly in a mail survey.
  - But even there, various open-ended questions are generally inserted to provide a more complete picture of the respondent's feelings and attitudes.

- Researcher must pay proper attention to the **wordings** of questions since reliable and meaningful returns depend on it to a large extent.
- Since words are likely to affect responses, they should be properly chosen.
  - Simple words, which are familiar to all respondents, should be employed. Words with ambiguous meanings must be avoided.
  - Similarly, danger words, catch-words or words with emotional connotations should be avoided.
  - Caution must also be exercised in the use of phrases which reflect upon the prestige of the respondent. Question wording, in no case, should bias the answer.
  - In fact, question wording and formulation is an art and can only be learnt by practice.

## ***Essentials of a good questionnaire:***

***To be successful, Questionnaire should be :***

- comparatively short and simple
- proceed in logical sequence moving- from easy to more difficult questions.
- Technical terms and vague expressions capable of different interpretations should be avoided
- dichotomous (yes or no answers), multiple choice (alternative answers listed) or open-ended.
- There should be some **control questions** in the questionnaire which indicate the reliability of the respondent.
- Questions affecting the sentiments of respondents should be avoided.

## ***Essentials...***

- Adequate space for answers should be provided.
- There should always be provision for indications of uncertainty, e.g., “do not know,” “no preference” and so on.
- Brief directions with regard to filling up the questionnaire should invariably be given in the questionnaire itself.
- The physical appearance of the questionnaire affects the cooperation.
- The quality of the paper, along with its color, must be good so that it may attract the attention of recipients.
- A great deal of questionnaires contains a mixture of **both**.

## ***Cover Letter or Introductory Statement of a Questionnaire.***

- Questionnaire construction consists of writing an introductory statement or cover letter.
- It *justifies the study to the respondent and often determines* whether she/he cooperates or not.
- It should be concise, courteous and businesslike
- The cover letter is usually written on the ***letterhead of the organization*** conducting or sponsoring the survey in order to help legitimize the survey to be conducted to the respondent.

*In addition, the introductory statement should:*

- 1. state the purpose of the study and its significance;***
- 2. explain who the data collector is, the basis of its authority, and why it is conducting the study;***
- 3. tell how and why the respondents were selected;***
- 4. explain why their answers are important;***
- 5. tell how to complete the format and list the person to call if help is needed to complete the form;***
- 6. provide assurance of confidentiality and anonymity when appropriate;***
- 7. explain how the data will be used;***
- 8. explain who will have access to the information;***
- 9. Provide mail-back instructions (if necessary); and***
- 10. Present the response efforts as a favor and thank the respondents for their cooperation.***

*See example,...*

## **6.2.2. COLLECTION OF DATA THROUGH INTERVIEW**

- The interview method of collecting data involves presentation of oral-verbal stimuli and reply in terms of oral-verbal responses.
- This method can be used through **personal interviews** and, if possible, through **telephone interviews**.

## *(a) Personal interviews:*

It requires a person known as the interviewer asking questions generally in a face-to-face contact to the other person or persons.

- 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.
- He has to be **on the spot** and has to meet people from whom data have to be collected.
- This method is particularly suitable for **intensive investigations**.

- But in certain cases it may *not be possible* or *worthwhile* to contact directly the persons concerned or *on account of the extensive scope of enquiry*, the direct personal investigation technique may not be used.
- In such cases an *indirect oral examination* can be conducted under which the interviewer has to cross-examine other persons who are supposed to have knowledge about the problem under investigation and the information obtained is recorded.
  - ***Most of the commissions and committees appointed by government to carry on investigations make use of this method.***

- The method of collecting information through personal interviews is usually carried out in a structured way.
- As such we call the interviews as *structured interviews*.
- Such interviews involve the use of a set of *predetermined questions* and of *highly standardized* techniques of recording.
- Thus, the interviewer in a structured interview *follows a rigid procedure* laid down, asking questions in a form and order prescribed.

