

**M A II**  
**RESEARCH METHODOLOGY**  
  
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**UNIT I**  
**MEANING AND NATURE OF RESEARCH**  
  
**1 WHAT IS RESEARCH?**  
  
**RESEARCH IS TO SEE WHAT EVERYBODY  
ELSE HAS SEEN , AND TO THINK WHAT  
NOBODY ELSE HAS THOUGHT**  
  
**ALBERT SZENT GYORBI**

1. **Title** of the **Thesis** .....
2. **Introduction** Giving **Purpose** of **Research**.....  
(in about 200 words)
3. A brief **Review** of the **Work** already done in the field
4. **Noteworthy Contributions** in the field of **Proposed work** .....
5. **Proposed Methodology** during the **Tenure** of the **Research** ..... work
6. **Expected outcome** of the **Proposed work** .....
7. **Bibliography** in **Standard Format** .....
8. **List of paper published** by the candidate .....

**RESEARCH: AN INTRODUCTORY APPROACH**

Research is composed of re and search and refers to search again; to search for new facts to modify older/ existing ones in any branch of knowledge.

Research refers to meaningful inquiry for new facts.

Research often starts from an idea  
unanswered questions  
extension of previous line of inquiry

Obvious function of research is to add new knowledge and cleansing and /or removing rubbish of inapplicable theory/ facts is equally notable.

- Research is an ongoing process and develops  
    **Contents**  
    **Concepts**  
    **Methods**  
    **Presentation(s)**

Research is an **scholarly investigation** in search of **truth, facts, and /or** certainties.  
Research attempts to find answers to unanswered questions.

Research as a careful **critical inquiry** and/or **examination** in seeking facts or principles **diligent investigation** in order to **ascertain** something.

- Research provides an **analytical framework** for the subject matter of **investigation**.
- An **urge of knowledge** is the basic ingredient of academic **research**.
- **Research involves** collection and processing of data from **primary and secondary sources** and thereafter are expressed in **quantitative and qualitative terms**.
- Research **stimulates** the **process of understanding** on one hand and deepens the insight on the other.

- Research attempts to solve the problem(s) of man.
- Researches which do not serve mankind are of little use or of no use.
- The domain of research problems must be well specified and accurately defined.
- Research must be based on facts. Data collected through observation provides a sound basis of research.
- Scientific research is a cumulative process and it is also a rejective process.

- ### Research
- R – Rational way of Thinking
  - E – Expert and Exhaustive Treatment
  - S – Search for Solution
  - E – Exactness
  - A – Aimful Analysis with Adequate Data
  - R – Relationship of Facts
  - C – Careful Recording & Critical Observation
  - H – Honesty and Hard Work

- ### Points to Remember.....
- Research is a logical and systematic search for new and useful information on a particular topic.
  - It is a search for knowledge, that is, a discovery of hidden truths.
  - Research is indeed civilization and determines the economic, social and political development of a nation.
  - It is the pursuit of truth with help of study, observations, comparison and experiments.

### UNIT I MEANING AND NATURE OF RESEARCH

### 2.OBJECTIVES OF RESEARCH

- ### OBJECTIVES :
- TO DISCOVER ANSWERS TO QUESTIONS THROUGH THE APPLICATION OF SCIENTIFIC PROCEDURES.
  - TO FIND OUT THE TRUTH/REALITY WHICH HAS NOT BEEN DISCOVERED AS YET.
  - TO GAIN FAMILIARITY WITH A PHENOMENON
  - TO ACHIEVE NEW INSIGHTS INTO THE SUBJECT/AREA.
  - TO PORTRAY ACCURATELY THE CHARACTERISTICS OF A PARTICULAR INDIVIDUAL, SITUATION OR A GROUP.
  - TO DETERMINE THE FREQUENCY WITH WHICH SOMETHING OCCURS OR IT IS ASSOCIATED WITH SOMETHING ELSE.
  - TO TEST A HYPOTHESIS OF A CAUSAL RELATIONSHIP BETWEEN VARIABLES AND INVARIABLES

- ### OBJECTIVES :
- To discover new facts.
  - To define and redefine the problem.
  - To verify and test important facts.
  - To analyze an event or process or phenomenon to identify the cause and effect relationship.
  - To formulate the hypotheses.
  - To collect, organize and evaluate data

## OBJECTIVES :

- To develop new scientific tools, concepts and theories to solve and understand scientific and nonscientific problems
- To find solutions to scientific, nonscientific and social problems and
- To overcome or solve the problems occurring in our everyday life.

## Characteristics of Research

1. A systematic approach is followed in research. Rules and procedures are an integral part of research that set the objective of a research process. Researchers need to practice ethics and code of conduct while making observations or drawing conclusions.
2. It is based on logical reasoning and involves both inductive and deductive methods.
3. The data or knowledge that is derived is in real time, actual observations in the natural settings.

- There is an in-depth analysis of all the data collected from research so that there are no anomalies associated with it.
- It creates a path for generating new questions. More research opportunity can be generated from existing research.
- It is analytical in nature. It makes use of all the available data so that there is no ambiguity in inference.
- Accuracy is one of the important characteristics of research, the information that is obtained while conducting the research should be accurate and true to its nature.

## Characteristics of Research

- It is directed towards the solution of problem.
- It is based upon observable experience or empirical evidence.
- It demands accurate observation and description.
- It is characterized by carefully designed procedure.

## Characteristics of Research

- It requires expertise.
- It is objective and logical.
- It requires courage.
- It is characterized by patient and unhurried activity.
- It is carefully recorded and reported.

## Utility of Research

- It is an aid to decision making.
- It facilitates the process of thinking, analysis, evaluation, and interpretation.
- It provides a basis for innovation.
- It identifies problem areas.
- It is helpful in the formulation of policy and strategy.

