CC6 UNIT 3

Methods of Data Collection

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.

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.

Observation

Lindzey Gardner (1975) defined it as “selection, provocation, recording and encoding of that set of behaviors and settings concerning organisms ‘in situ’(naturalistic settings or familiar surroundings) which are consistent with empirical aims

Purpose

Types  **AK SINGH**

Merits and demerits

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.

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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.

Type of oservation	Basis of classification	Sub types
Natural/ laboratory	Setting for observation	Natural- study in natural setting Laboratory- study in artificial setting
Open/ hidden	Knowledge of research goal	Open-objectives of research and researcher's identity known Hidden-objectives of research and researcher's identity not known
Direct/ indirect	Way of observing the phenomenon	Direct-phenomenon/events /subjects are diectly observed Indirect-only leftbehind physical traces of phenomenon are observed
Covert/ overt	Knowledge of being observed	Covert- sujects are unaware of being observed Overt- aware of being observed.

Stages in field observation

1. selecting a topic
2. Choosing research site
3. Getting access in setting
4. Taking roles
5. Jotting down field notes
6. Formulating analysis
7. Writing report

Interview and Focus group discussion

Concept of interview- Lindzey Gardner(1968) has defined it as "a two person conversation, initiated by the interviewer for the specific purpose of obtaining research relevant information and focused by him on the content specified by the research objectives of description and explanation."

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.

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(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 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.

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.

Gathering people from similar backgrounds or experiences together to discuss a specific topic of interest questions are asked about their perceptions, attitudes, beliefs, opinion or ideas. Questions are saked in an interactive group setting where participant are free to talk with other group members. During this process, the researcher either takes note3s or records the vital points he or she is getting from the discussion. Researcher should select members of the focus group carefully for effective and authoritative responses.

It is a predetermined semi structured interview led by a skilled moderator. The moderator asks broad questions to elicit responses and generate discussion among the participants. The moderators goal is to generate maximum amount of discussion and opinions within a given time period.

Advantages-

helps to understand an issue at a deeper level

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Respondent gets relatively more freedom of responding to questions

Interviewers role is mild

information is more specific and detailed

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.

Functions

Merits and demerits

Types  **AK SINGH**

Factors affecting interview

Sources

Training of interviewer

Survey

Survey researcher is primarily interested in assessing the characteristics of whole population. But asurvey researcher rarely takes pain to to make an approach to each member of the population probably because it requires a lot of money, time and patience. Thus he takes a convenient random sample which is considered to be representative of the whole population when the sample is drawn for survey it is called sample survey.

Types of survey research

Cross sectional survey

When he or she wants to collect data from different types of groups (differ in terms of age, gender, nation, tribes so on) at a time

Longitudinal survey

When the researcher wants to study the same sample for for a longer period of time. For example attitude or behavioral changes over time.

Trend studies

Researcher needs to analyse a trend of a phenomenon in the population. The sample of the selected population may not be the same but they belong to the same population. For example, the a yearly survey of number of graduates actively using books and journals from the library of a university.

Cohort studies

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A particular population which is sampled and studied more than once within a time gap. For example an investigation of the number of graduates of the year 2009 who have been actively using the library and four years alter , the same issue may be examined on the on another sample of 2009 graduates and investigate whether after a time gap there has been any difference in the attitudes towards the importance of the library within the members of the same class

Panel studies

Same sample of people are studied every time. Here focused is on studying the changes in attitudes and behavior of the same group.

Questionnaire- 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

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

Instrument used

Merits demerits  **AK SINGH**

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

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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 possessfollowing characteristics:

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**. 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.

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. From all this we can say that it is very risky to use the already available data. The already available data should be used by the researcher only when he finds them reliable, suitable and adequate. But he should not blindly discard the use of such data if they are readily available from authentic sources and are also suitable and adequate for in that case it will not be economical to spend time and energy in field surveys for collecting information. At times, there may be wealth of usable information in the already available data which must be used by an intelligent researcher but with due precaution.

SELECTION OF APPROPRIATE METHOD FOR DATA COLLECTION

Thus, there are various methods of data collection. As such the researcher must judiciously select the method/methods for his own study, keeping in view the following factors:

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1. **Nature, scope and object of enquiry**: This constitutes the most important factor affecting the choice of a particular method. The method selected should be such that it suits the type of enquiry that is to be conducted by the researcher. This factor is also important in deciding whether the data already available (secondary data) are to be used or the data not yet available (primary data) are to be collected.

