

RESEARCH METHODOLOGY

Meaning

- ❖ Research is an endeavour to discover answers to intellectual and practical problems through the application of scientific method.
- ❖ “Research is a systematized effort to gain new knowledge”.
-Redman and Mory.
- ❖ Research is the systematic process of collecting and analyzing information (data) in order to increase our understanding of the phenomenon about which we are concerned or interested.

1.1What is research?

- Research is the process of finding solutions to a problem after a thorough study and analysis of the situational factors
- Research provides the needed information that guides managers to make informed decisions to successfully deal with problems
- The information provided could be the result of a careful analysis of data gathered firsthand or of data that are already available (in the company)

Objectives of Research

- ❖ The purpose of research is to discover answers through the application of scientific procedures.
- ❖ The objectives are:
 - To gain familiarity with a phenomenon or to achieve new insights into it – Exploratory or Formulative Research.
 - To portray accurately the characteristics of a particular individual, situation or a group – Descriptive Research.
 - To determine the frequency with which something occurs or with which it is associated with something else – Diagnostic Research.
 - To test a hypothesis of a causal relationship between variables – Hypothesis-Testing Research.

Characteristics of Research

- ❖ Research is directed towards the solution of a problem.
- ❖ Research is based upon observable experience or empirical evidence.
- ❖ Research demands accurate observation and description.
- ❖ Research involves gathering new data from primary sources or using existing data for a new purpose.
- ❖ Research activities are characterized by carefully designed procedures.
- ❖ Research requires expertise i.e., skill necessary to carryout investigation, search the related literature and to understand and analyze the data gathered.
- ❖ Research is objective and logical – applying every possible test to validate the data collected and conclusions reached.
- ❖ Research involves the quest for answers to unsolved problems.
- ❖ Research requires courage.
- ❖ Research is characterized by patient and unhurried activity.
- ❖ Research is carefully recorded and reported.

SCIENTIFIC METHOD

- ✿ ‘Science’ refers to the body of systematic and organised knowledge which makes use of scientific method to acquire knowledge in a particular field of enquiry.
- ✿ Scientific method is the systematic collection of data (facts) and their theoretical treatment through proper observation, experimentation and interpretation.
- ✿ Scientific method attempts to achieve a systematic interrelation of facts by experimentation, observation, and logical arguments from accepted postulates and a combination of these three in varying proportions.

BASIC POSTULATES IN SCIENTIFIC METHOD

- ☞ **It relies on empirical evidence.**
- ☞ **It utilizes relevant concepts.**
- ☞ **It is committed to only objective considerations.**
- ☞ **It presupposes ethical neutrality.**
- ☞ **It results into probabilistic predictions.**
- ☞ **The methodology is made known.**
- ☞ **Aims at formulating scientific theories.**

CRITERIA OF A GOOD RESEARCH

- ⊕ Purpose clearly defined.
- ⊕ Research process detailed.
- ⊕ Research design thoroughly planned.
- ⊕ High ethical standards applied.
- ⊕ Limitations frankly revealed.
- ⊕ Adequate analysis for decision maker's needs.
- ⊕ Findings presented unambiguously.
- ⊕ Conclusions justified.
- ⊕ Researcher's experience reflected.

QUALITIES OF A GOOD RESEARCH

- **Systematic**
- **Logical**
- **Empirical**
- **Replicable**
- **Creative**
- **Use of multiple methods**

NEED FOR RESEARCH

- ♪ **EXPLORATION**
- ♪ **DESCRIBE**
- ♪ **DIAGNOSE**
- ♪ **HYPOTHESIS**
- ♪ **INDUCTIONS AND DEDUCTIONS**

SCOPE / SIGNIFICANCE OF RESEARCH

- ❖ **RESEARCH FOR DECISION MAKING**
- Throws light on risks and uncertainty**
- Identify alternative courses of action**
- Helps in economic use of resources**
- Helps in project identification**

- Solves investment problems**
- Solves pricing problems**
- Solves allocation problems**
- Solves decision making issues in HR**
- Solves various operational and planning problems of business and industry**

- Provides the basis for all government policies in our economic system.**
- Helps social scientists in studying social relationships and in seeking answers to various social problems.**
- For students, research means a careerism or a way to attain a high position in the social structure.**
- For professionals in research, it may mean a source of livelihood.**

- ❑ For philosophers and thinkers, research means the outlet for new ideas and insights.
- ❑ For literary men and women, research means development of new styles and creative work.
- ❑ For analysts and intellectuals, research means generalizations of new theories.

