

Level : LMD3

Module : Research Methodology

Data Analysis

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Data Analysis

- The collected data can be analysed quantitatively and qualitatively.
- Quantitative data analysis relies on statistics.

Quantitative Data Analysis

According to Kothari (2004, p.131):

The role of statistics in research is to function as a tool in designing research, analysing its data and drawing conclusions therefrom. Most research studies result in a large volume of raw data which must be suitably reduced so that the same can be read easily and can be used for further analysis.

Quantitative Data Analysis

Quantitative data analysis enables the researcher to get more reliable results. Moreover, it is less time consuming. Quantitative analysis helps to summarize data using descriptive statistics.

Descriptive Statistics

Descriptive statistics refer to a set of procedures employed for the purpose of summarizing the collected information. They consist of frequencies and percentages as well as measures of central tendency.

Measures of Central Tendency

Measures of central tendency include the mean, median and mode.

The mean refers to the average:

$$M = \frac{\sum X}{N}$$

M= mean

$\sum X$ = sum of scores

N= number of scores

Measures of Central Tendency

- **The median** is the middle value.
- For an odd number, the median is the middle score. For example, in the list of scores: 8,9,10,11,12, the median is 10.
- For an even number, the median is the average of the two middle scores. For example, in the list of scores: 6, 8,9,10,11, 12, the median is 9.5 $[(9+10)/2]$.

Measures of Central Tendency

- **The mode** is a measure of central tendency that refers to the most frequently repeated number. For example, in the list of values: 10, 9, 11, 9, 8, 9, 12, the mode is 9.

Quantitative Data Analysis

The analysed data are often presented in tables, bar graphs and pie charts. Quantitative data analysis helps to provide evidence and understand the results through the explanation of numerical information.

Qualitative Data Analysis

- ❑ Qualitative data analysis refers to the process of organizing and summarizing the collected data using words. It involves description, explanation and interpretation.

Qualitative Data Analysis

- ❑ Qualitative data analysis depends on the investigator's point of view and understanding. According to Cohen et al. (2007, p.469), “the analysis here is almost inevitably interpretive, hence the data analysis is less a completely accurate representation... the researcher brings to the data his or her own preconceptions, interests, biases, preferences”.

Qualitative Data Analysis

- ❑ Qualitative data analysis relies on coding which means using symbols to classify and organize similar answers. Then, the researcher has to explain and interpret the collected information.

Qualitative Data Analysis

- ❑ Qualitative data analysis does not involve numerical data as it provides textual information; it may also rely on the use of tables to summarize the findings and help the readers to get a clear idea about the meaning of the obtained results.

Purposes of Qualitative Analysis

- Qualitative data analysis can have various purposes such as describing or explaining the investigated issue. It helps the researcher to make inferences and draw conclusions. It tries to supply arguments that reveal the significance of the study.

Advantages

- Qualitative data analysis provides a detailed description.
- It allows the researcher to give his opinion and provide a deep understanding of the topic.
- Qualitative data analysis is more flexible.

Disadvantages

- Qualitative data analysis is time consuming.
- The results may not be generalizable.
- Qualitative data analysis is subjective.

Qualitative Data Analysis

Qualitative data analysis is an important step in the process of research as it is needed to interpret textual information.

Generally speaking, the researcher has to rely on qualitative and quantitative data analysis in order to provide more evidence.

References

- Cohen, Louis, Manion, Lawrence, and Morrison, Keith. (2007). *Research Methods in Education*. New York: Routledge.
- Kothari, C.R. (2004). *Research Methodology*. India: New Age International Publishers.
- Perry, Fred. (2005). *Research in Applied Linguistics: Becoming a Discerning Consumer*. New Jersey: Lawrence Erlbaum Associates.