2. **Availability of funds**: Availability of funds for the research project determines to a large extent the method to be used for the collection of data. When funds at the disposal of the researcher are very limited, he will have to select a comparatively cheaper method which may not be as efficient and effective as some other costly method. Finance, in fact, is a big constraint in practice and the researcher has to act within this limitation.

3. **Time factor**: Availability of time has also to be taken into account in deciding a particular method of data collection. Some methods take relatively more time, whereas with others the data can be collected in a comparatively shorter duration. The time at the disposal of the researcher, thus, affects the selection of the method by which the data are to be collected.

4**. Precision required**: Precision required is yet another important factor to be considered at the time of selecting the method of collection of data.

But one must always remember that each method of data collection has its uses and none is superior in all situations. For instance, telephone interview method may be considered appropriate (assuming telephone population) if funds are restricted, time is also restricted and the data is to be collected in respect of few items with or without a certain degree of precision. In case funds permit and more information is desired, personal interview method may be said to be relatively better. In case time is ample, funds are limited and much information is to be gathered with no precision, then mail-questionnaire method can be regarded more reasonable. When funds are ample, time is also ample and much information with no precision is to be collected, then either personal interview or the mail-questionnaire or the joint use of these two methods may be taken as an appropriate method of collecting data. Where a wide geographic area is to be covered, the use of mail-questionnaires supplemented by personal interviews will yield more reliable results per rupee spent than either method alone. The secondary data may be used in case the researcher finds them reliable, adequate and appropriate for his research. While studying motivating influences in market researches or studying people's attitudes in psychological/social surveys, we can resort to the use of one or more of the projective techniques stated earlier. Such techniques are of immense value in case the reason is obtainable from the respondent who knows the reason but does not want to admit it or the reason relates to some underlying psychological attitude and the respondent is not aware of it. But when the respondent knows the reason and can tell the same if asked, than a non-projective questionnaire, using direct questions, may yield satisfactory results even in case of attitude surveys. Since projective techniques are as yet in an early stage of development and with the validity of many of them remaining an open question, it is usually considered better to rely on the straight forward statistical methods with only supplementary use of projective techniques. Nevertheless, in pre-testing and in searching for hypotheses they can be highly valuable.

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Thus, the most desirable approach with regard to the selection of the method depends on the nature of the particular problem and on the time and resources (money and personnel) available along with the desired degree of accuracy. But, over and above all this, much depends upon the ability and experience of the researcher. Dr. A.L. Bowley's remark in this context is very appropriate when he says that "in collection of statistical data common sense is the chief requisite and experience the chief teacher."

CASE STUDY METHOD

The case study method is a very popular form of qualitative analysis and involves a careful and complete observation of a social unit, be that unit a person, a family, an institution, a cultural group or even the entire community. It is a method of study in depth rather than breadth. The case study places more emphasis on the full analysis of a limited number of events or conditions and their interrelations. The case study deals with the processes that take place and their interrelationship.

In preparing a clinical case study the information is collected from following sources

Preliminary information- name -age -sex –education- occupation –income- number of children - social status

Past history- condition of mother, during pregnancy -any incident- child's development, -after birth- physical , mental, emotional, social illness , relation between parents and other members of the family achievement of the child, parents death birth order etc.

- **Present condition**-
- Physical results of medical examination of any disease
- IQ special abilities general intelligence
- Social – home env, friends and their types, social env in school, home and neighbourhood,
- Emotional, anxiety, fear, temperament, attitude, etc.
- Interest, personal, social, vocational, and special achievement, performance in school – failure special achievement etc.

Demerits merits
Purposes → **Ak Singh**

Data Processing

1. **Checking and editing data**

Checking needs to find out that all the questions are answered, data are relevant and appropriate, confusion regarding responses are made clear here.

Field editing : This process begins in the field . It includes the review of the reporting forms by the investigator for completing (translating or rewriting) what the latter has written in abbreviated and /or in illegible form at the time of recording the respondents responses.

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Central editing: All forms of schedules are returned to the office and should get a thorough editing by a single or a team of editors

2. Coding

Assigning numerals or other symbols to answers so that responses can be put into a limited number of categories or classes. Coding is generally done before preparing the questionnaire and interview schedule. For example to report religions put for Hindu, 2 for Muslim and so on.

Classification- Raw data are reduced into homogeneous groups depending on common characteristics.

Tabulation- Orderly arrangement of data in columns and rows. Comparison of frequencies and percentages

Graphical representations

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