## PURPOSE OF RESEARCH

- Progress and good life
- Development of scientific attitude
- Creativity and innovativeness
- Prediction and Control
- Purposive development:
  - Development = Growth + Change
- Schematic Evaluation
- Impact Analysis
- Methodological Improvement

## MOTIVATION IN RESEARCH :

- WHAT MAKES PEOPLE TO UNDERTAKE RESEARCH ? THE POSSIBLE MOTIVES FOR RESEARCH MAY BE EITHER ONE OR MORE –
  1. TO GET A RESEARCH DEGREE ALONG WITH ITS CONSEQUENTIAL BENEFITS;
  2. TO FACE THE CHALLENGE IN SOLVING THE UNSOLVED PROBLEMS (PRACTICAL PROBLEMS);
  3. TO GET INTELLECTUAL JOB OF DOING SOME CREATIVE WORK;
  4. TO BE OF SERVICE TO SOCIETY;
  5. TO GET RESPECTABILITY.

## MAJOR TYPES OF RESEARCH

- Descriptive Research
- Analytical Research
- Applied Research
- Basic Research
- Quantitative Research
- Qualitative Research
- Conceptual Research
- Non-Scientific Methods



## Descriptive Research

- Surveys and fact finding enquiries of different kind
- Purpose is the description of the state of affairs as it exists in present
- Ex Post Facto Research
- Researcher has no control over the variables; he can only report what has happened or what is happening



## Subdivisions of Descriptive Research

- Survey Research
- The Case Study
- Correlational Study
- Comparative Study



## Analytical Research



- Involves in-depth study and evaluation of available information in an attempt to explain complex phenomenon
- The researcher has to use facts or information already available and analyze these to make a critical evaluation of the material

### Subdivisions of Analytical Research

- Historical research
- Philosophical Research
- Review
- Research synthesis (meta analysis i.e. analysis of the review already published)

### Applied/ Action Research

- Finding a solution to an immediate problem
- Research aimed to find social or political trends that may affect a particular institution is an example of applied research
- Subtypes
  - Marketing Research
  - Evaluation Research

### Basic / Pure / Fundamental Research

- Concerned with generalization and with the formulations of a theory
- Natural phenomenon and mathematics are examples of basic research
- Finding information that has a broad base of application

### Quantitative Research

- Based on measurement of quantity or amount
- Weighing , measuring are examples of quantitative research

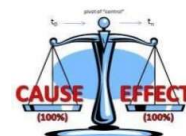


### Qualitative Research

- Phenomena relating to quality or kind
- character, personality and mankind are examples of variables used to measure qualitative research
- Word association test, sentence completion test

### Conceptual / Experimental Research

- Related to some abstract idea or theory
- To develop new concepts or to reinterpret existing ones
- Attempt to establish cause and effect relationship



## Other Types of Research

- Based on Time
  - Cross-sectional Research
  - Longitudinal Research
- Based on Environment
  - Field Research
  - Laboratory Research
- Clinical or Diagnostic Research
  - Case study or in-depth approaches



- Exploratory Research
  - Hypothesis development, rather than hypothesis testing
- Formalized Research
  - Substantial structure and with specific hypothesis to be tested

- Historical Research
  - Utilize historical sources to study events of the past
- Conclusion oriented
  - Picking a problem, redesign enquiry, conceptualize
- Decision oriented
  - For the need for a decision maker, researcher cannot embark upon research his own inclination
  - e.g. : Operations Research

## TYPE OF RESEARCH

### 1. DESCRIPTIVE VS ANALYTICAL :

Descriptive—

\* surveys, fact finding, FACT FINDING AND TO DESCRIBE THAT – WHAT HAS HAPPENED/IS HAPPENING.

ANALYTICAL \* TO USE FACTS OR INFORMATION ALREADY AVAILABLE AND ANALYSE THESE TO MAKE A CRITICAL EVALUATION OF THE MATERIAL.

### 2. APPLIED VS FUNDAMENTAL :

APPLIED \* AIMS AT FINDING A SOLUTION FOR AN IMMEDIATE PROBLEM FACING A SOCIETY OR INDUSTRY OR INSTITUTION.

FUNDAMENTAL \* IS CONCERNED WITH THE FORMULATION OF A THEORY. GATHERING KNOWLEDGE FOR KNOWLEDGE'S SAKE – "PURE/BASIC RESEARCH EX. HUMAN BEHAVIOUR."

### 3. QUANTITATIVE VS QUALITATIVE :

QUANTITATIVE IS BASED ON THE MEASUREMENT OF QUALITY/AMOUNT OF DATA TO EXPRESS IN TERMS OF QUANTITY. QUALITATIVE IS CONCERNED WITH QUALITATIVE PHENOMENON, i.e. PHENOMENA RELATING TO OR INVOLVING QUALITY OR KIND USED SPECIALLY FOR BEHAVIOURAL STUDIES.

### 4. CONCEPTUAL VS EMPIRICAL :

CONCEPTUAL RESEARCH IS RELATED TO SOME ABSTRACT IDEA/THEORY TO DEVELOP NEW CONCEPTS OR TO REINTERPRET EXISTING ONES. EMPIRICAL RESEARCH RELIES ON EXPERIENCE OR OBSERVATION ALONE, EVEN WITHOUT DUE REGARD TO SYSTEM/THEORY. IT IS MAINLY DATA BASED AND ARE CAPABLE OF BEING VERIFIED BY OBSERVATIONS EXPERIMENTS. EMPIRICAL RESEARCH IS APPROPRIATE WHEN PROOF IS SOUGHT THAT CERTAIN VARIABLES AFFECT OTHER VARIABLES IN SOME WAY.

## QUALITIES OF GOOD RESEARCHER

- Rational
- Rationale
- Logical
- Aware
- Awareness
- Positive Attitude
- Zeal
- Effective Attempts
- Honesty in Attempts
- Sincerely



## QUALITIES OF GOOD RESEARCHER

- Volunteering
- Team Spirit
- Capacity to Avail Facilities
- Capacity to Judge the Situation
- Capacity to Identify Problem(s)
- Capacity to Identify Possible Strategies
- Capacity to Accept the Challenge
- To Assess the Resources/Financial
- To Ensure Cooperation
- Determination to Reach to the Conclusion

## Research Methods and Research Methodology

- **Research methods** are the various procedures, schemes and algorithms used in research.
- All the methods used by a researcher during a research study are termed as research methods. They are essentially planned, scientific and value-neutral. They include the critical procedures, experimental studies, numerical schemes, statistical approaches, etc. Research methods help us collect samples, data and find a solution to a problem. Particularly, scientific research methods call for explanations based on collected facts, measurements and observations and not on reasoning alone. They accept only those explanations which can be verified by experiments.