- Unstructured *interviews* are characterized by:
  - a *flexibility* of approach to questioning.
  - do not follow a system of pre-determined questions and standardized techniques of recording information.
  - the interviewer is allowed much greater freedom to ask.
  - relatively greater freedom while recording the responses to include some aspects and exclude others.
- But this sort of flexibility results in *lack of comparability* of one interview with another and the *analysis* of unstructured responses becomes much *more difficult and time-consuming*.

- Unstructured interviews also demand **deep knowledge** and **greater skill** on the part of the interviewer.
- Unstructured interview, however, happens to be the central technique of collecting information in case of **exploratory** or **formulative** research studies.
- But in case of **descriptive studies**, we quite often use the technique of **structured interview** because of its being more economical, providing a safe basis for generalization and requiring relatively lesser skill on the part of the interviewer.

# ***Major advantages of personal interviews***

- **More information and that too in greater depth can be obtained.**
- **Can overcome the resistance,**
- **yield an almost perfect sample of the general population.**
- **greater flexibility .**
- **Observation method can as well be applied.**
- **Personal information can as well be obtained.**
- **Samples can be controlled more effectively - non-response generally remains very low.**
- **The interviewer can usually control which person (s) will answer the questions.**
- **Group discussions may also be held.**
- **The interviewer may catch the informant off-guard and thus may secure the most spontaneous reactions.**
- **The language problem can be avoided.**
- **Supplementary information about the respondent's personal characteristics and environment can collected.**

## ***Weaknesses of the interview method.***

- It is a very expensive method, especially...**
- Possibility of the bias and problem of supervision and control of interviewer**
- Certain types of respondents may not be easily approachable and to that extent the data may prove inadequate**
- More-time-consuming**
- The presence of the interviewer on the spot may over-stimulate the respondent.**
- Under the interview method the organization required for selecting, training and supervising the field-staff is more complex with formidable problems.**
- Interviewing at times may also introduce systematic errors.**
- Effective interview presupposes proper rapport with respondents that would facilitate free and frank responses.**
- This is often a very difficult requirement.**

## ***b) Telephone interviews:***

- consists in contacting respondents on telephone itself.
- It is not a very widely used method,
- The chief **merits** of such a system are:
  - It is more flexible in comparison to mailing method.
  - It is faster than other methods i.e., a quick way of obtaining information.
  - It is cheaper than personal interviewing method.
  - Recall is easy; callbacks are simple and economical.
  - There is a higher rate of response than what we have in mailing method;
  - the non-response is generally very low.
  - Replies can be recorded without causing embarrassment to respondents.
  - At times, access can be gained to respondents who otherwise cannot be contacted for one reason or the other.
  - No field staff is required.
  - Representative and wider distribution of sample is possible.

## *Some of demerits telephone interview*

- Little time is given to respondents for considered answers;
- Surveys are restricted to respondents who have telephone facilities.
- Extensive geographical coverage may get restricted.
- It is not 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.

## 6.2.3. COLLECTION OF DATA THROUGH OBSERVATION

- The most commonly used method especially in studies ***relating to behavioral sciences.***
- Observation becomes a scientific tool and the method of data collection for ***formulated research***
- ***It is systematically planned and recorded and is subjected to checks and controls on validity and reliability.***
- Under the observation method information is sought by **investigator's own direct observation** without asking from the respondent.
  - *For instance, in a study relating to consumer behavior, the **investigator instead of asking the brand of wrist watch used by the respondent, may himself look at the watch.***

## ***The main advantage***

- **Subjective bias** is eliminated, if observation is done accurately.
- The **information is related to what is currently happening**; it is not complicated by either the past behavior or future intentions or attitudes.
- **Independent** of respondents' **willingness** to respond.
- **Suitable** in studies which deal with subjects (i.e., respondents) **who are not capable of giving verbal reports of their feelings for one reason or the other.**

## ***Limitations of observation method***

- it is an **expensive** method.
- Information provided by this method is very **limited**.
- sometimes **unforeseen** factors may interfere with the **observational** task.
- At times, some people are rarely **accessible for direct observation**

- *While using this method, the researcher should keep in mind things like:*

- **What** should be **observed**?
- **How** the **observations** should be **recorded**? Or
- **how** the **accuracy** of **observation** can be ensured?

