Chapter 7

Methods of Data Collection

Structure:

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7.1 WHAT IS DATA?

Data can exist in a variety of forms as numbers or text on pieces of paper, as bits and bytes stored in electronic memory, or as facts stored in a person's mind. Strictly speaking, data is the plural of datum, a single piece of information. In practice, however, people use data as both the singular and plural form of the word.

Data that is accurate and timely, specific and organized for a purpose, presented within a context that gives it meaning and relevance, and can lead to an increase in understanding and decrease in uncertainty.

7.2 WHAT IS INFORMATION?

Information in raw or unorganized forms (such as alphabets, numbers, or symbols) that refers to, or represent, conditions, ideas or objects. Information is valuable because it can affect behaviour, a decision or an outcome. For example, if a manager is told his/her company's net profit decreased in the past month, he/she may use this information as a reason to cut their financial spending. A piece of information is considered valueless if, after receiving it, things remain unchanged.

Data v/s Information

Data is raw, unorganized facts that need to be processed. Data can be something simple and seemingly random and useless until it is organized. Whereas when data is processed, organized, structured or presented in a given context so as to make it useful, is called Information.

Each student's test score is one piece of data. Whereas the classes, average score or the school's average score is the information that can be concluded from the given data.

The terms data, information and knowledge are frequently used for overlapping concepts. The main difference is in the level of abstraction being considered. Data is the lowest level of abstraction, information is the next level, and finally, knowledge is the highest level among all three. Data on its own carries no meaning. For data to become information, it must be interpreted and take on a meaning. For example, the height of Mt. Everest is generally considered as "data", a book on Mt. Everest geological characteristics may be considered as "information", and a report containing practical information on the best way to reach Mt. Everest's peak may be considered as "knowledge".

7.3 TYPES OF DATA

1. SECONDARY DATA

Secondary data are data that are taken from research works already done by somebody and used for the purpose of the research data collection. The reason why secondary data are being increasingly used in research is that published statistics are now available covering diverse fields so that an investigator finds required data readily available to him in many cases. For certain studies like stock price behavior, interest and exchange rate scenario, etc., only secondary data are used.

2. PRIMARY DATA

Primary data means original data that has been collected specially for the purpose in mind. It means someone collected data from the original source firsthand. Data collected in this way is called primary data. Primary data is the data observed or collected directly from first-hand experience. Primary data is collected by the researcher himself. Primary data is original research data in its raw form, without any analysis or processing. This data provides a wealth of information for researchers. This data can contain results from empirical testing, transcripts of interviews and surveys, and recorded observations. A person conducting a study on mice, for example, would have primary data like test results from blood and urine analysis, along with detailed observations of the mice on a day to day basis.

7.4 SOURCES OF PRIMARY DATA

People can distinguish primary data from other kinds of data by the fact that it is directly collected and presented without commentary. Secondary data consists of things like research papers based on the data. The major disadvantage of primary data is the sheer volume of information. People would need to read through pages and pages of information to extract usable data. In data processing, researchers use statistics and other tools to present the data in a more accessible format, turning raw results into meaningful statements like “20% of study participants reported feeling nauseous.”

7.5 SOURCES OF PRIMARY DATA

1. Experiments

Experiments requires an artificial or natural setting in which one has to perform logical study to collect data. It is more suitable for medicine, nutrition and psychological studies. In experiment the experimenter has to keep control over the influence of any external variable on the results.

2. Survey

Surveying means contacting for getting certain information. **Survey method** is a method of collecting data for research purpose. There are personal surveys, mail surveys, telephone surveys and Internet surveys. Survey may be sample survey or census survey.

1. Personal Survey

Personal survey involves meeting personally every number who has to be surveyed. The features of this method of data collection are as follows.

