

Research Methodology

English Department /3rd Stage

College of Basic Education/Diyala University

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.**

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**.

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.

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.

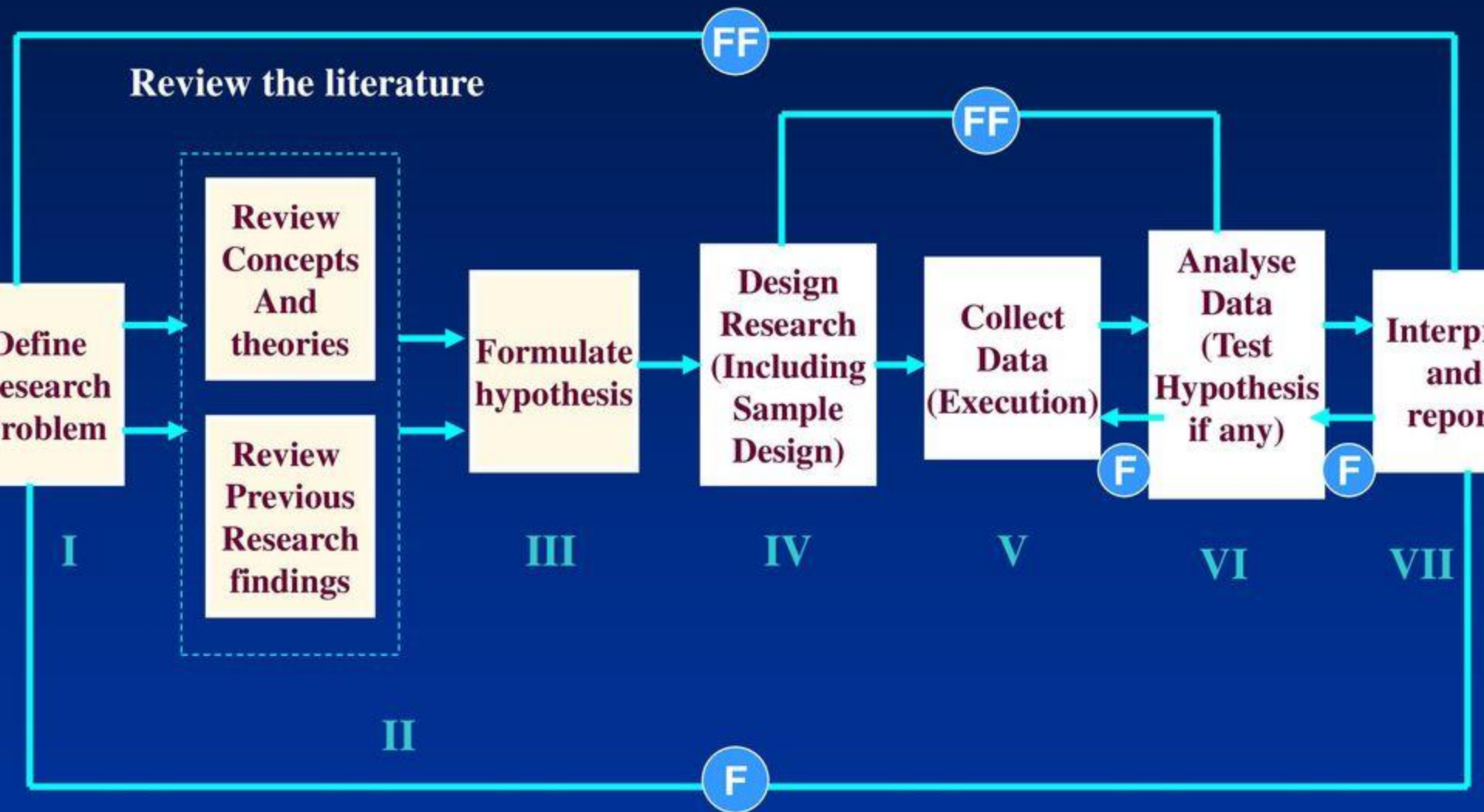
Conceptual vs Empirical Research

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.

- **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



F — Feed Back

FF — Feed Forward

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.

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

★ Identification / Selection of the Problem

★ Formulation of the Problem

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.

CRITERIA OF A GOOD RESEARCH PROBLEM

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

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.

SOURCES OF LITERATURE

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

SOURCE CARDS

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

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.

