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Lesson No.

2.1: Methods of Data Collection

2.2: Qualitative Technique of Data Collection

2.3: Questionnaire Designing

2.4: Measurement Process

2.5: Scaling Technique

2.6: Report Writing

2.7: Presentation

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SEMESTER-V BUSINESS RESEARCH METHODS

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METHODS OF DATA COLLECTION

Structure of the lesson

2.1.0 OBJECTIVES

After reading this chapter, the reader should be able to :

- Differentiate between and explain the different techniques of data collection.
- Enumerate the factors to be kept in mind while designing a questionnaire.
- List the issues of consideration when deciding on a data collection mode.

2.1.1 INTRODUCTION

Sources of data can be Internal or External. Internal data is collected from the activities within the firm or the agency itself. For example,

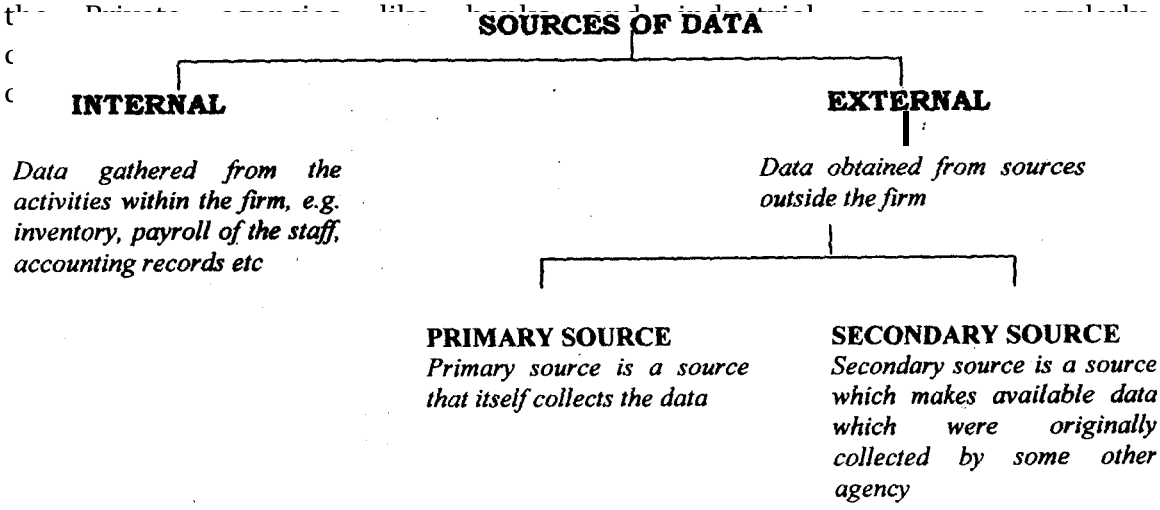

Figure-1 : Sources of Data

2.1.2 PRIMARY DATA

In the words of Wessel, Willett and Simone, *"Data originally collected in the process of investigations is known as primary data".* Primary data consists of figures collected at first hand in order to satisfy the purpose of a particular statistical enquiry. Primary data is generally collected by an authority conducting enquiry. The same authority makes analysis, interpretations and publishes the data.

Primary data is the best for the statisticians who are aware of their goals, precise definitions and techniques of measurement to make the data perfectly suitable to their requirement. Primary sources usually have more detailed information particularly on the procedures followed in collecting and compiling the data.

2.1.2.1 Merits of Primary Data

(1) It is original in nature

(2) It is more reliable, authentic and accurate.

(3) It can be used wit greater confidence because the enquirer knows its origin, coverage and definitions.

(4) It is generally free from bias,

(5) It exactly matches the needs of the project.

2.1.2.2 Demerits of Primary Data

(1) It is expensive.

(2) It is time consuming.

(3) Sometimes it may be difficult to approach the exact source.

(4) Collection of primary data usually involves creating new definitions and measuring instruments such as questionnaires or interview forms and training people to use these specifically designed instruments.

2.1.3 SECONDARY DATA

Secondary data consists of figures which were collected originally to satisfy a particular enquiry but are being used now for different enquiry. They are often used because they are readily available.

In the words of M.M. Blair, *"Secondary data are those which are already in existence, and which have been collected/or some other purpose than the answering of the question in hand"* According to Wessel, *"Data collected by other persons are called secondary data".*

Sources of Secondary data are published and unpublished Government, Semi- Government magazines, reports and research papers. Secondary data is not necessarily an inferior source. In most of the practical work, a secondary source is just as acceptable as a primary source, but proper care has to be taken while using secondary data.

Merits of Secondary Data

(1) It is readily available.

(2) It is much less expensive as compared to primary data.

(3) It is less time consuming as compared to primary data.

Demerits of Secondary Data

(1) There is a possibility that proper procedure might not have been followed in their collection.

(2) These may not be relevant in the present context.

(3) These may to be free from personal bias and prejudices

(4) These not have the needed accuracy or reliability.

(5) These may not be adequate.

(6) Proper care and precautions have to be taken before using the secondary data.

(7) It may be outdated.

2.1.4 CHOICE BETWEEN PRIMARY DATA AND SECONDARY DATA

This investigator must decide whether he should use Primary data or

Secondary data for his investigation. While making choice between these two types of data. He should consider the following points:

(1) Nature and scope of the enquiry

(2) Availability of financial resources

(3) Availability of time

(4) Degree of accuracy required

In actual practice most of the statistical analysis rests upon the Secondary data. Primary data is used only in those cases where the Secondary data do not provide an adequate basis for the analysis.

2.1.5 SOURCES OF COLLECTION OF DATA

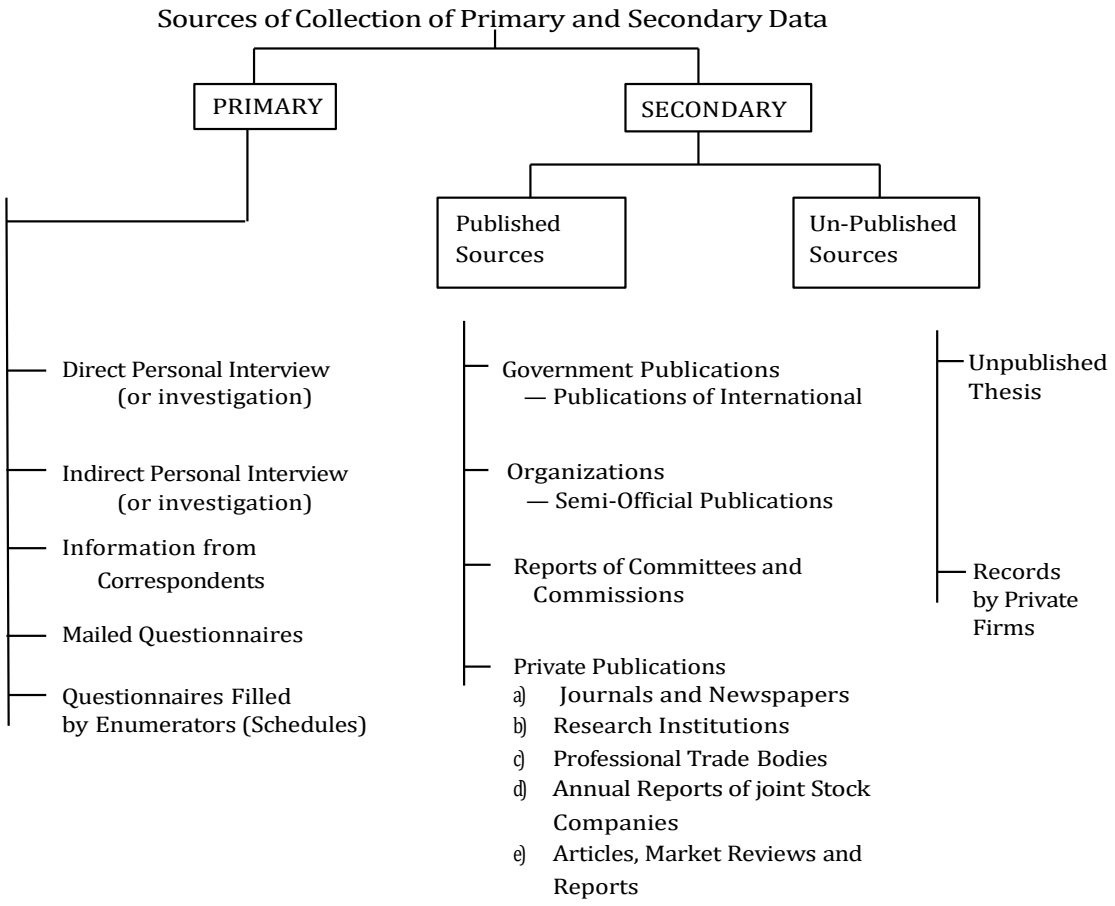

Figure-2 : Sources of Collection of Data

2.1.5.1 COLLECTION OF PRIMARY DATA

Observation Method - In this method, instead of asking the respondent, researcher tries to observe the behaviour, appearance etc. of the respondent. For example, instead of asking a person which brand a shirt a person like, researcher can look at his shirt. This method is helpful in eliminating subjective bias. There are generally two types of observation methods; participant and non-participant. In participant observation researcher tries to make himself a member of the group he is observing. In non-participant researcher not try to be part of the group, but merely observes the group.

1. Direct Personal Interview (or Investigation)

This method of data collection is suitable when the field of enquiry is limited or the nature of enquiry confidential and when maximum degree of accuracy is required. In this method the investigator contacts each informant personally and conducts on the spot enquiry. The investigator must be skillful, tactful, accurate, amiable and neutral.

In the words of W.I. King, *"This type of enquiry while admirable because of additional accuracy due to personal supervision must not cover too narrow a field to be representative and is also liable to too large an injection of the Personal element. The prejudices and the desires of the investigator become too often unconsciously woven into the fabric of his conclusions."*

Merits

1. Original data are collected by this method.
2. As the data are collected by one person there is uniformity in collection of data.
3. The required information can be properly obtained.
4. There is flexibility in the enquiry as the investigator is personally present.
5. Information can be obtained easily from the informants due to a personal interview.
6. Since the enquiry is intensive and in person the results obtained are normally reliable and accurate.
7. Informant reactions to questions can be properly studied.
8. Investigators can use the language of communication according to the educational standard and attitude of the informant and collect exact and accurate data.

9. It permits probing to explore the facts in depth.
10. Promptness is assured.

Limitations

1. This method can be used when the field of enquiry is small. It cannot be used when field of enquiry is wide.
2. It is a costly method and consumes more time.
3. Personal bias can give wrong results.
4. Investigators need to be trained and supervised for the job, otherwise results obtained may not be reliable.
5. This method is lengthy and complex.

2. Indirect Personal Interview (or Indirect Investigation)

This method is used in case the informants are reluctant to give information or the data is of such complicated nature that it is difficult to get them directly. The information is collected orally from other persons who are expected to possess the necessary information. These other persons are known as witnesses. This method is adopted in the following situations:

(a) When the direct sources do not exist.
(b) When the direct sources cannot be relied upon.
(c) When the direct sources are indifferent on their part.
(d) When the area of investigation is large.
(e) When the expert information is needed.

This method is used by committees and commissions appointed by Government. They gather facts about different problems by asking and cross-examining different types of people who appear as witnesses. An informant should be a person (1) who is not biased or prejudiced, (2) who must know the facts of problem. (3) who must be capable of answering correctly and giving true information , and (4) who is not motivated to give colour to the facts. The collected data are required to be given due allowance for the conscious and unconscious bias of the informant. For the success of this method. It is necessary that the evidence of one person alone should not be relied upon; the opinions of various persons should be obtained to find out the real and true picture of the situation.

Merits

1. This method covers a wide area of investigation. Whenever the informant in direct investigation is reluctant to give information, or cannot be contacted this method is a good alternative.
2. As the information is obtained from the third party, it is more or less free from bias of the investigator and the informant.
3. It saves labour, time and money.
4. As the information covers a wide range, different aspects of problems can be properly studied.
5. An opinion and suggestion of experts can be obtained.

3. Information from Correspondents

In this method, local agents or correspondents are appointed indifferent parts of the investigation area. These agents regularly collect information according to their own judgment and own method and supply the information to the central officer or investigator. Radio and newspaper agencies generally obtain information about strikes, thefts, accidents, etc. by this method. It is adopted by Government departments to get estimates of agricultural crops and the wholesale price index number. It is suitable when the information is to be obtained from a wide area and where a high degree of accuracy is not essential.

This method is suitable when:

1. Very high degree of accuracy is not required.
2. Regular and continuous information is needed.
3. The area of investigation is large enough.

Merits

1. Information is received regularly.
2. This method is comparatively cheap.
3. It gives results easily and promptly.
4. It can cover a wide area under investigation.
5. It is particularly useful for special purpose enquiries like inviting price quotations from different group markets etc.

Limitations

1. In this method, original data is not obtained.

2. It gives approximate and rough results.
3. As the correspondent used his own judgment, his personal bias may affect the accuracy of the information sent.
4. Different attitudes of different correspondents and agents may increase errors.

4. Mailed Questionnaires

A list of questions relating to inquiry, which is called schedule or questionnaire is prepared. Space is provided for each answer. Schedules are sent to informants by post, with a request to answer and return the same within a specified time. Prepaid postage stamp is generally affixed on the schedules, and assurance is also given with regard to secrecy of communication. The success of this method depends on the cooperation extended by the informants and the manner in which the questionnaire is drafted.

Merits

1. A large field can be studied by this method. We can use this method in case where informants are spread over a wide geographical area.
2. This is not an expensive method. It is cheap as mailing cost is much less than the cost of personal visits.
3. We can obtain original data by this method.
4. It is from the bias of the investigator as the information is given by the informants themselves.

