

# STUDY MATERIAL

*Prepared for*

III B.Com (V Semester)

*Subject*

Research Methodology

*Prepared by*

**Mrs. V. THANASELVI SUBA, M.Com., M.Phil., (Ph.D.),**

Head & Assistant Professor, Department of Commerce



**Department of Commerce**

**Government Arts & Science College (Women)**

**Sathankulam - 628704**

**RESEARCH METHODOLOGY****SMCO54**

**UNIT - I Introduction to Research** – Types of Research – Significance of Research – Research methods vs. Methodology – Research – Research process – Criteria of Good Research.

**UNIT - II Research Design** – Meaning of Research design – need for research design – features of a good design – different research designs.

**UNIT - III Design of sample surveys** – sample design – sample survey Vs census survey – Types of sampling designs – Non probability sampling – probability sampling – Complex random sampling design.

**UNIT - IV Data Collection and preparation** – Collection of Primary Data – Methods of Collecting Primary Data – Guidelines for Constructing Questionnaire / Schedule – Difference between Questionnaire and schedule Collection of secondary data – Data Preparation process.

**UNIT - V Interpretation and report writing** – Meaning of interpretation – techniques of interpretation – precautions in interpretation – significance of report writing – different steps in writing report – layout of the research report – mechanics of writing a research report – precautions for writing research report.

## UNIT - I

### INTRODUCTION TO RESEARCH

#### RESEARCH

The search for knowledge through objective and systematic method of finding a proper and feasible solution to a problem is popularly known as research.

#### DEFINITION

Research, according to Redman and Mory is a "systematised effort to gain new knowledge".

#### VARIOUS CRITERIA OF GOOD RESEARCH

- a) At the outset there should be a clear-cut declaration of the purpose of the research.
- b) The research procedure adopted should be described in detail to help succeeding researchers to repeat the research for further advancement, maintaining the continuity of what has already been attained.
- c) The analysis of data should be adequate to reveal its significance and the methods of analysis used should be appropriate. The validity and reliability of the data should be checked and cross-checked with utmost care.

#### OBJECTIVES

- i) To highlight the significance of the phenomenon under study.
- ii) To develop new tools, concepts and theories for a better study.
- iii) To test the hypothesis of casual relationship between variables.
- iv) To write the report based upon the findings of the research.

**CHARACTERISTICS OF RESEARCH**

- |  |                        |
|--|------------------------|
| 1) Research is systematic enquiry            | 8) Empirical           |
| 2) Clearly defined purpose                   | 9) Expertise knowledge |
| 3) Research is undertaken to establish facts | 10) Verifiable         |
| 4) Objectivity                               | 11) Honesty            |
| 5) Solve a problem                           | 12) Logical study      |
| 6) Generalisation                            | 13) Rational           |
| 7) Universal                                 | 14) Gathering new data |

**TYPES OF RESEARCH**

- |                           |   |
|---------------------------|---|
| i) Applied Research       | v) Experimental Research                  |
| ii) Analytical Research   | vi) Pure or Fundamental or Basic Research |
| iii) Descriptive Research | vii) Historical Research                  |
| iv) Exploratory Research  | viii) Other types of Research             |

**APPROACHES TO RESEARCH**

- |                           |                           |
|---------------------------|---------------------------|
| i) Quantitative Approach  | iv) Experimental Approach |
| ii) Qualitative Approach  | v) Simulation Approach    |
| iii) Inferential Approach |                           |

**METHODS OF RESEARCH****I. SURVEY METHOD**

Survey is a fact finding' study. Under this method of research the researcher is interested in knowing something about the whole population.

**II. CASE STUDY METHOD**

A case study is the most popular method of research. It is a qualitative, intensive, stimulating and comprehensive study of a social phenomenon. Though the field of study is comparatively limited unlike the other types of research it is an in depth comprehensive study of a person, a social group, an episode, a process, a situation, a programme a community, an institution or any other social unit.

### **III. EX-POST FACTO METHOD**

It is a systematic field study which aims at discovering the relations and interactions among variables in social institutions and actual life situations.

#### **RESEARCH PROBLEM**

A research problem refers to the practical difficulties which a researcher experiences in the context of either a theoretical or practical situation and wants to obtain a solution for the same.