PROBLEMS IN RESEARCH

- **Not similar to science**
- **Uncontrollable variables**
- **Human tendencies**
- **Time and money**
- **Lack of computerization**
- **Lack of scientific training in the methodology of research**

- **Insufficient interaction between university research departments and business establishments**
- **Lack of confidence on the part of business units to give information**
- **Lack of code of conduct**
- **Difficulty of adequate and timely secretarial assistance**

- **Poor library management and functioning**
- **Difficulty of timely availability of published data.**
- **Ignorance**
- **Research for the sake of research-limited practical utility though they may use high sounding business jargon.**

ROLE OF RESEARCH

IN

DECISION-MAKING

- ♪ **Decision-making is the process of selecting the best alternative from the available set of alternatives.**
- ♪ **Management is chiefly concerned with decision-making and its implementation.**
- ♪ **These decisions should be based on appropriate studies, evaluations and observations.**
- ♪ **Research provides us with knowledge and skills needed to solve the problems and to meet the challenges of a fast paced decision-making environment.**

According to Herbert A Simon, decision-making involves three activities:

- 👉 **Intelligence Activity** - scanning the environment for identifying conditions necessary for the decision.
- 👉 **Designing Activity** - identifying, developing and analyzing the alternative courses of action.
- 👉 **Choice Activity** - choosing the best course of action from among the alternatives.

FACTORS THAT AFFECT MANAGERIAL DECISIONS

- ❖ **INTERNAL FACTORS** – factors present inside an organisation such as resources, technology, trade unions, cash flow, manpower etc.
- ❖ **EXTERNAL FACTORS** – factors present outside the organisation such as government policies, political factors, socio-economic factors, legal framework, geographic and cultural factors etc.
- ❖ **QUANTITATIVE FACTORS** – factors that can be measured in quantities such as time, resources, cost factors etc.

- ❖ **QUALITATIVE FACTORS** – factors that cannot be measured in quantities such as organizational cohesiveness, sense of belonging of employees, risk of technological change etc.
- ❖ **UNCERTAINTY FACTORS** – factors which cannot be predicted.

TYPES OF RESEARCH

Descriptive vs Analytical Research

Descriptive Research is a fact finding investigation which is aimed at describing the characteristics of individual, situation or a group (or) describing the state of affairs as it exists at present.

Analytical Research is primarily concerned with testing hypothesis and specifying and interpreting relationships, by analyzing the facts or information already available.



Applied vs Fundamental Research

Applied Research or Action Research is carried out to find solution to a real life problem requiring an action or policy decision.

Fundamental Research which is also known as basic or pure research is undertaken for the sake of knowledge without any intention to apply it in practice.

It is undertaken out of intellectual curiosity and is not necessarily problem-oriented.



Quantitative vs Qualitative Research

Quantitative Research is employed for measuring the quantity or amount of a particular phenomena by the use of statistical analysis.

Qualitative Research is a non-quantitative type of analysis which is aimed at finding out the quality of a particular phenomenon.



Conceptual vs Empirical Research

Conceptual Research is generally used by philosophers and thinkers to develop new concepts or to reinterpret existing ones.

Empirical Research is a data based research which depends on experience or observation alone. It is aimed at coming up with conclusions without due regard for system and theory.