- The number of respondents that can be contacted is not very high, as the time taken to contact the respondent, and the time spent on the interview itself is very high in relative terms.
- When the time available for research in large, the personal method is used.
- The cost involved is highest in the personal method since it requires field interviewers as well as their conveyance/travelling costs. Also, if a person is not available he may have to be contacted again and again.
- The accuracy obtained is very high, as the right persons are contacted and if there is difficulty in their understanding certain questions the interviewer can take care of it. Also, if the interviewer feels that the respondent is not furnishing the correct facts, by observing he can make his own interpretations, record the responses for better results. The responses rate is high compared to the mail survey, making the accuracy of the results better.
- When a large geographical area is to be covered and the time and cost constraints are high, personal survey method is not resorted to. However, if it is an ongoing syndicated research or census surveys, such in time and costs have to be necessarily borne for the sake of better coverage and accuracy.
- This method would require the agency to have a good infrastructure of data collection, in terms of field force, its supervision and control.
- When the literacy levels are low and the respondent would find it difficult to fill up the questionnaire on his own, this method is the best alternative available.
- A very length questionnaire under a structured survey is difficult to administer personally, with inaccuracy creeping in on account of the monotonous nature and fatigue effect on the part of the interviewer. At times, in certain socio-economic studies when this is unavoidable, the number of interviewers is made larger and certain incentives may be given to the respondents to extend their cooperation in filling up the set of questions, asked.
- The availability of skilled interviewers can reduce the interviewer bias on account of recording incorrect responses of the fatigue effects.
- When the questions require spontaneous answers, this is the best method, However, if the questions are of a personal nature or require too much thought on the part of the respondent he may feel embarrassed or make up the answers without thinking. However, in case of non-structured and non-disguised techniques like the in-depth interviews such probing is called for.
- The interviewer may have the tendency to contact some other person; similar to the respondent to complete his quota of respondents. This affects the accuracy of results thus necessitating a tight control on field work.
- A complete list of the respondents would be required to draw a representative sample. However, the interviewer has at times to use his own discretion and access respondents with similar demography characteristic in case of non-availability.

2. Mail Survey Method

Mail survey involves contacting the respondents through post. A questionnaire is dispatched to elicit views. The features of this method are as follows:

- A large number of respondents can be contacted using the available database of addresses.
- When the time available is again fairly large, and respondents are very distantly located this method is preferred.
- The cost involved is not very high and it is mainly just the cost of mailing which is often very cheap.
- The accuracy obtained is not very high since the response rate is not very high, not more than 20%. Also, the right respondent may not have filled up the questionnaire. Again, the chances of interpreting the questions incorrectly by the respondents are high, resulting in wrong responses which may be inconsistent with the responses in the rest of the questionnaire.
- The mail method most suited to contact people scattered over large geographical areas when the time available for contact is fairly enough An updated database of respondent addresses would go a long way in obtaining a good response rate. With the availability of fax, internet and courier facilities, time can be saved.
- The size of field force required is almost negligible and the agency could function with few data entry operators to take care of the data collected.
- The mail method can be used to contact only people who can read and write and definitely has limitations for social research at the slum level or rural levels.
- This is the method best suited when the questionnaire is very length. The respondents does not have to fill it up in one stroke. He also has time to think about the questions and answer them. Errors on account of fatigue or monotonous nature of the dialogue with the interviewer are not likely to creep in.
- The interviewer bias is not of any consequence in this case.
- The questions which require spontaneous answers would not lend themselves suitable to the mail survey. However, personal questions or those involving certain thought processes are best suited to the mail questionnaire method.
- The questionnaires are out of the control of the agency. The person who fills up the questionnaire may not be the desired respondent but someone in the same office or household.
- The mailing would not solve the purpose if the addresses of the respondents have not been updated. The existence of a mailing list is essential.

3. Telephone Survey Method

In telephone survey voice contact is directly established with the respondents. The features of this method are as follows:

- The number of respondents who can be contacted is fairly large, as the time to contact them is less than that for a personal interview.
- The cost involved is moderately high as skilled telephone operators need to be employed. Also if the respondent is not available he needs to be contacted more than once.
- The accuracy obtained is fairly high in this case as the response rate is comparable to the personally administered questions. In certain cases, it might be higher also. The skill of the

telephone interviewer makes the respondent at ease and comfortable to answer the questions. Also, certain questions, which need explanations can also be posed through the telephone.

