CHAPTER TWO: COLLECTION OF PRIMARY AND SECONDARY DATA

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Objectifs

Objectifs opérationnels et prérequis nécessaires

L'objectif global de ce chapitre se décline en plusieurs *objectifs opérationnels.* Nous mettons en évidence, également, *le niveau à atteindre* pour chacun d'eux:

- Expliquer le processus de *"data collection".* Il s'agit de comprendre les différentes *étapes* du processus de recherche.*(savoirs)*
- Pratiquer les méthodes de methodologies de recherche. Il s'agit de *savoir mettre en application* les méthodes de commencement du travail et de la recherche scientifique soit au niveau personel *(REVIEW OF LITERATURE)* ou bien au sein d'un contexte particulier comme la distribution des questionnaires et les observations *(savoirs-faire).*

Les deux *pré- requis* nécessaires à la compréhension de cette deuxième unité pédagogique (chapitre2) sont:

le processus et la methodologie de recherche avec ses deux types

À cet effet, pendant le déroulement de ce chapitre des révisions sur ces notions et les notions de base sont faites.

Exercice

I

the purpose from this type of activity is to work for a kind of a warming-up for the students.

What do you know about the different methods of data collection?

☐ a practical process

☐ theoretical process

Methods of Data Collection

II

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. 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.

1. I/ COLLECTION OF PRIMARY DATA

We collect primary data during the course of doing experiments in an experimental research but in case we do research of the descriptive type and perform surveys, whether sample surveys or census surveys, then we can obtain primary data either through observation or through direct communication with respondents in one form

or another or through personal interviews.This, in other words, means that there are several methods of collecting primary data, particularly in surveys and descriptive researches. Important ones are: (i) observation method, (ii) interview method, (iii) through questionnaires, (iv) through schedules, and (v) other methods which include (a) warranty cards; (b) distributor audits; (c) pantry audits; (d) consumer panels; (e) using mechanical devices; (f) through projective techniques; (g) depth interviews, and (h) content analysis. We briefly take up each method separately.

1.1. Observation Method

The observation method is the most commonly used method specially in studies relating to behavioural sciences. In a way we all observe things around us, but this sort of observation is not scientific observation. Observation becomes a scientific tool and the method of data collection for the researcher, when it serves a formulated research purpose, is systematically planned and recorded and is subjected to checks and controls on validity and reliability. Under the observation method, the information is sought by way of investigator's own direct observation without asking from the respondent. For instance, in a study relating to consumer behaviour, the investigator instead of asking the brand of wrist watch used by the respondent, may himself look at the watch. The main advantage of this method is that subjective bias is eliminated, if observation is done accurately. Secondly, the information obtained under this method relates to what is currently happening; it is not complicated by either the past behaviour or future intentions or attitudes. Thirdly, this method is independent of respondents' willingness to respond and as such is relatively less demanding of active cooperation on the part of respondents as happens to be the case in the interview or the questionnaire method. This method is particularly 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.

However, observation method has various limitations. Firstly, it is an expensive method. Secondly, the information provided by this method is very limited. Thirdly, sometimes unforeseen factors may interfere with the observational task. At times, the fact that some people are rarely accessible to direct observation creates obstacle for this method to collect data effectively. 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? In case the observation is characterised by a careful definition of the units to be observed, the style of recording the observed information, standardised conditions of observation and the selection of pertinent data of observation, then the observation is called as structured observation. But when observation is to take place without these characteristics to be thought of in advance, the same 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.

We often talk about participant and non-participant types of observation in the context of studies, particularly of social sciences. 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.)

There are several merits of the participant type of observation: (i) The researcher is enabled to record the natural behaviour of the group. (ii) The researcher can even gather information which could not easily be obtained if he observes in a disinterested fashion. (iii) The researcher can even verify the truth of statements made by informants in the context of a questionnaire or a schedule. But there are also certain demerits of this type of observation viz., 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.

Sometimes we talk of controlled and uncontrolled observation. If the observation takes place in the natural setting, it may be termed as uncontrolled observation, but when observation takes place according to definite pre-arranged plans, involving experimental procedure, the same is then termed controlled 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 behaviour, allowing sufficient time for observing it. But in controlled observation, we use mechanical (or precision) instruments as aids to accuracy and standardisation. Such observation has a tendency to supply formalised data upon which generalisations can be built with some degree of assurance. The main pitfall of non-controlled observation is that of subjective interpretation. There is also the danger of having the feeling that we know more about the observed phenomena than we actually do. 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.

1.2. Interview Method

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.

1.2.1. (a) Personal interviews:

Personal interview method requires a person known as the interviewer asking questions generally in a face-to-face contact to the other person or persons. (At times the interviewee may also ask certain questions and the interviewer responds to these, but usually the interviewer initiates the interview and collects the information.) This sort of interview may be in the form of direct personal investigation or it may be indirect oral investigation. In the case of direct personal investigation the interviewer has to collect the information personally from the sources concerned. 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 standardised techniques of recording. Thus, the interviewer in a structured interview follows a rigid procedure laid down, asking questions in a form and order prescribed. As against it, the unstructured interviews are characterised by a flexibility of approach to questioning. Unstructured interviews

do not follow a system of pre-determined questions and standardised techniques of recording information. In a non-structured interview, the interviewer is allowed much greater freedom to ask, in case of need, supplementary questions or at times he may omit certain questions if the situation so requires. He may even change the sequence of questions. He has 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 than that of the structured responses obtained in case of structured interviews. 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 generalisation and requiring relatively lesser skill on the part of the interviewer.

We may as well talk about focussed interview, clinical interview and the non-directive interview. Focussed interview is meant to focus attention on the given experience of the respondent and its effects. Under it the interviewer has the freedom to decide the manner and sequence in which the questions would be asked and has also the freedom to explore reasons and motives. The main task of the interviewer in case of a focussed interview is to confine the respondent to a discussion of issues with which he seeks conversance. Such interviews are used generally in the development of hypotheses and constitute a major type of unstructured interviews. The clinical interview is concerned with broad underlying feelings or motivations or with the course of individual's life experience. The method of eliciting information under it is generally left to the interviewer's discretion. In case of non-directive interview, the interviewer's function is simply to encourage the respondent to talk about the given topic with a bare minimum of direct questioning. The interviewer often acts as a catalyst to a comprehensive expression of the respondents' feelings and beliefs and of the frame of reference within which such feelings and beliefs take on personal significance.