Limitations

1. It may be difficult to get the cooperation of the informants in all cases. Some times they may not send back the schedules.
2. Schedules sent back by the informants may be incomplete or inaccurate and it may be difficult to verify the accuracy.
3. There may be delays in getting replies to the questionnaires.
4. This method can be used only when the informants are educated or literate, so that they return the questionnaires duly read, understood, and answered.
5. There is a possibility of getting wrong results due to partial responses and those who do answer may not include certain information which is essentially required. This method is suitable

for the following situations:

When it is compulsory by law to fill the questionnaire, e.g., Government agencies compel bank and companies, etc, to supply information regularly to the Government in a prescribed form.

a) This method can be successful when the informants are educated.

5. Questionnaires Filled by Enumerators (Schedules)

Mailed questionnaire method poses a number of difficulties in collection of data. In many cases the filled questionnaires received are incomplete, inadequate and unrepresentative.

The second alternative approach is to send trained investigators or enumerators to informants with standardized questionnaire which are to be filled in by the investigators themselves. The investigator helps the informants in recording their answers. The investigators should be honest, tactful and painstaking. This is the most common method used by research organizations. They train investigators properly and specifically for the purpose of an enquiry and also train them in dealing with different persons tactfully to get proper answers to the questions under study. The statistical information collected under this method is highly reliable.

Merits

1. It can cover a wide area.
2. The results are not affected by personal bias.
3. True and reliable answer to difficult questions can be obtained through establishment of personal contact between the enumerator and the informant.
4. As the information is collected by trained and experienced enumerators, it is reasonably accurate and reliable.
5. This method can be adopted in those cases also where the informants are illiterate.
6. Personal presence of the investigator assures complete response and the respondents can be persuaded to give the answers to questionnaire.

Limitations

1. It is an expensive method as compared to other methods of

primary collection of data, as the enumerators are required to be paid.

2. This method is time consuming since the enumerator is required to visit people spread out over a wide area.
3. This method needs the supervision of investigators and enumerators,
4. Enumerators need to be trained. Without proper training, enumerators may collect vague and incomplete information leading to wrong conclusions.
5. It needs a large group of investigators to cover the wide area of universe and therefore it can be used by bigger organizations.

6 Miscellaneous Techniques of Primary Data Collection

1. Warranty Cards: warranty cards are usually postal sized cards which are used by dealers of consumer durables to collect information regarding their products.

2. Distributor or Store Audits: In the method the distributors get their retail stores audited through salesmen and use such information to estimate market size, market share, seasonal purchasing pattern and so on.

3. Pantry Audits: pantry audit technique is used to estimate consumption of the basket of goods at the customer levels, wherein the investigator collects an inventory of types, quantities, and prices of commodities consumed.

4. Consumer Panels: An extension of the pantry audit approach on a regular basis is known as Consumer Panel, where a set of customers are arranged to come to an understanding to maintain detailed daily records of their consumption and he same is made available to the investigator on demand.

5. Use of Mechanical Devices: In this eye cameras are designed to record the focus of eyes of s respondent on a specific portion of a sketch or a diagram or written material, which in turn is useful in designing advertisement material.

6. Projective Techniques: In such techniques, the individual's responses to the stimulus - situation are not taken at their face value. Rather the responses to these stimuli are interpreted as indicating individual's own view, his personality structure, his needs tensions etc

in the context of some pre-established conceptualization of what the individual's responses to the stimuli mean.

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.

8. Content analysis: This technique consists of analyzing the contents of documentary materials such as books, magazines, newspapers, journals etc and the content of all other verbal materials which can be either spoken or pointed out.

The analysis of content is a central activity whenever one is concerned with the study of the nature of verbal materials.

2.1.5.2 Drafting the Questionnaire (Qualities of a Good Questionnaire)

Following are the basic principles for drafting the questionnaire:

1. Covering letter - The person conducting the survey must introduce himself and make the aims and objectives of the enquiry clear to the informant. A personal letter can be enclosed indicating the purposes and aims of enquiry. The informant should be taken into confidence. He should be assured that his answers will be kept confidential. A self — addressed and stamped envelope should be enclosed for the convenience of the informant to return the questionnaire.

2. Number of questions- Minimum number of questions based on the objectives and scope of enquiry only should be asked. More the number of questions. Lesser the possibility of good and proper response. Fifteen to twenty five questions should be sufficient for making the required enquiry, Lengthy questions should preferably be divided into simple parts, and irrelevant questions should be avoided.

3. Personal questions- personal questions like asking about his addictions should be avoided. The Informant may not desire to answer such questions which may disclose his confidential, private or personal information. Questions affecting the sentiments for the informants should not be asked.

4. The questions should be simple and clear- The language of the questions should be easy to understand.

5. The questions should be arranged logically- It helps in classification and tabulation of data. It is not logical to ask a man his income before asking him whether he is employed or not. There should be a proper sequence of the questions.

6. Instructions to the Informants- Clear and definite instructions for filling in the questionnaire and address where completed questionnaire should be sent must be given.

7. The questions should be divided and subdivided under different heads and subheads- The question should be divided and sub-divided under proper heads and sub-heads and should be properly numbered for the convenience of the informant and the investigator

8. Multiple Choice Questions- Questions should be framed in such a way that the answers are factual or objective and the informant should be able to give the answers simply by using a tick mark in the blank

Which of the following languages you use most for writing? (Put a tick mark)

1. English ☐ 2. Hindi ☐
3. Punjabi ☐ 4. Urdu ☐
5. Any other ☐

9. Simple Alternative Questions. (Yes/No) As far as possible the question should be framed in such a way that they are answerable in 'Yes' or 'No' or ' Right' or Wrong' e.g.

- *Are you married? Yes/No*
- Are you employed? Yes/No

10. Specific Information Questions. We get specific answers to certain types of questions. These questions are simple and direct.

- In which class do you read?
- How many brothers have you?
- What is your mother tongue?
- What is your father?

11. Open Question. - Open question makes the informant free to give any reply he chooses. Such questions are difficult to tabulate and increase labor in statistics work and should be minimum in number in questionnaire. Example:

(a) Suggest the measures to solve the problems of poor students in

University of Delhi.

(b) How will you solve the wage problem in your industry?

12. Relevant Question- The question should be directly related to the point under enquiry for which the data is being collected.

13. Avoidance Of Leading Questions- As far as possible leading questions should be avoided. Why do you like Taj Mahal Tea? Instead of such simple question, two questions can be framed for enquiry, namely.

14. Attractive Layout- The questionnaire should be made to look as attractive as possible, keeping in view the possible answer to the questions of schedule, sufficient space should be provided.

2.1.5.3 IMPORTANT ISSUES IN QUESTIONNAIRE FORMATION

Define the issue - It is very important for the Researcher to define precisely the issue that he is researching. The questionnaire should make it clear the issue. Each question should be cheeked against the issue that is being researched.

Should the Question be Subjective or Objective - Researchers have no available rules to follow in deciding whether to make their questions Subjective or objective. They must be aware, however, of the fact that the choice will influence their results.

Positive or Negative Statements - It is better to use positive and negative statements alternately to average out the effect of each wording.

Use Simple Words - Words used in questionnaires should be words with only one meaning, a meaning known to everybody.

Avoid Ambiguous Questions - Ambiguous questions mean different things to different people. Naturally, comparable replies cannot be received from respondents who take a question to mean different things. So it is very important to avoid ambiguous questions.

Do not Ask Questions in a way that will involve Generalizations - Questions should always be stated in specific terms. If generalizations are desired, the researcher should make them from the specific data obtained.

"Cushion" Questions they may seem Unreasonable to Respondent - In many researches it is desirable to know the income of respondent So that comparison can be made. A sudden Question : What is your

income ? may impress the respondent as being too personal. A brief explanation about the reason for asking such a question is often used to case the respondent's reaction. Even interviewers may explain, then the request for income data may seem more reasonable to the respondent.

Use Split Ballot Wherever Possible - No one working it correct one for a question. Different wordings may get different reassures, yet no one can say one wording is right and another is wrong. It is important for the researcher to realize this situation exists and to understand what effect a particular phrasing may have on results. To do this the "Split ballot" technique can be used. Whenever there are two wordings for which to choose, but no basis on which of Pick one over the other, one can be used on half the questionnaires and the other on the other half.

2.1.5.4 COLLECTION OF SECONDARY DATA

The chief sources of secondary data may be broadly classified into the following two groups:

- ❖ Published Sources
- ❖ Un-published Sources

1. Published Sources of Secondary Data

There are a numbers of National (Government, Semi-Government and Private) Organisations, and also International agencies, which collect statistical data relating to Business, Trade, Labour, Prices, Consumption, Production, Industries, Agriculture, Income, Currency and Exchange, Health, Population and a number of Socio-Economic phenomena and publish their findings in statistical reports on a regular basis (monthly, quarterly, annually, adhoc). These publications of the various organisations serve as a powerful source of secondary data. Given below is a brief summary of these sources:

(1) Official Publications of Central Government: The following are the various government organisations along with their year of establishment which collect, compile and publish statistical data on a number of topics of current interest - Prices, Wages, Population, Production and Consumption, Labour, Trade, Army, etc.

(a) Office of the Registrar General and Census Commissioner of India, New Delhi (1949)

(b) Directorate General of Commercial Intelligence and Statistics - Ministry of Commerce (1895)

(c) Labour Bureau - Ministry of Labour (1946)

(d) Directorate of Economics and Statistics - Ministry of Agriculture and Irrigation (1948)

(e) The Indian Army Statistical Organisation (IASO) - Ministry of Defence (1947)

(f) National Sample Survey Organisation (NSSO) - Department of Statistics, Ministry of Planning (1950)

(g) Central Statistical Organisation (CSO) - Department of Statistics, Ministry of Planning (1951)

(2) Publications of Semi Government Statistical Organisations: Very useful information is provided by the publications of the Semi Government Statistical Organisations as enumerated below.

(a) Statistics Department of the Reserve Bank of India (Mumbai), which brings out an annual report on the Bank, Currency and Finance; Reserve Bank of India Bulletin (Monthly) and various monthly and quarterly reports.

(b) Economic Department of Reserve Bank of India

(c) The Institute of Economic Growth, Delhi

(d) Gokhale Institute of Politics and Economics, Pune

(e) The Institute of Foreign Trade, New Delhi

Moreover the statistical material published by the institutions like Municipal and District Boards, Corporations, Block and Panchayat Samitis on Vital Statistics (Births and Deaths), Health, Sanitation and other related subjects provides fairly reliable and useful information.

(3) Publications of Research Institutions: Individual Research scholars, the different departments in the various Universities of India and various Research Organisations and Institutes like Indian Statistical Institute (ISI), Calcutta and Delhi; Indian Council of Agricultural Research (ICAR), New Delhi; Indian Agricultural Statistics Research Institute (IASRI), New Delhi ; National Council of Educational Research and Training, New Delhi; National Council of Applied Economic research, New Delhi; The Institute of Applied Manpower Research, New Delhi; The Institute of Labour Research, Mumbai; Indian

Standards Institute, New Delhi and so on, publish the findings of their research programmes in the forms of research papers or mono graphs or journals which are a constant of secondary data on the subjects concerned.

(4) Publications of Commercial and Financial Institutions: A number of private, commercial and trade institutions like Federation of Indian Chamber of Commerce and industries (FICCI), Institute of Chartered Accountants of India (ICA), Trade Unions, Stock Exchanges, Bank Bodies, Cooperative Societies etc., publish Reports and Statistical Material on current economic business and other phenomena.

(5) Reports of various Committees and Commissions appointed by the Government: The report of the survey and enquiry commissions and committees to find their expert views on some important matters like wages, dearness allowance, prices, national income, taxation, land, education etc. are invaluable source of secondary information.

(6) Newspapers and Periodicals: Statistical material on a number of important current socio-economic problems can be obtained from the numerical data collected and published by some reputed magazines, periodicals, and newspapers like eastern economist, economic times, the financial express, Indian journal of economics, commerce, capital, transport, statesman's yearbook and the times of India year book etc.

(7) International Publications: The publications of a number of foreign governments of international agencies provide in valuable statistical information on a variety of important economic and current topics.

2. Unpublished Sources of Secondary Data

The statistical data need not always by published. There are various sources of unpublished statistical material such as the record maintained by the private firms or business enterprises who may not like to relates their data to any outside agency; the various departments and offices of the central and state governments; the researches carried out by the individual research scholars in the universities or research institutes.

2.1.5.5 APPROPRIATE METHOD OF DATA COLLECTION

There are various sources of data collection, so the researcher must judiciously select the method (s) best suited for his study keeping in view the following factors:

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) is to be used or the data not yet available (Primary data) should 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 however may not be as efficient and effective as some other costly method, but a trade-off has to be made. Thus financial constraint can be a big hindrance in the way of a fine research.

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 relatively shorter period of time. Thus, the time at the disposal of the researcher affects the selection of the method by which data is to be collected.

4. Precision Required: The degree and extent of precision required is yet another important factor to be considered at the time of selecting the method of data collection.

2.1.6 Self Check Exercises

Q1: What do you mean by primary data?

Q2: What do you mean by secondary data?

2.1.7 SUMMARY

At the end, one must always remember that each method of data collection has its own pros and cons, has its own uses and none is superior in all the situations. In case funds permit and more information is desired, personal interview method may be said to be a relatively better option. In case time is ample and funds are limited, and more information is to be gathered, with relatively lesser precision, then mail-questionnaire can be preferred. When funds and time, both are ample, but less or no precision is required then personal interview or mail questionnaire or a joint use of the two can be out to use. Where a wide geographic area is to be covered then again, mail questionnaire can be used. The secondary data can be used in case the researcher finds it 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. When the respondent knows the reason and can tell the same if asked, then a non-projective questionnaire using direct questions may yield satisfactory results, even in case of attitude surveys.