- The telephone method can be used for respondents having the ability to communicate and express themselves. As such, only a certain class of respondents lend themselves useful to such methods.
- The length of the questionnaire has to be extremely short in this case. The issue which is addressed through the questions has to be focused one so that, less time is required to be spent over the telephone to explain the purpose of the research, etc. The telephone method would thus have a limited use.
- The skill of the operator/interviewer largely is responsible for the size of bias in recording the respondents incorrectly.
- The questions requiring spontaneous answers or of a personal nature can be administered over the telephone but those which require thinking would be difficult to take care of using this method.

4. **Internet Survey Method**

This is the world of connectivity through Internet. Internet survey involves using Internet for survey. The superiority of this survey is that it has no limitations of geography. The questionnaire may be put through a websites, forums, blogs, wikis, mail-groups, etc. The survey may be advertised through Internet or other mode inviting the attention of the prospective respondents. They may send their responses again over the Internet. This is the most modern type of survey and has great potentials. It is not prohibitively expensive.

3. Questionnaire

It is most commonly used survey method. It is list of questions, that is, either open-ended or closed-ended for which respondent gives an answer. It can be conducted via telephone, mail, face to face or other methods. A questionnaire is a form prepared and distributed to respondents to secure responses to certain questions. It is a device for securing answers to questions by using a form which the respondent fills by himself. It is a systematic compilation of questions that are submitted to a sample drawn from the population from which information is desired. It is an important instrument in normative survey research, being used to gather information from widely scattered sources. The questionnaire procedure normally comes into use where one cannot readily see personally all the people from whom one desires responses or where there is no particular reason to see them personally.

Purposes of questionnaire in research are twofold:

- To collect information from the respondents who are scattered in a vast area and
- To achieve success in collecting reliable and dependable data.

Types of Questionnaire

There are diverse forms of questionnaire used in research. These are discussed briefly here.

1. **Structured and Non-structured Questionnaires**: The structured questionnaire contains definite, concrete and direct questions, whereas non-structured questionnaire may consist of partially completed questions or statements. A non-structured questionnaire is often used as the interview guide, which is non-directive. The interviewer possesses only a blueprint of the enquiries and he is largely free to arrange the form or statements of the questions. The

enquiries framed in a general form beforehand are given a specific form during the actual process of interview.

2. **Closed Form and Open Form:** The questions that call for short or check responses are known as restricted or closed form type. This provides for making a yes or no, a short response, or checking an item from a list of given responses. It restricts the choice of response for the respondent. He has simply to select a response out of supplied responses and has not to frame his response in his own way. It is easy to fill out, takes less time, keeps the respondent on the subject, is relatively more objective, more acceptable and convenient to the respondent, and is fairly easy to tabulate and analyze. The open form, open-end or unrestricted type questionnaire calls for a free response in the respondent's own words. The respondent – frames and supplies his own response. No clues are provided. It probably provides for greater depth of response. The subject reveals his mind, gives his frame of reference and possibly the reasons for his responses. This type of item is sometimes difficult to interpret, tabulate and summarize in the research report. When the respondent is allowed freedom of response his expressions, may take any unique direction which may not find any uniformity with earlier responses.
3. **The Mixed Questionnaire:** The mixed questionnaire consists of both closed-end and open-end type questions. For social research, this method is very useful. Many questionnaires include both open and closed type items. Each type has its specific merits and limitations and the research worker has to decide which type is more likely to supply the information he wants.
4. **Fact and Opinion Questionnaires**: Questionnaire are also classified as: (1) Questionnaire of fact, which requires certain information of facts from the respondent without any reference to his opinion or attitude about them, and (2) Questionnaire of opinion and attitude in which the informant's opinion, attitude or preference regarding some phenomena is sought.
5. **Pictorial and Verbal Questionnaires**: In the pictorial questionnaire, pictures are used to promote interest in answering questions. It is used extensively in studies of social attitudes and prejudices in children or illiterate persons. In a pictorial questionnaire, the selected alternative answers in the form of pictures are given and the respondent is required to tick the concerned picture. This questionnaire may be very useful for collecting data in a developing country like India, specially from the rural masses who are mostly illiterate and less knowledgeable. The serious limitation of this questionnaire is that it is lengthy in form. Also it is highly expensive. Verbal questionnaire uses words and numbers only. It is the usual form meant for literate respondents.