Despite the variations in interview-techniques, the major advantages and weaknesses of personal interviews can be enumerated in a general way. The chief merits of the interview method are as follows:

(i) More information and that too in greater depth can be obtained.

(ii) Interviewer by his own skill can overcome the resistance, if any, of the respondents; the interview method can be made to yield an almost perfect sample of the general population.

(iii) There is greater flexibility under this method as the opportunity to restructure questions is always there, specially in case of unstructured interviews.

(iv) Observation method can as well be applied to recording verbal answers to various questions.

(v) Personal information can as well be obtained easily under this method.

(vi) Samples can be controlled more effectively as there arises no difficulty of the missing returns; non-response generally remains very low.

(vii) The interviewer can usually control which person(s) will answer the questions. This is not possible in mailed questionnaire approach. If so desired, group discussions may also be held.

(viii) The interviewer may catch the informant off-guard and thus may secure the most spontaneous reactions than would be the case if mailed questionnaire is used.

(ix) The language of the interview can be adopted to the ability or educational level of the

person interviewed and as such misinterpretations concerning questions can be avoided.

(x) The interviewer can collect supplementary information about the respondent's personal characteristics and environment which is often of great value in interpreting results.

But there are also certain weaknesses of the interview method. Among the important weaknesses, mention may be made of the following:

(i) It is a very expensive method, specially when large and widely spread geographical sample is taken.

(ii) There remains the possibility of the bias of interviewer as well as that of the respondent; there also remains the headache of supervision and control of interviewers.

(iii) Certain types of respondents such as important officials or executives or people in high income groups may not be easily approachable under this method and to that extent the data may prove inadequate.

(iv) This method is relatively more-time-consuming, specially when the sample is large and recalls upon the respondents are necessary.

(v) The presence of the interviewer on the spot may over-stimulate the respondent, sometimes even to the extent that he may give imaginary information just to make the interview interesting.

(vi) Under the interview method the organisation required for selecting, training and supervising the field-staff is more complex with formidable problems.

(vii) Interviewing at times may also introduce systematic errors.

(viii) Effective interview presupposes proper rapport with respondents that would facilitate free and frank responses. This is often a very difficult requirement.

1.2.2. (b) Telephone interviews:

This method of collecting information consists in contacting respondents on telephone itself. It is not a very widely used method, but plays important part in industrial surveys, particularly in developed regions. The chief merits of such a system are:

1. It is more flexible in comparison to mailing method.

2. It is faster than other methods i.e., a quick way of obtaining information.

3. It is cheaper than personal interviewing method; here the cost per response is relatively low.

4. Recall is easy; callbacks are simple and economical.

5. There is a higher rate of response than what we have in mailing method; the non-response is generally very low.

6. Replies can be recorded without causing embarrassment to respondents.

7. Interviewer can explain requirements more easily.

8. At times, access can be gained to respondents who otherwise cannot be contacted for one reason or the other.

9. No field staff is required.

10. Representative and wider distribution of sample is possible.

But this system of collecting information is not free from demerits. Some of these may be highlighted.

1. Little time is given to respondents for considered answers; interview period is not likely to exceed five minutes in most cases.

2. Surveys are restricted to respondents who have telephone facilities.

3. Extensive geographical coverage may get restricted by cost considerations.

4. It is not suitable for intensive surveys where comprehensive answers are required to various questions.

5. Possibility of the bias of the interviewer is relatively more.

6. Questions have to be short and to the point; probes are difficult to handle.

1.3. COLLECTION OF DATA THROUGH QUESTIONNAIRES

This method of data collection is quite popular, particularly in case of big enquiries. It is being adopted by private individuals, research workers, private and public organisations and even by governments. In this method a questionnaire is sent (usually by post) to the persons concerned with a request to answer the questions and return the questionnaire. A questionnaire consists of a number of questions printed or typed in a definite order on a form or set of forms. The questionnaire is mailed to respondents who are expected to read and understand the questions and write down the reply in the space meant for the purpose in the questionnaire itself. 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 interviewer; 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 here:

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 despatched.

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 infact 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.

DRUG-TAKING CONFIDENCE QUESTIONNAIRE (DTCQ)

Drugs

To be completed by the client:

1. Type of drug: _____

(Check one)

Is this your MAIN substance of abuse?   ☐

or

your SECOND substance of abuse?   ☐

or

your THIRD substance of abuse?   ☐

Authors: H.M. Annis and G. Martin, Addiction Research Foundation, ©1985

Listed below are a number of situations or events in which

some people use _____.

Imagine yourself as you are right now in each of these situations.

Indicate on the scale provided how confident you are that you would be able to resist the urge to use _____ in that situation.

Circle 100 if you are 100% confident right now that you could resist the urge to use these drugs; 80 if you are 80% confident; 60 if you are 60% confident. If you are more unconfident than confident, circle 40 to indicate that you are only 40% confident that you could resist the urge to use these drugs; 20 for 20% confident; 0 if you have no confidence at all about that situation.

I would be able to resist the urge to use _____	not at all confident				very confident	
1.	If I were depressed about things in general	0	20	40	60	80	100
2.	If I felt shaky, sick or nauseous	0	20	40	60	80	100
3.	If I were happy	0	20	40	60	80	100
4.	If I felt there was nowhere left to turn	0	20	40	60	80	100
5.	If I wanted to see whether I could use these drugs in moderation	0	20	40	60	80	100
6.	If I were in a place where I had used or bought these drugs before	0	20	40	60	80	100

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1.3.1. 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 the following with regard to these three main aspects of a questionnaire:

a) 1. General form:

So far as the general form of a questionnaire is concerned, it can either be structured or unstructured questionnaire. 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 standardisation 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) but should be stated in advance and not constructed during questioning. 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. When these characteristics are not present in a questionnaire, it can be termed as unstructured or non-structured questionnaire. More specifically, we can say that 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.

