

**RESEARCH METHODOLOGY**  
**SEMESTER IV (SEC)**  
**Lecture 1**

**Question Pattern:**

- 10 questions of 2 marks each=20
- 4 questions of 5marks each=20
- 4 questions of 10 marks each=40

**Unit 1: Methodological Issues 1**

- *Locating the basic issues- theme based literature survey and motivation behind any study objectives of the study-development of writing skills*
- *Designing the sampling frame in case of field survey - the role of pilot survey*
- *The role of random numbers in drawing random sample*
- *Methods behind preparation of questionnaire in case of field survey*
- *Data entry after field survey*
- *Tabular representation of data and graphs for data interpretation*

**1.1: The Basic Issues**

Before we proceed on the issue, let us briefly discuss as to what we do really mean by the term 'Research'. As we all know, research in our day to day conversation implies a careful investigation or inquiry to search for new facts in any branch of knowledge.

However, we are also aware that research is an academic activity and as such the term should be used in a technical sense. Thus, the act of "research" includes

- (i) defining and redefining problems,
- (ii) formulating hypothesis or suggested solutions;
- (iii) collecting, organising and evaluating data;
- (iv) making deductions and
- (v) reaching conclusions; and at last carefully testing the conclusions to determine whether they fit the formulating hypothesis.

Research is, thus, an original contribution to the existing stock of knowledge making for its advancement.

**Types of Research**

The basic types of research are as follows:

- (i) **Descriptive vs. Analytical:** *Descriptive research* includes surveys and fact-finding enquiries of different kinds. The major purpose of descriptive research is description of the state of affairs as it exists at present. In social science and business research we quite often use the term *Ex post facto research* for *descriptive research* studies. The main characteristic of this method is that the researcher has no control over the variables; he can only report what has happened or what is happening. *Analytical research*, on the other hand, implies that the researcher has to use facts or information already available, and analyze these to make a critical evaluation of the material.

- (ii) **Applied vs. Fundamental:** Research can be either **applied** or **fundamental** (basic or pure). *Applied research* aims at finding a solution for an immediate problem facing a society or an industrial/business organisation, whereas *fundamental research* is mainly concerned with generalisations and with the formulation of a theory.

"Gathering knowledge for knowledge's sake is termed 'pure' or 'basic' research." Research concerning some natural phenomenon or relating to pure mathematics are examples of fundamental research. On the other hand, research aimed at certain conclusions (say, a solution) facing a particular social or business problem is an example of applied research. Research to identify social, economic or political trends or a marketing research is example of **applied** research.

- (iii) **Quantitative vs. Qualitative:** **Quantitative** research is based on the measurement of quantity or amount. It is applicable to phenomena that can be expressed in terms of quantity. **Qualitative** research, on the other hand, is concerned with qualitative phenomenon. For example, when we are interested in investigating the reasons for human behaviour (i.e., why people think or do certain things), that is an important type of qualitative research.

- (iv) **Conceptual vs. Empirical:** **Conceptual** research is that related to some abstract idea(s) or theory. It is generally used by thinkers to develop new concepts or to reinterpret existing ones. On the other hand, **empirical** research relies on experience or observation alone, often without due regard for system and theory. It is data-based research.

In such a research, the researcher must first provide himself with a working hypothesis or guess as to the probable results. He then works to get enough facts (data) to prove or disprove his hypothesis.

### **Difference between research methods and research methodology**

Let us now explain the difference between research methods and research methodology.

Research methods, that is, all the methods used in conducting a research, can be put into the following three groups:

1. In the first group we include those methods which are concerned with the collection of data. These methods will be used where the data already available are not sufficient to arrive at the required solution;
2. The second group consists of those statistical techniques which are used for establishing relationships between the data and the unknowns;
3. The third group consists of those methods which are used to evaluate the accuracy of the results obtained.