In the questionnaire technique, great reliance is placed on the respondent's verbal report for data on the stimulus experiences in which he is exposed and for knowledge of his behaviour. The questionnaire is effective only when the respondent is able or willing to express his reactions clearly. A good questionnaire can elicit cooperation of the respondent to get frank answers on almost any subject, even such personal matters as sex and income. Thus, it is clear that the respondent can judge the study only by what he can see. The questionnaire, by its very nature, is an impersonal technique and it is several pieces of paper appeals/persuades the respondent that he ought to participate.

4. Interview

Interview is face to face conversation with respondents. It is slow, expensive and takes people away from regular work. Interviewer can not only record the statements the interviewee speaks but

also can observe the body language or non verbal communication such as face-pulling, shrugging, hand gestures that add further meaning to spoken words. **Interview** is one of the popular **methods of research data collection.** The term interview can be dissected into two terms as, 'inter' and 'view'. The essence of interview is that one mind tries to read the other. The interviewer tries to assess the interviewed in terms of the aspects studied or issues analyzed.

Types of Interview used in Research

There are different types of interviews used in the research data collection. An interview is either structured or unstructured, depending upon whether a formal questionnaire has been formulated and the questions asked in a prearranged order or not. An interview is also either direct or indirect as a result of whether the purposes of the questions asked are plainly stated or intentionally disguised. Cross-classifying these two characteristics provides four different types of interviews. That is, an interview may be

1. structured and direct,
2. unstructured and direct,
3. structured and indirect, or
4. unstructured and indirect.

Types (1) and (2) are basically objective types; (3) and (4) are subjective types.

1. **Structured-Direct Interview**: The usual type of interview conducted during a consumer survey to obtain descriptive information is one using a formal questionnaire consisting of non-disguised questions, a questionnaire designed to "get the facts". If the marketing search manager of a television set manufacturer wants to find out how many and what kinds of people prefer various styles of television cabinets, for example, he may have a set of questions drawn up that asks for these facts directly. Assuming that personal interviewing is being used, each interviewer will be instructed to ask the questions in the order given on the questionnaire and to ask only those questions. The resulting interviews will be structured-direct in nature.
2. **Unstructured-Direct Interview**: In the unstructured-direct method of interviewing, the interviewer is given only general instructions on the type of information desired. He is left to ask the necessary direct questions to obtain this information, using the warding and the order that seems most appropriate in the context of each interview. Unstructured-direct interviews are often used in exploratory studies. Many research projects that use a formal questionnaire for the final interviews go through an exploratory phase in which respondents are contacted and unstructured interviews are held. These interviews are useful in obtaining a clearer understanding of the problem and determining what areas should be investigated.
3. **Structured-indirect interview**: In the case of structured indirect interview the questions are pre-decided and arranged in a structured way. However the purpose of the study is not revealed.
4. **Unstructured-indirect interview**: In the case of unstructured indirect interview the questions aren't pre-decided and neither the purpose of the study made known explicitly.

There are **other types of interviews**, like focus-group interview, depth interview, etc. All these are dealt here.

(i) Focus-Group Interviews: Perhaps the best-known and most widely used type of indirect interview is the one conducted with a focus group. A focus-group interview is one in which a group of people jointly participate in an unstructured-indirect interview. The group,

usually consisting of 8 to 12 people, is generally selected purposively to include persons who have a common background or similar buying or use experience that relates to the problem to be researched. The interviewer, moderator, as he or she is more often called, attempts to focus the discussion on the problem areas in a relaxed, nondirected manner. The objective is to foster involvement and interaction among the group members during the interview will lead to spontaneous discussion and the disclosure of attitudes, opinions, information on present or prospective buying and use behavior.

(ii) **Focused Interviews:** This is a semi-structured interview where the investigator attempts to focus the discussion on the actual effects of a given experience to which the respondents have been exposed. It takes place with the respondents known to have involved in a particular experience, e.g., seeing a particular film, viewing a particular program on TV., involved in a train/bus accident, etc. The situation is analyzed prior to the interview. An interview guide specifying topics relating to the research hypothesis is used. The interview is focused on the subjective experiences of the respondent, i.e., his attitudes and emotional responses regarding the situation under study. The focused interview permits the interviewer to obtain details of personal reactions, specific emotions and the like. The merits of using this type of interview is that, it's free from the inflexibility of formal methods, yet gives the interview a set form and insures adequate coverage of all the relevant topics. The respondent is asked for certain information, yet he has plenty of opportunity to present his views. The interviewer is also free to choose the sequence of questions and determine the extent of probing.

