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Unit – VI

ANALYSIS OF DATA

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ANALYSIS OF DATA

- This is the most important phase of the research process, which involves computation of certain measures along with searching for patterns of relationship that exists among data group
- Analysis and interpretation of data includes compilation, editing, coding, classification and presentation of data.

Definition

- Analysis is the process of organizing and synthesis of the data so as to answer research questions and test hypothesis.
- Analysis is the process of breaking a complex topic into smaller parts to gain better understanding of it.

Analysis of Quantitative Data Analysis

Data preparation:

It involves checking or logging the data in, checking the data for accuracy, entering the data and transforming the data. It involves following steps

- *Compilation*
- *Editing*
- *Coding*
- *Classification*
- *Tabulation*

Cont…

- *Compilation*:

  In this gathering towards all the collected data in manner that a process of analysis can be initiated.

Cont…

- *Editing*:

  It implies the checking of the gathered data for accuracy, utility and completeness. The researcher must see that none of the questions has been skipped, all the answers have been recorded and all the replies are internally consistent with each other.

Cont…

- *Coding*:

  The original data is transformed into symbols compatible with manual or computer assisted analysis. Code is an abbreviation, a symbol, a number or an alphabet which assigned by the researcher to every scheduled item and response category.

Cont…

- *Classification*:

  In this process, we divide and arrange the entire data into different categories, classifications, groups or classes on the basis of common characteristics.

Cont…

- *Tabulation*:

  It is the recording of the classified data in accurate mathematical terms. It is the tedious process where raw data is to be summarized and displayed in compact form, which can be done manually or by computer.

Describing the data

- Descriptive statistics are used to describe the basic features of data and to provide simple summaries about the sample and the measures used in study.

Drawing inferences of data

- Inferential statistics helps in drawing inferences from data. The most commonly used inferential statistical data are Z test, T test, ANOVA, Chi-Square Test etc.

Interpretation of data

- It refers to the critical examination of the analyzed study results to draw inferences and conclusions.

Steps of Qualitative Data Analysis

- Qualitative data is obtained through loosely structured interview with open ended questions, observations and projective approaches.
- Irrespective of purpose and above mentioned techniques, the researcher ends up with a substantial number of pages of written texts that needs to be analysed.

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The procedures are

- Describe the study sample characteristics
- Order and reduce/ code the data
- Summarizing the data
- Drawing conclusions
- If required, develop strategies for further testing

Cont…

Description of study sampling characteristics

- A useful step in data processing as well as reporting the findings is the description of the study subjects.

Ordering and reduce/ code the data

- In ordering and coding of data, researchers can handle two types of data
- Response or answers acquired through open ended questions
- More elaborate narrative form loosely structured interviews

Cont…

Open ended questions:

- List the answers of the samples
- Read the answers and remember the purpose of questions
- Make the rough categories of answers that seem to belong together and code them with respective keywords
- List all the answers according to code
- Interpret each list and given meaningful or characteristic keyword

Cont…

- Make final list of labeled categories and code all
- This content analysis is the most important purpose of the analysis by counting the answers under each label, however the researcher will gain insight as well in how common the different reasons are.

Elaborate Narratives

- The data from interview are more bulky than answers to open ended questions. The carefully transcribed field notes and tapes may consist of pages of narrative text.
- In addition data is not presented in order we need for our analysis, since informants may jump from one topic to another.
- To make analysis easier we have to order and reduce the data. Ordering is best done in relation to the objectives and discussion on topics.

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Steps:

- Reread research objectives and discussion about topics
- Carefully read number of interviews, which need to be analyzed.
- List all keywords that being to a certain topic in the subcategories
- Interpret the data
- Code all your qualitative data

Summarizing data in compilation sheets

After ordering the data we will have to summarize them. A useful first step is summarizing all data of each study unit per study population on separate compilation sheet.

Summarizations can be done further by

- *Matrices*
- *Diagrams*
- *Flow charts*
- *Quasi Statistical Tables*
- *Narrative Analysis*

Cont…

Matrices:

- A matrix is a chart that looks like a cross table but contains words, it can be useful in quantitative and also qualitative data

Diagrams:

- A diagram is a figure with boxes contains variables and arrows indicating the relationships between these variables.

Cont…

Flow charts:

- They are special types of diagrams that express the logical sequences of actions or decisions. The preceding figure, indicating the successive steps in protocol development

Cont…

Quasi Statistical Tables:

- This style typically begins with some preconceived ideas about the analysis and uses those ideas to sort the data.
- In this researcher searches the content of the narrative data for particular words or themes that have been specified in advance.
- Then the result can be analyzed statistically.

Cont…

Narrative Analysis:

- In this approach the stories of the respondents are narrated. A researcher always tries to compare ideas presented by respondents about self.

Drawing and Verifying Conclusion

- When researcher starts to summarize data in compilation sheets. He or she continuously draw conclusions and modify or reject quite a number of them as they proceed.

Reporting the data

- Reporting qualitative data is of two different types. One way is summarizing the major result in a separate section of the findings, following the objectives.
- The second possibility is to fully integrate different data sets in the chapter of findings ordered according to the objectives of the entire study.

Establishing the validity of Qualitative data

- Check for representatives of data
- Check for bias
- Cross check data with evidence from other
- Compare and contrast data
- Use extreme informants to the maximum
- Carry out additional research to test the finding of your study
- Get feedback from your informant