STEP-3

*FORMULATION
OF
HYPOTHESIS*

HYPOTHESIS

- A hypothesis is an assumption about **relations** between **variables**.
- Hypothesis can be defined as a logically conjectured **relationship** between two or more **variables** expressed in the form of a testable statement.

Relationships are conjectured on the basis of the network of associations established in the **theoretical framework** formulated for the research study.

VARIABLES

- ⇒ Anything that can vary can be considered as a variable.
- ⇒ A variable is anything that can take on differing or varying values.

For example; Age, Production units, Absenteeism, Sex, Motivation, Income, Height, Weight etc.

Note: The values can differ at various times for the same object or person (or) at the same time for different objects or persons.

Types of Variables

⇒ Explanatory vs Extraneous Variable

The variables selected for analysis are called explanatory variables and all other variables that are not related to the purpose of the study but may affect the dependant variable are extraneous.

⇒ Dependant vs Independent Variable

The variable that changes in relationship to changes in another variable(s) is called **dependant variable**.

The variable whose change results in the change in another variable is called an **independent variable**.

OR

An independent variable is the one that influences the dependant variable in either a positive or negative way.

HYPOTHESIS

- Research Hypothesis is a predictive statement that relates an **independent variable** to a **dependant variable**.

Hypothesis must contain atleast one independent variable and one dependant variable.

HYPOTHESIS

- Hypothesis are tentative, intelligent guesses as to the solution of the problem.
- Hypothesis is a specific statement of prediction. It describes in concrete terms what you expect to happen in the study.
- Hypothesis is an assumption about the population of the study.
- It delimits the area of research and keeps the researcher on the right track.

CHARACTERISTICS OF HYPOTHESIS

- **Conceptual Clarity** - It should be clear and precise.
- **Specificity** - It should be specific and limited in scope.
- **Consistency** - It should be consistent with the objectives of research.
- **Testability** - It should be capable of being tested.
- **Expectancy** - It should state the expected relationships between variables.

CHARACTERISTICS OF HYPOTHESIS

- **Simplicity** - It should be stated as far as possible in simple terms.
- **Objectivity** - It should not include value judgments, relative terms or any moral preaching.
- **Theoretical Relevance** - It should be consistent with a substantial body of established or known facts or existing theory.
- **Availability of Techniques** – Statistical methods should be available for testing the proposed hypothesis.

SOURCES OF HYPOTHESIS

- ◆ **Discussions with colleagues and experts about the problem, its origin and objectives in seeking a solution.**
- ◆ **Examination of data and records for possible trends, peculiarities.**
- ◆ **Review of similar studies.**
- ◆ **Exploratory personal investigation / Observation.**
- ◆ **Logical deduction from the existing theory.**
- ◆ **Continuity of research.**
- ◆ **Intuition and personal experience.**

TYPES OF HYPOTHESIS

⌘ Descriptive Hypothesis

These are assumptions that describe the characteristics (such as size, form or distribution) of a variable. The variable may be an object, person, organisation, situation or event.

Examples:

- “Public enterprises are more amenable for centralized planning”.

⊕ Relational Hypothesis [Explanatory Hypothesis]

These are assumptions that describe the relationship between two variables. The relationship suggested may be positive, negative or causal relationship.

Examples:

- “Families with higher incomes spend more for recreation”.

Causal Hypothesis state that the existence of or change in one variable causes or leads to an effect on another variable. The first variable is called the **independent variable** and the latter is the **dependant variable**.

⊕ Null Hypothesis

When a hypothesis is stated negatively, it is called null hypothesis. It is a **'no difference', 'no relationship'** hypothesis. ie., It states that, no difference exists between the parameter and statistic being compared to or no relationship exists between the variables being compared.

It is usually represented as H_0 or H_0 .

Example:

- H_0 : There is no relationship between a family's income and expenditure on recreation.

⌘ Alternate Hypothesis

It is the hypothesis that describes the researcher's prediction that, there exist a relationship between two variables or it is the opposite of null hypothesis. It is represented as H_A or H_1 .

Example:

H_A : There is a definite relationship between family's income and expenditure on recreation.

FUNCTIONS OR ROLE OF HYPOTHESIS

- ❧ It gives a definite point to the investigation and provides direction to the study.
- ❧ It determines the data needs.
- ❧ It specifies the sources of data.
- ❧ It suggests which type of research is likely to be more appropriate.
- ❧ It determines the most appropriate technique of analysis.
- ❧ It contributes to the development of theory.