(iii) **The Third Person Technique**: The simplest way of obtaining information through indirect questioning of a respondent is to ask for the view of a neighbor, an (unnamed) associate, or some other person whose views on the subject at hand might reasonably be known. This permits the respondent to project his own views with no feeling of social pressure to give an "acceptable" answer.

(iv) **The Depth Interview**: There is substantial use of the unstructured, informal interview in marketing research to explore the underlying predispositions, needs, desires, feelings, and emotions of the consumer toward products and services. This method of interviewing is referred to as a "depth interview". The depth interview in marketing research may consist of either direct or indirect questions, or some combination of the two. The skilled interviewer will generally employ both types of questions, A direct, free answer question such as "What are the major reasons why you bought your iPhone? Might well be followed up, for example, with an indirect question such as "Why do you think people who own smart phones bought them?" By following leads and cues provided by respondents, phrasing questions to continue the flow and pattern of the conversation and to maintain the rapport established, the competent interviewer can explore and probe the underlying motivations of the respondent.

(v) **The Personal Interview**: As the name implies, the personal interview consists of an interviewer asking questions of one or more respondents in a face to face situation. The interviewer's role is to get in touch with the respondent(s), ask the desired questions, and to record the answers obtained. The recording of the information obtained may be done either during or after the interview. In either case, it is a part of the interviewer's responsibility to ensure that the content of the answers is clear and unambiguous and that it has been recorded correctly.

(vi) **The Telephone Interview**: Telephone interviews are sometimes used in lieu of personal interviews, especially when the information must be collected quickly and inexpensively

and the amount of information required is limited. The telephone interview is well suited to such research problems as determining "coincidental" viewing of television or listening to radio programmes. In this type of study, calls are placed to a sample of telephone subscribers during the time the programme is on the air. The person receiving the call is simply asked "Are you now watching television?" and, if so, "What programme are you watching?" Other questions such as "How often do you watch this programme?" "Who sponsors this programme?" and the like may also be asked. The result is a rapid and inexpensive measurement of audience level. Either a structured or an unstructured interview may be held. Since the amount of information sought is usually well defined, non-confidential in nature, and limited in amount, virtually all telephone interviews are structured in nature. This medium does not lend itself well to indirect interviews and has not been used for this purpose.

5. **Observation:**

Observation involves three processes, i.e.,

(i) Sensation
(ii) Attention
(iii) Perception.

Sensation is gained through the sense organs which depend upon the physical alertness of the observer. The sense organs are receptive to stimuli and get attracted leading to the first stage in observation. Then comes attention or concentration which is largely a matter of commitment and will-power. Adequate training and experience can make it almost a matter of habit. The third is perception which comprises the interpretation of sensory reports. Thus, sensation merely reports the facts as observed but perception enables the mind to recognize the facts.

Through this process, observation serves the purpose of

(i) studying collective behavior and complex social situations.
(ii) following up of individual units composing the situations.
(iii) understanding the whole and the parts in their interrelations.
(iv) getting the out of the way details of the situation.

Types of Observation

There are different types of observation. The important ones are listed below:

1. **Casual and Scientific Observation**

   An observation may be either casual or scientific. Casual observation occurs without any previous preparation. It is a matter of chance that the right thing is observed at the right time and in the right place. Scientific observation, on the other hand, is carried out with due preparations and is done with the help of right tools of measurement experienced enumerators and under able guidance. Scientific observations yield thorough and accurate data.

2. **Simple and Systematic Observation**

   An observation may be either Simple or Systematic. Simple Observation is found in almost all research studies, at least in the initial stages of exploration. Its practice is not very standardized. It befits the heuristic nature of exploratory research. Participant studies are also usually classified as simple observation because participant roles do not permit systematic observation. Systematic observation, on the other hand, employs standardized

procedures, training of observers, schedules for recording and other devices to control the observer sometimes even the subject. Clearly some systematization is valuable in research observation, but the situation often limits what can be done. A systematic observation is a scientific observation too.