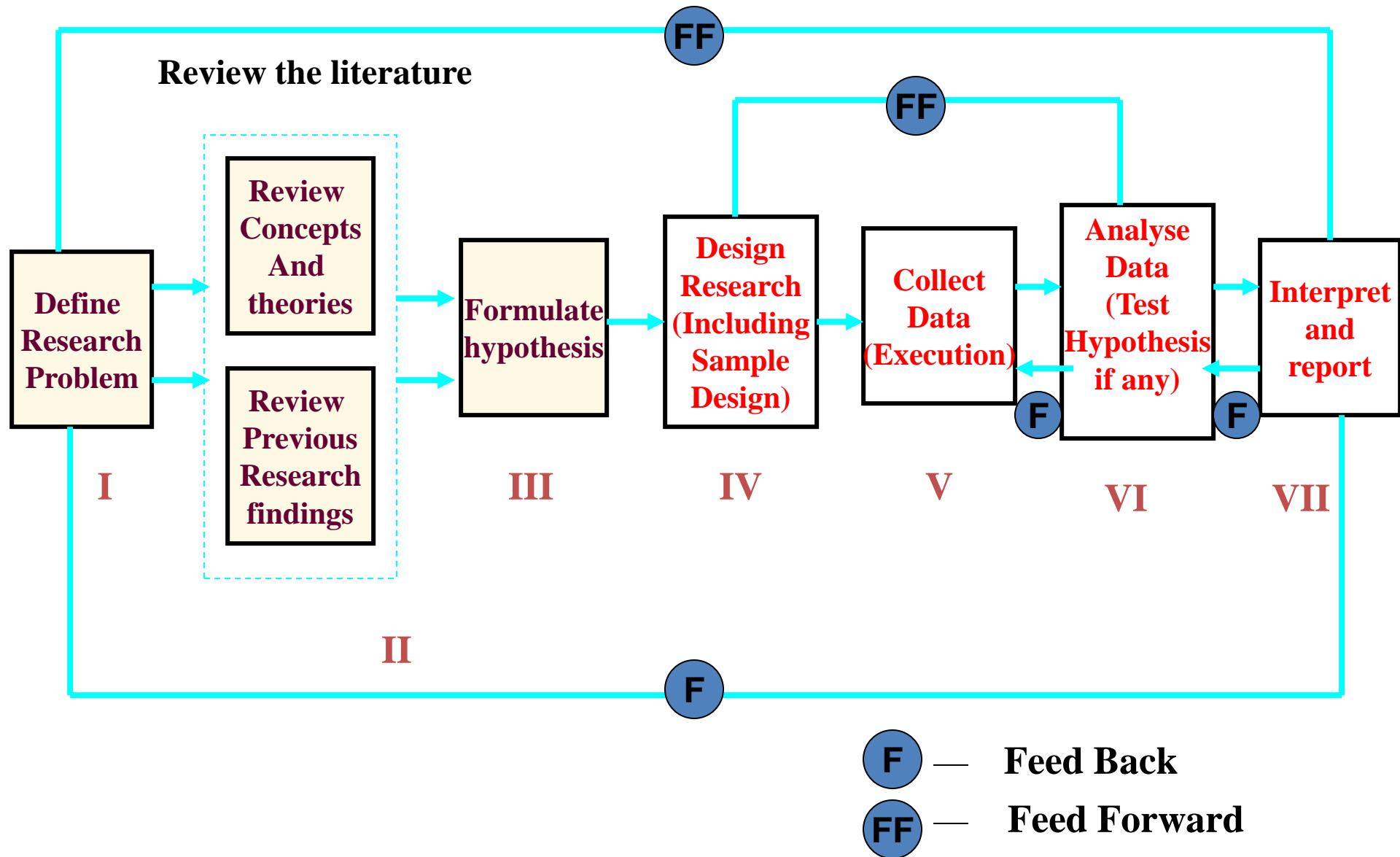
Some other types of research..

- ☞ **One-time Research – Research confined to a single time period.**
- ☞ **Longitudinal Research – Research carried on over several time periods.**
- ☞ **Diagnostic Research – It is also called clinical research which aims at identifying the causes of a problem, frequency with which it occurs and the possible solutions for it.**
- ☞ **Exploratory Research – It is the preliminary study of an unfamiliar problem, about which the researcher has little or no knowledge. It is aimed to gain familiarity with the problem, to generate new ideas or to make a precise formulation of the problem. Hence it is also known as formulative research.**

- ☞ **Experimental Research** – It is designed to assess the effect of one particular variable on a phenomenon by keeping the other variables constant or controlled.

- ☞ **Historical Research** – It is the study of past records and other information sources, with a view to find the origin and development of a phenomenon and to discover the trends in the past, in order to understand the present and to anticipate the future.

RESEARCH PROCESS



STEP-1

*DEFINITION
OF THE
RESEARCH PROBLEM*

RESEARCH PROBLEM

What is a research problem?

- ❖ The term ‘problem’ means a question or issue to be examined.
- ❖ Research Problem refers to some difficulty /need which a researcher experiences in the context of either theoretical or practical situation and wants to obtain a solution for the same.

HOW DO WE KNOW WE HAVE A RESEARCH PROBLEM?

- * Customer complaints
- * Conversation with company employees
- * Observation of inappropriate behaviour or conditions in the firm
- * Deviation from the business plan
- * Success of the firm's competitor's
- * Relevant reading of published material (trends, regulations)
- * Company records and reports.

The first step in the research process – **definition of the **problem** involves two activities:**

☆ Identification / Selection of the Problem

☆ Formulation of the Problem

IDENTIFICATION / SELECTION OF THE RESEARCH PROBLEM

★ This step involves identification of a few problems and selection of one out of them, after evaluating the alternatives against certain selection criteria.

