UNIT 3: QUALITATIVE AND QUANTITATIVE RESEARCH

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3.1. LEARNING OBJECTIVES

After going through this unit, you will be able to -

- understand the meaning of qualitative and quantitative research
- identify the different types data collecting strategies in qualitative and quantitative research
- explain the advantages as well as disadvantages of both qualitative and quantitative research
- analyse the difference between qualitative and quantitative research

3.2 INTRODUCTION

Qualitative and Quantitative Research are two foremost approaches of conducting a study. The aim of either of the research approaches is to get an in-depth idea of a research problem based on the collection and

analysis of data using various qualitative or quantitative methods. Based on the nature of the problem identified for conducting a study, the researcher uses either quantitative or qualitative approach. In the previous unit we have already learned briefly about these two types of research. In this unit we shall try to understand them in details.

3.3 QUALITATIVE RESEARCH

Qualitative Research is a detailed, in-depth collection and analysis of quality data based on small samples, intended to provide insight and understanding.

Qualitative research addresses issues that grasp the subjective meaning from the perspective of the participants. It is a research strategy that usually emphasizes words rather than quantification in the collection and analysis of data. The primary aim of a qualitative research is to provide a complete, detailed description of the research topic. It is usually more exploratory in nature. The research situation is designed to be as open possible that enables the researcher to analyse the social situation. The researcher serves as the primary data gathering instrument in qualitative research. Here, the researcher employs various data-gathering strategies, depending upon the thrust or approach of his/her research. Qualitative Research is primarily subjective in approach as it seeks to understand human behaviour and reasons that govern such behaviour. Thus, qualitative data is characterized by exhaustive and distinct attributes or categories that do not possess numerical magnitude. The researcher has the scope to use certain open techniques through which the person conducting the study collects information by observing phenomena and interacting with the respondents in its natural setting. Some of the most significant data-gathering strategies used in qualitative research are individual in-depth interviews, structured and unstructured interviews, focus group discussions, narratives, content or documentary analysis, ethnography or participant observation and archival research.

- **Ethnography/ Participant Observation:** The researcher involves oneself in a social setting for a considerable amount of time

(sometimes months, years) to observe, experience and listen with the objective of having an in-depth understanding of a particular cultural group which is the subject of study.

- **Focus Group Discussions:** It is a kind of an interview with a group people on a specific topic or issue where each of the selected members discusses their views on the subject. It aims to reveal how the group participants view a particular issue that they might be facing.
- **Semi-structured and Unstructured Interviews:** Qualitative research makes use of semi-structured or unstructured interviews with open-ended questions. A respondent has the freedom to express his/ her views, feelings and experiences without any restriction, time or word limit. It helps the researcher to get an in-depth understanding of the research problem as the interviewee expresses hi/ her experiences and knowledge on the particular topic.
- **Content Analysis:** It is a technique to analyse documents and texts that seek to interpret information for the study. Content analysis is applicable to different forms of unstructured information such as transcripts of interviews, open-ended questionnaires, case studies, archival materials etc. It seeks to bring out a pattern of information that can contribute to the research.
- **Case-study Method:** It is a research strategy that investigates a social phenomenon in its natural context. The “case” may be an individual, a community, a cultural group, an organization, an event or an action, existing in a specific time and place. The case study research design is useful for testing whether scientific theories and models actually work in the real world.

3.3.1 Advantages of Qualitative Research

- It provides liberty to the researcher to do an in depth study of the particular topic. The aim is to deliver a complete detailed description of a social reality.
- The semi-structured and unstructured interviews and participant observation methods employed in qualitative research helps in bringing about an unexplored domain of knowledge.

- The research design formulated for qualitative research may gradually evolve as the study advances and further explores the area of study.

3.3.2 Disadvantages of Qualitative Research

- Researcher tends to become subjectively immersed in the subject matter.
- Limited use of statistical data results in generation of non- statistical data in qualitative research which has less generalizeability.
- Qualitative research is more time consuming both in the processes of collection and analysis of data.

3.4 QUANTITATIVE RESEARCH

Quantitative Research techniques seek to quantify data and apply some form of statistical analysis.

Quantitative Research focuses more in counting and classifying features and constructing statistical models and figures to explain what is observed. Quantitative research techniques seek to quantify data and apply some form of statistical analysis. Quantitative data possesses the characteristic of numerical magnitude. Only measurable data are gathered and analyzed in quantitative research and thus it is objective in its approach. It only seeks precise measurements and analysis of target concepts to answer his/her inquiry. Quantitative Research makes use of tools such as questionnaires, surveys, statistical measurements and other equipment to accumulate numerical or measurable data. Quantitative research is mostly based on hypotheses which are to be tested. A hypothesis formulates a relation between two or more variables or phenomenon that needs to be statistically tested in a quantitative research. Some of the important techniques of data collection and analysis in quantitative research are:

- **Hypothesis :** A hypothesis is a tentative assumption about relation between variables or an explanation of a research problem.

  Close ended questionnaire: Close-ended questionnaires gives options of specific answers one of which the respondent has to

select. The multiple answers are already stated against each question. The close-ended questions are easier for quantitative analysis.