#### **Basic Steps in the Selection and Formulation of a Research Problem**

- i) Identification of the research problem
- ii) Selection of the research problem
- iii) Formulation of the problem
- iv) Choice of a theoretical frame work for the research problem
- v) Formulation of hypothesis
- vi) Operational definition of concepts
- vii) Methodology
- viii) Analysis of data and testing of hypothesis
- ix) Stating the results

#### **IMPORTANT SOURCES OF PROBLEM SELECTION**

- i) Theory of researcher's own interest
- ii) Academic experience
- iii) Problems related to technological changes
- iv) Problems related to social changes
- v) Unexplored areas
- vi) Research
- vii) Problems identified through various organisations
- viii) Problems identified through authorities / Policy makers

#### **TYPES OF RESEARCH PROBLEMS**

- i) Empirical Problems
- ii) Analytical Problems
- iii) Normative Problems

## **UNIT - II**

### **RESEARCH DESIGN**

#### **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". - Claire Selttiz and others.

"A research design is the logical and systematic planning and directing a piece of research". - Pauline V.young.

#### **NEED FOR A RESEARCH PLAN**

A research design facilitates the researcher to complete the various research operations efficiently by yielding maximum information with minimum expenditure as to effort, time and money. Moreover, researcher can see the whole study structure and also realize the place and importance of the successive steps which he has to take in the total research work. In addition, the design helps the researcher organize his ideas in a form whereby it will be possible for him to look for flaws and inadequacies.

#### **CRITERIA OF A GOOD RESEARCH DESIGN**

- |                 |                    |
|-----------------|--------------------|
| i) Objectivity  | iii) Validity      |
| ii) Reliability | iv) Generalisation |

#### **FACTORS AFFECTING RESEARCH DESIGN**

- 1) Availability of sufficient data
- 2) Availability of time
- 3) Availability of resources
- 4) Ability of the Researcher
- 5) External Factors
- 6) Result Desired

**COMPONENTS OF A RESEARCH DESIGN**

- |   |  |
|---|--|
| i) Introduction                         | ix) Collection of data                   |
| ii) Statement of the problem            | x) Tools for collection of data          |
| iii) Review of the previous studies     | xi) Sampling procedure                   |
| iv) Scope of the study                  | xii) Statistical tools used for analysis |
| v) Objectives of the study              | xiii) Limitations of the study           |
| vi) Hypotheses of the study             | xiv) Chapter arrangement                 |
| vii) Operational definition of concepts | xv) Findings and suggestions             |
| viii) Reference period                  |  |

**CLASSIFICATIONS OF RESEARCH DESIGNS**

- |                                       |                               |
|---------------------------------------|-------------------------------|
| i) Exploratory (or) Formulative study | v) Historical study           |
| ii) Descriptive study                 | vi) Inferential design        |
| iii) Diagnostic study                 | vii) Sample surveys           |
| iv) Experimental study                | viii) Field studies and so on |

**STEPS IN PREPARING A RESEARCH DESIGN**

- |  |                                      |
|--|--------------------------------------|
| 1) The title                           | 9) Geographical areas to be covered  |
| 2) Statement of the problem            | 10) Time period                      |
| 3) Review of literature                | 11) Dimensions of the study          |
| 4) Sources of information to be tapped | 12) The basis for selecting the data |
| 5) Development of Bibliography         | 13) Techniques of study              |
| 6) Nature                              | 14) The control of error             |
| 7) Objectives of the study             | 15) Chapter arrangement              |
| 8) Socio cultural context of study     |                                      |

## **UNIT - III**

### **DESIGN OF SAMPLE SURVEYS**

#### **SAMPLE**

A sample is the part of the population or universe selected for the purpose of investigation. "A sample is a smaller representation of the larger whole". - Goode and Hatt.

#### **STEPS TO BE TAKEN TO MAKE THE SAMPLE USEFUL AND RELIABLE**

- i) Defining the population or universe to be surveyed.
- ii) Specifying the sampling frame
- iii) Specifying sampling unit
- iv) Specifying method of sampling
- v) Determining the size of sample
- vi) Specifying the sampling plan
- vii) Selection of the sample

#### **METHODS OF SAMPLING**

##### **I. Random Sampling Methods**

- i) Simple Random Sampling
- ii) Restricted Random Sampling
  - a) Stratified Sampling
  - b) Systematic Sampling
  - c) Cluster Sampling

##### **II. Non-random Sampling Methods**

- i) Purposive Sampling
- ii) Quota Sampling
- iii) Convenient Sampling



**SAMPLING**

Sampling is the process of selection of a sample with a view to obtain information or draw inference about a population.