- **Research methodology** is a systematic way to solve a problem. It is a science of studying how research is to be carried out. Essentially, the procedures by which researchers go about their work of describing, explaining and predicting phenomena are called research methodology. It is also defined as the study of methods by which knowledge is gained. Its aim is to give the work plan of research.

## RESEARCH METHODOLOGY

### UNIT II

## MATERIALS AND TOOLS OF RESEARCH

When you do research, you have to gather information and evidence from a variety of sources.

## PRIMARY SOURCES

- A primary source is anything that gives you direct access to the people, events, or phenomena that you are researching
- The most important resources of information that give exact and accurate data for research. Researcher has collected this data on the basis of his own observations.
- It provides direct or firsthand evidence about an event, object, person, or work of art.

## PRIMARY SOURCES

- It includes historical and legal documents, eyewitness accounts, results of experiments, statistical data, pieces of creative writing, audio and video recordings, speeches and art objects.
- If you are researching the past, you cannot directly access it yourself, so you need primary sources that were produced at the time by participants or witnesses (e.g. letters, photographs or newspapers).
- If you are researching something current, your primary sources can either be **qualitative or quantitative data** that you collect yourself (e.g. through interviews, surveys, or experiments) or sources produced by people directly involved in the topic (e.g. official documents or media texts).

## PRIMARY SOURCES

- **Law and politics** Court records  
Legal texts  
Government documents
- **Sciences** Empirical studies  
Statistical data

## PRIMARY SOURCES

- In literary research , primary sources are:
- Works of author/s;
- Autobiography;
- Interviews;
- Articles in newspapers,magazines,letters;
- Data collected through surveys, interviews.

### • Examples of primary sources:

- Autobiographies and memoirs
- Diaries, personal letters, and correspondence
- Interviews, surveys, and fieldwork
- Internet communications on email, blogs, listservs, and newsgroups
- Photographs, drawings, and posters
- Works of art and literature
- Books, magazine and newspaper articles and ads published at the time
- Public opinion polls

- Speeches and oral histories
- Original documents (birth certificates, property deeds, trial transcripts)
- Research data, such as census statistics
- Official and unofficial records of organizations and government agencies
- Artifacts of all kinds, such as tools, coins, clothing, furniture, etc.
- Audio recordings, DVDs, and video recordings
- Government documents (reports, bills, proclamations, hearings, etc.)
- Patents
- Technical reports
- Scientific journal articles reporting experimental research results

## SECONDARY RESOURCES

- A secondary source is anything that **interprets, evaluates, analyzes, summarizes, or synthesizes** information.
- Secondary sources usually refer to one or more primary sources in order to make an argument, develop an idea, or explain something.
- When using secondary sources, make sure to critically evaluate their **credibility** and pay attention to the primary sources they use as evidence.
- **Secondary Sources** are one step removed from primary sources, though they often quote or otherwise use primary sources. They can cover the same topic, but add a layer of interpretation and analysis.

## SECONDARY RESOURCES

- **Examples of secondary sources:**
- Bibliographies
- Biographical works
- Reference books, including dictionaries, encyclopedias, and atlases
- Articles from magazines, journals, and newspapers after the event
- Literature reviews and review articles (e.g., movie reviews, book reviews)
- History books and other popular or scholarly books
- Works of criticism and interpretation
- Commentaries and treatises
- Textbooks
- Indexes and abstracts



## Questionnaires

- It is list of questions related to one topic.
- It may be defined as; "A questionnaire is a systematic compilation of questions that are submitted to a sampling of population from which information is desired." Barr, Davis & Johnson
- "In general, the word questionnaire refers to a device for securing answers to questions by using a form which the respondent fills in himself." W. J. Goode & K. Hall.

## Questionnaires

- The questionnaire is probably most used and most abused of the data gathering devices .
- It is easy to prepare and to administer.
- The questionnaire is a form prepared and distributed to secure responses to certain questions.
- It is a device for securing answers to questions by using a form which the respondent will fill by himself.
- It is a systematic compilation of questions.
- It is an important instrument being used to gather information from widely scattered sources. Normally used where one cannot see personally all of the people from whom he desires responses or where there is no particular reason to see them personally

## Characteristics of a Good Questionnaire:

1. It deals with an important or significant topic.
2. Its significance is carefully stated on the questionnaire itself or on its covering letter.
3. It seeks only that data which cannot be obtained from the resources like books, reports and records.
4. It is as short as possible, only long enough to get the essential data.
5. It is attractive in appearance, neatly arranged and clearly duplicated or printed.
6. Directions are clear and complete, important terms are clarified.
7. The questions are objective, with no clues, hints or suggestions.
8. Questions are presented in a order from simple to complex.
9. Double negatives, adverbs and descriptive adjectives are avoided.
10. Double barreled questions or putting two questions in one question are also avoided

11. The questions carry adequate number of alternatives.
12. It is easy to tabulate, summarize and interpret.

## Merits of Questionnaire Method:

1. It's very economical.
2. It's a time saving process.
3. It covers the research in wide area.
4. It's very suitable for special type of responses.
5. It is most reliable in special cases.

## Demerits of Questionnaire Method:

1. Through this we get only limited responses.
2. Lack of personal contact.
3. Greater possibility of wrong answers.
4. Chances of receiving incomplete response are more.
5. Sometimes answers may be illegible.
6. It may be useless in many problems.

## The Interview

- Interview is a two way method which permits an exchange of ideas and information.
- “Interviewing is fundamentally a process of social interaction.” W. J. Goode & P.K. Hatt.
- “The interview constitutes a social situation between two persons, the psychological process involved requiring both individuals mutually respond though the social research purpose of the interview call for a varied response from the two parties concerned.” Vivien Palmar.
- “The interview may be regarded as a systematic method by which a person enters more or less imaginatively into the inner life of a comparative stranger.” P.V. Young

## Biography and Autobiography

- A **biography**, or simply **bio**, is a detailed description of a person's life. It involves more than just the basic facts like education, work, relationships, and death; it portrays a person's experience of these life events.
- **Autobiographies** often want to make sense of events in their lives and to communicate an important personal statement about life. They may also want to give credit to people who influence them. Controversial individuals often write **autobiographies** to explain or justify their actions.
- The purpose of an **autobiography** is to give you a first-hand account into the life of the person you are reading about, and to give you a better insight into how their experiences have shaped them as a person.