**Structured observation** is characterized by:

- a **careful definition of the units to be observed**,
- the **style of recording the observed information**,
- **standardized conditions of observation and the selection of pertinent data of observation**, then the
- But when **observation is to take place** without these characteristics it is termed as **unstructured observation**.
- *Structured observation is considered appropriate in **descriptive studies**, whereas in an **exploratory** study the observational procedure is most likely to be relatively **unstructured**.*

## *Participant and non-participant types of observation.*

- This distinction depends upon the **observer's sharing or not sharing the life of the group he is observing.**
- If the **observer observes by making himself, more or less, a member of the group he is observing** so that he can experience what the members of the group experience, the observation is called as the **participant observation.**
- But when the **observer observes as a detached emissary** without any attempt on his part to experience through participation what others feel, the observation of this type is often termed as **non-participant observation.**
- (When the **observer is observing in such a manner that his presence may be unknown to the people he is observing**, such an observation is described as **disguised observation.**)

# Merits and demerits of the participant type of observation

## – Merits:

*The researcher,*

- enabled to record the **natural behavior** of the group.
- can even **gather information which could not easily be obtained** if he observes in a disinterested fashion.
- can even **verify the truth of statements made by informants** in the context of a questionnaire .

## – Demerits:

- the **observer may lose the objectivity to the extent he participates emotionally;**
- the problem of **observation-control** is not solved; and
- it may **narrow-down the researcher's range of experience.**

# ***uncontrolled and controlled observation***

- If the **observation** takes place **in the natural setting**, it may be termed as **uncontrolled observation**.
- In **non-controlled observation**, no attempt is made to use **precision instruments**.
- *The major **aim** of this type of observation is*
  - to get a **spontaneous picture of life and persons**.
  - It has a **tendency to supply naturalness and completeness of behavior, allowing sufficient time for observing it**.
- *The main **pitfall of non-controlled** observation is:*
  - **subjective interpretation.**
  - **the danger of having the feeling that we know more about the observed phenomena than we actually do.**

- When observation takes place according to ***definite pre-arranged plans, involving experimental procedure***, then termed **controlled observation**.
- In controlled observation, we use **mechanical (or precision) instruments as aids to accuracy and standardization**.
  - Such observation has a tendency to supply formalized data upon which generalizations can be built with some degree of assurance.
- ***Generally, controlled observation takes place in various experiments that are carried out in a laboratory or under controlled conditions, whereas uncontrolled observation is resorted to in case of exploratory researches.***

## 6.2.4. COLLECTION OF DATA THROUGH FOCUS GROUP DISCUSSION (FGD)

- With **origins** in sociology, widely applicable in business research.
- A **FGD** is a discussion made by a panel of 8 to 12 respondents led by a trained **moderator**. ...
- The **output** of the session is a list of **ideas and behavioral observations with recommendations** of the **moderator**.
- Particularly, **in exploratory research**, the qualitative data that focus groups produce may be used for enriching all levels of research questions and hypotheses and comparing the effectiveness of design options.

# ***Qualities of a moderator:***

- The **moderator** should be equipped with **sufficient skill** so that... ***he/she can maintain a high degree of interaction among group members.***
- It is only with interaction the focus group discussion can:
  - ***Provide the desired spontaneity of response by participants,***
  - ***Produce the degree of emotional involvement essential to produce "depth" level responses, and***
  - ***Produce the kind and degree of rapport which facilitates a "give and take" exchange of attitudinal and behavioral information.***

## ***The key qualifications for moderator include:***

- ***Kindness with firmness/control.***
- ***Permissiveness/Open minded.***
- ***Involvement.***
- ***complete Understanding***  
***(convey)***
- ***Encouragement.***
- ***Flexibility.***
- ***Sensitivity.***

# ***Benefits of Focus Group Discussion.***

If properly used, group interview does have the following contributions:

- ***Synergism.***
- ***Snowballing-*** comment by one individual **often triggers a chain of responses** from the other participants..
- ***Stimulation*** the responders get “**turned on**” in that they want to **express their ideas and expose their feelings** .
- ***Security:-*** The participants can usually find comfort in the group in that their feelings are not greatly different from other participants and they are more willing to express their ideas and feelings.
- ***Spontaneity***