SOURCES OF PROBLEMS

- ☞ **Reading**
- ☞ **Academic Experience**
- ☞ **Daily Experience**
- ☞ **Exposure to Field Situations**
- ☞ **Consultations**
- ☞ **Brainstorming**
- ☞ **Research**
- ☞ **Intuition**

CRITERIA OF SELECTION

The selection of one appropriate researchable problem out of the identified problems requires evaluation of those alternatives against certain criteria. They are:

- Internal / Personal criteria – Researcher's Interest, Researcher's Competence, Researcher's own Resource: finance and time.
- External Criteria or Factors – Researchability of the problem, Importance and Urgency, Novelty of the Problem, Feasibility, Facilities, Usefulness and Social Relevance, Research Personnel.

DEFINITION / FORMULATION OF THE RESEARCH PROBLEM

- Formulation is the process of refining the research ideas into research questions and objectives.
- Formulation means translating and transforming the selected research problem/topic/idea into a scientifically researchable question. It is concerned with specifying exactly what the research problem is.

- ❖ Problem definition or Problem statement is a clear, precise and succinct statement of the question or issue that is to be investigated with the goal of finding an answer or solution.
- ❖ There are two ways of stating a problem:
 - 1) Posting question / questions
 - 2) Making declarative statement / statements

PROCESS INVOLVED IN DEFINING THE PROBLEM

***STATEMENT OF THE PROBLEM IN A
GENERAL WAY.**

****UNDERSTANDING THE NATURE Of
PROBLEM**

****SURVEYING THE AVAILABLE
LITERATURE**

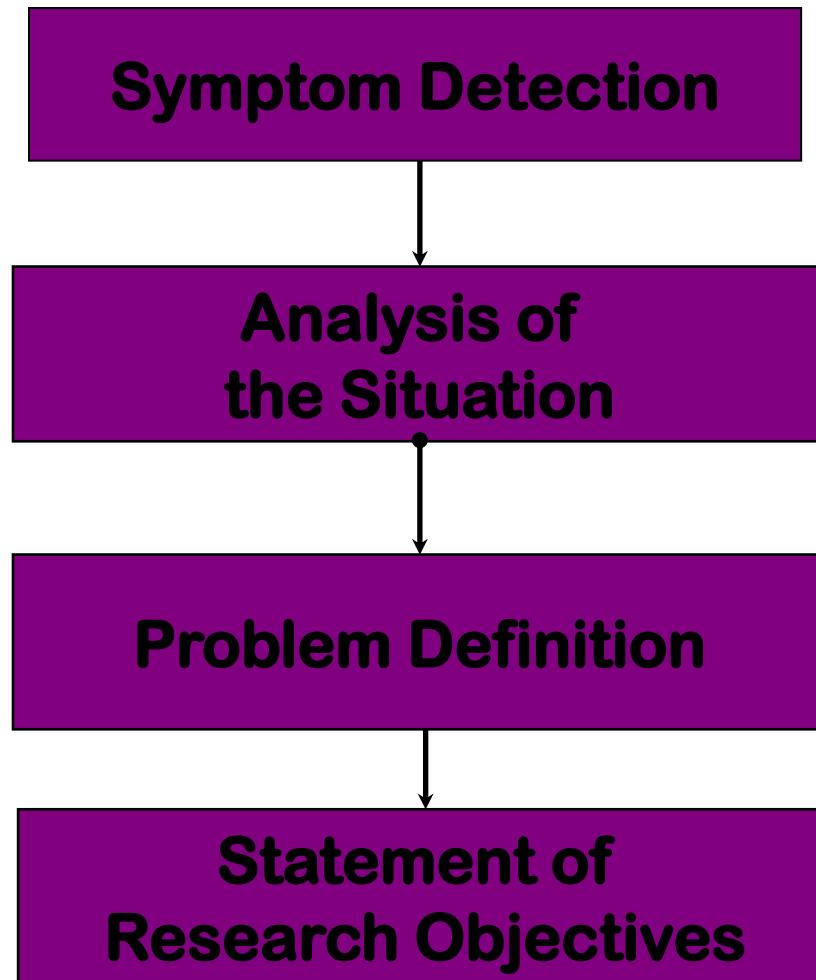
****DEVELOPING IDEAS THROUGH
DISCUSSIONS**

****REPHRASING THE RESEARCH PROBLEM**

CRITERIA OF A GOOD RESEARCH PROBLEM

- ☞ Clear and Unambiguous
- ☞ Empirical
- ☞ Verifiable
- ☞ Interesting
- ☞ Novel and Original
- ☞ Availability of Guidance

Defining Problem, Results in Clear Cut Research Objectives..