Structured questionnaires are simple to administer and relatively inexpensive to analyse. 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 and that too in respondent's own words cannot be obtained with structured questionnaires. They are usually considered inappropriate in investigations where the aim happens to be 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 (testing before final use) operations from the use of unstructured questionnaires, one can construct a structured questionnaire for use in the main study.

b) 2. Question sequence:

In order to make the questionnaire effective and to ensure quality to the replies received, a researcher should pay attention to the question-sequence in preparing the questionnaire. A proper sequence of questions reduces considerably the chances of individual questions being misunderstood. The question-sequence must be clear and smoothly-moving, meaning thereby that the relation of one question to another should be readily apparent to the respondent, with questions that are easiest to answer being put in the beginning. The first few questions are particularly important because they are likely to influence the attitude of the respondent and in seeking his desired cooperation. The opening questions should be such as to arouse human interest. The following type of questions should generally be avoided as opening questions in a questionnaire:

1. questions that put too great a strain on the memory or intellect of the respondent;

2. questions of a personal character;

3. 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. Ideally, the question sequence should conform to the respondent's way of thinking. Knowing what information is desired, the researcher can rearrange the order of the questions (this is possible in case of unstructured questionnaire) to fit the discussion in each particular case. But in a structured questionnaire the best that can be done is to determine the question-sequence with the help of a Pilot Survey which is likely to produce good rapport with most respondents. Relatively difficult questions must be relegated towards the end so that even if the respondent decides not to answer such questions, considerable information would have already been obtained. Thus, question-sequence should usually go from the general to the more specific and the researcher must always remember that the answer to a given question is a function not only of the question itself, but of all previous questions as well. For instance, if one question deals with the price usually paid for coffee and the next with reason for preferring that particular brand, the answer to this latter question may be couched largely in terms of price differences.

With regard to this aspect of questionnaire, the researcher should note that each 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., multiple choice question and the open-end question. In the former the respondent selects one of the alternative possible answers put to him, whereas in the latter 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.' There are some advantages and disadvantages of each possible form of question. Multiple choice or closed questions have the advantages of easy handling, simple to answer, quick and relatively inexpensive to analyse. They are most amenable to statistical analysis. Sometimes, the provision of alternative replies helps to make clear the meaning of the question. But the main drawback of fixed alternative questions is that of "putting answers in people's mouths" i.e., they may force a statement of opinion on an issue about which the respondent does not in fact have any opinion. 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. In such situations, 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. Such questions give the respondent considerable latitude in phrasing a reply. Getting the replies in respondent's own words is, thus, the major advantage of open-ended questions. But one should not forget that, from an analytical point of view, open-ended questions are more difficult to handle, raising problems of interpretation, comparability and interviewer bias.*

1.3.2. Essentials of a good questionnaire:

To be successful, questionnaire should be comparatively short and simple i.e., the size of the questionnaire should be kept to the minimum. Questions should proceed in logical sequence moving from easy to more difficult questions. Personal and intimate questions should be left to the end. Technical terms and vague expressions capable of different interpretations should be avoided in a questionnaire. Questions may be dichotomous (yes or no answers), multiple choice (alternative answers listed) or open-ended. The latter type of questions are often difficult to analyse and hence should be avoided in a questionnaire to the extent possible. There should be some control questions in the questionnaire which indicate the reliability of the respondent.

For instance, a question designed to determine the consumption of particular material may be asked first in terms of financial expenditure and later in terms of weight. The control questions, thus, introduce a cross-check to see whether the information collected is correct or not. Questions affecting the sentiments of respondents should be avoided. Adequate space for answers should be provided in the questionnaire to help editing and tabulation. 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. Finally, the physical appearance of the questionnaire affects the cooperation the researcher receives from the recipients and as such an attractive looking questionnaire, particularly in mail surveys, is a plus point for enlisting cooperation. The quality of the paper, along with its colour, must be good so that it may attract the attention of recipients.

1.4. SOME OTHER METHODS OF DATA COLLECTION

Let us consider some other methods of data collection, particularly used by big business houses in modern times.

1.4.1. 1. Warranty cards:

Warranty cards are usually postal sized cards which are used by dealers of consumer durables to collect information regarding their products. The information sought is printed in the form of questions on the 'warranty cards' which is placed inside the package along with the product with a request to the consumer to fill in the card and post it back to the dealer.

WARRANTY CARD

Vehicle Make:_____ Model:_____ Year:_____VIN:_____
Install Date: _____Month _____Day _____Year

Type_____Roll ID_____
Front Windshield_____Rear Window_____
Driver side Window(front)_____Driver side Window(front)_____
Other_____

Dealership/Entity Name_____
Address_____
City/State _____Zip Code _____
Phone Number_____Installer Name_____

Customer Name_____
Address_____
City/State _____Zip Code _____
Phone Number_____Installer Name_____

A copy of your original receipt and this warranty registration card are required for warranty redemption

1.4.2. 2. Distributor or store audits:

Distributor or store audits are performed by distributors as well as manufactures through their salesmen at regular intervals. Distributors get the retail stores audited through salesmen and use such information to estimate market size, market share, seasonal purchasing pattern and so on. The data are obtained in such audits not by questioning but by observation. For instance, in case of a grocery store audit, a sample of stores is visited periodically and data are recorded on inventories on hand either by observation or copying from store records. Store audits are invariably panel operations, for the derivation of sales estimates and compilation of sales trends by stores are their principal 'raison detre'. The principal advantage of this method is that it offers the most efficient way of evaluating the effect on sales of variations of different techniques of in-store promotion.

Other methods:

Distributor or store audits:

Distributors get the retail stores audited through salesmen and use such information to estimate market size, market share and seasonal purchasing pattern and so on. The data are obtained in such audits not by questioning but by observation.

Consumer panels:

An extension of the pantry audit approach on a regular basis is known as 'consumer panel', where a set of consumers are arranged to come to an understanding to maintain detailed daily records of their consumption and the same is made available to investigator on demands.