Thus, the most desirable approach with regard to one of the selection of the methods adopted, depends on the nature of the particular problem and on the time and the resources (money, personnel etc) available, along with the desired degree of accuracy.

2.1.8 GLOSSARY

- Data: A single piece of information, as a fact, statistic, or code.
- Questionnaire: A form containing a set of questions, especially one addressed to a statistically significant number of subjects as a way of gathering information for a survey
- Schedule: An ordered list of questions or a standardized questionnaire relating to inquiry which is to be filled in by the investigators themselves
- Enumerator: Someone who collects census data by visiting individual homes

2.1.9 Exercise

(A) Short Questions

Q1: What do you mean by schedule?

Q2: Differentiate between primary data and secondary data?

Q3: Who are enumerators?

(B) Long Questions

1. Differentiate between the appropriate needs for primary and / or secondary data, elucidating the merits and demerits of both.
2. Illustrate the different modes of collection of

o Primary Data,

o Secondary Data

and highlighting the merits and demerits of each technique.

3. In what circumstances would you prefer a Personal Interview over a Questionnaire and vice-versa?
4. Enumerate the difference between a questionnaire and a schedule.
5. What are the essential qualities to be kept in mind while drafting a questionnaire?

2.1.10 SUGGESTED READINGS

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BBA Part-III | Paper : BBA-501
Semester-V | Business Research Methods
Lesson No. 2.2 | Author : Gurpreet Singh

QUALITATIVE TECHNIQUES OF DATA COLLECTION

LESSON STRUCTURE

2.2.0 OBJECTIVES

After studying this unit, you should be able to:

- Understand what are qualitative techniques of data collection.
- Explain the purpose of quantitative techniques.
- Understand the methods of quantitative methods of data collection.
- Able to identify features commonly associated with quantitative research rather than with qualitative research.

- Aware of key terms associated with quantitative research

2.2.1 INTRODUCTION

Qualitative research is a method of inquiry employed in many different academic disciplines, traditionally in the social sciences, but also in market research and further contexts. Qualitative researchers aim to gather an in-depth understanding of human behaviour and the reasons that govern such behaviour. The qualitative method investigates the *why* and *how* of decision making, not just *what*, *where*, *when*. Hence, smaller but focused samples are more often needed than large samples. Qualitative research is grounded in the assumption that individuals construct social reality in the form of meanings and interpretations, and that these constructions tend to be transitory and situational. Use qualitative methods to capture what people say about their meanings and interpretations. Qualitative research typically involves qualitative data, i.e., data obtained through methods such interviews, on-site observations, and focus groups that is in narrative rather than numerical form. Such data are analyzed by looking for themes and patterns. It involves reading, rereading, and exploring the data.

Qualitative methods include:

- Interviews
- Focus groups
- Observation groups

2.2.2 QUANTITATIVE RESEARCH

The term quantitative data is used to describe a type of information that can be counted or expressed numerically. This type of data is often collected in experiments, manipulated and statistically analyzed. Quantitative data can be represented visually in graphs, histograms, tables and charts. Quantitative inquiries use numerical and statistical processes to answer questions. Statistics are used in a variety of ways to support inquiry or program assessment/evaluation. Descriptive statistics means numbers used to describe a group of items. Inferential statistics are computed from a sample drawn from a larger population with the intention of making generalizations from the sample about the whole population. The accuracy of inferences drawn from a sample is critically affected by the sampling procedures used. It is important to start planning the statistical analysis at the same time that planning for an inquiry

begins. Decisions about analysis techniques to use and statistics to report are affected by levels of measurement of the variables in the study, the questions being addressed, and the type and level of information that you expect to include in reporting on your discoveries. The Quantitative data collection methods rely on random sampling and structured data collection instruments that fit diverse experiences into predetermined response categories. They produce results that are easy to summarize, compare, and generalize. A brief consideration of the major distinctions between quantitative research and qualitative research can put qualitative research into context.

Table 1 : Comparison of features of Quantitative and Qualitative approaches to research

QUANTITATIVE	QUALITATIVE
Objective	Subjective
Deductive	Inductive
Generalisable	Not Generalisable
Numbers	Word

Both designs, quantitative and qualitative are said to be systematic. In fact having a system or following a process is a defining principle of research. Broadly speaking, quantitative research is thought to be objective whereas qualitative research often involves a subjective element. It is thought that in gaining, analysing and interpreting quantitative data, the researcher can remain detached and objective. Often this is not possible with qualitative research where the researcher may actually be involved in the situation of the research. Consider a study being undertaken into waiting times in the Accident & Emergency (A&E) Department of a hospital.

2.2.3 PURPOSE OF QUALITATIVE RESEARCH

Qualitative research has its roots in social science and is more concerned with understanding why people behave as they do their knowledge, beliefs, fears, etc(e.g., why do patients prefer to be involved in decision-making about their treatment?) The aim of qualitative data-collection methods is to be able to tackle issues, try to understand them and explain the impact they have on people's behaviour and ways of thinking: issues that can only be broached using these methods. It is also, however, a matter of reducing assumptions, preconceptions

or prejudices that all human beings carry with them when they meet other people. These methods consist of descriptions and questions, based on three criteria:

Why? This study must try to respond to a specific objective: obtain socio-economic information to set up a mother-child health project.

What should be observed? It must focus on an object fixed in time, geographically and sociologically: describe the economic power of women in a post-war situation in a certain area of a country.

How? It must follow a set approach, in other words a series of more or less standardized procedures: obtain this information using methodology defined beforehand.

2.2.4 METHODS OF QUALITATIVE RESEARCH

Qualitative methods include:

1. Observation groups
2. Interviews
3. Focus groups
4. Projective techniques

2.2.4.1 Observation groups

Observational techniques are methods by which an individual or individuals gather first hand data on programs, processes, or behaviors being studied. They provide evaluators with an opportunity to collect data on a wide range of behaviors, to capture a great variety of interactions, and to openly explore the evaluation topic. By directly observing operations and activities, the evaluator can develop a holistic perspective, i.e., an understanding of the context within which the project operates. This may be especially important where it is not the event that is of interest, but rather how that event may fit into, or be impacted by, a sequence of events. Observational approaches also allow the evaluator to learn about things the participants or staff may be unaware of or that they are unwilling or unable to discuss in an interview or focus group.

When to use observations Observations can be useful during both the formative and summative phases of evaluation. For example, during the formative phase, observations can be useful in determining whether or not the project is being delivered and operated as planned. In the hypothetical project,

observations could be used to describe the faculty development sessions, examining the extent to which participants understand the concepts, ask the right questions, and are engaged in appropriate interactions. Such formative observations could also provide valuable insights into the teaching styles of the presenters and how they are covering the material.

The Role of the Observer

There are various methods for gathering observational data, depending on the nature of a given project. The most fundamental distinction between various observational strategies concerns the extent to which the observer will be a *participant* in the setting being studied. The extent of participation is a continuous process that varies from complete involvement in the setting as a full participant to complete separation from the setting as an outside observer or spectator. The participant observer is fully engaged in experiencing the project setting while at the same time trying to understand that setting through personal experience, observations, and interactions and discussions with other participants. The outside observer stands apart from the setting, attempts to be nonintrusive, and assumes the role of a "fly-on-the-wall." The extent to which full participation is possible and desirable will depend on the nature of the project and its participants, the political and social context, the nature of the evaluation questions being asked, and the resources available. "The idea is to negotiate and adopt that degree of participation that will yield the most meaningful data about the program given the characteristics of the participants, the nature of staff-participant interactions, and the socio-political context of the program". In some cases it may be beneficial to have two people observing at the same time. This can increase the quality of the data by providing a larger volume of data and by decreasing the influence of observer bias. However, in addition to the added cost, the presence of two observers may create an environment threatening to those being observed and cause them to change their behavior. Studies using observation typically employ intensive training experiences to make sure that the observer or observers know what to look for and can, to the extent possible, operate in an unbiased manner. In long or complicated studies, it is useful to check on an observer’s performance periodically to make sure that accuracy is being maintained. The issue of training is a critical one and may make the difference between a defensible study and what can be challenged as "one person’s perspective."

Participant observation is often difficult to incorporate in evaluations; therefore, the use of outside observers is far more common. In the hypothetical project, observations might be scheduled for all training sessions and for a sample of classrooms, including some where faculty members who participated in training were teaching and some staffed by teachers who had not participated in the training.

Issues of privacy and access : Observational techniques are perhaps the most privacy-threatening data collection technique for staff and, to a lesser extent, participants. Staff fear that the data may be included in their performance evaluations and may have effects on their careers. Participants may also feel uncomfortable assuming that they are being judged. Evaluators need to assure everyone that evaluations of performance are not the purpose of the effort, and that no such reports will result from the observations. Additionally, because most educational settings are subject to a constant flow of observers from various organizations, there is often great reluctance to grant access to additional observers. Much effort may be needed to assure project staff and participants that they will not be adversely affected by the evaluators' work and to negotiate observer access to specific sites.

2.2.4.2 Interviews

Interviews provide very different data from observations: they allow the evaluation team to capture the perspectives of project participants, staff, and others associated with the project. In the hypothetical example, interviews with project staff's can provide information on the early stages of the implementation and problems encountered. The use of interviews as a data collection method begins with the assumption that the participants' perspectives are meaningful, knowable, and able to be made explicit, and that their perspectives affect the success of the project. An interview, rather than a paper and pencil survey, is selected when interpersonal contact is important and when opportunities for follow up of interesting comments are desired.

Two types of interviews are used in evaluation research: structured interviews, in which a carefully worded questionnaire is administered; and in-depth interviews, in which the interviewer does not follow a rigid form. In the former, the emphasis is on obtaining answers to carefully phrased questions. Interviewers are trained to deviate only minimally from the question wording to ensure uniformity of interview administration. In the latter, however, the interviewers seek to encourage free and open responses, and there may be a trade off between

comprehensive coverage of topics and in-depth exploration of a more limited set of questions. In-depth interviews also encourage capturing of respondents' perceptions in their own words, a very desirable strategy in qualitative data collection. This allows the evaluator to present the meaningfulness of the experience from the respondent's perspective. In-depth interviews are conducted with individuals or with a small group of individuals.

Indepth interviews An in-depth interview is a dialogue between a skilled interviewer and an interviewee. Its goal is to elicit rich, detailed material that can be used in analysis. Such interviews are best conducted face to face, although in some situations telephone interviewing can be successful. In-depth interviews are characterized by extensive probing and open-ended questions. Typically, the project evaluator prepares an interview guide that includes a list of questions or issues that are to be explored and suggested probes for following up on key topics. The guide helps the interviewer pace the interview and makes interviewing more systematic and comprehensive.

The dynamics of interviewing are similar to a guided conversation. The interviewer becomes an attentive listener who shapes the process into a familiar and comfortable form of social engagement - a conversation and the quality of the information obtained is largely dependent on the interviewer's skills and personality (Patton, 1990). In contrast to a good conversation, however, an in-depth interview is not intended to be a two-way form of communication and sharing. The key to being a good interviewer is being a good listener and questioner. Tempting as it may be, it is not the role of the interviewer to put forth his or her opinions, perceptions, or feelings. Interviewers should be trained individuals who are sensitive, empathetic, and able to establish a nonthreatening environment in which participants feel comfortable. They should be selected during a process that weighs personal characteristics that will make them acceptable to the individuals being interviewed; clearly, age, sex, profession, race/ethnicity, and appearance may be key characteristics. Thorough training, including familiarization with the project and its goals, is important. Poor interviewing skills, poor phrasing of questions, or inadequate knowledge of the subject's culture or frame of reference may result in a collection that obtains little useful data.

2.2.4.3 Focus Groups

Focus groups combine elements of both interviewing and participant observation. The focus group session is, indeed, an interview not a discussion group,

problem-solving session, or decision-making group. At the same time, focus groups capitalize on group dynamics. The hallmark of focus groups is the explicit use of the group interaction to generate data and insights that would be unlikely to emerge without the interaction found in a group. The technique inherently allows observation of group dynamics, discussion, and firsthand insights into the respondents' behaviors, attitudes, language, etc. Focus groups are a gathering of 8 to 12 people who share some characteristics relevant to the evaluation. Originally used as a market research tool to investigate the appeal of various products, the focus group technique has been adopted by other fields, such as education, as a tool for data gathering on a given topic. Focus groups conducted by experts take place in a focus group facility that includes recording apparatus (audio and/or visual) and an attached room with a one-way mirror for observation. There is an official recorder who may or may not be in the room. Participants are paid for attendance and provided with refreshments. As the focus group technique has been adopted by fields outside of marketing, some of these features, such as payment or refreshment, have been eliminated.

When to use focus groups When conducting evaluations, focus groups are useful in answering the same type of questions as in-depth interviews, except in a social context. Specific applications of the focus group method in evaluations include

- identifying and defining problems in project implementation;
- identifying project strengths, weaknesses, and recommendations;
- assisting with interpretation of quantitative findings;
- obtaining perceptions of project outcomes and impacts; and
- generating new ideas.