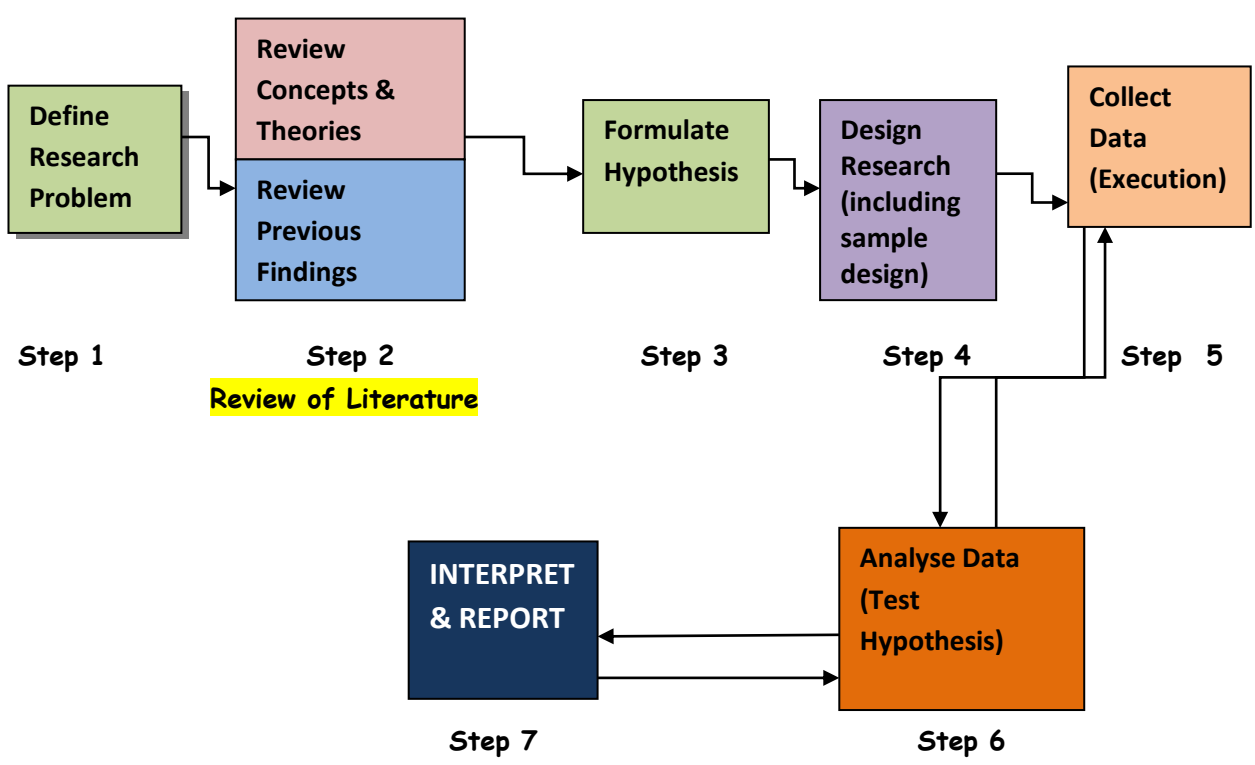
Research methodology, on the other hand, is the scientific way to efficiently solve research problems. The comparative chart between research method and research methodology can be described as follows:

	Research Method	Research Methodology
<b>Meaning</b>	Research Method implies the methods employed by the researcher to conduct research.	Research methodology signifies way to efficiently solving research problems.
<b>What is it?</b>	Behaviour and instrument used in the selection and construction of the research technique.	Science of understanding, how research is performed methodically.
<b>Encompasses</b>	Carrying out experiment, test, surveys and so on.	Study different techniques which can be utilized in the performance of experiment, test, surveys etc.
<b>Objective</b>	To discover solution to research problem.	To apply correct procedures so as to determine solutions.

### 1.2: Theme based literature survey and motivation behind any study

If we go through any good research paper in any reputed journal, we shall find that all papers have a common arrangement. That arrangement will give us a fair idea about the likely flow chart of the research process. So, before, we go into the aspect of literature survey, let us first take a look at that flow chart (in respect of an empirical research).

**FLOW CHART OF AN EMPIRICAL RESEARCH WORK**



**Literature Survey:** The purpose of carrying out a *Literature Survey* is to demonstrate and develop our familiarity with other people's work relevant to the focus of our study. We usually survey their written work in books and in papers in academic journals, but a survey could also include speeches, documentary films or other outputs.

The question is: how does the scholar proceed to make a meaningful literature survey? (Note: It is expected that a question of 10 marks will be set where you will be asked to write a literature survey on a topic of your own choice. So your home assignment is to prepare a literature survey on any topic - like, say, Jobless growth in India - problems and prospects)

The literature survey should be theme-based. It should be classified under various sub-themes on the basis of the topic of research. It should not be haphazardly written. Therefore, we should not skip from one area to another and one author to another. This will make the reader lose track on what the researcher is trying to focus on.

For example, if the topic of research is "**Impact of FDI on employment level in the organized manufacturing sector in India,**", the literature survey can be done on the basis of works under the sub-themes like (i) Empirical works on impact of FDI on employment at the international level, (ii) Theoretical works on impact of FDI on employment at the international level, (iii) Empirical works on impact of FDI on employment in the organized manufacturing sector of India, etc.