**SAMPLING UNITS**

Sampling units are the target population elements available for selection during the sampling process. In a simple, single - stage sampling, the sampling units and the population elements may be the same.

**SAMPLING TECHNIQUE**

It is the procedure adopted to select a sample.

**PARAMETERS VS STATISTICS**

A parameter is a characteristic of a population whereas a statistics is a characteristic of a sample.

**SAMPLE SIZE**

This means how many items are selected from the universe to constitute a sample. The size of sample should be optimum. An optimum sample may be defined as that sample which fulfills the requirements of efficiency, representativeness, reliability and flexibility.

## UNIT - IV

### DATA COLLECTION AND PREPARATION

#### DATA

Data refer to the facts, figures, or information collected for a specific purpose. There are two types of data, namely: i) Primary data and ii) Secondary data

#### METHODS OF COLLECTION OF PRIMARY DATA

- I. Through experiment
- II. Through survey
  - i) Observation method
  - ii) Interview Method
    - a) Personal Interview
    - b) Telephonic Interview
  - iii) Mailed Questionnaire Method
  - iv) Through Schedules

#### CLASSIFICATION OF SECONDARY DATA

Secondary data may be grouped into two

##### i) Common external sources

Secondary data obtained from books, journals, reports, Government publications, Publications of organisations, professional bodies, project reports, media, commercial sources etc are known as common external sources.

##### ii) Internal and proprietary data

These data are generally available in the routine business in various departments like finance, production, personnel, sales, research and development department, etc., Data on employees' salary from pay roll, sales amounts from sales journal, raw materials from stock registers, labour and manufacturing expenses from production records and cash receipts from cash books, etc. are internal data.

**ADVANTAGES OF SECONDARY SOURCES OF DATA**

- 1) Cost and time
- 2) Quickly and cheaply
- 3) More time for data analysis
- 4) Re-analysis may off new interpretations
- 5) Bench mark
- 6) Sole source of information
- 7) Subgroup or subset analysis

**LIMITATIONS OF SECONDARY DATA**

- |                                  |                             |
|----------------------------------|-----------------------------|
| 1) Lack of familiarity with data | 3) Appropriateness          |
| 2) Complexity of the data        | 4) Absence of key variables |

**QUESTIONNAIRE**

A questionnaire the list of questions used in survey method for collection of data. This questionnaire is generally filled in by the informants. These questionnaires are handed over to the researcher who compiles and tabulates the data from the questionnaire.

**INTERVIEW SCHEDULE**

If the questionnaire is filled in by the enumerator himself (for which answers are obtained from informants) it is called the interview schedule. For this purpose, the enumerator approaches the respondents, asks questions (contained in the questionnaire and fill in the answers obtained from them in the questionnaire.

**PROCESS OF CONSTRUCTION OF SCHEDULE OR QUESTIONNAIRE**

- |   |  |
|---|--|
| i) Data need determination                    | v) Instrument drafting                 |
| ii) Preparation of 'Dummy' tables             | vi) Evaluation of the draft instrument |
| iii) Determination of the respondents 'level' | vii) Pre - testing                     |
| iv) Selection of data gathering method        | vii) Designing the format              |

## TYPES OF QUESTIONNAIRE AS A TOOL FOR DATA COLLECTION

- |                                   |                               |
|-----------------------------------|-------------------------------|
| i) Structured Questionnaires      | v) Mixed questionnaire        |
| ii) Non-structured questionnaires | vi) Opinion Questionnaires    |
| iii) Closed form Questionnaires   | vii) Pictorial Questionnaires |
| iv) Open form Questionnaires      | viii) Verbal Questionnaires   |

## DISTINGUISH BETWEEN QUESTIONNAIRES AND SCHEDULES.

Through the Questionnaire and schedule seem to be alike; there are some differences between the two.