3. Subjective and Objective Observation

An observation may be either Subjective or Objective. In every act of observation there are two components namely, the object (or what is observed) and the subject (or the observer). It may be that sometimes one may have to observe one's own immediate experience. That is called Subjective Observation or Self-observation or introspection. Prejudices and biases are generally parts of subjective observation. Many data of psychological interest are gathered by the method of subjective observation. To avoid such prejudices, the observer takes stock of him and discovers what prejudices and biases will prevent impartial study and disinterested points of view. Persistent self-observation and criticism by others may ultimately overcome prejudice and biases. Such introspection may have another social value, i.e., it sensitizes the observer to the problems of others and creates sympathetic insight which facilitates, at least to some degree, the understanding of people's behavior in similar circumstances and similar cultural contexts. The net result is impartial subjective observation. When the observer is an entity apart from the thing observed, the observation of this type is objective.

4. Factual and Inferential Observation

Observation may be either factual or inferential. In factual observation things or phenomena observed with naked eyes are reported. In inferential observation behavior or psychological aspects are observed.

5. Direct and Indirect Observation

Observation may be either Direct or Indirect. In the case of direct observation the observer is physically present and personally monitors what takes place. This approach is very flexible of events and behavior as they occur. He is also free to shift places, change the focus of the observation, concentrate on unexpected events if they should occur. In indirect observation recording is done by mechanical, photographic or electronic means. For example a special motion picture camera which takes one frame every second is mounted in a department of a large store to study customer and employee movement.

6. Behavioral and Non-behavioral Observations

Observation may be either behavioral or non-behavioral. As pointed earlier the concept of observation involves not only watching but also listening and reading. Thus, observation includes the full range of monitoring behavioral and non-behavioral activities and conditions. Non-verbal analysis, linguistic analysis, extra-linguistic analysis and spatial analysis are the four major categories of behavioral observational study of persons. Record analysis, physical condition analysis and physical process analysis are the three major categories of non-behavioral study of persons. Non-verbal behavioral observation includes observation of body movement, motor expressions and even exchanged glances. Body movement, is an indicator of interest or boredom, anger or pleasure in a certain environment. Motor expressions such as facial movements can be observed as a sign of emotional studies. For instance, eye-blink rates are studied as indicators of interest in advertising messages. Finally, exchanged glances might be of interest in studies of interpersonal behavior Linguistic behavior is a second frequently used from of behavioral observation. One simple type, familiar to most students, is the tally of 'ahs' (or other annoying words or sounds) that a professor emits during a class.

7.6 SOURCES OF SECONDARY DATA

It is data that has been already collected by and readily available from other sources. When we use statistical methods with primary data from another purpose we are using secondary data. It means one purpose's primary data is another purpose's secondary data. So secondary data is data that is being reused. Such data are cheaper and more quickly obtainable than primary data.

Secondary data are data that are taken from research works already done by somebody and used for the purpose of the research data collection. The reason why secondary data are being increasingly used in research is that published statistics are now available covering diverse fields so that an investigator finds required data readily available to him in many cases. For certain studies like stock price behavior, interest and exchange rate scenario, etc., only secondary data are used.

Sources of secondary data

(1) Published printed sources: There are varieties of published printed sources. Their credibility depends on many factors like the writer, the publishing company, time and date of publication. New sources are preferred and old sources should be avoided as new technology and researchers bring new facts into light.

(2) Books: Books are available today on any topic that you want to research. Their use starts even before you have selected the topic. After the topic selection, books provide insights on how much work has already been done on the same topic and you can prepare the literature review.

(3) Journals/Periodicals: They 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 they can give information on very specific topic.

(4) Magazines and newspapers: Magazines are also effective but not very reliable sources. Newspapers on the other hand are more reliable.

(**5) Published electronic sources:**

As Internet is becoming more advance, fast and reachable to the masses, it has been seen that much information that is not available in printed form is available on internet. In the past the credibility of internet was questionable but today almost every journal and book are available online.