## Bibliography

- A **bibliography** is a list of all of the sources you have used (whether referenced or not) in the process of researching your work. In general, a **bibliography** should include: the authors' names, the titles of the works, the names and locations of the companies that published your copies of the sources

## Thesaurus

- Like a dictionary, a **thesaurus** can help you expand the way that you discuss your topic.
- A **thesaurus** contains groupings of words that are collected in terms of their meaning.
- This is how you can **use a thesaurus** in your **research**: ... Once you find the word, look at the words that are listed alongside the main word.

## Unpublished research

- **Unpublished research** includes work in progress, work submitted for publication but not yet published, or work that has been completed but not submitted for publication.
- **You will cite unpublished** work the same as **you would** published work, with the author's last name and the year the work is in progress or was completed.
- When making reference to unpublished university dissertations or theses you must include:
  - The author's name
  - The title in **single quotation marks**
  - The level of the degree, name of the university and the date **in brackets**
- **Example**
- *Anna Leone, Evolution and Change: Town and Country in Late Antique North Africa (unpublished doctoral thesis, University of Leicester, 2001), p. 23.*

## Newspaper article

- The newspaper articles are the primary sources when newspaper articles are used for historical research. This is because newspaper articles, written about a specific event immediately after its occurrence, can be viewed as primary sources.
- Articles written and included in daily newspapers, before the internet, were the latest and most up to date reports of events. Often, there was a morning and an evening edition of a daily, and as such, these are often regarded as primary sources.
- However, it is important to remember that a newspaper is put together by an editor, and the editor can cut and paste articles in a particular order and in a particular way to fit the editorial style they are looking for.

## Research Monographs

- Research Monographs are “separately published reports on original research that are too long, too specialized, or otherwise unsuitable for publication in one of the standard journals.
- Each Monograph is self-contained, frequently summarizes existing theory or practice before presenting the author’s original and previously unpublished work, and is likely to be one of a series of such research monographs in the same field.” However, it may be added that ordinarily a monograph is a short treatise. It differs from a treatise in the same that it is a work done on a more limited scale.
- A research monograph presents results of original research.

## Library catalog

- Anatomy of a **Catalog** Record for a Book
- Each record in the **library catalog** (QuickSearch) is composed of important elements of information that describe a specific item. For example, the elements of information for a specific book title would be contained in a single **catalog** record.
- OPAC

## Literature Resource Center

- *Literature Resource Center* is the most current, comprehensive and reliable online literature database. It offers the broadest and most representative range of authors and their works, including a large collection of full-text critical and literary analysis.
- The database provides researchers with inbounding evidence to support their literary responses and thesis statements through a diversity of scholars and critics that ensure all views and perspectives are represented.
- Integrated with the most popular collaboration tools, students and patrons rely on this go-to resource whenever and wherever they do research.

## Electronic journal

- An electronic journal is a periodical publication which is published in electronic format, usually on the Internet.
- Electronic journals have several advantages over traditional printed journals:
- You can search the contents pages and/or the full text of journals to find articles on a certain subject.
- You can read journal articles on your desktop, you don't have to be in the Library.
- You can e-mail articles to yourself or download them for printing.
- The article that you want to read will always be available, even when the Library is closed.
- Hypertext links allow you to move to different sections within individual journals or articles and can link you to related resources on the Internet.

- Journals can include more images and audio-visual material.
- Journals can be interactive - you can e-mail the author or editor with your comments.
- Many electronic journals which are available are electronic versions of journals which exist in print. For example, if you wanted to see the journal called "Man" this journal is available physically on [Level F in the Library](#), but is also available to SOAS users in [electronic format](#).
- Some journals are only available in electronic format and although some of these journals are of a high "academic" quality, please be aware that not all of them have gone through the same process of academic peer review as traditional print journals.

## Types of e-Journals

- (a) E-Journal on CD-ROMS;
- (b) On Line Journal;
- (c) On Line Journals with print Copy, it may be either free or at some nominal charges;
- (d) On Line indexing and abstracting journals. T

## Characteristics' of E-Journals

- Immediate access to high demand and frequently used items
- Information is stored in data format
- Easier access to individual components within items (e.g. an article of the journal)
- Rapid access to the required material,
- The ability to enhance digital images in terms of size sharpness, colour, contrast etc.
- The potential to conserve fragile/precious originals while presenting surrogate in more accessible forms
- Enhanced search ability including full text
- Intergration of different media i.e. images, sounds, videos etc.
- Reducing the problem of cost of delivery.

## Disadvantage of E-Journals

- Too much expensive
- on reliability of electronic media
- Threat to intellectual property right
- Lack of expertise on the part of users and library staff
- Adverse effects on user's health

## Research Methodology

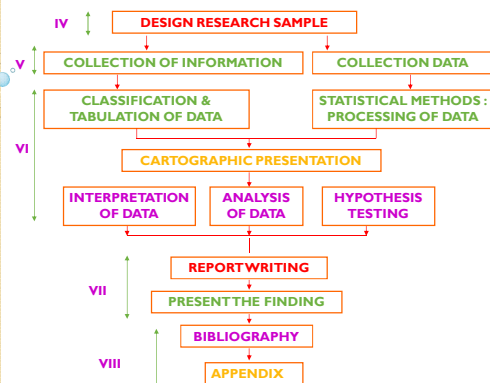
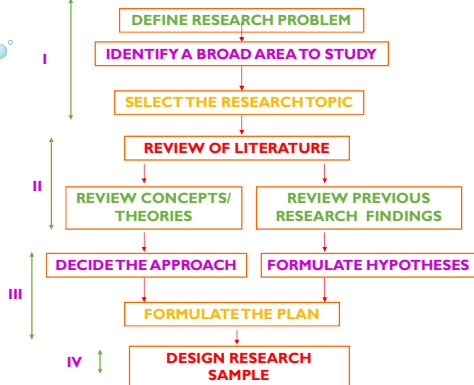
### • Unit II B

### • Research Process

## 7 STEPS RESEARCH PROCESSES

- 7 Write Final Draft & Cited References
- 6 Edit, Correct & Revise
- 5 Write Draft
- 4 Evaluate Information & Write Research Question
- 3 Organize Information & Citations
- 2 Collect Background Information
- 1 Choose a Topic

## A PROCESS MODEL



### Selecting the research area/Define Research Problem/Choose of Topic

- **1.** You are expected to state that you have selected the **research area** due to professional and personal interests in the area and this statement must be true. The importance of this first stage in the research process is often underestimated by many students. If you find research area and research problem that is genuinely interesting to you it is for sure that the whole process of writing your dissertation will be much easier. Therefore, it is never too early to start thinking about the research area for your dissertation.