2.2.4.4 Projective techniques

Projective techniques are based on the theory that the description of vague objects requires interpretation can only be based on the individual's own backround, attitudes, and values. The more vague or ambiguous the object to be described, the more one must reveal of oneself in order to complete the description. The following general categories of projective techniques are described Association, Completion, Construction and expression

1. Association Techniques

Association techniques require the subject to respond to the presentation of the stimulus with the first thing or things that come to mind. The word association technique requires the respondent to give the first word or thought that comes to mind after the researcher presents a word or phrase. In free word association, only the first word or thought is required. In successive word association, the respondent is asked to give a series of words or thoughts that occur after hearing a given word. The respondent is generally read a number of relatively neutral terms to establish the technique.

2. Completion Techniques

Completion techniques require the respondent to complete an incomplete stimulus. Two types of completion techniques are of interest to marketing researchers- sentence completion and story completion. Sentence completion, as name implies, involves requiring the respondent to complete a sentence. To some extent, it merely rephrases an open- ended question. Story completion is an expanded version of sentence completion. As the name suggests, part of story is told and the respondent is asked to complete it.

3. Construction Techniques

Construction techniques require the respondent to produce or construct something generally a story, dialogue, or description. They are similar to completion techniques, except that less initial structure is provided. Cartoon techniques present cartoon type drawing of one or more people in a particular situation. One or more of the individuals are shown with a sentence in bubble form above their heads and one of the others is shown with a black bubble the the respondent is to fill in.

4. Expressive Techniques

Role playing is the only expressive techniques utilizes to any extent by marketing researchers. In role playing, the consumer is asked to assume the role or behaviour of an object or another person, such as a sales representative for particular department store. The role playing customer can then be asked to try to sell a given product to a number of different consumers who raise varying objections.

Further methods used in qualitative research studies

Diary methods - The researcher or subject keeps a personal account of daily events, feelings, discussions, interactions etc.

Role-play and simulation - Participants may be asked to play a role, or may be asked to observe role-play, after which they are asked to rate behaviour, report feelings, and predict further events.

Case-study - This is an in-depth study of just one person, group or event. This technique is simply a description of individuals.

2.2.4.5 Case Study

Case study is widely used in qualitative research. It is very valuable in practice oriented fields. In case study an individual case is investigated. According to Sturman case study is a general term for the exploration of an individual, group or phenomenon." According to Simons "Case study is an in-depth exploration from multiple perspectives of the complexity and uniqueness of a particular project, policy, institution, program or system in a 'real life'."

Types of Singular Case Studies

1. Retrospective Case Studies – Studying the past phenomena is a detailed manner.
2. Snapshot Studies - It is related to the investigation of a particular time in the past of a phenomenon.
3. Diachronic Studies – It is considered similar to longitudinal studies.

Types of Multiple Case Studies

1. Nested Studies
2. Parallel Studies
3. Sequential Studies

2.2.5 Self-Check Exercises

Q1: State the methods of Qualitative Research?

Q2: What is retrospective Case Studies?

2.2.6 SUMMARY

The downside of qualitative research is that, invariably, only small numbers of subjects can be studied because data collection methods are so labour intensive. It is also often criticized for: being subject to researcher bias; the difficulties in analysing qualitative data rigorously; the lack of reproducibility and generalisability of the findings (findings may not be applicable to other subjects or settings). Proponents of qualitative research would however argue that there are strategies available to the qualitative researcher to protect against these

potential biases and to enhance the rigor of the findings. The methodological checklist below is developed to help readers of qualitative projects assess the quality of published research but they also provide a useful checklist for researchers to consider when designing their own qualitative research.

Check list for the appraisal of qualitative research

– Was the research question clearly identified?

– Was the setting in which the research took place clearly described?

– If sampling was undertaken, were the sampling methods described?

– Did the research worker address the issues of subjectivity and data collection?

– Were methods to test the validity of the results of the research used?

– Were any steps taken to increase the reliability of the information collected, for example, by repeating the information collection with another research worker?

– Were the results of the research kept separate from the conclusions drawn by the research workers?

– If quantitative methods were appropriate as a supplement to the qualitative methods, were they used?

2.2.7 Glossary

1. Quantitative Data: The term is used when a information can be expressed numerically.
2. Case Study: This is an in depth study of just one person, group or event. This technique is simply a description of individuals.

2.2.8 QUESTIONS TO EXERCISE

Short Question

1. Write a short note on focus group?
2. Write a short note on projective technique methods of qualitative research?

Long question

1. Explain the benefits of Qualitative techniques data collection?(Refer Para 2.2.4)
2. Explain the methods of qualitative research?(Refer Para 2.2.5)
3. Differentiate between Quantitative and Qualitative research? (Refer Para 2.2.3)
4. Write short note on Quantitative research? (Refer Para 2.2.3)

2.2.9 RECOMMENDED READINGS

- B.M. Aggarwal , Business Mathematics, Sultan Chand Publications, 2012.
- S.P. Gupta ,Statistical Methods , Sultan Chand & Sons publication, 2011.
- A.K.P.C. Swan, Business Research Methods and Statistics, 2011

QUESTIONNAIRE DESIGNING

Structure of the Lesson :

2.3.0 Objective

The main objective of this lesson explains to the students regarding concept, need and objectives of a Questionnaire. In addition to this, the lesson also covers various types, process, merits, demerits and structure of a questionnaire.

2.3.1 Introduction and objectives of a questionnaire

Questionnaires are a popular means of collecting data, but are difficult to design. In this method a questionnaire is sent to the concerned persons 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. In other words a questionnaire is

(a) a systematic list of questions;

(b) a set of stimuli to which the respondents are exposed in order to observe their verbal behaviour under these stimuli; and

(c) refers to a device for securing answers to questions by using a

form which the respondent fills in himself or the interviewer fills in on behalf of the respondents.

Any questionnaire may have three specific objectives as mentioned below :

(1) It must translate the information needed into a set of specific questions that the respondents can and will answer.

(2) A questionnaire must uplift, motivate and encourage the respondent to become involved in the interview to cooperate and to complete the interview.

(3) A questionnaire should have inherent strength in minimizing response error.

2.3.2 Types of Questionnaire

Generally questionnaires contain three type of measurement questions, that are, administrative questions, classification questions and target questions. On the basis of this division following are the various types of questions :

1. Contingency questions
2. Matrix questions
3. Scaled questions
4. Closed ended questions (Structured)
5. Open ended questions (Unstructured)

1. Contingency Questions : Such type of questions are those questions which can be answered only if the respondent gives a particular response to a previous question.

2. Matrix Questions : The matrix questions are those type of questions in which identical response categories are assigned to multiple questions.

3. Scaled Questions : For these questions responses are graded on a continuum.

4. Closed Ended or Structured Questions : Here respondents answers are limited to a fixed set of responses, e.g. yes or no, and multiple choice answers based questions.

5. Open Ended or Unstructured Questions : For these questions, the respondent supplies their own answer without being constrained by a fixed set of possible responses - e.g. word association, sentence completion, story completion and picture completion etc.

2.3.3 Design process for a questionnaire

A questionnaire design has some logical and practical steps as discussed here :

1. Specify the information needed.
2. Specify the type of interviewing.
3. Determine the content of individual questions.
4. Design the questions to overcome the respondent inability and unwillingness to answer.
5. Decide the structure of the question.
6. Determine the wording of the question.
7. Arrange the question in proper order.
8. Identify the form and layout of the questionnaire.
9. Reproduce the questionnaire after considering above mentioned steps.
10. Pretest the questionnaire before passing the final design of it.

2.3.4 Main aspects of a questionnaire

The main aspects of a questionnaire are :

(1) the general form of questionnaire;

(2) sequencing of questions; and

(3) formulation and wording of questions.

Researcher should mate the following with regard to these three main aspects of a qnestionnaire :

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 in which there are definite, concrete and pre-determined questions. The questions are presented with exactly the same wording and in the same order to all respondents. Resort is taken to this sort of standardization to ensure that all respondents reply to the same set of questions. When these characteristics are not present in a questionnaire, it can be termed as unstructured or non-structured questionnaire. A structured questionnaire is not suitable when a problem is being first explored and working hypotheses sought. Then on the basis of the results obtained in pretest operations from the use of unstructured questionnaires, one can construct a structured questionnaire for use in the main study.

2. Question Sequence : 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 opening questions should be such as to arouse human interest.

The questions that (1) put too great a strain on the memory or intellect of the respondent; (2) questions of a personal character; and (3) related to personal wealth it should generally be avoided.

Ideally, the question sequence should confirm to the respondent's way of thinking.

3. Question Formulation and Wording : 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. convey only one thought at a time;

(c) should be concrete and confirm as much as possible to the respondent's way of thinking.

In addition to this, simple words which are familiar to all respondents should be employed. Words with ambiguous meanings must be avoided. Similarly, danger words, catch-words or words with emotional connotations should be avoided.

2.3.5 Merits of questionnaire

The merits claimed on behalf of questionnaire method are as follows :

1. Suits in case of large Universe : Questionnaire method is suitable even when the universe is large as it is widely spread geographically.

2. Free from Bias : Data is free from bias of the interviewer as answers are in respondents own words.

3. Adequate Time : Adequate time is given to get well thought out answers.

4. Convenient Approach : Respondents, who are not easily approachable, can also be reached conveniently.

5. Applicable in case of large sample : Through this method large samples can be made use of, and thus results can be made more dependable and reliable.

6. Low Cost : Preparing and administration of the questionnaire involves less cost even if the sample size is large.

2.3.6 Demerits of questionnaire

The main demerits of the system are as given below :

1. Low Rate of Return : Generally there is low rate of return seen, especially in case of mail or post.

2. Chances of Biasness : Due to no-response is often indeterminate, chances of biasness may increase.

3. Educated Respondents : It can be used only when respondents are educated and cooperating.

4. Less Control over questionnaire : The control over questionnaire may be lost once it is sent.

5. Inflexibility : There is inbuilt inflexibility because of the difficulty of amending the approach once questionnaires have been dispatched.

6. Ambiguous Replies : There is also the possibility of ambiguous replies or ommission of replies.

7. Slowest Method : This method is likely to be the slowest of all methods.

8. Representation : In this method it is difficult to know whether willing respondents are truly representative.

2.3.7 Essentials of a good questionnaire

To be successful, questionnaire should be fulfill the following requirements/ essentials :

1. Questionnaire should be comparatively short and simple.
2. It should proceed in logical sequence moving from easy to more difficult questions.
3. Personal and intimate questions should be left to the end.
4. Technical terms and vague expressions capable of different interpretations should be avoided in a questionnaire.
5. Questions may be dichotomous (i.e. yes or no answers), multiple choice or open-ended.
6. There should be some control questions in the questionnaire those indicate the reliability of the respondents. Such questions introduce a cross-check to see whether the information collected is correct or not.
7. Adequate space for answers should be provided in the questionnaire to help editing and tabulation.
8. There should always be provision for indications of uncertainly.
9. Brief directions with regard to filling up the questionnaire should invariably be given in the questionnaire itself.
10. Finally, an attractive looking questionnaire, particularly in mail surveys, is a plus point for enlisting cooperation. The quality of the paper, alongwith its colour, must be good so that it may attract the attention of recipients.
11. Questionnaire should be tailor made. The Researcher must use the

same language in questionnaire design with which respondent is comfortable. The Researcher must avoid technical terms in case questionnaire is meant for the general public.

Guidlines for Constructing a Questionnaire

The researcher should pay attention on the followig points in constructing an appropriate and effective questionnaire :

1. The reasearcher must keep in view the problems he is to study for it provides the starting point for developing the questionnaire. He must be clear about the various aspects of his research problem to be dealt with in the course of his research project.

2. Appropriate form of questions depends on the nature of information sought, the sampled respondents and the kind of analysis indeed. The researcher must decide whether to use close or open ended questions. Questions should be simple and must be constructed with a view to their forming a logical part of a well thought out tabulation plan. The units of renumeration should also be defined preisely so that they can ensure climate and full reformation.

3. Rough draft of the questionnaire/schedule be prepared, giving due thought to the appropriate sequence of putting questions. Questionnaires which are previously injected may as well be looked into at this stage.

4. Researcher must invariably re-examine and in case of need may revise the rough draft for a better one. Technical defects must be minutely scrutinised and removed.

5. Pilot study should be undertaken for pre-testing the questionnaire. The questionnaire may be edited in the light of the results of pilot study.

6. Questionnaire must contain simple but straight forward directions for the respondents that they may not feel any difficulty in answering the questions.

7. A succinet questionnaire asks questions that aim to answer only the research objectives. Any questions beyond the scope of the research should be included. It is common for researchers to "cast the net wider" so that they will collect more data, regardless of whether these data are important or not. This usually happens when the researcher has not yet properly thought of research objectives.

8. The options/choices available for each question should be as exhaustive as possible. This will ensure the respondent can find an option which best suits his answer.

9. The order of questions should flow in a logical sequence.
10. Avoid double barrelled questions i.e. avoid asking two things in one question.

Self Check Exercise :

Q.1. What is Questionnaire? Discuss its objectives.

Q.2. Discuss various types of Questionnaire?

2.3.8 Summary

There is two sources of collection of data that are (1) Primary source of collection of data and (2) Secondary source of collection of data. Designing of questionnaire is the part of primary data collection system. Generally, various types of questions like administrative questions, classification questions and target questions contain in the questionnaires which can further renamed as contingency, matrix, scaled, closed ended, and open ended questions. The design of questionnaire should be based upon some logical or practical steps as discussed in this lesson. The main aspects of the questionnaire need to be taken care are the general form of questionnaire; sequencing of questions, formulation and wording of questionnaire.

2.3.9 Glossary

1. Open Ended Questions (Unstructured) : No options or predefined categories are given in the questionnaire.
2. Close Ended Questions (Structured) : Respondents answers are limited to a fixed set of responses.
3. Scaled Questions : Responses are graded on a continuous process.
4. Dichotomous Questions : Respondent answers with a 'yes' or a 'no'.
5. Questionnaire : A document containing set of questions.