- ***Serendipity.*** It is more often the case in a group rather than individual interview that some idea will drop out the clue. ***chance***
- ***Specialization.*** The group interview allows the use of a **more highly trained**, but more **expensive**, interviewer since a number of individuals are being “**interviewed**” **simultaneously**.
- ***Scientific Scrutiny/study.***
- ***Structure.*** affords more flexibility than the individual interview
- ***Speed.***

## 6.2.6. COLLECTION OF DATA THROUGH CASE STUDY METHOD

- The **case study method** is a very popular form of **qualitative analysis** and involves a ***careful and complete observation of a social unit***, be that unit... a **person**, a **family**, an **institution**, a **cultural group** or even **the entire community**.
- It is a method of study ***in depth*** rather than **breadth**.
- The case study places more emphasis on the ***full analysis of a limited number of events or conditions*** and their **interrelations**.
- The case study deals with the **processes that take place and their interrelationship**.
- Thus, case study is essentially **an *intensive investigation*** of the particular unit under consideration.
- The object of the case study method is to ***locate the factors that account*** for the **behavior-patterns of the given unit as an integrated totality**.

- According to H. Odum, “**The case study method is a technique by which individual factor whether it be an institution or just an episode in the life of an individual or a group is analyzed in its relationship to any other in the group**”. - Thus, a fairly **exhaustive study** called a life or case history.
- In brief, we can say that **case study method** is a form of **qualitative analysis** where in **careful and complete observation of an individual or a situation or an institution is done**; efforts are made to study each and every aspect of the **concerning unit** in minute details and then **from case data generalizations and inferences are drawn**.

## 6.3. COLLECTION OF SECONDARY DATA

- Secondary data means data that are already available i.e., they refer to the data which have already been collected and analyzed by someone else.
- When the researcher utilizes secondary data, then *he has to look into various sources from where he can obtain them.*
- Secondary data may either be published data or unpublished data.

- **Usually published data are available in:**
  - a) various **publications** of the central, state and local governments;
  - b) various **publications** of foreign governments or of international bodies and their subsidiary organizations;
  - c) **technical** and **trade** journals;
  - d) books, magazines and newspapers;
  - e) reports and publications of various associations connected with business and industry, banks, stock exchanges, etc.;
  - f) reports prepared by research scholars, universities, economists, etc. in different fields; and
  - g) public records and statistics, historical documents, and other sources of published information.

- The sources of **unpublished** data are many; they may be found in ***diaries, letters, unpublished biographies*** and ***autobiographies*** and also may be available with ***scholars*** and ***research workers, trade associations, labor bureaus*** and other ***public/ private, individuals*** and ***organizations***.
- Researcher must be very careful in using secondary data. - **secondary data may be unsuitable or may be inadequate in the context of the problem**
- In this connection Dr. A.L. Bowley -**it is never safe to take published statistics at their face value without knowing their meaning and limitations**

Before using secondary data, the researcher must see that they possess following characteristics:

- The already available data should be used by the researcher only when he finds them **reliable**, **suitable** and **adequate**.
- But he should not blindly discard the use of such data if they are readily available from authentic sources and are also suitable and adequate for in that case it will not be economical to spend time and energy in field surveys for collecting information.

## 6.4. SELECTION OF APPROPRIATE METHOD FOR DATA COLLECTION

- Thus, there are various methods of data collection. As such the researcher must judiciously select the method/methods for his own study, keeping in view the following factors:
  - *Nature, scope and object of enquiry:*
  - *Availability of funds:*
  - *Time factor:*
  - *Precision required:*
- Thus, the most desirable approach with regard to the selection of the method depends **on the nature of the particular problem** and **on the time** and **resources** (money and personnel) available along with the desired **degree of accuracy**.
- But, over and above all this, much depends upon the **ability and experience** of the researcher. Dr. A.L. Bowley's remark in this context is very appropriate when he says that "in collection of statistical data common sense is the chief requisite and experience the chief teacher."

**The End !**