### Suggestion for research topics may arise from the following

- Theses and dissertations
- Articles in academic and professional journals
- Reports
- Annual survey (Theme Based)
- Communication with experts in the field
- Conversations with potential users of the research findings
- Discussions with fellow researchers/Colleagues
- The media

### IDENTIFY A BROAD AREA TO STUDY

- **Formulating research aim, objectives and research questions or developing hypotheses.** The choice between the formulation of research questions and the development of hypotheses depends on your research approach. Appropriate research aims and objectives or hypotheses usually result from several attempts and revisions and these need to be mentioned in Methodology chapter. It is critically important to get your research questions or hypotheses confirmed by your supervisor before moving forward with the work.

### Review of Literature

- Literature review is usually the longest stage in the research process. Actually, the literature review starts even before the formulation of research aims and objective; because you have to check if exactly the same research problem has been addressed before. Nevertheless, the main part of the literature review is conducted after the formulation of research aim and objectives. You have to use a wide range of secondary data sources such as books, newspapers, magazines, journals, online articles etc.

### Survey of Literature/Review of Literature

- Most research work involves use of published literature.
- Indeed the ability to ferret out obscure facts is often seen as the primary activity of the researcher.
- The regulation for research degree always contain a requirement that candidate should demonstrate the ability to make proper critical use of relevant literature.
- The successful researcher needs to be able to do just this.
- It is assumed that the researcher is reasonably familiar with the use of libraries, particularly specialist and academic libraries.

- There are two major reasons carrying out a survey of literature –

- As a part of the process of topic selection.
- As a part research project/Ph.D needs to carry out several surveys of relevant published literature in rather greater depth.
- The preparation of detailed research proposal/synopsis will require the researcher to define previous work in his proposed fields and in those allied to it.

## Review of Literature

### Step I

- Prepare the list of Libraries.
- Identify the libraries as per research need.
- Select the libraries to be consulted.
- Initiate a correspondence with the libraries identified to know about the
  - Services provided,
  - Facilities available and
  - Working hours and the working procedure.
- Convey the tentative program of your visit and duration.
- Find out the details of organizations providing financial assistance for library consultation and associated activities.

### Step II

- Prefer to visit libraries undergone automation.
- Please learn basics of computer operation.
- After reaching the library observe (i) the functioning of library and (ii) identify the place for work (iii) identify the person who can help.
- Start feeding points as per your need to procure the required research material.
- Carefully read the titles projected on the screen of the computer.
- Identify the titles as per the objectives and requirements of the study.
- Fill up the demand slip to procure the identified research material.
- Carefully go through the research material made available to you.
- Fill up the requisition slip for the photo copy of the identified material (please ensure that all details have been incorporated).

### Step III

- Please convert the photo copied material into academic content.
- Please go through the available research material to search the material likely to be used in the proposed study.
- Develop your own codes and methods to mark the relevant and useful contents likely to be used in the proposed study.
- Add the source material in your bibliography.
- Mark the alphabetical serial no. of bibliography on the source material.
- Mark the accumulated number for all titles of the bibliography.
- Put a brief note about the relevance of research material on the back, to facilitate its use at the right place as and when required.
- Please try to classify the photocopied material as per the chapters of the proposed study.
- Constantly review the material procured and identify the possible gaps and initiate the process to plug such gaps.

### Step IV

- Extract the required material from the photocopied material, likely to be used in the first draft of the proposed study.
- Specific details of extracted material to be carefully marked (as per the referred pages) to facilitate the verification and / or needful corrections as & when Example..  
The level of awareness of the planet, its environment and its bounties on which we survive..... K-9/10  
Let us hope, we are able to meet this impending challenge..... K-9/12  
The analysis of the selected developmental and infrastructure indicates wide variations..... S-2/7\*  
Alphabet represents – surname of author – K : Kapoor; S : Sharma  
Number represents – S-12 Sr. number of alphabet in the bibliography  
S-2/7\* number represents page number of the source material referred.
- Chapter wise set of loose pages be prepared, so that extraction of the required material is placed as per requirements.
- After reviewing the composition of tables, new format of tables be evolved to classify and tabulate the data as per the requirement of the study.
- Similarly diagrams and maps also be designed as per the combination of variables.

## Formulating Hypothesis

- Ordinarily, when one talks about hypothesis, one simply means a mere assumption or some supposition to be proved or disproved. But for a researcher hypothesis is a **formal question that he intends to resolve**.
- Thus a hypothesis may be defined as a proposition or a set of proposition set forth as an explanation for the occurrence of some specified group of phenomena either asserted merely as a provisional conjecture to guide some investigation or accepted as highly probable in the light of established facts.
- Quite often a research hypothesis is a predictive statement, capable of being tested by scientific methods, that relates an independent variable to some dependent variable.

## Formulating Hypothesis

- For example, consider statements like the following ones:  
“Students who receive counseling will show a greater increase in creativity than students not receiving counseling”  
“the automobile A is performing as well as automobile B.”
- “Drinking sugary drinks daily leads to obesity” or,
- “The female students perform as well as the male students”.
- These are hypotheses capable of being objectively verified and tested. Thus, we may conclude that a hypothesis states what we are looking for and it is a proposition which can be put to a test to determine its validity.



## Types of hypothesis

- This usually involves proposing a possible relationship between two variables: the independent variable (what the researcher changes) and the dependent variable (what the research measures).
- A **variable** is **defined** as anything that has a quantity or quality that varies.
- **Variables** can be defined as any aspect of a theory that can vary or change as part of the interaction within the theory. In other words, **variables** are anything can effect or change the results of a **study**. Every **study** has **variables** as these are needed in order to understand differences.