2.3.10 Answers to self check questions

Ans.1 Questionnaire is a systematic list of questions. Its objectives are :

1. Translation of information.
2. Must uplift the respondent.
3. Must motivate or encourage the respondent.
4. Should have inherent strength to minimize the response error.
5. Should be able to overcome the respondents' inability to answer certain questions.

Ans.2 Types of Questionnaire :

(1) Open Ended Questionnaire

(2) Closed Ended Questionnaire

(3) Matrix Type Questionnaire

(4) Scaled Questionnaire

2.3.11 Exercise

(A) Short Question :

Q.1. Define Questionnaire.

Q.2. What do you mean by Question ?

Q.3. What is required while deciding question content ?

(B) Long Questions :

Q.1. What are different sources of data collection? Discuss the role of questionnaire need to play in the process of primary data collection.

Q.2. What is a questionnaire? What practical steps are required for designing a questionnaire?

Q.3. Distinguish between open and close ended questionnaires. Discuss the main aspects of a questionnaire.

2.3.12 Suggested Readings

1. Research Methods for Business
A Skill Building Approach
By : Dr. S.K. Das, Surendra Publications.

2. Business Research Methods and Statistics
By : A.K.P.C. Swain
Kalyani Publishers.

MEASUREMENT PROCESS

Structure of the Lesson :

2.4.0 Objective

Measurement is the foundation of any scientific investigation which is the main objective of this lesson. This lesson explains the concepts and

characteristics of sound measurement process. And the second part of lesson discusses in detail various tests of measurement of error, like validity, reliability and practicality.

2.4.1 Introduction

A common feature of research is the attempt to have respondent communicate their feelings, attitudes, opinions and evaluation in some measurable form. Most texts on management research explain the four levels of measurement: nominal, ordinal, interval and ratio.

In other sense, every day we come across measurement of certain objects or things such as height, weight or a feature of physical object. In addition to this we may also like to measure the personality and attitude of a person or his preferences towards selected object or phenomena. As a dictionary meaning, to measure is to discover the extent, dimensions, quantity or capacity of something, especially by comparison with a standard. And a particular procedure of assigning numbers or symbols to measure something is called a scale of measurement.

2.4.2 Measurement in Research

Measurement denotes "the assignment of certain numbers or symbols to empirical events, objects in compliance with a set of well developed and meaningful rules in a systematic fashion".

In our daily life we are said to measure when we use some yardstick to determine weight, height, or some other feature of a physical object. We also like to measure a song, a painting or the personalities of our friends. In this way we try to measure physical objects as well as abstract concepts. Measurement is a relatively complex and demanding task, especially when it concerns qualitative or abstract phenomena.

So, it is easy to assign numbers in respect of properties of some objects, but it is relatively difficult in respect of others, such as, measuring intelligence, conformity or martial adjustment etc. Hence, we can expect high accuracy in measuring the length of pipe with a yardstick, but if the concept is abstract and the measurement tools are not standardized, we are less confident about the accuracy of the results of measurement.

A researcher develops certain mapping rules and then translates the observations of property indicants using this rule. The several types of data whether qualitative or quantitative are generated for each variable/concept/ construct considered for the purpose, depending on assumption about mapping rules.

Mapping rules may have following characteristics :

1. Classification : At the first step numbers used are classified.
2. Order : Numbers are ordered at the next step.
3. Distance : Differences between numbers are ordered but no unique origin is there.
4. Origin : The number series has a unique origin indicated by zero.

Technically speaking, measurement is a process of mapping aspects of a domain onto other aspects of a range according to some rule of correspondence.

2.4.3 Type of data and measurement process

In measurement process data can be studied and categorized in various ways:

(1) Nominal Data
(2) Ordinal Data
(3) Interval Data
(4) Ratio Data

1. Nominal Data : This type of data are numerical in name only, because they do not share any of the properties of the numbers eg. we can record a person's marital status as 1,2,3 or 4 depending on whether the person is single, married, widowed or divorced.
2. Ordinal Data : Ordinal data refers to such situations based information in which we cann't anything except set up inequalities. For example, greater than (i.e.>) or less than (i.e.<) kind of measurement of data, but we cannot form differences between two variables. For instance diamond is harder than gypsum.
3. Interval Data : We refer data as interval data when in addition to setting up inequalities we can also form differences. For example, temperature 95^0-70^0= temperature 135^0-110^0, since equal temperature differences are equal in the sense that the same amount of heat is required to raise the temperature of an object from 70^0 to 95^0 or from 110^0-135^0.
4. Ratio Data : Ratio data refers to when in addition to setting up inequalities and forming differences we can also form quotients. For example, such data includes all the usual measurement of length, height, money amounts, weight, volume, area pressures etc.

2.4.4 Measurement Error

The main objective of measurement is that it should be precise and unambiguous, but it often not met within entirety, so the researcher must be aware about the under mentioned sources of error in measurement.

1. Respondent : Such type of error measurement process is occurred

when transient factors like fatigue, boredom, anxiety etc. limit the ability of the respondent to respond accurately and fully.

2. Situation : Any condition which places a strain on interview can have serious effects on the interviewer-respondent rapport. For example, if someone else is present, he can distort responses by joining in or merely by being present.

3. Measurer : The interviewer can distort responses by rewording or reordering questions. His behavior, style and looks may encourage or discourage certain replies from respondents. Errors may also creep due to careless mechanical processing, incorrect coding faulty tabulation and/or statistical calculations etc.

4. Instrument : The use of complex words, beyond the comprehension of the respondent, ambiguous meanings, poor printings, inadequate space for replies, response choice omissions etc. are a few things that can make measurement instrument defective and may result in measurement process.

Self Check Exercise-I

Q.1. Define the Measurement Error.

Q.2. What do you mean by 'measurement'?

2.4.5 Test or characteristics of sound measurement

The quality of data depends on sound measurement tool. And sound measurement tool must meet the test of validity, reliability and practically. Actually, these are three major considerations one should apply in evaluating a measurement tool.

Validity refers to the extent to which a test measures what we actually wish to measure.

Reliability refers to the accuracy and precision of a measurement procedure.

Practicality is concerned with a wide range of factors of economy, convenience and interpretability.

2.4.6 Validity

Validity is the extent to which differences found with a measuring instrument reflect true differences among those being tested. It requires the measurement tool to be sensitive to all the nuances of meaning in the variable and to changes in nuances one does not know what the true differences are. A test/ measurement that has validity in one situation may not be valid in a different situation or for a different purpose. So what is relevant depends on the nature of the research problem and the researcher's judgment. The methods of

determining validity may be grouped into the following categories :

(a) Content validity

(b) Criterion related validity

(c) Construct related validity

2.4.6.1 Content Validity : The content validity of a measuring tool (scale) is the extent to which it provides adequate coverage of the investigative questions guiding the study. The content related evidence shows how far a sample of items is representative of some defined universe or domain of content. If the instrument contains a representative sample of the universe, the content validity is good. Its determination is primarily judgmental and intuitive. It can also be determined by using a panel of persons who shall judge how well the measuring instrument meets the standards, but there is no numerical way to express it.

2.4.6.2 Criterion Related Validity : It relates to our ability to predict some outcome or estimate the existence of some current condition. This form of validity reflects the success of measures used for some empirical estimating purpose. The concerned criterion must possess the following qualities :

(1) Relevance : A criterion in which we can judge the proper measure.

(2) Freedom from Bias : A criterion which gives each subject an equal opportunity to score well.

(3) Reliability : A reliable criterion is stable or reproducible.

(4) Availability : The information specified by the criterion must be avoidable.

Infact, a criterion must be available.

Infact, a criterion related validity is a broad term that actually refers to (a) Predictive validity and (b) Concurrent validity.

Predictive Validity refers to the usefulness of a test in predicting some future performance. This validity is expressed as the coefficient of correlation between test scores and scores on another measure of known validity.

Concurrent Validity is the most complex and abstract. It refers to the usefulness of a test in closely relating to other measures of known validity.

2.4.6.3 Construct Validity :

A measure is said to possess construct validity to the degree that it confirms to predicted correlations with other theoretical propositions. For determining construct validity, we associate a set of other propositions with the results

measurements on our devised scale correlate in a predicted way with these other propositions; we can conclude that there is some construct validity.

2.4.7 Reliability

A measuring instrument is reliable if it provides consistent results. Reliable measuring instrument does contribute to validity, but a reliable instrument need not be a valid instrument. For example, a scale that consistently overweight objects by five kgs., is a reliable scale, but it does not give a valid measure of weight.

Two aspects of reliability viz., stability aspect and equivalence aspect deserve special mention.

2.4.7.1 Stability Aspect : The stability aspect is concerned with securing consistent results with repeated measurements of the same person and with the same instruments.

2.4.7.2 Equivalence Aspect : The equivalence aspect considers how much error may get introduced by different investigators or different samples of the items being studied. A good way to test for the equivalence of measurements by two investigators is to compare their observations of the same events. Thus, reliability can be improved in the following two ways :

(1) By standardizing the conditions under which the measurement takes place.

(2) By carefully designed directions for measurement with no variation from group to group, by using trained and motivated persons to conduct the research and also by broadening the sample of items used.

2.4.8 Practicality

From the operational point of view, the measuring instrument ought to be practical i.e. it should be economical, convenient and interpretable.

2.4.8.1 Economy : This consideration suggests that some trade-off is needed between the ideal research project and that which the budget can afford. Although more items give greater reliability, but in the interest of limiting the interview or observation time, we have to take only few items for our study purpose. In the same way, data collection methods to be used are also dependent at times upon economic factors.

2.4.8.2 Convenience : This test suggests that the measuring instrument should be easy to administer. For this purpose one should give due attention to the proper layout of the measuring instrument. For example, questionnaire provides clear instructions.

2.4.8.3 Interpretability : This test is especially important when persons other than the designers of the test are to interpret the results. In order to be interpretable, instrument must be supplemented by (a) detailed instructions for administering the test;

(b) scoring keys;

(c) evidence about the reliability; and

(d) guides for using the test and for interpreting results.

The technique of developing measurement tools involves a four stage process, consisting of

(a) Concept development;

(b) Specification of concept dimensions;

(c) Selection of indicators; and

(d) Formation of index.

Self Check Exercise-II

Q.1. What are the important aspects of Practicality?

Q.2. Discuss Reliability test.

2.4.9 Technique of Developing Measurement Tools : It is a four stage process. Following are the four stages:

1. Concept Development - It is related to the understanding of major concepts related to the study.
2. Specification of Concept Dimensions - This step involves specifying dimensions pertaining to the major concepts.
3. Selection of Indicators - After specifying dimensions next task of the researcher is to measure concepts. He does so by developing indicators, which are used to measure the concept.
4. Formation of Index : It is related to combining indicators to create an index.

2.4.10 Summary

Every investigation or survey must have the measurement process, and all measurements take one of four forms of data viz. nominal data, ordinal data, interval data and ratio data. But design problems include a variety of issues that can threaten the confidence we have in the findings because we have measured or observed things very accurately. Key among these problems is invalid operational definitions, poor measurement, designs and researcher bias that don't allow accurate conclusions.

2.4.11 Glossary

1. Reliability : It concerns with consistency.
2. Validity : It concerns with congruence or 'goodness of fit'.
3. Internal Validity : Study drawing appropriate conclusions from the data at hand.
4. External Validity : Ability to generalize from a study to a larger population.
5. Credibility : How accurately the data reflect reality.

2.4.12 Answers to Self Check Questions

Self Check Exercise-I

Ans.1. Measurement Error : It means presence of error in the measurement tools or process.

Ans.2. Measurement : It is to discover the extent, dimensions, quantity or capacity of something, normally by comparing with a standard.

Self Check Exercise-II

Ans.1. Important aspects of Practicality are

1. Economy
2. Convenience
3. Interpretability

Ans.2. Reliability Test : Reliability test means the extent to which a measuring device is consistent in measuring process, whatever it measures.

2.4.13 Exercise

(a) Short Questions :

Q.1. What are characteristics of good measurement?

Q.2. Discuss the Measurement Process.

Q.3. Define Nominal Data.

(b) Long Questions :

Q.1. Explain the role of Measurement in research by considering various types of data.

Q.2. What do you mean by mapping rules? Describe the possible ways or sources of errors in measurement process.

Q.3. What are major tests of sound measurement? Discuss in detail validity test.

2.4.14 Suggested Readings

1. Business Research Methods and Statistics
   By A.K.P.C. Swain
   Kalayani Publishers
2. Research and Writing (Across the Disciplines)
   By : P. Ramadass
   A Wilson Aruni
   MJP Publishers.

SCALING TECHNIQUES

Structure of the Lesson :

2.5.0 Objective

The main objective of this lesson is to provide detailed information to the students about the scaling techniques. So after reading this lesson they will

be able to understand various types of :

(1) Rating Scales;

(2) Ranking Scales; and

(3) Selection of an appropriate scale for particular research.

2.5.1 Introduction

Mapping is a valuable technique for visually displaying relationships and resources. For instance, in case of water supply project it can be useful to present the placement of wells, distance of the homes from the wells, other water supply systems etc. So, it gives researchers a good overview of the physical situation and may help to highlight relationship.

In the same way scaling is a technique that allows researchers through their respondents to categorize certain variables that they would not be able to rank themselves. For instance, researcher asks the respondents to bring certain types of herbal medicine and to arrange these into piles according to their usefulness. In such a case respondents would be asked to explain the logic of their ranking.

These both techniques may be used as participatory techniques in rapid appraisals or situation analysis.

