

Module 6

Data Analysis & Report Writing

- After collection of data the next step is to process and interpretation.
- There are two parts in processing data
 - Data Analysis
 - Interpretation of data



Steps in processing of data

- Preparing raw data
- Editing
- Coding
- Tabulation
- Summarising the data
- Usage of statistical data



1 Preparing raw data

- The information collected may be illegible, in
- Scattered information
- This can be organised through
 - Editing
 - Coding
 - Tabulation



2.Editing

- The purpose of editing is to eliminate errors
- It involves inspection & correction of each question
- The main role of editing is to identify ambiguous response.
- The editing is the activity of inspecting, correcting and
- correct data

2.Editing

- This can be done in two ways
 - Field editing
 - Office editing

2.Editing – Field Editing

- It should be done when the study is still under progress
- This is to make sure that proper procedure is followed with respondents, interview them and record their responses
- Such editing is more effective when done on same day after the interview. The investigator must not just do field editing.
- The reason to field editing is
 - Inappropriate respondents
 - Incomplete interviews
 - Improper understanding
 - Lack of consistency -
 - Legibility – clear on same spot
 - Fictitious interview- cheating by interviewer



2.Editing – Office Editing

- Such type of editing relates to the time when the process has been completed.
- Here a single or common editor corrects the wrong place, entry in wrong unit e.t.c.
- As a rule all the wrong answers should be dropped from the results.
- It should be done after the collection of the data.
- This can be done by interviewer, or supervisor.
- Office editing need more experts who understand the requirements of respondents.



2.Editing – Office Editing

- Eg: I don't drink coffee ,
 - My favourite brand is BRU
- It is inconsistent
- 1.was the respondent lying?
- 2. did the interviewer record wrongly?

EDITING REQUIRES SOME CAREFUL CONSIDERATIONS:

- Editor must be familiar with the interviewer's mind set, objectives and the study.
- Different colors should be used when editors make entry in the transcript.
- They should initial all answers or changes they make to the transcript.
- The editors name and date of editing should be placed on the transcript.



3. Coding

- It refers to transforming edited questionnaire ready for analysis.
- It involves assigning numbers or other symbols
 - Guidelines
- Establishment of appropriate category
 - Internal –X external -Y
- Mutually exclusive
 - Student , professional, sales, manager



4. Tabulation

- It refers to counting the numbers of cases in different categories.
- The results are summarized in the form of statistical data is divided into groups and sub-groups.
- The counting and placing of data in a particular form are done.
- The tabulation involves
 - Sorting and counting
 - Summarising the data



4. Tabulation – summarising c

Income	Tally marks
1000	
2000	-
3000	-



4. Tabulation – Types

1.Simple or one way table :

the multiple choice questions which allow only one-way tabulation or univariate.

the questions are pre-determined and consist of responses falling into a particular category or percentage.

There may be two types of univariate tabulation

1. Questions with only one response
2. Multiple response to question



4. Tabulation – Types

1. Questions with only one response

Table No 1

Study of number of children in a family

No of children	Family	%
0	10	10
1	20	20
2	30	30
3	40	40
	100	100

4. Tabulation – Types

2. Questions with multiple response

Table No 1

Choice of an automobile

What you like about your Car

Attributes	No of respondents
Body	15
Design	20
Colour	25
Mileage	40
Safety	20

4. Tabulation – Types

2. Cross tabulation or two-way table

This is also known as Bivariate Tabulation.
The data may include two or more variables.

Eg : popularity of health drink among families having different income levels.
 Suppose 500 families are contracted and data collected is as follows.

Income per month	No of children per family				
	0	1	2	3	4
< 1000	5	0	8	9	11
1001-2000	10	5	8	10	13
2001-3000					



Data Validation

- Data validation is a process that ensures the clear data to the programs, applications and
- It checks for the integrity and validity of data different software and its components.
- Data validation ensures that the data complies and quality benchmarks.
- Data validation is also known as input validation



Some of the types of data validation

1. Code validation
2. Data type validation
3. Data range validation
4. Constraint validation
5. Structured validation



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Report Writing and Presentat



WHAT IS IT?

