



- **Objectives of the Module:**

- ✓ Explain the characteristics of quantitative, qualitative and mixed research.

Select and explain the method appropriate for a research study

- **Knowledge Analysis:**

<b>Prerequisites:</b>	<b>Essential Questions:</b>
A student has Knowledge of : 1. Concept of research and characteristics of research 2. Types and steps of research	1. How the research is organized and conducted? 2. How the organization of research changes according to different type of research?

- **Instruction (Referencing):**

<b>Content</b>	<b>Mode of Transaction</b>
1. Methods of Research : <i>Historical, Case study, Ethnography, Ex post facto, documentary and content analysis, survey and experimental studies</i> 2. Characteristics of methods and their implications in research area	1. Lecture with Presentation 2. Reading and reflective thinking 3. Assignment & Project

- **Learning hours:** 12



### **INTRODUCTION:**

'Method' refers to the systematic, organized way to perform some specific task with specific objectives and context. It saves our time, money, resources and efforts. Thus, its knowledge is required in the research. 'Methodology' is different than 'method'. Methodology provides the knowledge of methods and several steps involved in the research. Method is one part of Methodology.

This module is focused towards some selected methods commonly used by the researcher. However, each research has to tailor method for own research problem by using the knowledge of methods.

Research methods are classified in several ways like according to nature of problem there are two broad categories (i) Qualitative and (ii) Quantitative methods, according to reference of time methods (i) Past Related Methods : Historical research, developmental study etc (ii) Present Related Methods : Survey, case study, ethnography etc, and (iii) Future Related Method: Experimental method.

Few of the methods are explained here.

### **EXPERIMENTAL RESEARCH**

The experimental method is derived from the classical experimentation method. It is based on the assumption that casual reasoning may be predicated by manipulating an independent variable and observing its effect on dependent variables. Thus, it is the study of phenomena under purposively designed situation. It is under category of quantitative approach.

Experimental research belongs to prediction of phenomena, occurrences on the basis of empirical data gathered in well-structured, careful observations of controlled conditions. Experimenters manipulate predefined parameter, conditions, inputs, process components, process, and note the observations with specific instruments, devices. The data derived from the observation is analysed to establish causal relationships existing in the phenomena.

Variable is one important term involved the experimental research. It is explained as follows:

#### **Concept and Type of Variables:**

Any factor, element, thing, construct that held some value which varies is called as variables. Variables may be classified in several ways but for an experimental research there are three basic types of variables.



1. Independent variable: The variable which has ability to work as cause of changes in other variables is called as an independent variable.
2. Dependent Variable: The variables which changes in the response of changes in some other variables are called as dependent variables.
3. Extraneous Variables: The variable which causes the changes in other variables without deliberate manipulation of them by researcher. The researcher has to control or remove the effect of these variables.

### Characteristics of Experimental Method

The characteristics that distinct experimental method from other methods of research are as following:

**Control** : it is not possible to claim that *change in a situation is only due to manipulation of specific variable by researcher* without control over the variables shaping the setting of study. It is very possible that the change in dependent variable may be due to (1) Manipulation of independent variables or (2) by chance or error or (3) influence of bias or some known –unknown variables. Variables that are not of direct interest to the researcher, called extraneous variables, need to be controlled. Control refers to removing or minimizing the influence of such variables by several methods such as: randomization or random assignment of subjects to groups; matching subjects on extraneous variable(s) and then assigning subjects randomly to groups.

**Manipulation:** Manipulation refers to purposeful handling of independent variables to study its effect on dependent variables.

**Observation** : Careful record of the changes found in a controlled setting are most important in the experiment to establish a valid cause and effect relationship.

**Replication:** Replication belongs to repetition of the experiment in same setting. It is desired that the results should remain same. Replication show that changes in dependent variables are due to deliberate change in the independent variables not by chance or errors coming from any extraneous variables.

### EXPERIMENTAL DESIGNS:

Experimental design is the plan and procedure of experiment. It explains the setting of experiments, variables involved in experiment, deliberate manipulation of variables, nature of treatment, mechanism of observation.

The following categories of experimental research designs are popular:



- (i) Pre-experimental designs – It is used when extraneous variables are not much effective or have very little effect and need not control.
- (ii) True experimental designs – It is used when full control over the extraneous variable is required and randomization is possible.
- (iii) Quasi-experimental designs – It is used when randomization is not feasible and very little control is required .
- (iv) Factorial designs- It is used when more than one independent variables are involved in the study.

There are various subtypes of these categories of experimental design and should be selected according to nature of research problem and variables involved in the study.

### **HISTORICAL RESEARCH**

Historical research is study of past events and focused to establish the factual casual relations among the past events. It is retrospective and analytical method. In historical research, the investigator studies documents and other sources that contain facts concerning the research theme with the objective of achieving better understanding of present policies, practices, problems and institutions. An attempt is made to examine past events or combinations of events and establish facts in order to arrive at conclusions concerning past events or predict future events. Historical research is a type of analytical research. Its common methodological characteristics include

- (i) Research topic belongs to past incidents
- (ii) No control of investigator
- (iii) Identification of information sources or collection of evidences
- (iv) Internal and external criticism of the documents/ evidences

### **STEPS IN HISTORICAL RESEARCH:**

The essential steps involved in conducting a historical research are as follows:

- Identification of Problem.
- Review of Literature
- Collection of evidences/data
- Evaluation of data sources
- Analysis and interpretation
- Report Writing



### DESCRIPTIVE RESEARCH

The descriptive research is study of research problems belonging to frame of reference of particular area and present times. It may be employed with an extensive or intensive approach. This research belongs to phenomena, conditions, practices, structures, relationships, patterns, beliefs, opinions trends related to research problems in the context of present times and specific area.