Technically, scaling describes the procedures of assigning numbers to various degrees of opinion; attitude and other concepts. This can be done in two ways viz., (i) making a judgment about some characteristic of an individual and then placing him directly on a scale that has been defined in terms of that characteristic; and (ii) constructing questionnaires in such a way that the score of individual's responses assigns him a place on a scale.

2.5.2 Classification bases of scales

The number assigning procedures or the scaling procedures may be broadly classified on one or more of the following bases :

(a) Subject Orientation : Under it a scale may be designed to measure characteristics of the respondent who completes it or to judge the stimulus object which is presented to the respondent.

(b) Response Form : Under this we may classify the scales as categorical (rating scales) and comparative (ranking scales). In the categorical scales respondent scores some comparative scales respondent is asked to compare two or more objects.

(c) Degree of Subjectivity : Under this case the scale data may be based on whether we measure subjective personal preference or simply make non-preference judgments. In the former case, respondent is asked to choose on

the basis of preference and in later can simply asked to judge without reflecting any personal preference.

(d) Scale Properties : Considering scale properties, nominal scales merely classify without indicating order, distance or unique origin. Ordinal scales indicate magnitude relationships of 'more than' or 'less than', but indicate no distance or unique origin. Interval scales have both order and distance values, but no unique origin. Ratio scales possess all these features.

(e) Number of Dimensions : As per this base scales can be classified as 'one-dimensional' and 'multidimensional' scales. Under the former we measure only one attribute of the respondent or object, whereas in multidimensional an attribute space of 'n' dimensions, rather than a single dimension continuum.

(f) Scale Construction Techniques : Following are the five main techniques by which scale can be developed :

1. Arbitrary Approach : Here, scale is developed on adhoc basis.
2. Consensus Approach : Here judges evaluate the item chosen for inclusion in the questionnaire.
3. Item Analysis Approach : Here a number of items (individual) are developed into a test.
4. Cumulative Scale : Used to confirm some ranks of items with ascending or descending discriminating power.
5. Factor Scales : Used to identify relationship of inter-correlations of items.

2.5.3 Rating Scales

Rating Scales are used to judge properties of the objects in that reference to similar objects such as classifying objects like/dislike, approve/disapprove, yes/no etc.

2.5.3.1 Simple Category Scale : (Data used Nominal)

This scale relates to dichotomous question which provides two options usually a yes/no question.

E.g. Do you prefer laptop than a desktop?

Yes ☐ No ☐

2.5.3.2 Multiple Choice Single Response Scale : (Data used Nominal)

In such a scale question provides multiple options to answer.

E.g. which colour you wear most often?

White ☐ Black ☐ Red ☐ Blue ☐ Grey ☐

2.5.3.3 Multiple Choice Multiple Response : (Data used Nominal)

In such a scale questions provides multiple choices and welcome multiple responses also.

E.g. Check any of the subject you feel interesting in the B.Com course.

English	☐	Management	☐
Punjabi	☐	Economic	☐
Accounting	☐	Computers	☐

2.5.3.4 Likert type Rating Scale : (Data used Interval)

In this scale questions are used when survey requires a person to rate a product or a brand along a well defined, evenly spaced continuum.

E.g. Considering your last 10 years experience of service, would you say that your experience was

Delightful	☐	Excellent	☐
Satisfactory	☐	Unsatisfactory	☐
A Failure	☐		

Addition Advantages of Likert Type Scales

1. It is more reliable and effective
2. It is very easy to construct and use.
3. It permits the respondent to respond in a degree of concord or dissension.
4. They easily adapt to most attitude measurement situations.

2.5.3.4 Multiple Choice Likert Type Scale : (Used Ordinal or Interval)

In this scale series of questions are included all of which has the same answer scale.

E.g. considering your service experience of last 12 years, what you would say it was

	Delightful 4	Excellent 3	Satisfactory 2	Unsatisfactory 1
Experience of first 4 years	☐	☐		☐
☐ Experience of next four years	☐	☐		☐
☐ Experience of next four years	☐	☐		☐
☐				

2.5.3.6 The Semantic Differential Scale : (Data used Interval)

This scale asks a person to rate a product, brand or company based upon a seven point rating scale that has two bipolar adjectives at each end. For

example :

(1) Attractive .....Unattractive

(2) Simple.....Complicated

Advantages of Semantic Different Scales

1. It is more reliable and valid as compared to other scaling techniques
2. It reduces survey completion time

2.5.3.7 The Stapel Scale : (Data Used Ordinal or Interval)

The stapel scale is another variant of the multiple choice question that asks a person to rate a brand/product/service according to a certain characteristics on a scale from -5 or 5.

For Example : When thinking about management courses in ABC Institute of Management the word 'Innovation' aptly describes or poorly describes the institute?

Describes Poorly	(-5)	(-4)	(-3)	(-2)	(-1)	(0)	(+1)	(+2)	(+3)	(+4)	(+5)
Innovations	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

2.5.3.8 The Constant Sum Scale : (Data Used Ratio)

The constant sum scale question produces what is assumed to be a ratio measurement data. This data is the most powerful of all measurement scales because it is characterized by an absolute zero point and an equal interval scale.

Such data is obtained by asking the respondent to "Assign 100 points or percent across the answer options so as to reflect your degree of preference, importance or other evaluation."

For Example : While thinking for the reasons you purchase data mining software, please rate the following reasons according to their relative importance.

☐ Seamless integration with other software

☐ User friendliness of software

☐ Level of pre and post purchase service

☐ Level of value for the price

Note : Values/Scores must add upto 100.

2.5.3.2.5 Graphic Rating Scale : (Data used Interval)

The graphic rating scale is created to enable researchers to discern five differences. This makes it possible to have infinite number of ratings and

the respondent checks his response at any point along a continuum. The score is a measure of length (millimeters) from either end point

Very likely Very unlikely

Such scales also use pictures, icons or other visuals to communicate with rates, thus creating a varied data types.

2.5.4 ranking scales

In ranking scales the rater compares two or more objects and makes choices among them. The rank order question provides more powerful data than a simple multiple choice questions. Normally the open ended questions and the demographic questions are used on ranking scales. Following are the examples on rank order scaling :

2.5.4.1 Paired Comparison Scale : (Data used Ordinal) :

In paired comparison scale the respondent can express attitudes unambiguously by choosing between two objects. For example : For each pair of four small cars listed below, place a beside the one you would most prefer if you had to choose between the two.

☐ Maruti	☐ Maruti
☐ Indica	☐ Alto
☐ Santro	☐ Santro
☐ Indica	☐ Indica
☐ Maruti	☐ Alto
☐ Santro	☐ Alto

2.5.4.2 Forced Ranking Scale : (Data used Ordinal) :

The forced ranking scale lists attributes that are ranked relative to each other. For example, we may like to rank certain set of brands or products based on a specific attribute or characteristics. As regards fuel efficiency rank the following cars :

☐ Indica
☐ Maruti
☐ Santro
☐ Alto

2.5.4.3 Comparative Scale : (Data used Ordinal) :

Sometimes a manager or researcher is interesting in bench marking and hence calls for a standard by which other programs, processes, brands, points of scale or people are compared. For example, Do the comparison of the previous mutual fund's performance with the present one.

Superior		About the Same		Inferior
1	2	3	4	5

Such scale is best suited for such comparison if the respondents are familiar or knowledgeable with the standard.

Self Check Exercise :

Q.1. What are scales?

Q.2. Categorized the scales as 'Comparative Scales' and 'Non-comparative scales'.

2.5.5 Selection of an appropriate scale

There are a number of scaling techniques available to a researcher, each with its own strengths and weaknesses. However, the researcher's choice should be shaped by

(1) the specific information which is required to complete the research objectives;

(2) the adaptability of the scale to the data collection method and budget constraints; and

(3) the compatibility of the scale with the structure of the respondent's attitude.

Appropriate Applications of some scales (Attitude)

Attitude Component	Appropriate Type of Scale
Knowledge :	
(1) Awareness	Itemized Category
(2) Attribute beliefs	Itemized Category, Semantic differential (Rank order, Likert Constant Sum)
(3) Attribute Importance	Itemized Category, Constant Sum (Rank order, Likert)
Affect or Liking :	
(1) Overall Preferences	Itemized Category, Constant Sum (Rank order, Likert, Semantic differential)
(2) Specific attributes	Itemized Category, Semantic differential (Rank order, Constant Sum, Likert)

Action :

Intentions Itemized category, constant sum (Rank order, Likert)

2.5.6 Summary

Social Sciences researchers devise scaling procedure for the assignment of numbers or symbols to a property of objects so that the characteristics of numbers get associated with the properties in questions. The measurement scales can be classified as a rating or ranking scale according to nature of responses received. A rating scale is used when the respondents score on an object or on its indicant without comparing with other objects. But a ranking scale is used when the respondent participant makes comparison among two or more indicants or objects. Thus, the researcher should know these techniques in detail so as to develop/use an appropriate scale for his own study.

2.5.7 Glossary

1. Semantic Scale : Seven points scale.
2. Staple Scale : Ten points scale from -5 to 5.
3. Rating Scale : Rate/Judge the objects simply.
4. Ranking Scale : Rate/Judge the objects by comparing them.
5. Likert Scale : Summated Scales.
6. Arbitrary Scale : Scale developed on adhoc basis.

2.5.8 Answers to self check questions

Ans.1 Scales : Generally Social Science researchers use scales for the assignment of numbers or symbols to a property of objects, so that the characteristics of numbers get associated with the properties in questions.

Ans.2 (a) Comparative Scales are :

1. Pair-wise comparison scale
2. Rank-order scale
3. Constant sum scale
4. Q-sort scale
5. Guttman scale

(b) Non-Comparative Scales are :

(1) Continuous rating scale

(2) Likert scale

(3) Thurstone scale

(4) Item-wised rating scale

(5) Semantic differential scale

(6) Stapel scale

2.5.2.5 Exercise

(A) Short Questions :

Q.1. What is scaling technique?

Q.2. Define constant sum scale.

Q.3. Explain comparative scale.

(B) Long Questions :

Q.1. Distinguish between rating scales and ranking scales. Discuss the situations where they will be more appropriate.

Q.2. Discuss different rating scales with examples based on levels of measurement.

Q.3. What are the comparative and non comparative scaling techniques? Discuss.

2.5.10 Suggested Readings

1. Research Methods for Business
(A Skill Building Approach)
By : Dr. S.K. Das
Surendra's Publication

2. Business Research Methods and Statistics
By : A.K.P.C. Swain
Kalyani Publishers.

LESSON NO. 2.6 AUTHOR : SANDEEP S. VIRDI

REPORT WRITING

STRUCTURE of the Lesson

2.6.0 OBJECTIVES

After reading this chapter, the reader should be able to:

- Understand the importance and need for Report writing.
- Types of reports and the guidelines for writing a report.
- The fundamental structure of a Business Research Project Report.

2.6.1 INTRODUCTION

As part of the research proposal, the sponsor and the researcher agree on what types of reporting will occur both during and at the end of the research project. Depending on the budget for the project, a formal presentation may not be part of the reporting. A research sponsor,

however, is sure to require a written report and a poorly presented report can destroy a research project. This fact prompts researchers to make special efforts to communicate clearly and effectively their findings, analysis of findings, interpretations, conclusions and recommendations.

Interpretation : Interpretation is drawing inferences from the results. It is considered a very important part of the research process. It is basically a reasonable explanation of various precautions in interpreting the results. The Researcher must seek the help of an expert while interpreting the results.

2.6.1.1 Significance of Report Writing

Research report is one of the vital aspects of research and is considered a major constituent of the research study, for the research task remains incomplete till the report has been presented and / or written. As a matter of fact even the most brilliant hypotheses, highly well designed and conducted research study, and the most striking generalization and findings are of little value unless they are effectively communicated to others. The purpose of research is not well served unless the findings are made known to others.

Writing of report is the last step in a research study and requires a set of skills somewhat different from those called for in respect of the earlier stages of research.

2.6.1.2 Types of Research Reports

Depending on its intended audience, the research report may be either technical or popular in orientation. While both approaches describe the research study, its methodology, findings, conclusions and recommendation, they can differ considerable in terms of detail, writing style, use of technical terms and length. In general, the higher the executive status of the audience, the shorter the report will tend to be.

1. Technical Report

The technical report is generally intended for other researchers, or for research managers. The report should enable another researcher to critique methodology, check calculations and accuracy and to follow everything which is done on a step by step basis, A brief definition of every technical term should be given. A general outline of a technical report can be as follows:

1. Summary of Results
2. Nature of the Study
3. Methods Employed
4. Data
5. Analysis of Data and Presentation of Findings
6. Conclusions
7. Bibliography
8. Technical Appendices
9. Index

2. Popular Report

The popular report is intended for a more general audience, one that is not that conversant with the details of research methods and terminology. Compared to the technical report, the presentation will be a bit livelier with increased attention to headlines, flow diagrams, charts, tables and occasional summaries for the purpose of stressing major points. A popular report gives emphasis on simplicity and attractiveness, practical aspects and policy implications. A general outline of a popular report can be as follows:

1. Findings and their Implications
2. Recommendations for Actions
3. Objectives of the Study
4. Methods Employed
5. Results
6. Technical Appendices

As different kinds of audiences may be interested in the results of the same research study, it is sometimes necessary to write both a technical report and a popular report.

2.6.2 GUIDELINES FOR WRITING A REPORT

Researchers who are effective in report writing agree that there are a series of guidelines which should be followed:

Such guidelines can be enumerated as under:

❖ Consider the Audience: Make the report clear; use only words familiar to the readers and define all technical terms. To make the comparison of figures easier, use percentages, rounded off figures,

ranks or ratios; put the exact data in a table within the text or in the appendix. Use graphic aids (charts, graphs, pictures, etc.) wherever they help clarify the presentation of data.