- ❖ An analysis of the data of the investigation, written in an objective, logical and factual way.
- ❖ Any matter on which definitive information is required.

“Research reports are designed to provide accurate accounts of the results of disciplined studies accomplished to solve problems or to reveal new knowledge.” (Busha and 1988).

1. Meaning of Research

- Research report writing is the oral or written presentation of the evidence and the findings in such detail that they are readily understood and accessed by the reader, and to enable him to verify the validity of the conclusions.
- According to American Marketing Society, "Research report writing is to convey to interested persons the whole truth in sufficient detail and to enable each reader to understand the data and to determine himself the validity of the conclusions. It is covers, **Disseminations, Presents the information and knowledge to others, to make the generalizations, to encourage others to work on the same or allied problem.**



Structure of Research Report

- Generally, a research report, whether it is called a research report or a research paper, is divided into three main parts:
- 1) The Preliminary i.e. preface pages
- 2) The text of the report / Main body of the report
- 3) The Reference material.

PRELIMINARY SECTION

- Title page
- Certification
- Candidate Declaration
- Preface including Acknowledgment
- Table of Content
- List of Tables
- List of figures
- List of Abbreviation

CHAPTER 1-INTRODUCTION

1.0 Introduction

1.1 Background of the study

1.2 Problem Statement

1.3 Purpose and objective of the study

1.4 Research Questions

1.5 Definition of Terms

1.6 Significance of the study

1.7 Conclusion



CHAPTER 2-LITERATURE REVIEW

2.0 Introduction

2.1 Body of the literature

2.1.1 General area of research

2.1.2 Underlying theory

2.1.3 Variables used from previous

2.2 Theoretical Framework

2.3 Hypotheses

2.4 Conclusion

CHAPTER 3 – RESEARCH METHODOLOGY

3.0 Introduction

3.1 Research Design

3.2 Variable and Measurement

3.3 Questionnaire design

3.4 Population and Sample

3.5 Scope of the study

3.6 Data analysis method

3.6.1 Goodness of data

3.6.2 Inferential analysis

3.7 Conclusion



CHAPTER 4- DATA COLLECTION, DATA ANALYSIS

4.1 Introduction

4.2 Goodness of Measure

4.2.1 Representativeness of data

4.2.2 Validity test

4.2.3 Reliability test

4.3 Inferential analysis

4.3.1 Descriptive analysis

4.3.2 Test of difference

4.3.3 Test of relationship

- Correlation analysis
- Hypothesis testing

4.4 Conclusion

CHAPTER 5-DISCUSSION AND CONCLUSION

- 5.1 Recapitulation of major findings
- 5.2 Discussion
- 5.3 Implication
 - 5.3.1 Theoretical Implication
 - 5.3.2 Practical Implication
- 5.4 Limitation
- 5.5 Recommendation for future research
- 5.6 Conclusion



REFERENCE MATERIAL

The reference material is generally divided as

- 1. Bibliography (APA Style or ..)
- 2. Appendices (SPSS output & Data Stream)
- 3. Glossary of terms (if any)
- 4. Index (if any)



Types Of reports

- ***Technical Report***
- ***Popular Report***



Technical Report

In the technical report the main emphasis is on

- the methods employed,
- assumptions made in the course of the study
- the detailed presentation of the findings including supporting data.



Popular Report

- The popular report is one which gives emphasis to attractiveness.
- The simplification should be sought through minimization of technical, particularly mathematical, liberal use of charts and diagrams.
- Attractive layout along with large print, many occasional cartoons now and then is another feature of the popular report.
- Besides, in such a report emphasis is given to policy implications. We give below a general format of a popular report.