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1.4.3. 3. Pantry audits:

Pantry audit technique is used to estimate consumption of the basket of goods at the consumer level. In this type of audit, the investigator collects an inventory of types, quantities and prices of commodities consumed. Thus in pantry audit data are recorded from the examination of consumer's pantry. The usual objective in a pantry audit is to find out what types of consumers buy certain products and certain brands, the assumption being that the contents of the pantry accurately portray consumer's preferences. Quite often, pantry audits are supplemented by direct questioning relating to reasons and circumstances under which particular products were purchased in an attempt to relate these factors to purchasing habits. A pantry audit may or may not be set up as a panel operation, since a single visit is often considered sufficient to yield an accurate picture of consumers' preferences. An important limitation of pantry audit approach is that, at times, it may not be possible to identify consumers' preferences from the audit data alone, particularly when promotion device produce a marked rise in sales.
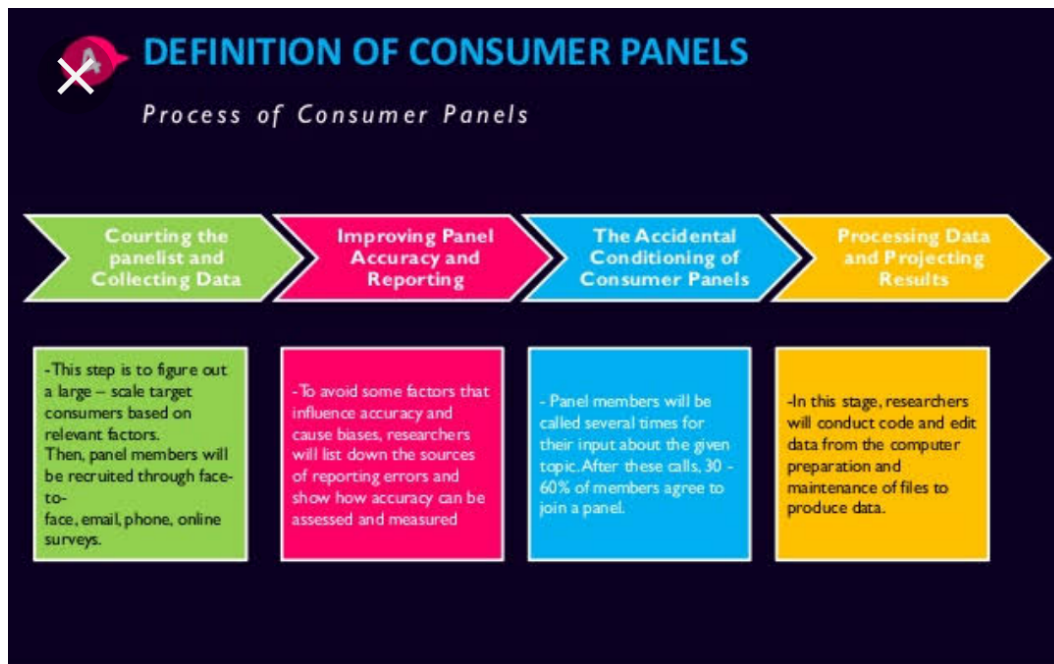
3) Pantry audits

- Pantry audit techniques is used to estimate consumption of the basket of goods at the consumer level. In this type of audit the investigator collects an inventory of types, quantities and price of commodities consumed. Thus in pantry audit is to find out what types of consumers buy certain products and certain brands the assumption being that the contents of the pantry accurately portray consumer's preferences.

1.4.4. 4. Consumer panels:

An extension of the pantry audit approach on a regular basis is known as 'consumer panel', where a set of consumers are arranged to come to an understanding to maintain detailed daily records of their consumption and the same is made available to investigator on demands. In other words, a consumer panel is essentially a sample of consumers who are interviewed repeatedly over a period of time. Mostly consume panels are of two types viz., the transitory consumer panel and the continuing consumer panel. A transitory consumer panel is set up to measure the effect of a particular phenomenon. Usually such a panel is conducted on a before-and-after-basis. Initial interviews are conducted before the phenomenon takes place to record the attitude of the consumer. A second set of interviews is carried out after the phenomenon has taken place to find out the consequent changes that might have occurred in the consumer's attitude. It is a favourite tool of advertising and of social research. A continuing consumer panel is often set up for an indefinite period with a view to collect data on a particular aspect of consumer behaviour over time, generally at periodic intervals or may be meant to serve as a general purpose panel for researchers on a variety of subjects. Such panels have been used in the area of consumer expenditure, public opinion and radio and TV listenership among others. Most of these panels operate by mail. The representativeness of the panel relative to the population and the effect of panel membership on the information obtained after the two major problems associated with the use of this method of data collection.

DEFINITION OF CONSUMER PANELS

Process of Consumer Panels

Courting the panelist and Collecting Data	Improving Panel Accuracy and Reporting	The Accidental Conditioning of Consumer Panels	Processing Data and Projecting Results
-This step is to figure out a large – scale target consumers based on relevant factors. Then, panel members will be recruited through face-to-face, email, phone, online surveys.	-To avoid some factors that influence accuracy and cause biases, researchers will list down the sources of reporting errors and show how accuracy can be assessed and measured	- Panel members will be called several times for their input about the given topic. After these calls, 30 - 60% of members agree to join a panel.	-In this stage, researchers will conduct code and edit data from the computer preparation and maintenance of files to produce data.

1.4.5. 5. Use of mechanical devices:

The use of mechanical devices has been widely made to collect information by way of indirect means. Eye camera, Pupilometric camera, Psychogalvanometer, Motion picture camera and Audiometer are the principal devices so far developed and commonly used by modern big business houses, mostly in the developed world for the purpose of collecting the required information. Eye cameras are designed to record the focus of eyes of a respondent on a specific portion of a sketch or diagram or written material. Such an information is useful in designing advertising material Pupilometric cameras record dilation of the pupil as a result of a visual stimulus. The extent of dilation shows the degree of interest aroused by the stimulus. Psychogalvanometer is used for measuring the extent of body excitement as a result of the visual stimulus. Motion picture cameras can be used to record movement of body of a buyer while deciding to buy a consumer good from a shop or big store. Influence of packaging or the information given on the label would stimulate a buyer to perform certain physical movements which can easily be recorded by a hidden motion picture camera in the shop's four walls. Audiometers are used by some TV concerns to find out the type of programmes as well as stations preferred by people. A device is fitted in the television instrument itself to record these changes. Such data may be used to find out the market share of competing television stations.

1.4.6. 6. Projective techniques:

Projective techniques (or what are sometimes called as indirect interviewing techniques) for the collection of data have been developed by psychologists to use projections of respondents for inferring about underlying motives, urges, or intentions which are such that the respondent either resists to reveal them or is unable to figure out himself. In projective techniques the respondent in supplying information tends unconsciously to project his own attitudes or feelings on the subject under study. Projective techniques play an important role in motivational researches or in attitude surveys. The use of these techniques requires intensive specialised training. In such techniques, the individual's responses to the stimulus-situation are not taken at their face value. The stimuli may arouse many different kinds of reactions. The nature of the stimuli and the way in which they are presented under these techniques do not clearly indicate the way in which the response is to be interpreted.

