

C H-6: Data Processing and Analysis

- The true value of survey data is realized only when the data are analyzed.
- Data analysis ranges from analyses encompassing very simple summary statistics to extremely complex multivariate analyses.
 - **Data Preparation and Presentation**
 - Data processing starts with the editing, coding, classifying and tabulation of the collected data.
 - The following activities are generally involved in the data processing exercise.

i) Editing

- Editing of data is the process of examining the collected raw data to detect errors and omissions and to correct these when possible.
- Editing involves a careful scrutiny of the completed questionnaires.
- In general one edits to assure that the data are:
 - ✓ Accurate
 - ✓ Consistent with other information/facts gathered
 - ✓ Uniformly entered
 - ✓ As complete as possible
 - ✓ Arranged to facilitate coding and tabulation
- The editing can be done at two levels
 - On the field and
 - in the office.

ii) Coding

- Coding refers to the process of assigning numerals or other symbols to answers so that responses can be put into a limited number of categories or classes.
- By this method several thousands of replies or answers can be reduced to a few categories, which contain the critical information needed for analysis.
- Data are transcribed from a questionnaire to a coding sheet.
- The coding must be:
 - **Appropriate**
 - **Exhaustive**
 - **Mutual exclusivity**

iii) Classification

- Where data presentation started!
- Classification is the process of arranging data in groups or classes on the basis of common characteristics.
- Data having common characteristics are placed in class and in this way the entire data get divided into a number of groups or classes.

iv) Tabulation

- when a mass of data has been assembled, it becomes necessary for the researchers to arrange the same in some kind of concise and logical order.
- Tabulation is the process of summarizing raw data and displaying it in compact form (i.e. in the form of statistical tables) for further analysis.
 - It is an orderly arrangement of data in columns and rows.
- In the case of computer tabulation computer programs such as SPSS, Lotus, excel, STATA, etc. could be used.
- Tabulation may be classified as simple and complex.

Data Analysis & Interpretation

- Analysis can be categorized as **descriptive** analysis and **inferential** (statistical) analysis.
- **Apply Your Knowledge of Statistics And Econometrics Here!**
- **Interpretation** refers to the task of drawing inferences after analytical or experimental study.
- It is the process of giving meanings to the analyzed data
- However, researchers need to be **careful not to make generalizations** that are **not** supported by the **data**.
- There is **no single rule** that guide the researcher how to interpret the data.

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- **However, the following suggestions could be helpful.**
 - Researcher must give **reasonable explanation** of the relations he has found.
 - he must explain the direction of relationship in line with the existing theory.
 - **Extraneous information** (variable) must be considered while interpreting the final result of research study,
 - it may be a key factor in understanding the problem under consideration.
 - Broad **generalization** must be **avoided**, because the coverage is restricted to a particular time & area.
 - Researcher should be **well equipped** with and must know the correct use of **statistical measures**.

Extraneous variables

Example: The Effect of Income of University students on their academic Performance

- Dependent variable = A. Performance
- Independent Variable = Income
- Extraneous variable
 - IQ
 - Age
 - Sex
 - No hrs devoted for study
 - Etc

CH-7: Writing the Research Report

▪ **The Writing Process**

- Many people often give inadequate attention to reporting their findings and conclusions.
- But a well-presented study can impress the reader more than another study with greater scientific quality but a weaker presentation.
- The intrinsic value of a study can be easily destroyed by a poor final report or presentation.
 - Thus, researchers must make special efforts to communicate clearly and fully their research results.
 - It is the last step in any research

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- Writing up is the process of transforming the 'world' into words.
- The 'world' refers to a research landscape where the researcher spends much of his time, effort, and money in observing and interviewing people.
- Generally, write up is the process in which the field experiences are transformed into a text, a report, or an article.

General Rules In Writting

- Simplify ---no much jargon
- Justify
- Quantify
- Be precise and specific
- Use short tense
- Be consistenent in the use of tense
- Aim to be logical and systematic
 - Usually be impersonal

Layout of the Research Report

- A comprehensive layout of the research report should comprise **(A)** preliminary pages; **(B)** the main text; and **(C)** the end matter

(A) Preliminary Pages

- this section includes the title page, authorization (if any), acknowledgement, acronym, tables of contents, list of tables/figures, summary and/or abstracts.
- Preliminary pages are commonly numbered with Roman Numbers

Layout of....

- **Abstract (Synopsis)** – this is a short summary.
 - It goes first in the report, but should be written last.
 - It helps the reader determine whether the full report contains important information.
- It is essential that your abstract includes all the keywords of your research.
- An abstract should briefly:
 - Re-establish the topic of the research.
 - Give the research problem and/or main objective of the research.
 - Indicate the methodology used.
 - Present the main findings and conclusions

(B) *Main Text*

- The main text provides the complete outline of the research report along with all details.
 - ✓ Introduction
 - ✓ Literature
 - ✓ Methodology
 - ✓ Findings and discussions
 - ✓ Conclusion and policy implications
- Each main section of the report should begin on a new page

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I. Introduction:

- The introduction should be formulated in such a way that readers know where the researcher will take them and why they should go there. The common structure consists of elements like,

1.1. Background of the study

1.2. Problem statement

1.3. Objective of the study

1.4. Significance of the study (Rationale)

1.5. Scope of the Study

1.6. Limitation of the study

(Cont...)

Limitation of the study

- No report is perfect, It is important to indicate limitations of the study and its implications.
- If there were problems with non-response, Sampling procedures and other problems should be readily acknowledge.
- However, the discussion of limitation should avoid overemphasizing the weakness, II.
Literature Review

II. Literature Review

III. Material and Methodology

IV. Results and Discussion

- **In this part the researcher will present his findings with supporting data in different forms, like tables, charts and figures.**
- **Tables and figures are followed by narrative discussion and justifications**
- **Note that,**
 - **Too lengthy (large) tables may better be placed in the appendix**
 - **Tables and figures should be explained**
 - **Tables and figures are usually self explanatory, thus, the discussion (explanation) should not be a duplicate of the table. Only important facts that lead to generalization should be discussed.**
 - **Table should contain statistical summaries and reduced data rather than the raw data.**

IV. Conclusion & Recommendation or Policy implications

Conclusion:

- This part begins with a brief restatement of, the description of the problem, the hypothesis, and discussion of findings and conclusion of the study.
- Generally, it is a good practice to finish the report with a short conclusion, which summarize and sum up the main points of the study
- The conclusion drawn from the study should be related to the hypothesis or the problem stated in the introductory section

Recommendation

- A researcher may forward (suggest) possible solution that may alleviate the problem in question.

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- The recommendation, Should be clear and an unambiguous
 - Need to be realistic, plausible and operational
 - Should indicate the responsible body to translate the suggested solution into practice

Reference/Bibliography

- It should be based on alphabetical listing of authors.

(C) End Matter/ appended section

- At the end of the report, appendices should be enlisted in respect of all technical data such as
 - Data usage permission letters
 - questionnaires,
 - sample of information,
 - mathematical derivations, etc.