The research methods under the category of descriptive research are as :

1. Case Study
2. Ex-post facto study
3. Correlational Study
4. Ethnography
5. Document Analysis

### CASE STUDY:

Case study is the study of an independent entity. It is employed to understand the phenomena and nature of single unit. It is descriptive research that involves interpretations of structure, process, nature, practices, conditions, circumstances or situations of a single unit (May be an individual, institution, organization etc. ) existing in the present. Many of the time it is required to study the complexities of single unit which may not be covered by survey or other descriptive study because of their extensive approach. Thus, in-depth understanding of phenomena belonging to single unit is possible by an empirical, qualitative, longitudinal approach which is adopted in the case study method. It is study of limited setting of a unit or case and emphasises on meticulous contextual analysis.

The most important aspect of the case study is *Research question* because research question defines the intension of study of a case and another is *Identification of units of analysis* or *how the case is defined by the investigator* or *theoretical frame that shapes the case?*

Important Characteristic of the case study method may be enlisted as following.

1. Detailed analysis of single entity
2. Limited context
3. In-depth information
4. Empirical inquiry
5. Qualitative and longitudinal approach



### **EX-POST FACTO RESEARCH:**

This type of study belongs to investigation of a situation or occurrences whose independent variables are not under direct control of researcher. This occurrences are non-manipulable. It is the study of already existing occurrences, events or already occurred incident. Thus, this research is termed as 'Ex-post facto' research and categorised as descriptive study.

It is study of cause and effect. However, without control over variables. It is employed in a retrospective way because it is related to situation and variables which are non-manipulable. Researcher has to hypothesise the causes and effects also and then to study casual relationships on the basis of data gathered from already occurred incident, phenomenon, process or practice. In short, it is the study of causal relationship of past events but it is different than historical study.

### **CO-RELATIONAL METHOD:**

Correlational research describes how the components of any situation, structure, practice, process, occurrences or how the variables involved in any study are associated. The focus of correlational study is different than a survey. It is not only just gathering of data and finding their statistical correlations. The approach is to study the structures, process etc.

### **ETHNOGRAPHY:**

This type of study is related to socio-cultural phenomena found in any institution, caste, ethnicity, country or organization. It is kind of holistic study that include longitudinal information collection and process of interaction within and among a group of people. It is assumed that idea of human being, their behaviour, beliefs may be understood in broad, their own natural setting. It is unstructured study and needs very long term interactions, observations

Data collection in ethnographic research includes interviewing, observation, pattern mapping, audio-visual recording etc.

### **DOCUMENTARY ANALYSIS:**

Documentary Analysis is similar to historical study but it is different from the historical study which requires emphasis on the past. However, documentary study emphasizes on present times.



### **SURVEY METHOD:**

The survey is widely used method of research in social-behavioral studies. The method is based on inquiry or observation or measurement procedure employed on respondents. Survey may use several structure or unstructured techniques for information gathering. However, it is beyond just information collection. It may be defined as the research belonging to phenomena, conditions, practices, structures, relationships, patterns, beliefs, opinions trends related to research problems in the context of present times and specific area.

Survey method focuses on existing or ongoing phenomena in its natural way and context. Its purpose is to study the problems, issues, behaviours, patterns, relationships existing in present times. It comes under category of descriptive research. It is a non-experimental, descriptive research method. May be qualitative and quantitative study depending upon the nature of research problem.

### **STEPS OF SURVEY METHOD**

The steps for conducting survey are given below.

- ✓ Identification of problem and context
- ✓ Review of Literature
- ✓ Planning for sampling
- ✓ Design and Development of tools of data collection
- ✓ Data collection, analysis and interpretation
- ✓ conclusions
- ✓ Report Writing & Presentation

Though the survey is most common and popular method the survey needs expertise and specialized knowledge of sample selection, tool selection and development etc. because they have direct effect on reliability and validity of the research.

### **TYPES OF SURVEY:**

There are various types of survey according to purpose, time, and focus of the study.

**Purpose Based Types:** there are three main methods classified on the basis of purpose.

- Exploratory survey: it is used to explore the existence of particular problem, issues, opinions, status of something etc. in the response of specific research questions.



- Descriptive survey: It is used study specific discretion of predetermined variables, issues, attributes etc.
- Explanatory survey: It is used to establish or verify relationships and association among the variables.

### **Time Based Types:**

- Cross-sectional survey: it is used to study status specific variables from a representative portion of the population.
- Longitudinal surveys: It is used study the complete process of some phenomena and it requires the data over long period.
- Trend Studies: it is used to study how the some specific variables, issues , opinions changes with time.

### **Data Collection Method Based:**

- Face-to-Face Survey: The information is collected by direct interaction with respondents.
- Inquiry form: The information is collected in the written form using questionnaires, inventories etc.
- Mail Survey: The respondents give their responses in specific form and send it by mail.
- Telephone Survey: The information is collected by telephonic talk with respondents
- Web Survey: The information is collected by using internet.

Each type is applicable in certain situation. The researcher has to decide type of survey according to nature of research problem, the sprayed of respondents and scope of the study.

### **SUMMARY:**

The knowledge of methods is essential for researcher to select appropriate method for research and to laid it to valid conclusions. There are several methods of research. Some belongs to Qualitative approach and Quantitative approach. The researchers have to select the appropriate method by taking many things into consideration like: Nature of problem, Sample and Population, resources available etc.