Under each sub-theme, the literature survey **should not be go like** this: One paragraph showing author 'A' has done this, other paragraph showing author 'B' has done that. **This is bad literature survey.**

Under each sub- theme a researcher should arrange his survey properly. Thus, he /she should say that authors A,B,C and D have focused on this common aspect or supported this view, though authors like E, F and G have looked at a different perspective and have instead said ..... **This is good literature survey.**

We give below an example (**I have slightly re-arranged it and given only selected portions**) from an article published in **Economic & Political Weekly** - a very reputed journal - in September, 2017. The article is titled "Explaining Falling Female Employment during a High Growth Period" and is written by Santosh Mehrotra and Sharmistha Sinha.

*"A rise in women's participation in economic activities is important..... at a macroeconomic level.....Calculations show that in India raising the participation of women in the labour market with a package of pro-growth and pro-women policies can boost the growth rate by about 2 percentage points over time (OECD 2015). Female employment is crucial not just because it has a positive effect on their own quality of life, but is also significantly improves the living standard of the entire household (Subbarao and Raney 1993; Dreze and Sen 1989).*

*.....Cross-country evidence suggests that female labour force participation is high in low income countries as well as in the upper-middle and high income economies, but relatively low in lower middle-income countries, creating a U-shaped relationship between national income and female labour force participation (Psacharopoulos and Tzannatos 1989; Schultz 1990, 1991; Pampel and Tanaka 1986; Kottis 1990). ..... As women move out from agriculture or low productivity work, it falls, bottoms out, and then moves upwards in the U when they acquire education and return to the labour force..... to participate in remunerative non-agricultural jobs.*

*The gendered structure of labour markets also contributes to this U (Durand 1975). Several researchers have attributed this relationship to changes in labour market structure (Sinha 1967; Durand 1975; Juhn and Ureta 2003). Some have highlighted the role of social norms regarding the nature of women's work (Goldin 1995), while some others have focused on cultural factors such as religion, social mobility, and family structure (Youssef 1974, Semyonow 1980; Horton 1996)."*

Note how the authors introduce the topic by stating its importance, and then explains the basic concept of U-curve along with some reference to articles that give us cross-country data on the same. Afterwards, they consider the possible reasons behind the U-curve, and cite (i) the gendered structure of labour market and (ii) cultural factors as two possible reasons. In each case, they refer to a few relevant articles.

### 1.3 Designing the sample frame in case of field survey

Not all research work is empirical in nature. Also, much empirical research is carried out on the strength of secondary data, where there is no scope of any field survey. However, when a field survey is required, designing an appropriate sample frame (**Step 4** in our **flow chart**) and of course a proper questionnaire become very important. But let us first briefly explain the concept of research design.

Decisions regarding what, where, when, how much, by what means concerning an inquiry or a research study constitute a research design. A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. In fact, it is the conceptual structure within which research is conducted; it constitutes the blueprint for the collection, measurement and analysis of data

Keeping in view the above definition, we may classify the overall research design into the following parts:

- (a) **the sampling design** which deals with the method of selecting items **to be observed** for the given study;
- (b) **the observational design** which relates to the **conditions under which** the observations are to be made;
- (c) **the statistical design** which concerns with the question of **how many items** are to be observed and **how the information and data gathered are to be analysed**; and
- (d) **the operational design** which deals with the **techniques** by which the procedures specified in the sampling, statistical and observational designs can be carried out.

The next part - that is, designing a **sampling frame**, role of **random numbers**, usefulness of **pilot survey**, designing a **questionnaire**, **analysis and representation of data** - are all basically topics found in your **Statistics** text book. However, we shall briefly discuss these topics as well to help you self-study. But, judging from the experience of your earlier SEC paper, you should be **very, very thorough** about the **relevant statistical concepts and definitions (as mentioned just now)**.

(The above discussion draws heavily from the book "**Research Methodology: Methods and Techniques**" by C. Kothari. This book is the referred textbook as per CU guidelines )

For the time being, here is your home work.

1. Write a Literature Survey (2 pages) on any topic of your choice (already mentioned) - **10 marks**
2. Answer the following: (**All of 2 marks each**)
  - (a) What do you mean by research?
  - (b) What are the different types of research? (only mention the types - no need to discuss)

(c) What are the steps in an empirical research process?

**3. Answer the following: (All of 4 marks each)**

(a) Distinguish between (i) Conceptual and (ii) empirical research

(b) Distinguish between research method and research methodology

(c) How should a good literature survey be written?

(d) What do you understand by a research design?

(e) What are the different parts of a research design?