The stimulus may be a photograph, a picture, an inkblot and so on. Responses to these stimuli are interpreted as indicating the individual's own view, his personality structure, his needs, tensions, etc. in the context of some pre-established psychological conceptualisation of what the individual's responses to the stimulus mean. We may now briefly deal with the important projective techniques.

Projective techniques:
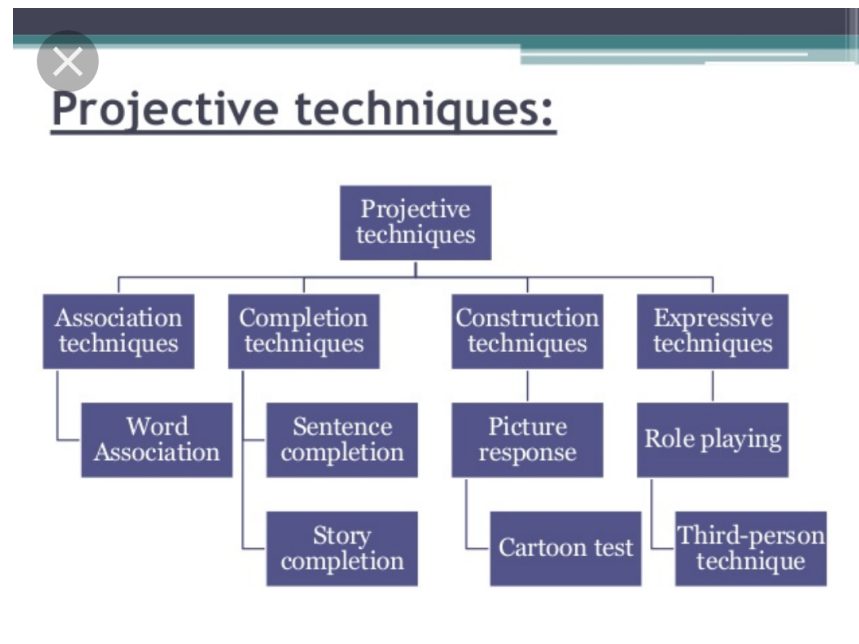
a) (i) Word association tests:

These tests are used to extract information regarding such words which have maximum association. In this sort of test the respondent is asked to mention the first word that comes to mind, ostensibly without thinking, as the interviewer reads out each word from a list. If the interviewer says cold, the respondent may say hot and the like ones. The general technique is to use a list of as many as 50 to 100 words. Analysis of the matching words supplied by the respondents indicates whether the given word should be used for the contemplated purpose. The same idea is exploited in marketing research to find out the quality that is mostly associated to a brand of a product. A number of qualities of a product may be listed and informants may be asked to write brand names possessing one or more of these. This technique is quick and easy to use, but yields reliable results when applied to words that are widely known and which possess essentially one type of meaning. This technique is frequently used in advertising research.

b) (ii) Sentence completion tests:

These tests happen to be an extension of the technique of word association tests. Under this, informant may be asked to complete a sentence (such as: persons who wear Khadi are...) to find association of Khadi clothes with certain personality characteristics. Several sentences of this type might be put to the informant on the same subject. Analysis of replies from the same informant reveals his attitude toward that subject, and the combination of these attitudes of all the sample members is then taken to reflect the views of the population. This technique permits the testing not only of words (as in case of word association tests), but of ideas as well and thus, helps in developing hypotheses and in the construction of questionnaires. This technique is also quick and easy to use, but it often leads to analytical problems, particularly when the response happens to be multidimensional.

c) (iii) Story completion tests:

Such tests are a step further wherein the researcher may contrive stories instead of sentences and ask the informants to complete them. The respondent is given just enough of story to focus his attention on a given subject and he is asked to supply a conclusion to the story.

Story Completion:

This technique is similar to the sentence completion test. However, in this technique, the respondent is presented with a specific scenario containing incomplete stimuli [see *example below*] and is asked to complete the scenario. Interpreting and analyzing data obtained from this technique is also difficult.

> Since Mr. Albert Lee had received a large commission by check just before leaving home for a holiday trip, he wanted to deposit it in an automatic teller machine, because _____, but his friend Mr. Wong told him that he should _____, because _____.

d) (iv) Verbal projection tests:

These are the tests wherein the respondent is asked to comment on or to explain what other people do. For example, why do people smoke? Answers may reveal the respondent's own motivations.

4. Verbal projection tests: These are the tests wherein the respondent is asked to comment on or to explain what other people do. For example, why do people smoke? Answers may reveal the respondent's own motivations.

5. Pictorial techniques: There are several pictorial techniques. The important ones are as follows:

I. *Thematic apperception test (T.A.T.)*

II. *Rosenzweig test*

III. *Rorschach test*

IV. *Holtzman Inkblot Test (HIT)*

V. *Tomkins-Horn picture arrangement test*

VI. *Quizzes, tests and examinations*

e) (v) Pictorial techniques:

There are several pictorial techniques. The important ones are as follows:

i (a) Thematic apperception test (T.A.T.):

The TAT consists of a set of pictures (some of the pictures deal with the ordinary day-to-day events while others may be ambiguous pictures of unusual situations) that are shown to respondents who are asked to describe what they think the pictures represent. The replies of respondents constitute the basis for the investigator to draw inferences about their personality structure, attitudes, etc.

TAT

❖ The **Thematic Apperception Test (TAT)** is a projective psychological **test**.

❖ Proponents of the technique assert that subjects' responses, in the narratives they make up about ambiguous pictures of people, reveal their underlying motives, concerns, and the way they see the social world.

ii (b) Rosenzweig test:

This test uses a cartoon format wherein we have a series of cartoons with words inserted in 'balloons' above. The respondent is asked to put his own words in an empty balloon space provided for the purpose in the picture. From what the respondents write in this fashion, the study of their attitudes can be made.

iii (c) Rorschach test:

This test consists of ten cards having prints of inkblots. The design happens to be symmetrical but meaningless. The respondents are asked to describe what they perceive in such symmetrical inkblots and the responses are interpreted on the basis of some pre-determined psychological framework. This test is frequently used but the problem of validity still remains a major problem of this test.