	Questionnaires	Schedules
1.	Questionnaires are sent to informants through mail and filled in by informants.	Schedules are filled up by the enumerators or researchers by putting the questions to the informants in person.
2.	Less expensive	More expensive
3.	Non-response is usually high.	Non-response is generally low.
4.	Identity of respondent is not known.	The identity of respondent is known.
5.	Questionnaire method consumes more time to finish the collection of data.	It requires lesser time.
6.	Personal contact of respondent is not possible.	Personal contact of respondent is possible.
7.	This method can be used only when informants are literates.	This method can be used even when the respondents are illiterates.
8.	Wide coverage of sample is possible.	It is difficult for a wide coverage of sample.

## **UNIT - V**

### **INTERPRETATION AND REPORT WRITING**

#### **INTERPRETATION**

"Scientific interpretation seeks for relationship between the data of study and between the study findings and other scientific knowledge." - Jahada and Cook.

#### **DIFFERENT FORMS OF INTERPRETATION**

- i) Relationship
- ii) Proportion
- iii) Percentages
- iv) Averages or other measures of comparison

#### **TECHNIQUES OF INTERPRETATION**

i) A Researcher must give reasonable explanation on the relation and the researcher must interpret relationship in terms of the underlying process. This is the technique of how generalisation should be done and concept be formulated.

ii) Extraneous information must be considered while interpreting the final results.

iii) It is advisable to get frank and honest opinion of experts.

iv) Before generalization all relevant factors must be considered.

#### **PRECAUTIONS IN INTERPRETATIONS**

- i) Failure to see the problem in proper perspective.
- ii) Failure to appreciate the relevance of various elements.
- iii) Ignoring selective factors.
- iv) Misinterpretation due to unstudied factors.
- v) Difficulties of interpretative evaluation.

## **REPORT**

A report is the exposition of a research project. It is the end product of a research activity. Thus writing of report is the last step in a research study and requires a set of skills. A report is also defined as "a statement of results, events, conditions, progress or interpretation of information".

## **TYPES OF REPORT**

- I. Oral Report
- II. Written report
  - i) Information report
  - ii) Research report
    - a) Technical report
    - b) Popular report

## **STEPS INVOLVED IN WRITING REPORT**

- i) Planning and organising the report
- ii) Preparation of rough draft
- iii) Rewriting and polishing
- iv) Preparation of the final bibliography
- v) Writing the final draft.

## **PRECAUTIONS FOR WRITING RESEARCH REPORT**

A report is a very formal document that is written for a variety of purposes in the sciences, social sciences, engineering and business disciplines. While writing research report, a researcher has to consider the following precautions.

1. While writing the report use simple words. Complex sentences should not be used.
2. Adequate care is taken to see that there is no spelling or grammatical errors.
3. The researcher has to avoid awkward repetition, vagueness and unnecessary abstraction.
4. The report should be prepared in logical sequence.

## **LAYOUT OF THE RESEARCH REPORT**

The layout of the research report contains three main headings.

- 1) Preliminary Pages
- 2) Main Test
- 3) The End Matter

### **1) Preliminary Pages**

The report should have

- i) The title with the date
- ii) Acknowledgment
- iii) The table of contents
- iv) List of Tables
- v) List of Graphs, Charts etc..

### **2) Main Test (Body of the Report)**

#### **Chapter I - Introduction**

- 1.1 Introduction to the study
- 1.2 Profile of the study
- 1.3 Significance of the study
- 1.4 Statement of the problem
- 1.5 Scope of the study
- 1.6 Objectives of the study
- 1.7 Hypotheses of the study

#### **Chapter 2 - Review of Literature**

- 2.1 Tools or Methods used in similar studies
- 2.2 Findings and conclusions of earlier studies
- 2.3 Lacunae of available literature.

**Chapter 3 - Research methodology**

- 3.1 Nature of the research design
- 3.2 Methods of collection of data
- 3.3 Sampling design and sample size
- 3.4 Techniques of data collection
- 3.5 Pretesting of tools
- 3.6 Analytical tools
- 3.7 Period of study

**Chapter 4 - Analysis and interpretation of data and data are analysed****Chapter 5 - Summary and Conclusion**

- 5.1 Summary
- 5.2 Findings
- 5.3 Suggestions
- 5.4 Conclusion
- 5.5 Research gap
- 5.6 Scope for further research

**3) The End Matter**

- i) References
- ii) Bibliography
- iii) Appendices
- iv) Annexure

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