STRUCTURE OF A BUSINESS R

1. Title page
2. Letter of Transmittal (covering lett
3. Table of contents
4. Executive summary
5. Introduction
6. Main Body
7. Conclusion
8. Appendix
9. References & Bibliography



Characteristics of good report

- 1) Attractive
- 2) Clear Topic
- 3) Balanced Language
- 4) No repetition of facts
- 5) Statement of scientific facts
- 6) Practicability
- 7) Description of the difficulties and the shortc

Importance of Research Repo

- Communicates the information
- Helps in evaluation
- Facilitates measuring performance
- Predicts future trends



Presentation— Essential Characters

- Objectives :
- Preparation
- First impression
- Facial expression
- Visual aids
- Audience involvements
- Effective conclusion

Elements of Presentation

- Presenter
- Specific content with a definite objective
 - Why who where when what and how
- Audience
 - Who
 - Why
 - Their background
 - How many



Factors affecting Presentation

- Audience analysis
- Personal appearance
- Opening and closing of presentation
- Language
- Body language
- Use of visuals
- Organization of presentation
- Voice
- Answering the questions



Processing of data--Editing, Coding and tabulation

- After collecting data, the method of converting it into a meaningful statement; includes
- **Data processing, Data analysis, and Data interpretation.**
- Data reduction or processing mainly involves (data manipulation necessary for preparing the data for analysis) could be manual or electronic
- It involves editing, categorizing the open-ended responses, computerization and preparation of tables and charts.



Editing data:

- **Information gathered during data collection**

Example: Data collected through questionnaires may have answers which may not be ticked at all. Some questions may be left unanswered.

Sometimes information may be given in a way that requires reconstruction in a category designed for a specific purpose. For example, daily/monthly income in annual income and so on.

The researcher has to take a decision as to how to handle such data.

- Editing also needs that data are relevant and are modified.
- Occasionally, the investigator makes a mistake impossible answer. “How much red chilies do you eat?” The answer is written as “4 kilos”. Can a family eat four kilo chilies in a month? The correct answer



Coding of data:

- Coding is translating answers into numerical numbers to the various categories of a variable analysis.
- Coding is done by using a code book, code sheet, or code card.
- Coding is done on the basis of the instructions. The code book gives a numerical code for each category.



Data classification/distribution

- Sarantakos (1998: 343) defines distribution as the classification of scores obtained for the various categories of a particular variable.

There are four types of distributions:

1. Frequency distribution
2. Percentage distribution
3. Cumulative distribution
4. Statistical distributions



Frequency distribution:

- In social science research, frequency distribution presents the frequency of occurrences of certain data. Frequency distribution appears in two forms:
- Ungrouped: Here, the scores are not collapsed. The distribution of ages of the students of a BJ (M) (e.g., 18, 19, 20, and so on) will be presented as an ungrouped frequency distribution.

Grouped: Here, the scores are collapsed into groups. The scores are presented together as a group. For example, age distribution groups like 18-20, 21-22 etc.



Percentage distribution:

It is also possible to give frequencies not in absolute percentages.

For instance instead of saying 200 respondent monthly income of less than Rs. 500, we can say 20% respondents have a monthly income of less than Rs. 500.



Cumulative distribution:

-

It tells how often the value of the random variable is equal to or less than a particular reference value.



Statistical data distribution:

- In this type of data distribution, some measure is calculated out of a sample of respondents.
- Several kind of averages are available (mean, median, mode) and researcher must decide which is most suitable for the data.
- Once the average has been calculated, the question is how representative a figure it is, i.e., how closely do the data points cluster around it.
- Are most of them very close to it or is there a wide variation?



Tabulation of data:

After editing, which ensures that the information is accurate and categorized in a suitable form, the data is presented in some kinds of tables and may also undergo statistical analysis.



- Table can be prepared manually and/or by computer.
- For a small study of 100 to 200 persons, then tabulating by computer since this necessitates punched cards.
- But for a survey analysis involving a large number requiring cross tabulation involving more than two variables, cross tabulation will be inappropriate and time consuming.



Data Validation

- Data validation is a process that ensures the clear data to the programs, applications and
- It checks for the integrity and validity of data different software and its components.
- Data validation ensures that the data complies and quality benchmarks.
- Data validation is also known as input validation



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