III. Rorschach test:

This test consists of ten cards having prints of inkblots. The design happens to be symmetrical but meaningless. The respondents are asked to describe what they perceive in such symmetrical inkblots and the responses are interpreted on the basis of some pre-determined psychological framework. This test is frequently used but the problem of validity still remains a major problem of this test.

iv (d) Holtzman Inkblot Test (HIT):

This test from W.H. Holtzman is a modification of the Rorschach Test explained above. This test consists of 45 inkblot cards (and not 10 inkblots as we find in case of Rorschach Test) which are based on colour, movement, shading and other factors involved in inkblot perception. Only one response per card is obtained from the subject (or the respondent) and the responses of a subject are interpreted at three levels of form appropriateness. Form responses are interpreted for knowing the accuracy (F) or inaccuracy (F–) of respondent's percepts; shading and colour for ascertaining his affectional and emotional needs; and movement responses for assessing the dynamic aspects of his life.

IV. Holtzman Inkblot Test (HIT):

This test from W.H. Holtzman is a modification of the Rorschach Test explained above. This test consists of 45 inkblot cards which are based on colour, movement, shading and other factors involved in inkblot perception. Only one response per card is obtained from the subject (or the respondent) and the responses of a subject are interpreted at three levels of for appropriateness. Form responses are interpreted for knowing the accuracy (F) or inaccuracy (F–) of respondent's percepts; shading and colour for ascertaining his affectional and emotional needs; and movement responses for assessing the dynamic aspects of his life.

v (e) Tomkins-Horn picture arrangement test:

This test is designed for group administration. It consists of twenty-five plates, each containing three sketches that may be arranged in different ways to portray sequence of events. The respondent is asked to arrange them in a sequence which he considers as reasonable. The responses are interpreted as providing evidence confirming certain norms, respondent's attitudes, etc.

The Tomkins-Horn

PICTURE
ARRANGEMENT
TEST

by **SILVAN S. TOMKINS**
Professor, Department of Psychology, Princeton University

and **JOHN B. MINER**
Research Associate, Conservation of Human Resources,
Columbia University

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V. Tomkins-Horn picture arrangement test:

This test is designed for group administration. It consists of some objects that may be arranged in different ways to portray sequence of events. The respondent is asked to arrange them in a sequence which he considers as reasonable. The responses are interpreted as providing evidence confirming certain norms, respondent's attitudes, etc.

Put the following in the correct order

f) (vi) Play techniques:

Under play techniques subjects are asked to improvise or act out a situation in which they have been assigned various roles. The researcher may observe such traits as hostility, dominance, sympathy, prejudice or the absence of such traits. These techniques have been used for knowing the attitudes of younger ones through manipulation of dolls. Dolls representing different racial groups are usually given to children who are allowed to play with them freely. The manner in which children organise dolls would indicate their attitude towards the class of persons represented by dolls. This is also known as doll-play test, and is used frequently in studies pertaining to sociology. The choice of colour, form, words, the sense of orderliness and other reactions may provide opportunities to infer deep-seated feelings.

g) (vii) Quizzes, tests and examinations:

This is also a technique of extracting information regarding specific ability of candidates indirectly. In this procedure both long and short questions are framed to test through them the memorising and analytical ability of candidates.

h) (viii) Sociometry:

Sociometry is a technique for describing the social relationships among individuals in a group. In an indirect way, sociometry attempts to describe attractions or repulsions between individuals by asking them to indicate whom they would choose or reject in various situations. Thus, sociometry is a new technique of studying the underlying motives of respondents. "Under this an attempt is made to trace the flow of information amongst groups and then examine the ways in which new ideas are diffused. Sociograms are constructed to identify leaders and followers." Sociograms are charts that depict the sociometric choices. There are many versions of the sociogram pattern and the reader is suggested to consult specialised references on sociometry for the purpose. This approach has been applied to the diffusion of ideas on drugs amongst medical practitioners.

1.4.7. 7. Depth interviews:

Depth interviews are those interviews that are designed to discover underlying motives and desires and are often used in motivational research. Such interviews are held to explore needs, desires and feelings of respondents. In other words, they aim to elicit unconscious as also other types of material relating especially to

personality dynamics and motivations. As such, depth interviews require great skill on the part of the interviewer and at the same time involve considerable time. Unless the researcher has specialised training, depth interviewing should not be attempted. Depth interview may be projective in nature or it may be a non-projective interview. The difference lies in the nature of the questions asked. Indirect questions on seemingly irrelevant subjects provide information that can be related to the informant's behaviour or attitude towards the subject under study. Thus, for instance, the informant may be asked on his frequency of air travel and he might again be asked at a later stage to narrate his opinion concerning the feelings of relatives of some other man who gets killed in an airplane accident. Reluctance to fly can then be related to replies to questions of the latter nature. If the depth interview involves questions of such type, the same may be treated as projective depth interview. But in order to be useful, depth interviews do not necessarily have to be projective in nature; even non-projective depth interviews can reveal important aspects of psycho-social situation for understanding the attitudes of people.

1.4.8. 8. Content-analysis:

Content-analysis consists of analysing the contents of documentary materials such as books, magazines, newspapers and the contents of all other verbal materials which can be either spoken or printed. Content-analysis prior to 1940's was mostly quantitative analysis of documentary materials concerning certain characteristics that can be identified and counted. But since 1950's content-analysis is mostly qualitative analysis concerning the general import or message of the existing documents. "The difference is somewhat like that between a casual interview and depth interviewing."[3] Bernard Berelson's name is often associated with. the latter type of contentanalysis. "Content-analysis is measurement through proportion.... Content analysis measures pervasiveness and that is sometimes an index of the intensity of the force."[4] The analysis of content is a central activity whenever one is concerned with the study of the nature of the verbal materials. A review of research in any area, for instance, involves the analysis of the contents of research articles that have been published. The analysis may be at a relatively simple level or may be a subtle one. It is at a simple level when we pursue it on the basis of certain characteristics of the document or verbal materials that can be identified and counted (such as on the basis of major scientific concepts in a book). It is at a subtle level when researcher makes a study of the attitude, say of the press towards education by feature writers.
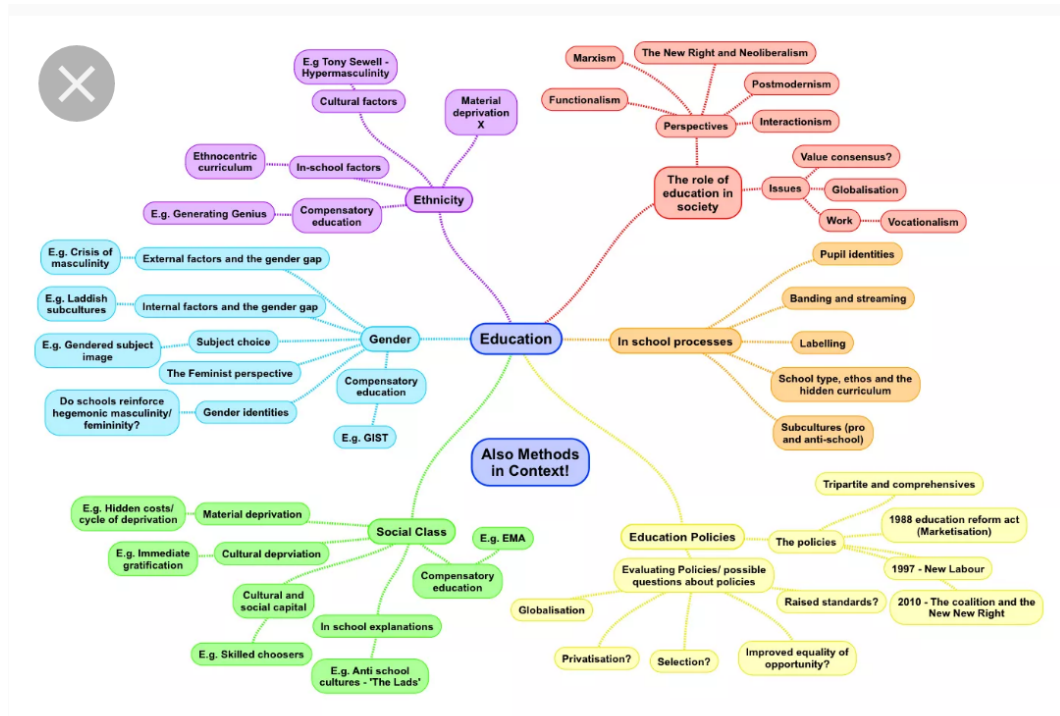
2. II/ COLLECTION OF SECONDARY DATA

Secondary data means data that are already available i.e., they refer to the data which have already been collected and analysed by someone else. When the researcher utilises secondary data, then he has to look into various sources from where he can obtain them. In this case he is certainly not confronted with the problems that are usually associated with the collection of original data. Secondary data may either be published data or unpublished data. Usually published data are available in:

(a) various publications of the central, state are local governments;

(b) various publications of foreign governments or of international bodies and their subsidiary organisations;

(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, labour bureaus and other public/ private individuals and organisations.

Researcher must be very careful in using secondary data. He must make a minute scrutiny because it is just possible that the secondary data may be unsuitable or may be inadequate in the context of the problem which the researcher wants to study. In this connection Dr. A.L. Bowley very aptly observes that it is never safe to take published statistics at their face value without knowing their meaning and limitations and it is always necessary to criticise arguments that can be based on them. By way of caution, the researcher, before using secondary data, must see that they possess following characteristics:

2.1. 1. Reliability of data:

The reliability can be tested by finding out such things about the said data:

(a) Who collected the data?

(b) What were the sources of data?

(c) Were they collected by using proper methods

(d) At what time were they collected?(e) Was there any bias of the compiler? (t) What level of accuracy was desired? Was it achieved ?

2.2. 2. Suitability of data:

The data that are suitable for one enquiry may not necessarily be found suitable in another enquiry. Hence, if the available data are found to be unsuitable, they should not be used by the researcher. In this context, the researcher must very carefully scrutinise the definition of various terms and units of collection used at the time of collecting the data from the primary source originally. Similarly, the object, scope and nature of the original enquiry must also be studied. If the researcher finds differences in these, the data will remain unsuitable for the present enquiry and should not be used.
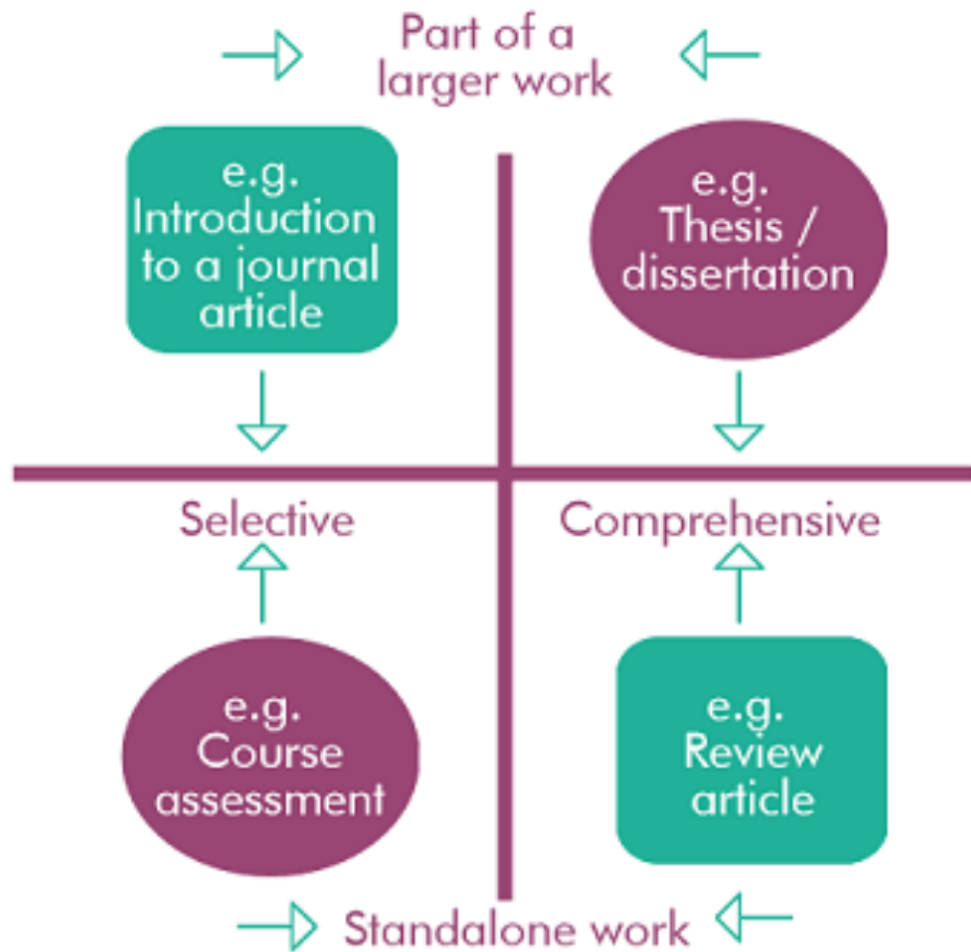
2.3. 3. Adequacy of data:

If the level of accuracy achieved in data is found inadequate for the purpose of the present enquiry, they will be considered as inadequate and should not be used by the researcher. The data will also be considered inadequate, if they are related to an area which may be either narrower or wider than the area of the present enquiry.

2.4. FINDING AND REVIEWING THE LITERATURE

The most important reason for doing research is to produce new knowledge and understanding, and to disseminate it to make it available to everyone. When planning a research project, it is essential to know what the current state of knowledge is in your chosen subject as it is obviously a waste of time to spend months producing knowledge that is already freely available. Therefore, one of the first steps in planning a research project is to do a literature review: that is, to trawl through all the available information sources in order to track down the latest knowledge, and to assess it for relevance, quality, controversy and gaps. The last two will indicate where additional research is required – to try to resolve a controversy or to fill a gap. This chapter explains where to find the necessary information and how to analyse it and present it so that you can devise a solid basis for your research project.

Types of Literature Reviews

Part of a larger work

e.g. Introduction to a journal article

e.g. Thesis / dissertation

Selective

Comprehensive

e.g. Course assessment

e.g. Review article

Standalone work

2.4.1. LIBRARIES

Your university or college library – this should be your first choice. Here you will find a huge amount of information and also about all the other information sources listed below. There are also specialist libraries, such as subject libraries in university departments, professional libraries in professional institutions, technical libraries in technical (research) establishments. Local libraries sometimes have special collections of local interest. Try to get the latest publications, unless you have special reasons not to, e.g. historical studies. The information in fast moving subjects, such as management, business, science and technology will become rapidly obsolete, but in the humanities older publications can have lasting value. It is no longer sufficient just to visit the shelves to see what is there, even if you have consulted the online catalogue first. There will be a wide range of electronic resources and search facilities provided backed up by training sessions and leaflets in the use of these. Being adept at making searches will save you lots of time and frustration, as well as ensuring that you get hold of all the latest information you need.

2.4.2. INFORMATION SERVICES

Government departments such as Standards Institutes, Records Offices, Statistical Offices provide information for the public. Pressure groups and voluntary organizations often produce publications about their work. Research establishments, professional and trade organizations also release details about latest research.

2.4.3. MUSEUMS AND GALLERIES – NATIONAL AND LOCAL

Apart from the exhibits, museums and galleries usually produce a range of printed and electronic information. They may also have many artefacts that are in store and only accessible by arrangement. Private collections of historical records and artefacts might be found.

2.4.4. PEOPLE

There are experts in every field. Some will be willing to advise you. Try the members of your own university staff at first, many of whom will be involved in research. Your library will contain guides to professionals and experts. In some cases, local knowledge will be needed – search out the relevant local experts (e.g. local historians, social workers, ornithologists etc.).

2.4.5. THE INTERNET

The full gamut of the World Wide Web. With thousands of pages being added every day, the World Wide Web (WWW) is the biggest single source of information in the world. However, the content is of extremely variable quality, and the biggest challenge when using it is to track down good quality material. You can easily waste hours trawling through rubbish in search of the goodies. Careful use of search terms helps to eliminate the trash. Usually, the more precise your search parameters, the more manageable the search results will be. Not all information on the WWW is free. Published Internet guides can help you to make the best of this resource (try your library for lists devoted to subject areas). Some are specifically aimed at students and list useful search engines, sites and databases. Any Internet guide becomes quickly outdated. Specialized search engines such as Google Scholar will filter out much of the dross by listing academic and technical papers from proven sources.

2.5. DOING A LITERATURE REVIEW

The oft-repeated instruction to 'do a literature review' belies some of the complexities of the task. But why should you do one? The review that forms part of research proposal, paper, thesis or dissertation is an important introduction to the research project and underpins the argument about why the project is worth doing. It therefore forms a distinctly recognizable section near the beginning and leads on to the more specific and practical description of the research activities. In the dissertation or thesis, usually, one of the first chapters consists of a critical appraisal of the research literature relevant to the research subject under consideration. This is a more extended version of what is required for a proposal. Doing a literature review means not only tracking down all the relevant information but also taking a critical position on the ideas contained therein. The latter is an important step in determining the quality of research evidence. The process involves an objective critique and evaluation of the strengths and weaknesses of a document, to determine its design quality and merits, and its relevance for your research topic. You will need to evaluate and consider the relevance of the document to your own dissertation question and study objectives. The literature review will need to be carried out in four major directions, not just narrowly confined to your specific subject area. Here they are, arranged from the general to the particular, their relative importance depending on the nature of your subject:

- Research theory and philosophy – to establish the intellectual context(s) of research related to your subject.
- History of developments in your subject – to trace the background to present thinking.
- Latest research and developments in your subject – to inform about the current issues being investigated and the latest thinking and practice, to discuss the conflicting arguments, and to detect a gap in knowledge.
- Research methods – to explore practical techniques that have been used, particularly those that might be relevant to your project.

Here is a checklist of useful points for your review:

- Compile an overview of the literature to illustrate the interplay of ideas and major steps in the development of your subject.
- Introduce the important issues of your research problem through the analysis of the literature.
- Explain the general theoretical background to help the reader understand the attitudes behind the reviewed literature and your own philosophical stance.
- Make links across discipline boundaries when doing an interdisciplinary review, rather than keeping each separate and examined in turn. You may even suggest some new links that need to be investigated.
- Include some account of how the previous research was done, so that you have a precedent for your own approach to methodology.

Questions de synthèse

1. Define the following concepts:

   - Questionnaire
   - Interview
   - Observation
   - Tests

2. Make a comparison between primary data and secondary data collection. Illustrate with examples.

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