❖ Address the Information Needs: Remember the research report is designed to communicate information to decision makers. Make sure that it clearly relates the research findings to the objectives of the management.

❖ Be Concise, Yet Complete: Most managers will not want to read about the details of a research report. Knowing what to include and what to leave out is a difficult task. It is up to you, the researcher, to take into account the information needs of the decision maker when writing your report.

❖ Be Objective: You will probably face at least one situation in which you know that the client will not easily accept the results. The findings may conflict with the decision maker's experience a judgment or they may reflect unfavorably on the wisdom of previous decisions. In these circumstances, there is a strong temptation to start the report by making the result more acceptable to the management. A professional researcher, however, will present the research findings in an objective manner (i.e., without bias) and will defend their validity if they are challenged by the client.

❖ Style: The style of writing a research report is important because it shows a way of presentation. Here are a few a tips to help you write a report that is easy to read.

- Write in brisk, business like English
- Use short words and sentences.
- Be concise.
- Use the active voice.
- Consider appearance – space makes a long report easier to read.
- Write in present tense.

2.6.3 Guidelines for REPORT WRITING

Report writing is one of the most important aspect of research. Even if the researcher has done a great research but he is not able to present the facts in the form of report. Then his efforts are wasted. The basic aim of research is not well served unless the findings are known to others.

2.6.3.1 Structure of Report : The Structure of report can be discussed as :

(1) Title Page (2) Table of Contents
(3) List of Tables/graphs etc (4) Executive Summary
(5) Introduction (6) Literature review
(7) Methodology (8) Results
(9) Limitations (10) Conclusions and Recommendations
(11) References (12)Appendices

1. Title Page - It should Contain a title which conveys the basic structure of study, name of organisation submitting the report and name of the recipient organisation.

2. Table of Contents - Table of Contents is a sequentially arranged list of the topics covered in the report along with their page references.

3. List of Tables/ Graphs - This table lists the titles and the page numbers of all visual aids i.e. tables, figures, graphs etc.

4. Executive Summary - It is one of the most important part of report. It is the short summary of the complete content of the project. It should be short but at the same time it should convey the basic essence of the project. It must summaries the complete content of the report.

5. Introduction - It gives the reader a clear understanding about the central issue of the research. It should include a full statement of the research objectives. It should give brief introduction about the problem. If the research is done on a paticular organization, then it must tell briefly about that organization and the problem which the organization is facing.

6. Literature Review - The main purpose of Literature review is to develop a wider understanding and broader view of the problem. In the literature review, all the relevant previous studies are quoted, so that the researcher can visualize where is the gap and then try to find solutions to rectify this gap.

7. Methodology - It gives the estimate of the reliability and validity of the methods used in the research.

8. Results - This part of report gives the final verdict about the research. All the answers to the objective formulated earlier are answered in the form of results. This part should be written very

carefully, because it is the core of the research.

9. Limitations - The main aim of this section is to enable the reader to judge the validity of the research.

10. Conclusions and Recommendations - It is this section of the report which will justify whether you have answered the research questions. In the conclusion part the researcher is making judgments rather than presenting facts.

11. References - References are collection of the research material of other authors that the researcher has used in his own study.

12. Appendices - Appendices should contain a blank copy of questionnaire, interview, schedules that a researcher has used to collect the data.

2.6.4 COMMON GRAMMATICAL ERRORS

This part of the lesson mentioned, some common grammatical errors as shown in chart-I.

OFTEN WE WRITE	THE CORRECT WAY IS
1. Each pronoun should agree with their antecedent	*Each pronoun should agree with its antecedent*
2. Just between you and I, case is important	*Just between you and me, case is important*
3. A preposition, is *a poor word to end a sentence with*	*A preposition is a poor word with which to end a sentence*
4. Verbs has to agree with their subject.	*Verbs have to agree with their subject.*
5. Do not use no double negatives	*Do not use double negatives.*
6. Remember to never split an infinitive.	*Remember never to split an infinitive.*
7. When dangling, do not use participles.	*Do not use dangling participles*
8. Avoid cliches like the plague	*To avoid cliches like the plague.*
9. Do not write a run-on sentence it is *difficult when you get to punctuate it so i t makes sense when the re ad er reads what you wrote.*	*Do not write a run-on sentence. It is difficult* to *punctuate it, so that it makes sense to the reader.*
10. About data is *included in* this section,	*What about sentence fragments?*
11. The data is included in this section.	*The data are included in this section*

Chart-I Common Grammatical Errors

2.6.5 CHECKLIST FOR EVALUATING THE FIRST DRAFT

- ✓ Is there a clear structure?
- ✓ Is there a clear storyline?
- ✓ Does your abstract reflect accurately the whole content of the report?

- ✓ Does your introduction state clearly the research question(s) and objectives?
- ✓ Does your literature review inform the later content of the report?
- ✓ Are your methods clearly explained?
- ✓ Have you made a clear distinction between findings and conclusions in the two relevant chapters?
- ✓ Have you checked all your references and presented these in the required manner?
- ✓ Is there any text material that should be in the appendices or vice versa?
- ✓ Does your title reflect accurately your content?
- ✓ Have you divided up your text throughout with suitable headings?
- ✓ Does each chapter have a preview and a summary?
- ✓ Are you happy that your writing is clear, simple and direct ?
- ✓ Have you eliminated all jargon?
- ✓ Have you eliminated all unnecessary quotations?
- ✓ Have you checked spelling and grammar?
- ✓ Have you checked for assumptions about gender?
- ✓ Is your report in a format that will be acceptable to the assessing body?

Steps in Writing Reports – Following are the major steps involved in report writing:

1. Logical analysis of the subject matter – This part is concerned with the development of subject matter either logically or chronologically. Logically implies moving from simple to complex structure, whereas chronologically is based on the time of the happening of events.
2. Preparation of the final outline – Final outline is considered as the blueprint to write a detailed report.
3. Preparation of the rough draft – Now the researcher starts writing his/her report in a detailed manner.
4. Rewriting and polishing – This step involves carefully reviewing the rough draft to make it more efficient and crisp.

5. Preparation of the final bibliography – Bibliography is very important as it helps other researcher to find the sources of references in your study.
6. Writing the final draft – In this step researcher prepares the final draft of the study.

2.6.6 ORAL PRESENTATION

At times oral presentation of the results of the study is considered effective, particularly in cases where policy recommendations are indicated by project results. The merit of this approach lies in the fact that it provides an opportunity for give and take decisions which generally lead to a better understanding of the findings and their implications. But the main demerit of this sort of presentation is the lack of any permanent record concerning the research details and it may be just possible that the findings may fade away from people's memory even before an action is taken. In order to overcome this difficulty, a written report may be circulated before the oral presentation and referred to frequently during the discussion. Oral presentation is effective when supplemented by various visual devices. Use of slides, wall charts and blackboards is quite helpful in contributing to clarity and in reducing the boredom, if any. Distributing a board outline, with a few important tables and charts concerning the research results, makes the listeners attentive who have a ready outline on which to focus their thinking . This very often happens in academic institutions where the researcher discusses his research findings and policy implications with others either in a seminar or in a group discussion.

2.6.7 PRECAUTIONS FOR WRITING RESEARCH REPORTS

Research report is a channel of communicating the research findings to the readers of the report. A good research report is one which does this task efficiently and effectively. Following are some of the precautions which can be kept in view while writing a research report:

1. While determining the length of the report, one should keep in view the fact that it should be long enough to cover the subject but short enough to maintain interest.
2. A research report as far as possible should not be dull, and try

to sustain interest of the reader throughout.

3. Abstract terminology and technical jargon should be avoided in a research report and the report should be able to convey the matter as simply as possible.
4. Readers are often interested in acquiring a quick knowledge of the main findings and as such the report must provide a ready availability of the findings. For this purpose the charts, graphs and the statistical tables may be used for the various results in the main report in addition to the summary of the findings.
5. The layout of the report should be well thought out and must be appropriate and in accordance with the objective of the research problem.
6. The report should be free from grammatical mistakes and errors, and must be prepared strictly in accordance with the techniques of composition of report writing such as the use of quotations, footnotes, documentation, proper punctuation and use of abbreviations in footnotes.
7. The report must present the logical analysis of the subject matter. It must reflect a structure wherein the different pieces of analysis relating to the research problem fit well.
8. A research report should show originality and should necessarily be an attempt to solve some intellectual problem.
9. Towards the end, the report must also state the policy implications relating to the problem under consideration.

2.6. Appendices should be enlisted in respect of all the technical data in the report.

11. Bibliography of sources consulted is a must for a good report and as such must be prepared and appended at the end.
12. Index is also considered as essential part of a good report and as such must be prepared and appended at the end.
13. Report must be attractive in appearance, neat and clean, whether typed or printed.
14. Calculated confidence limits must be mentioned and the various constraints experienced in conducting the research study may also be stated in the report.

15. Objective of the study, the nature of the problem, the methods employed and the analysis techniques adopted must all be clearly stated in the beginning of the report in the form of introduction.

2.6.8 Self-check exercise

1. What is literature review?
2. What do you mean by references?
3. What is report?

2.6.9 SUMMARY

Research report is one of the vital aspects of research and is considered a major constituent of the research study, for the research task remains incomplete till the report has been presented and / or written. Writing of report is the last step in a research study and requires a set of skills somewhat different from those called for in respect of the earlier stages of research. Research report is a channel of communicating the research findings to the readers of the report. A good research report is one which does this task efficiently and effectively. A research report as far as possible should not be dull, and should try to sustain interest of the reader throughout. The layout of the report should be well thought out and must be appropriate and in accordance with the objective of the research problem. The report must present the logical analysis of the subject matter. It must reflect a structure wherein the different pieces of analysis relating to the research problem fit well.

2.6.10 GLOSSARY

- Report: An account or statement to relate, as to what has been learned by observation or investigation.
- Executive Summary / Abstract: A short summary of the complete content of the project report.
- Literature Review: Text that helps develop an understanding and insight into the relevant previous research and the trends that have emerged.
- Reference: A note in a publication referring the reader to another passage or source, footnote used to direct a reader elsewhere for additional information.
- Bibliography: A list of source materials that are used or consulted in the preparation of a work or that are referred to in the text, which includes the description and identification of the editions, dates of issue, authorship, and typography of books or other written material.
- Appendix: Supplementary material at the end of a book, article, document.

2.6.11 Exercise:

Long questions:

Q1. Explain the types of reports and the guidelines for writing a report.

Q2. Explicate in detail, with illustrations, the structure of a Business Research Project Report.

Q3. What are the Precautions to be kept in mind or the Errors which can creep in, while writing report?

Short questions:

Q1. What do you mean by abstract?

Q2. What do you mean by appendix?

Q3. What do you mean by bibliography?

2.6.12 SUGGESTED READINGS

- Cooper, Donald R. and Schindler, Pamela S.; *Business Research Methods,* Tata McGraw Hill, New Delhi, 2007, 9th Edition.
- Bryman, Alan and Bell, Emma; *Business Research Methods,* Oxford University Press, New Delhi, 2006, 1st Indian Edition.
- Kothari, C. R.; *Research Methodology - Methods and Techniques,* New Age International Publishers, New Delhi, 2007, Revised 2nd Edition.
- Bhattacharya, Dipak Kumar; *Research Methodology,* Excel Books, New Delhi, 2006, 2nd Edition.
- Saunders, Mark; Lewis, Philip and Thornhill, Adrian; *Research Methods for Business Students,* Pearson Education, New Delhi, 2004, 3rd Edition.

Lesson No. 2.7 | Author: Gurpreet Singh

PRESENTATION

STRUCTURE OF THE LESSON

2.7.0 OBJECTIVES

The Purpose of this lesson is to

- Introduce the concept of Data Presentation.
- Discuss the nature and scope of data presentation.
- To introduce the types of Reports
- To present a basic outline for the data presentation format.
- To discuss guidelines that can be useful for a presentation.

2.7.1 INTRODUCTION

No matter what the quality of the research understates, much of the acceptance of the results depends on the way they are communicated to the relevant audiences. Standards for researchers are opting to be different from those of

executives to whom they wish to communicate. Executives are not much intersecting in methodology -they want the results. While written or oral presentation may be an anticlimax to researchers, it is frequently all executives hear or see of the project. If executives are to act on the basis of the results, they must be convinced of their valve. Researchers must make their presentation technically accurate as well as understandable and useful.

Research presentation serves its chief functions first, it is the means where by the data, analyzed and fierily are placed in an organized and permanent from. As it is the only systematic record of the research, it serves as an essential reference for future research world is likely to be judged mainly by the report. The key decision- mal person's whom the research serves seldom have much personal contact will a researcher with in this firm and still less with an outside researcher agency. Since the report is their index of the researcher's skill level performance, the time, thought, or effort spent on it are vital to his or her future. Third, and most important, the effectiveness of the report may determine the action taken. Properly organised and lucid reports lead to appropriate action or policies- the goal of all commercial or administrative research. In urgent situations the convincing reports may inspire decision makers to promptness. The ability of the report finding to induce correct action or perceptions is the main criterion of its success, and that hinges greatly on the report.