- The dependent **variable** is the **variable** a researcher is interested in.
- An independent **variable** is a **variable** believed to affect the dependent **variable**.
- Confounding **variables** are **defined** as interference caused by another **variable**.
- First, we must take a moment to define **independent** and **dependent** variables. Simply put, an independent variable is the **cause** and the dependent variable is the **effect**. The independent variable can be changed whereas the dependent variable is what you're watching for change.

For example: How does the amount of makeup one applies affect how clear their skin is? Here, the independent variable is the makeup and the dependent variable is the skin.

### The six most common forms of hypotheses are:

- Simple Hypothesis
- Complex Hypothesis
- Empirical Hypothesis
- Null Hypothesis (Denoted by "H0")
- Alternative Hypothesis (Denoted by "H1")
- Logical Hypothesis
- Statistical Hypothesis

- A **simple hypothesis** is a prediction of the relationship between two variables: the independent variable and the dependent variable.

Ex:

Drinking sugary drinks daily leads to obesity.

- A **complex hypothesis** examines the relationship between two or more independent variables and two or more dependent variables.

Ex:

Overweight adults who

1) value longevity and 2) seek happiness are more likely than other adults to

1) lose their excess weight and 2) feel a more regular sense of joy.

- A **null hypothesis** (H0) exists when a researcher believes there is no relationship between the two variables, or there is a lack of information to state a scientific hypothesis. This is something to attempt to disprove or discredit.

Ex:

There is no significant change in my health during the times when I drink green tea only or milk only.

- This is where the **alternative hypothesis** (H1) enters the scene. In an attempt to disprove a null hypothesis, researchers will seek to discover an alternative hypothesis.

Ex:

My health improves during the times when I drink green tea only, as opposed to milk only.

- A **logical hypothesis** is a proposed explanation possessing limited evidence. Generally, you want to turn a logical hypothesis into an empirical hypothesis, putting your theories or postulations to the test.

Ex: Cacti experience more successful growth rates than tulips on Mars. (Until we're able to test plant growth in Mars' ground for an extended period of time, the evidence for this claim will be limited and the hypothesis will only remain logical.)

- An **empirical hypothesis**, or working hypothesis, comes to life when a theory is being put to the test, using observation and experiment. It's no longer just an idea or notion. It's actually going through some trial and error, and perhaps changing around those independent variables.

Ex: Roses watered with liquid Vitamin B grow faster than roses watered with liquid Vitamin E. (Here, trial and error is leading to a series of findings.)

- A **statistical hypothesis** is an examination of a portion of a population.

Ex:

If you wanted to conduct a study on the life expectancy of Indians, you would want to examine every single resident of India. This is not practical. Therefore, you would conduct your research using a statistical hypothesis, or a sample of the Indian population.

- A **Directional hypothesis** predicts the direction of the relationship between the independent and dependent variable.

Ex:

Girls ability of learning life science is better than boys.

- A **Non Directional hypothesis** predicts the relationship between the independent variable and dependent variable but does not specify the directional of the relationship.

Ex:

Teacher–student relationship influence student’s learning.

A **Causal hypothesis** predicts a cause and effects relationship or interaction between the independent variable and dependent variable.

An **Associative hypothesis** states an associative relationship between the independent variable and dependent variable.

When there is a change in any one of the variables, changes occur in the other variable.

## Characteristics of hypothesis

- Hypothesis should be clear and precise. If the hypothesis is not clear and precise, the inferences drawn on its basis cannot be taken as reliable.
- Hypothesis should be capable of being tested. In a swamp of untestable hypotheses, many a time the research programmes have bogged down. Some prior study may be done by researcher in order to make hypothesis a testable one.
- Hypothesis should state relationship between variables, if it happens to be a relational hypothesis.
- Hypothesis should be limited in scope and must be specific. A researcher must remember that narrower hypotheses are generally more testable and he should develop such hypotheses.

- Hypothesis should be stated as far as possible in most simple terms so that the same is easily understandable by all concerned. But one must remember that simplicity of hypothesis has nothing to do with its significance.
- Hypothesis should be consistent with most known facts i.e., it must be consistent with a substantial body of established facts. In other words, it should be one which judges accept as being the most likely.
- Hypothesis should be amenable to testing within a reasonable time. One should not use even an excellent hypothesis, if the same cannot be tested in reasonable time for one cannot spend a life-time collecting data to test it.
- Hypothesis must explain the facts that gave rise to the need for explanation. This means that by using the hypothesis plus other known and accepted generalizations, one should be able to deduce the original problem condition. Thus hypothesis must actually explain what it claims to explain; it should have empirical reference.

- One of the valuable attribute of a good hypothesis is to predict for future. It not only clears the present problematic situation but also predict for the future that what would be happened in the coming time. So, hypothesis is a best guide of research activity due to power of prediction.
- A hypothesis must have close contact with observable things. It does not believe on air castles but it is based on observation. Those things and objects which we cannot observe, for that hypothesis cannot be formulated. The verification of a hypothesis is based on observable things.
- A hypothesis should be so dabble to every layman, P.V Young says, “A hypothesis would be simple, if a researcher has more in sight towards the problem”. W-ocean stated that, “A hypothesis should be as sharp as razor’s blade”. So, a good hypothesis must be simple and have no complexity.

- If a hypothesis is relevant to a particular problem, it would be considered as good one. A hypothesis is guidance for the identification and solution of the problem, so it must be accordance to the problem.
- It should be formulated for a particular and specific problem. It should not include generalization. If generalization exists, then a hypothesis cannot reach to the correct conclusions.
- Hypothesis must be relevant to the techniques which is available for testing. A researcher must know about the workable techniques before formulating a hypothesis.
- It should be able to provide new suggestions and ways of knowledge. It must create new discoveries of knowledge J.S. Mill, one of the eminent researcher says that “Hypothesis is the best source of new knowledge it creates new ways of discoveries”.

- Internal harmony and consistency is a major characteristic of good hypothesis. It should be out of contradictions and conflicts. There must be a close relationship between variables which one is dependent on other.
- It must provide a reasonable explanation for the event that has occurred or will occur.
- It must be consistent with prior research or observations.