1. **e-Journals:** e-Journals are more commonly available than printed journals. Latest journals are difficult to retrieve without subscription but if there is e-library then one can view any journal any time.
2. **General Websites:** They are generally not very reliable hence their content should be checked for their reliability.
3. **Weblogs:** Weblogs are becoming common. They are actually diaries written by different people. These are as reliable as personal written diaries.

(6) Unpublished personal records:

Some unpublished data may also be useful in some cases.

1. **Diaries:** Diaries are personal records and rarely available. But if you are conducting descriptive research then they might be very useful. The Anne Franks diary is the most famous example of this. That diary contained the most accurate records of Nazi wars.
2. **Letters:** Like diaries letters are also rich sources of data.

3. **Government records:** Government records are very important for marketing, management and social researches. Examples are census data, health records, and educational institute's records.

7.7 PRIMARY DATA V/S SECONDARY DATA

1. Primary data is data which has been collected by you, which is more reliable and up to date. Secondary data has been collected from a secondary source (Other people, business etc.) so it may not be valid or up to date.
2. "Primary data" are data collected for the need at hand. "Secondary data" are data that were collected for another reason but is being re-purposed to address the need at hand.
3. When describing the expertise of data analysts, it is not uncommon to distinguish between primary and secondary data analytics. Primary data analytics involves the ability to analyze data for the purpose by which it has been collected. Secondary data analytics involves identifying "secondary data sources" to solve a new problem and then the ability to re-purpose that data.
4. **Primary data** is a data which is created for the first time and there is no previous source available. **Secondary data** is a readily available data like data from trade directories, statistics from websites etc. In Dissertation, literature review is done through secondary data which includes the contents such as theories, models, compilation, research findings by some other scholar etc.

7.8 APPROPRIATENESS OF METHODS OF DATA COLLECTION

The choice of appropriate data collection methods should be based on the research questions, design, sample, and the possible data sources. The technique used for data collection should gather information that will allow the research questions to be answered, take into account the characteristics of the sample, and provide information that is linked to each intended learning outcome.

7.9 ADVANTAGES AND DISADVANTAGES OF SECONDARY DATA

Following merits are usually claimed for using secondary data source.

1. **Provides an insight into total situation:** The purpose of use of available materials is to explore the nature of the data and the subjects to get an insight into the total situation. While looking for the data required by the researcher he may uncover many more available data than are often assumed to exists and hence, contributes significantly to the unfolding of hidden information.
2. **Helps in the formulation of hypothesis:** The use of documentary sources sometimes, helps in the formulation of research hypothesis. While an investigator may have one or two hypotheses which he might have deduced from theory, the study of available materials may suggest further hypotheses. If a research idea or hypotheses can be formulated in such a manner that the available recorded material bears on the question, the use of such material becomes possible.
3. **Helps in testing the hypotheses:** The available records may also help in testing the hypothesis.
4. **Provides supplementary information:** Available documents may be used to supplement or to check information gathered specifically for the purposes of a given investigation. For

example, if one has drawn in random sample of a small group in order to interview individuals, the accuracy of one's sample could be checked by comparing socio-economic data of the sample, like income, education standard, caste, family size, etc., with the same data of the most recent census or with available data in local Government offices.

The following are the demerits of using secondary data source for research purpose.

1. **Collected for a specific purpose:** Data are often collected with a specific purpose in mind, a purpose that may produce deliberate or unintentional bias. Thus, secondary sources must be evaluated carefully. The fact that secondary data were collected originally for particular purposes may produce other problems. Category definitions, particular measures or treatment effects may not be the most appropriate for the purpose at hand.
2. **Old data:** Secondary data are by definition, old data. Thus, the data may not be particularly timely for same purposes.
3. **Aggregation of data in inappropriate unit:** Seldom are secondary data available at the individual observation level. This means that the data are aggregated in some form, and the unit of aggregation may be inappropriate for a particular purpose.
4. **Authenticity:** The authenticity of same secondary sources of data is doubtful.
5. **Context change:** Secondary data refer to a given situation. As situations change, the data lose their contextual validity.

7.10 QUESTIONS

1. What are the Sources of collecting Secondary and primary data?
2. Explain methods of data collection?
3. Distinguish between primary and Secondary data?
4. Explain the advantages and disadvantages of Secondary data?
5. Explain the appropriateness of methods of data collection.

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