2.7.2 TYPES OF REPORTS

To write an effective report, it is essential to plan its contents well. Each report is a tailor-made job that is adapted to the character of the problem, the importation contained therein, and to the thought modes and the preferences of those who will be utilizing the report. The findings may be reported in any or all of these forms:

Basic report: This is the first report prepared on the project's findings, written by the researches for his or her own use, composed of working papers and preliminary drafts. It provides the basis for the final report and then becomes record for the files. Unfortunately, the need to consider this a report is often overlooked, so that no standard arrangement for such reports is determined and no orderly file or even retention of them is provided unless this is done, this basic and complete record of the work and findings is unavailable in the future when its methodology or data are needed for reference or to aid other studies.

Reports for Publication: Often such reports are prepared from research findings for articles in trade and professional journals, popular magazines, bulletins, or monographs, publications and their audiences vary, so no single description can cover this category of report. If a report or article is to be accepted, it is very important that the writer of the report determine the character and interests of the audience to be reached as well as the publisher's polices and write appropriately. Normally, these are relatively condensed reports, for publishers do not want to waste words, nor will reaches tolerate too much verbosity.

Technical reports: There reports are usually in tented for scientific or technically trained persons. They would be interested typically in specific descriptions of the entire procedures employed, which usually would follow the introduction of the problem and hypothesis researched. They are also interested in the logical and statistical details that led to the conclusions, So they may be given these step by step in progression toward the interpretations. Tests of statistical significance tend to be desired by such readers. When the stage of conclusions is reached, the technical realer has had the whole' development of the underlying data and resuming.

Reports for executives: These are reports intended for decision makers. These are the busy people who want primarily the "meat" of the researches project, its major conclusions and recommendations. They do not want the voluminous details that are suitable for the technical report, and mythological information would better be put in an appendix, where they can reefs to it if they wish.

2.7.3 WRITTEN PRESENTATION

Situational differences in the personality, background and responsibility of the researcher and manager to whom the report is addressed should conspire to give each report a unique Glover. But even so, most agree that the following principles should be kept constantly in mind.

- A report is complete when it provides all the information to readers. According to requirement of language they understand. This means that the writer must continually ask whether every question in the original assignment has been addressed. What alternatives are examined? What was found? The report must include necessary definitions and explanations but they must be succinct. The length of the report should be proportional to its contribution.

- A report must be accurate, avoider carelessness in discussing the data, illogical reasoning or theft phrasing.

- Clarity is probably violated more than any other principle of good written. clear and logical thinking and process expression produce clarity. When the underling loge is fuzzy or the presentation imprecise, readers have difficulty understanding what they read.

-A report must be concise. The writer must be selective about what is included, and avoid trying to impress the reader with all that has been found. If something does not per lain ducally to the subject, it should be omitted lionise writing is effective because it makes maximum use of every word no word or phrase can be removed without destroying whole composition.

2.7.4 DATA PREPARATION

Data preparation consists of three important steps:

- Editing
- Coding
- Data entry

The raw data are often in bulky form and are difficult to be comprehended easily for ready reference. This calls for devising certain suitable methods for processing of data such as condensing/summarizing data for easy comprehension and providing directions for subsequent analysis in computing required statistical derivatives and applying further statistical treatment.

The most prominent and universally adopted data processing methods which present data in summary form are:

- Classification
- Tabulation
- Graphical representation
- Diagrammatic representation of data, etc.

Editing is the review of the questionnaire with the objective of increasing accuracy and precision. It is needed to detect and if possible, to eliminate errors in the filled in necessary for faultless analysis of survey data.

There are three points-completeness, accuracy and uniformity, to be checked while editing the data.

After editing the data it may be required in most surveys to put the results in quantitative form by coding the answers before summarization and analysis begin. This may also be conveniently carried out at the time of editing.

The purpose of coding in surveys is to put the answers into a particular question into meaningful and unambiguous categories to bring out essential pattern, concealed in the mass of information. Essentially, coding means assigning a code, usually a number, to each possible response to each question.

Coding helps the researcher to reduce several replies to a few categories as per the requirement of the analysis. In coding categories, partition a set of information using certain rules. The code includes an indication of the column position (field) and data record it will occupy. For instance, gender may be coded as M (male) of F (female). Alternatively, male may be coded as 1. and female as 2.

A field represents a single item of data, such as sex of the respondent. A record consists of related fields such as sex, marital status, age, household size, occupation etc. All the data for a respondent are contained in a single record. Sometimes more than one record may be necessary.

Code Book Construction

A code book or coding scheme contains each variable, along with specification for the application of coding rules to the variable. It is used by the researcher as a guide to make the data entry less prone to error and more efficient. It provides a source for locating the positions of the variables in the data file during statistical analysis.

Coding Closed Questions

The responses to closed questions include scaled items and others for which answers can be anticipated. When codes are established in the beginning of the research process, it is possible to precede the questionnaire. Proceeding is helpful for data entry without going through intermediate steps for completing the coding sheet. Closed questions can be easily handled by the researchers for coding. As regards open-ended questions the researcher should note the varieties of answers and after preliminary evaluation, response categories can be settled down/created for coding. Although most responses could be accounted

for by the derived categories, another category might be established to meet the coding rule exhaustiveness. It is to be noted that open questions are more difficult to code since answers are not prepared in advance. However, they do encourage disclosure of complete information without restriction imposed by prior suggestive answers.

Transcribing

Transcribing data involves transferring the coded data from the questionnaire or coding sheets onto a computer for subsequent data treatment.

Data Cleaning

The data collected through questionnaires may contain certain inconsistencies and also missing responses. Thus, there is need for consistency checks to make corrections for out of range and logically inconsistent data and also for extreme values. Missing responses correspond to unknown values of the variable because of ambiguous answers provided by the respondents and also because the interviewers fail to record answers properly. Data entry implies conversion of information gathered from secondary or primary sources to a medium for viewing and manipulation. Keyboarding helps the researchers who need to create a data file immediately and store it in a minimum space on a variety of media.

The researcher can make use of a PC image scanner and with the help of optical character recognition programs can transfer printed text into computer files in order to edit and use it without taking recourse to retyping. Optical scanning instruments serve the researchers more efficiently. Optical scanners process the marked-sensed questionnaires and store the answers in a file. This method is often associated with standardised and pre-printed forms and has been largely adopted by designers for data entry and pre-processing.

Spreadsheets are a specialized type of data base. It provides an easy to learn mechanism for organizing and tabulating data and computing simple statistics. Data entry on a spread sheet uses numbered rows and letter columns with a matrix of thousands of cells into which an entry may be placed. Spread sheets have also the provision that you can type numbers, formulas and text into appropriate cells. Many statistics programs for personal computers and also charting and graphic applications have provision for data editors, similar to Excel spread sheet. Spread sheet is a very convenient and flexible means for entering and viewing data and also facilitates subsequent applications.

Condensation/Summarization of Data

Numerical data collected in an enquiry are usually in raw and bulky from difficult to be easily comprehensible and grasped and therefore need certain methods to bring about condensation or summarization of data. There are different ways of presenting data in summary form.

These are:

(a) Classification

(b) Seriation

(c) Tabulation

(d) Graphical representation of data

(e) Diagrammatic representation of data

Classification of data

Classification is a process by which the data are arranged according to resemblances, affinities, internal homogeneity and common characteristics. This process is fore runner to the tabular, graphical and diagrammatic representation of data. For example, in a socio-economic enquiry, data can be classified according to age, sex, educational qualification, religion, caste, income group, occupation etc.

Seriation of Data

A systematic arrangement of data is called seriation. The seriation gives rise to statistical series, which has close connection with classification.

The statistical series are of three types:

(i) Time series (ii) Spatial series (iii) Frequency series

Tabulation

After classification of data the next step in the process of summarization of data is to put the classified data in rows and columns having special characteristics on a piece of paper. Such representation of data in orderly and easily comprehensible fashion is called tabulation.

Frequency Table and its construction

In the presence of bulky data, making it difficult for ready comprehension, it is a general practice to classify the data according to class intervals and then constructing a frequency table, a popular method of condensation/summarisation of data. This sort of technique of condensation is not without pitfalls. If the class intervals are very vide, there is every likelihood that the essential features of data may be concealed behind the summarization, thus making the statistical analysis deceptive and arriving at conclusions, which are far from reality.

2.7.5 ORAL PRESENTATION

In addition to the written report, most marketing research investigations require one or more oral reports they may also require interim progress reports. They almost require a formal oral report at the conclusion of the study. The first imperative is to know the audience, its technical level of sophistication and member's involvement in the project. In general, it is better to err on the side of too little technical detail than too much. Executives want to hear and see what the information means to them as marketing managers. What do the data suggest in terms of marketing actions? They can also for the necessary clarification about the technical detail if they want it. In the most popular structure, the conclusions are introduced after all the evidence supporting a particular course of action is presented. By progressively disclosing the facts, the presenter is building a logical case in sequential fashion. The alternative structure involves presenting the conclusions immediately after the purpose and main objectives. The structure tends to involve managers immediately in the findings. The structure used depends on the corporate culture as well as the presenter's own comfort level. In either case, the evidence supporting the conclusions drawn must be consistent with the evidence. Another important consideration for effective delivery of the oral report is the use of appropriate visual aids. Power point presentation, flip charts, transparencies, slides and even chalet boards can all be used, depending on the size of the group and the physical faculties of the metering room. Finally, make sure, your visuals can be read easily by those in the back of the room. Following one the tips for preparing effective presentation visuals.

- keep it simple
- one minute per visual, one main point, few words.

- bring copies of slides to hand out to the audience before yore presentation
- Big font.
- build complexity

2.7.6 GRAPHICAL PRESENTATION

The old message explains that "a picture is worth a thousand words" is equally true for business reports, Text and tables can be used to present quantitative information, but graphs can often serve that purpose better. These are three basic kinds of graphics; charts that show how much, maps that shows where, and diagrams that show how, charts are generally the most useful of the three types for research reports.

Pie chart: Pie chat is a circle divided into sections with each section representing a portion of the total. The sections are presented as part of a whole, so the pie chat is particularly effective for depicting relative size or emphasizing comparisons.

Line Chart: The line chart is a two dimensional chart that is particularly useful in depiction dynamic relationships, such as tine-series fluctuations of one or more series. Each line representing different variable should be distinctive in colour or form (e.g. dots and dashes in suitable combinations) and explained in a legend.

Maps: Maps focus attention on geographical areas. Data maps are especially suited to the presentation of rates, ratios, and frequency distribution data by areas. In constructing data maps, the quantity of interest is broken into groups and shading or colour is used to display the numerical group in which each area belongs In general, it is helpful to keep the group intervals approximately equal and to use a limited no of shading. Map figures can be useful in comparing performance between markets, or within markets over time e.g. the degree of success of recent marketing mix implementation.

2.7.7 Self-check exercise:

Q1. What do you mean by Pie-chart?

Q2. What do you mean by line-chart?

2.7.8 SUMMARY

The research report was discussed in this lesson. Five points were emphasized the criteria for evaluating research reports, written presentation report format, oral presentations and Graphical presentation of results. The fundamental criterion for the development of every research report is communication with

the ambience. The reader's interests, capabilities, and circumstances determine what goes in the report, what is left out, and how the information included in the report is presented. The criteria that need to be kept in mind in preparing the report includes, completeness, accuracy, clarity and conciseness.

A report includes title page, table of contents, summary, introductions, body, conclusions and recommendations and appendix. An oral report begins by stating the general purpose of the study and specific objectives. The remainder of the presentation needs to systematically build on the evidence so that logical conclusions are drawn. Graphical presentation is often the best way to communicate those findings that require emphasis. Three main forms are the pie chart ,line chart ,and maps.

2.7.9 GLOSSARY

Transcribing: Transcribing data involves transferring the coded data from the questionnaire or coding sheets onto a computer for subsequent data treatment.

Seriation: A systematic arrangement of data is called seriation.

2.7.10 QUESTIONS TO EXERCISE

Long questions:

1. What is meant by the report criteria of completeness, accuracy, clarity and conciseness? (Refer para 2.7.3)
2. Explain the report format? (Refer para 2.7.4)
3. What are the key consideration in preparing oral report?(Refer para 2.7.5)
4. Explain line chart, pie chart, maps? (Refer para 2.7.6)

Short questions:

1. Explain various types of reports?
2. What is tabulation?
3. What do you mean by maps?

2.7.11 RECOMMENDED READING

1. Churchill, Iacobucci, Isreal, Marketing Research, cengage learning India pvt. Ltd 2009
2. Boyd, West fall, stasch, Marketing Research, Richaed D. IRWIN inc , 2003
3. Luck and Rubin, Marketing Research, Prentice Private Limited, 2003
4. Tull and Hawkins, Marking Research, Prentice, Private, Limited. 2008

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Roll No.....

BBA PART-III | Paper - BBA : 501

SEMESTER-V | Business Research Methods

Lesson No. 2.1-2.7

Date of receipt of the lesson..... | Marks obtained ..... %

Date of submission of | Date & Signature of the

Response Sheet by the student..... | Examiner.....

No. of pages attached..... | Write your name and address

Date of receipt in the Department..... | below in BLOCK LETTERS:

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Time : 1.30 hrs | Max Marks : 40

Attempt any two questions : 2x10=20

Q.1 Explain the methods of qualitative Research in detail.

Q.2 What are major tests of sound measurement ? Discuss in detail various types of validity tests.

Q.3 Explain Report writing in detail.

Q.4 Elaborate different types of scaling techniques.

Q.5 What are the different types of questionnaire used in Research.

Short questions (attempt any four) : 4x5=20 marks

Q.1 Measurement Error

Q.2 Types of Reports

Q.3 Steps in data preparation

Q.4. Likert scaling

Q.5 Concept of Reliability

Q.6 Types of questionnaire

Q.7 Types of Interview

Please send this Response-sheet along-with your answers to: The Deputy Registrar, Centre for Distance and Online Education, Punjabi University, Patiala - 147002

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