## Importance of Hypothesis

- It provides clarity to research problem and research objectives.
- It describes, explains or predicts the expected results or outcomes of the research.
- It indicates the type of research design.
- It directs the research study process.
- It facilitates data collection, data analysis, and data interpretation.

## Selecting methods of data collection

- Data collection method(s) need to be selected on the basis of critically analyzing advantages and disadvantages associated with several alternative data collection methods.
- In studies involving primary data collection, in-depth discussions of advantages and disadvantages of selected primary data collection method(s) need to be included in methodology.

- **Data collection**
- Data collection is the most important work, is researcher. The collection of information must be containing on facts which is from the following two types of researcher.
- **Primary Data Collection:** Primary data may be from the following.
  - Experiment
  - Questionnaire
  - Observation
  - Interview
- **Secondary data collection:** it has the following categories:
  - Review of literature
  - Official and non-official reports
  - Library approach

## Collecting the primary data

- Primary data collection needs to be preceded by a great level of preparation and pilot data collection may be required in case of questionnaires.
- Primary data collection is not a compulsory stage for all dissertations and you will skip this stage if you are conducting a desk-based research.

## Data analysis

- Analysis of data plays an important role in the achievement of research aim and objectives.
- Data analysis methods vary between secondary and primary studies, as well as, between qualitative and quantitative studies.
- When data is collected, it is forwarded for analysis which is the most technical job. Data analysis may be divided into two main categories.
- **Data Processing:** it is sub-divided into the following.
  - Data editing, Data coding, Data classification, Data tabulation, Data presentation, Data measurement

- **Data Exposition:** Data Exposition has the following sub-categories.
  - Description, Explanation, Narration, Conclusion/Findings, Recommendations/Suggestions
- **Hypothesis Testing**
  - Research data is then forwarded to test the hypothesis. Do the hypothesis are related to the facts or not? To find the answer the process of testing hypothesis is undertaken which may result in accepting or rejecting the hypothesis.

- **Generalization and Interpretation**
  - The acceptable hypothesis is possible for researcher to arrival at the process of generalization or to make & theory. Some types of research has no hypothesis for which researcher depends upon on theory which is known as interpretation.

### Interpretation

- ➤ Drawing inferences from the collected data/facts
  - To have broader meaning
  - To establish continuity in research through linking the results of a given study
  - To establish explanatory concepts
  - To establish relationship within the collected and processed data
  - To help in explaining the observations of the researcher

### Why Interpretation

- To understand the findings
- To link with other studies
- May lead to new enquiries/helping the continuity
- To establish the explanatory concepts for future research
- Open new avenues
- Stimulates the quest for the more knowledge
- Results help in forming the hypotheses

### Reaching conclusions

- Conclusions relate to the level of achievement of research aims and objectives.
- In this final part of your dissertation you will have to justify why you think that research aims and objectives have been achieved.
- Conclusions also need to cover research limitations and suggestions for future research.

### Completing the research

- Following all of the stages described above, and organizing separate chapters into one file leads to the completion of the first draft.
- The first draft of your dissertation needs to be prepared at least one month before the submission deadline. This is because you will need to have sufficient amount of time to address feedback of your supervisor.

## WRITING RESEARCH/PROJECT REPORT

- Research report is considered as a major component of the research.
- Research remains incomplete till the report has been presented and/or written.
- Brilliant hypothesis, highly well designed and conducted research and most striking findings are of little significance unless they are effectively communicated.
- The purpose of research is not well served unless the findings are made known to others.
- This all be done with utmost care.

## Report Writing be done

- After collecting data/information/literature Very carefully
- After cartographic presentation of processed data
- After drawing inferences
- After the Analysis of data/information
- Otherwise misleading conclusions
- Purpose is defeated.

## Writing Report

- Logical analysis of the subject matter
- Preparation of the final outline
- Preparation of the first draft
- Rewriting and polishing of the first draft
- Preparing Second draft incorporating various contents
- Preparation of the final draft/bibliography

## SOME IMPORTANT TIPS.....

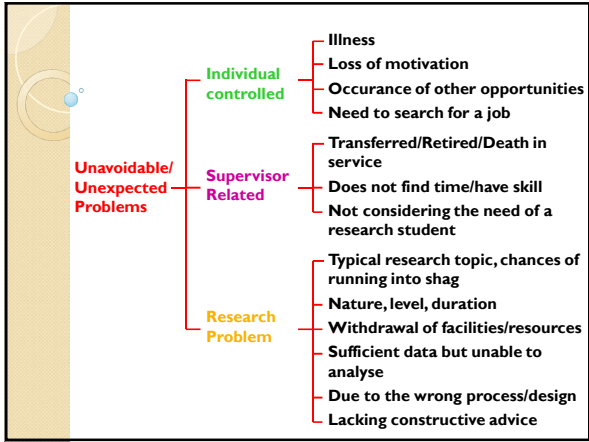
- Use acceptable language since writing is to communicate to others
- Be clear and precise
- Work be gradually diversified considering the need
  - Concise
  - Logical
  - Well structured
- Maintain clarity about objectives / Methods
- Method is like a tool : One will get success if the choice is correct
- Successful completion requires
  - interest
  - involvement
  - Researcher
  - Supervisor
  - Word
  - Sentence
  - Para
- Problem in opening statement : difficult to write first
- May start with background material/quotation/by putting question/ forecast
- Can support your statement with quotations
- Maintain continuity with Para / chapter
- Maintain the flow of issue dealing

- Keep the sequence of topics intact
- Change Para with issues/aspects
- Maintain cross references
- Remember references can not be corrected
- Have your own style
- Avoid over confidence take others help
- Avoid writing "I" use "We"
- Avoid to waste time
- Avoid jargon
- Avoid too long / too short Para
- Avoid repetition
- Avoid
  - Complex
  - Long
  - Too short
  - Dull
  - Heavy
 sentences
- Avoid bias be objective in writing
- Avoid
  - it is interesting
  - figure shows
- Avoid long tables
- Know your own personality / position
- Establish a relationship and pleasant association
- Allow enough time

## PROBLEMS IN RESEARCH

- Identify or Anticipate problems; suggest anticipatory action to avoid delay;
- Suggest ways of coping with unavoidable or unexpected problems which may arise;
- Make positive suggestions which will facilitate research progress

- Problems
  - Avoidable
  - Unavoidable
  - Unexpected
- Avoidable Problems
  - Over commitment
  - Failure to make use of the research plan
  - Adequacy of supervision



## Bibliography

- A **bibliography** is a list of books, scholarly articles, speeches, private records, diaries, interviews, laws, letters, websites, and other sources you use when researching a topic and **writing** a paper. The **bibliography** appears at the end.
- It is important to note that it must be a complete list including every source used during the research phase – not just the ones referenced in the text in any styles of writing.
- APA or MLA two styles.