- **Structured Interviews:** Similar to the close-ended questionnaires, structured interviews consist of a set of questions of close-ended nature which the researcher asks the respondents. The respondents do not get much scope of elaboration of their views on a particular topic.
- **Experimental Research:** It attempts to establish a cause and effect relationship among the groups of participants that make up the independent variable of the study. In experimental research, the cause (the independent variable) is under the control of the researcher.
- **Use of Statistics:** Statistical methods are used extensively in pure science and social science disciplines. Quantitative research using statistical methods starts with the collection of data, based on the hypothesis or theory. Usually a big sample of data is collected – this would require verification and validation before the process of data analysis. Software packages such as SPSS (Statistical Package for Social Sciences) are used for this purpose.
- **Measures of Central Tendency:** It seeks to bring out an average for a distribution of values and has three different forms of average:- (a) Mean- here, all the values in the distribution are summed up and then divided by the number of values. (b) Median- This is the mid-point in a distribution of values. (c) Mode- This is the value that occurs most frequently in a distribution.
- **Measures of Dispersion:** The amount of variation in a sample or a distribution of values is measured by using: (a) Range- it is the difference between the maximum and minimum value in a distribution of values. (b) Standard Deviation- The average amount of variation around the mean, it is calculated by taking the difference between each value in a distribution and the mean and then dividing the total of the differences by the number of values.

- **Correlation coefficient:** It is the measure of the relationship between two variables.
- **Multiple Regression:** It shows the degree to which multiple factors (independent variables) impact change in an outcome (dependent variable).
- **Chi-square test:** It is used to analyze data reported in categories, test is interested in seeing if two or more groups differ with respect to nominal variables. For example- the relationship between gender and educational qualification is statistically significant.
- **T-test:** *This* test used to see whether a difference between the means of two samples is significant.
- **ANOVA *(analysis of variance)* :** It is a technique which helps researchers discover if there is a significant difference between the means of more than two groups.

Quantitative data may be represented in the form of tables, graphs and diagrams after analysis.

3.4.1 Advantages of Quantitative Research

- Data is in the form of numbers and statistical methods are used to procure objective results.
- Quantitative data has more generalizeablity is able to test hypotheses.
- Quantitative analysis requires lesser time compared to qualitative analysis and it can analyse result collected from huge sample size using statistical methods.

3.4.2 Disadvantages of Quantitative Research

- Use of close ended questionnaire and structured interviews in quantitative research may limit an indepth analysis of the research problem.
- This approach measures the responses of a large number of individuals to a limited set of questions. The analysis of relationships between variables creates a static view of social life.

3.4.3 Difference between Quantitative and Qualitative Research

Quantitative research generates numerical data or information that can be converted into numbers. Qualitative Research on the other hand generates non-numerical data. Quantitative research is based on the quantity or amount. It is applicable to phenomena that can be expressed in terms of quantity.

Qualitative research, on the other hand, is concerned with qualitative phenomenon that is relating to quality or kind. Qualitative research is especially important in the behavioural sciences where the aim is to discover the underlying motives of human behaviour. The following table shows some of the major differences between Quantitative and Qualitative research.

Table 3.1: Differences between Quantitative and Qualitative Research

Variables	Quantitative Research	Qualitative Research
Theory	As a starting point to be tested	As an end point to be developed
Data collection	Standardized	Open
Analysis of data	Statistical analysis of numerical data	Interpretative analysis, content analysis of interviews, discussions, observation, etc.
Knowledge generated	Establishes relationships, causation	Describes meaning, discovery
Report	Report statistical analysis. Basic element of analysis is numbers	Report rich narrative, interpretative. Basicelement of analysis is words/ ideas, observation.

An advantage of quantitative research is that it allows the study of a large number of cases for certain aspects in a relatively short time and its results have a high degree of generalizability. On the other hand, qualitative research is ideal for detailed analysis of selected cases and its

generalizability is limited. The participants have more freedom to express/ discuss their feelings, knowledge and views on the particular issue that is being studied. The researcher also has the autonomy to seek elaborate responses from the participants and analyze it in detail. Another differentiation between quantitative and qualitative research can be drawn out from the fact that quantitative research should often start from hypothesis that has to be tested, whereas, in qualitative research, hypothesis play a minor role. If a study aims to find out the answer to an inquiry through numerical evidence, then researcher should make use of the Quantitative Research. However, if the study attempts to explain further why this particular event happened, or why this particular phenomenon is the case, then researcher should make use of Qualitative Research.



CHECK YOUR PROGRESS- I

Q.1: What is Focus Group Discussion?

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Q.2: State the differences between Quantitative and Qualitative research.

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3.5 LET US SUM UP

- It is inquisitiveness that leads to all forms of knowledge. The term 'research' refers to the systematic method that contributes to the existing stock of knowledge.
- Social science research; their approaches and inferences to bring out better understanding of social world.
- The basic scope of social research is to understand correctly the nature of human behaviour, social events and processes.

- Qualitative Research is primarily subjective in approach as it seeks to understand human behaviour and reasons that govern such behaviour.
- Quantitative data possesses the characteristic of numerical magnitude. Only measurable data are gathered and analyzed in quantitative research and thus it is objective in its approach.



3.6 FURTHER READING

1) Ahuja, Ram. (2014). *Research Methods.* Jaipur: Rawat Publications.
2) Bryman, Alan. (2008). *Social Research Methods- Third Edition*. New York: Oxford University Press
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5) Kothari, C.R. (2006). *Research Methodology: Methods and Techniques.* New Delhi: New Age International (P) Ltd.
6) Scott and Marshall. Oxford Dictionary of Sociology.
7) Young, Pauline V. (1966). *Scientific Social Surveys and Research (Fourth edition).*New Delhi: Prentice Hall of India Pvt. Ltd.



3.7 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q. No 1 : Focus Group Discussion is an interview with a group of people on a specific topic or issue where each of the selected members discusses their views on the subject.

Ans to Q. No 2 : Quantitative research generates numerical data or information that can be converted into numbers. Qualitative Research on the other hand generates non-numerical data. Quantitative research is based on the quantity or amount. It is applicable to phenomena that can be expressed in terms of quantity.