ESTABLISHMENT OF RESEARCH OBJECTIVES

- ☞ Research Objectives are the specific components of the research problem, that you'll be working to answer or complete, in order to answer the overall research problem.- Churchill, 2001

- ☞ The objectives refers to the questions to be answered through the study. They indicate what we are trying to get from the study or the expected results / outcome of the study.

ESTABLISHMENT OF RESEARCH OBJECTIVES

- ☞ Research Objectives should be clear and achievable, as they directly assist in answering the research problem.
- ☞ The objectives may be specified in the form of either statements or questions.
- ☞ Generally, they are written as statements, using the word “to”. (For example, ‘to discover ...’, ‘to determine ...’, ‘to establish ...’, etc.)

STEP-2

*REVIEW
OF
LITERATURE*

REVIEW OF LITERATURE

- ❖ Literature Review is the documentation of a comprehensive review of the published and unpublished work from secondary sources of data in the areas of specific interest to the researcher.
- ❖ The main aim is to find out problems that are already investigated and those that need further investigation.

REVIEW OF LITERATURE

- ❖ It is an extensive survey of all available past studies relevant to the field of investigation.

- ❖ It gives us knowledge about what others have found out in the related field of study and how they have done so.

PURPOSE OF REVIEW

- ✿ To gain a background knowledge of the research topic.
- ✿ To identify the concepts relating to it, potential relationships between them and to formulate researchable hypothesis.
- ✿ To identify appropriate methodology, research design, methods of measuring concepts and techniques of analysis.
- ✿ To identify data sources used by other researchers.
- ✿ To learn how others structured their reports.

How to conduct the Literature Survey?

- ✿ Identify the relevant sources.
- ✿ Extract and Record relevant information.
- ✿ Write-up the Literature Review.

SOURCES OF LITERATURE

- ★ Books and Journals
- ★ Electronic Databases
 - Bibliographic Databases
 - Abstract Databases
 - Full-Text Databases
- ★ Govt. and Industry Reports
- ★ Internet
- ★ Research Dissertations / Thesis

RECORDING THE LITERATURE

- ★ The most suitable method of recording notes is the card system.
- ★ The recording system involves use of two sets of cards:
 - Source cards (3"x 5") – used for noting bibliographic information.
 - Note cards (5"x 8") – used for actual note taking.

SOURCE CARDS

- ★ Source Cards serve two purposes:
 - a) Provide documentary information for footnotes.
 - b) It is used for compiling bibliography to be given at the end of the report.

SOURCE CARDS

- ★ Source Cards can be coded by a simple system inorder to relate them to the corresponding note cards.
 - 1) Marking a combination of letters and a number on the right hand top corner that begins with 'C'. For example; C1, C2 etc.
 - OR
 - 2) Marking the letter 'B' or 'J' or 'R' (B=Books, J=Journal, R=Report) on the left hand top corner.

SOURCE CARDS

- ★ The recording of bibliographic information should be made in proper bibliographic format.
- ★ The format for citing a book is:
Author's name, (year), Title of the book, Place of publication, Publisher's name.
- ★ For Example; Koontz Harold (1980), Management, New Delhi, McGraw-Hill International.
- ★ The format for citing a journal article is:
Author's name, (year), Title of the article, Journal name, Volume (number), pages.
- ★ For Example; Sheth J.N (1973), A Model of Industrial Buying Behaviour, Journal of Marketing, 37(4), 50-56.

NOTE CARDS

- ★ Detailed Information extracted from a printed source is recorded on the note cards.
- ★ It is desirable to note a single fact or idea on each card, on one side only.

How to write the review?

- ★ There are several ways of presenting the ideas of others within the body of the paper.
 - ★ For Example; If you are referring the major influencing factors in the Sheth's model of Industrial Buying Behaviour, it can be written as,
- 1) Sheth (1973, p-50) has suggested that, there are a number of influencing factors
 - 2) According to Sheth (1973) model of industrial buying behaviour, there are a number of influencing factors.....

How to write the review?

- 3) In some models of industrial buying behaviour, there are a number of influencing factors (Sheth, 1973).
- 4) In some models of industrial buying behaviour, there are a number of influencing factors¹.

¹. Sheth J.N (1973), A Model of Industrial Buying Behaviour, Journal of Marketing, 37(4), 50-56.

Points to be kept in mind while reviewing literature..

- ❖ Read relevant literature.
- ❖ Refer original works.
- ❖ Read with comprehension.
- ❖ Read in time.
- ❖ Index the literature.