## Sequence in Bibliography

- author name (the last name goes first, then a comma, then the first name of the author)
- title of the publication (and the title of the article if it's a magazine or encyclopedia)
- date of publication.
- the place of publication of a book.
- the publishing company of a book.
- the volume number of a magazine or printed encyclopedia.
- the page number(s)

## Bibliography

- MUKHERJEE, A. AND AGNIHOTRI, V.K. (1993) ENVIRONMENT AND DEVELOPMENT, CONCEPT PUBLISHING COMPANY, NEW DELHI. ISBN 81-7022-788-8
- SHUKLA, SANTOSH AND SHRIVASTAVA, SAURABH (2012) URBANISATION AND TRANSFORMATION OF RURAL ENVIRONMENT IN MADHYA PRADESH, READWORTHY PUBLICATIONS (P) LTD., NEW DELHI. ISBN 13:978-93-5018-135-5
- SHRIVASTAV, V.K. (Ed.) (1999) COMMERCIAL ACTIVITIES AND DEVELOPMENT IN THE GANGA BASIN, CONCEPT PUBLISHING COMPANY, NEW DELHI. ISBN 81-7022-194-3

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<ul style="list-style-type: none"> <li>•The complete name of the author</li> <li>•The title of the publication (and also the article title if it is a magazine or encyclopedia)</li> <li>•The date of publication</li> <li>•The name of the publisher</li> <li>•The volume and page numbers</li> </ul>	<ul style="list-style-type: none"> <li>•The name of the author</li> <li>•The name of the editor</li> <li>•The name of the company which posted the website</li> <li>•The URL or web address</li> <li>•The date you accessed the page</li> </ul>

## LITERARY RESEARCH

- The first thing to think about is that '**literary**' relates to **literature**. **Research** usually means finding something new: a substance, a formula, or an invention. So, **literary research** means finding something new within a **literary** work.
- **Literary Research** is the backbone of various **research** branches **Literary Research** includes - To find out all possible information's about a particular text or **literature** in published or unpublished matter in various forms.



## LITERARY RESEARCH

There are basically three ways that you can approach your own literary research:

- You can find an article about the work and disagree with it,
- you can find an article that you agree with and expand the author's opinion,
- or you can come up with a completely new idea.
- The important thing is to argue some point; say something specific about the literary work.

## LITERARY RESEARCH

- Your **thesis**, main idea, has to be an argument of sorts.
- This isn't a book report, in which you simply summarize the book.
- One way of looking at the task is that there must be two sides to an argument, so whatever you're saying about this narrative, there must be other people who would disagree with you.

## LITERARY RESEARCH

- **Methodology** in the **study** of **literature** or **literary** criticism would refer to the particular approach or theory used when reading or analyzing a **literary** text.
- The kinds of questions you ask will in turn direct to a particular theory and within that theory a particular **method** for your analysis.

## LITERARY RESEARCH

- In literature, methodology can be many things. For example, it can be the method an author uses to create a character in their work, or the method—a group of processes—the author uses to complete a work or begin a work. In most of my time dealing with discussions of literature, we use terms such as **genre** to refer to stories typed by the method—manner or way in which something is done—the work uses to tell its story: does it use mystery, terror, romance, historical romance, comedy, and so on.

## LITERARY RESEARCH

- In **literary research** cross-checks against different man-made **literary** trends, patterns, and styles (aka law-conformance) in **literature**. **Scientific research** checks against nature's trends, patterns, law-conformance and predictability.
- In natural sciences and social sciences two kinds of research: basic and applied.
- Literary research is of four kinds:
  - 1 Bibliography and textual criticism
  - 2 Biographical
  - 3 Theoretical
  - 4 Interpretive

## LITERARY RESEARCH

- **Bibliography and textual criticism:**

It is the research that is concerned with the identification and removal of transcription errors in the text.
- **Biographical:**

It is a wild field of different approaches and research strategies. The human reflexivity is the central mechanism mediating the influence of objective social and cultural conditions.
- **Theoretical:**

Its aim is to profound the theory of literature or modify and improve an already existing one.
- **Interpretive:**

It is an approach to research in the human sciences.

#### HOW TO PROCEED

1. RESEARCH TOPIC TO BE IMPOSED ON THE STUDENT/ RESEARCH STUDENT.
2. RESEARCH AREA BE DECIDED WITH THE CONSULTATION OF THE STUDENT/RESEARCH STUDENT.
3. RESEARCH MUST BE COMPLETED WITHIN A GIVEN PERIOD (IT TO BE RATED AS SUCCESS).
4. UNIT BE DECIDED ON WHICH THE ANALYSIS HAS TO BE COMPLETED.
5. PERIOD BE DECIDED ON WHICH THE ANALYSIS HAS TO BE COMPLETED.
6. ASSESSMENT OF FUNDS FOR EXPERIMENTS, FIELD WORK, COMPUTER ANALYSIS, CARTOGRAPHIC WORK, STATIONARY, POSTAGE ETC BE MADE.
7. RESULTS OF THE RESEARCH WORK BE PRESENTED IN A SPECIFIED MANNER.
8. COMPETENCE OF THE STUDENT AS WELL OF THE SUPERVISOR TO BE GAUGED IN THE FIELD OF STUDY CHOSEN.

THIS BE DONE CONSIDERING THE REQUIREMENT AND LEVEL OF THE RESEARCH WORK –

- \* FIRST DEGREE AND DIPLOMA PROJECTS;
- \* POST-GRADUATE DISSERTATION;
- \* MASTER'S DEGREE (M Phil);
- \* DOCTORAL RESEARCH WORK;