

Chapter 3
Research Methodology

CHAPTER-3

RESEARCH MEDHODOLOGY

3.0.0 Introduction-

One of the contributing factors of successful research is its methodology. It is important to follow the research methodology as it gives a right direction to any research. This chapter guides the researcher in the process of collecting, analysing and interpreting data and be on track. Methodology is a process which reveals all those methods and techniques used by the researcher during the course of studying his/her research problem. The role of methodology is to carry out the research work in a scientific and organized manner. Adaptation of a suitable methodology can help the researcher to keep the research work well organized, efficient and systematic. The success of any research mainly depends on the tools and techniques and the proper methods adopted in the research process. In this chapter, the discussion will be in detail about the variables, population, sample, tool used for collecting the data, steps for tool construction, the procedure of the data collection, and statistical techniques used for the given study.

3.0.1 Area or location of study:

The present study was conducted to know the social media usage level and academic achievements of senior secondary students of Ganjam district, Odisha.

3.0.2 Research method:

In the present study descriptive survey method was implemented. A descriptive survey research is an approach of descriptive research that blends quantitative and qualitative data to provide you with relevant and accurate information. It can only conduct via. Survey, observation and case study. The survey method gathers data from the population with relatively large sample at particular time and it attempts to describe and interpret what exists at present conditions, processes, trends, attitudes and belief for the participants of the research. The present study is basically qualitative and quantitative and the results are obtained. it is designed and carried out on the lines of survey under descriptive methodology. The main agenda is to describe the relationship that exists and in between the variables.

This contains the methods and procedures used in this study. The methodology followed in the study titled- "A study of Academic Achievements of senior secondary students in relation to social media usage" is discussed.

3.0.3 Research design:

The design of the study gives a total picture of research. The design of the present study is descriptive research. Descriptive research collects data that are used to answer a wide range of what, when and how pertaining to a particular population group (research connections). It is concerned with conditions or relationships that exist, opinions that are held, processes that are going on, effects that are evident, or trends that are developing. It is primarily concerned with the present, although it often considers past events and influences as they relate to current conditions. Literally, descriptive research means an investigation which focuses on just describing the phenomenon, as an outcome of research, what it is. Descriptive research deals with the relationships between variables, the testing of hypothesis, and the development of generalizations, principles or theories that have universal validity.

3.0.4 Population -

the senior secondary school students from Ganjam district of Odisha, India taken as population of the present study; keeping such factors as time, physical and financial constraints, a sample of 50 responses from government and private school and colleges was taken for the present were selected at random of class 11th under the age group of 16-18 years.

3.0.5 Sample-

The term sample refers to a small group of individuals from a large population. A sample may be defined as, "a finite number of observations or cases, selected from all areas in particular universe, often assumed to be representative of the total group or universe of which is a part"- Good (1973)

The process of obtaining information about the entire population by examining only a part of it is referred to as sampling. The sample of the research is taken from both private and government schools located in Ganjam district of Odisha. For the data collection, the investigator has listed schools and colleges of both types that is government and private. In total data of 50 response were collected.

Table 3.1-Description of sample according to name and type of school

Sl.no	Name of schools/colleges	Type of school/colleges
1.	Khallikote autonomous college	Government
2.	Khetramohan science college	Government
3.	K.C. public school	Private
4.	Saraswati Shishu Vidya Mandir, Berhampur	Private

the commonly used sampling techniques are random sampling, quota sampling, purposive sampling and stratified sampling. For conducting the present study, keeping in view the limitations and resources available with the stratified random sampling technique was used. The researcher collected data from the senior secondary students and divide the population on the basis of gender (male and female) that are available.

The stratified random sampling procedure was taken as the sampling procedure. Stratified random sampling is a method that involves the division of population into smaller sub-groups known as strata, the strata are formed based on the members' shared attributes or characteristics. The senior secondary students of Ganjam district of Odisha were taken as the population.

Table 3.2-Distribution of sample on the basis of gender

Gender	Number of students	Percentage
Male	20	40%
Female	30	60%
Total	50	100%

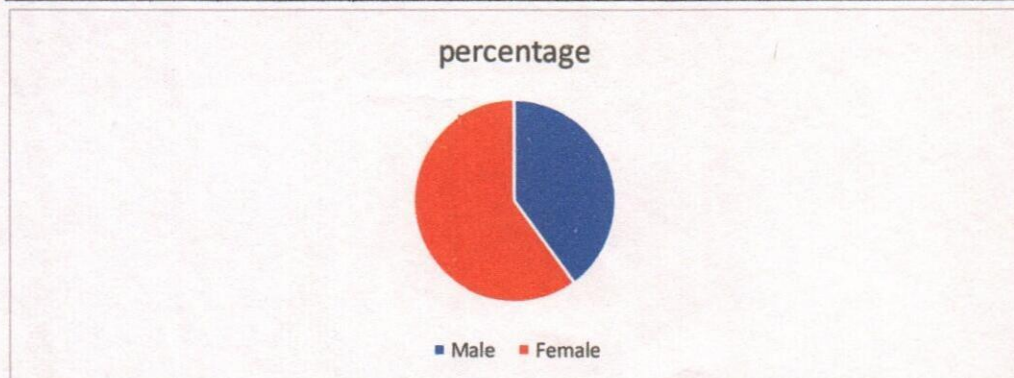


Figure 3.1 - distribution of sample according to gender

3.0.6 Variables of the study-

Variables are basically the periphery in the research part. It is basically the entity that can take any value and can vary. The dependent variable is the factor that is measured to determine the effect of the independent variable. It is on which the research is being studied. A dependent variable is one about which a researcher makes a prediction on. Here in this, academic achievement is taken as a dependent variable and social media usage is taken as an independent variable. Gender is taken as a demographic variable.

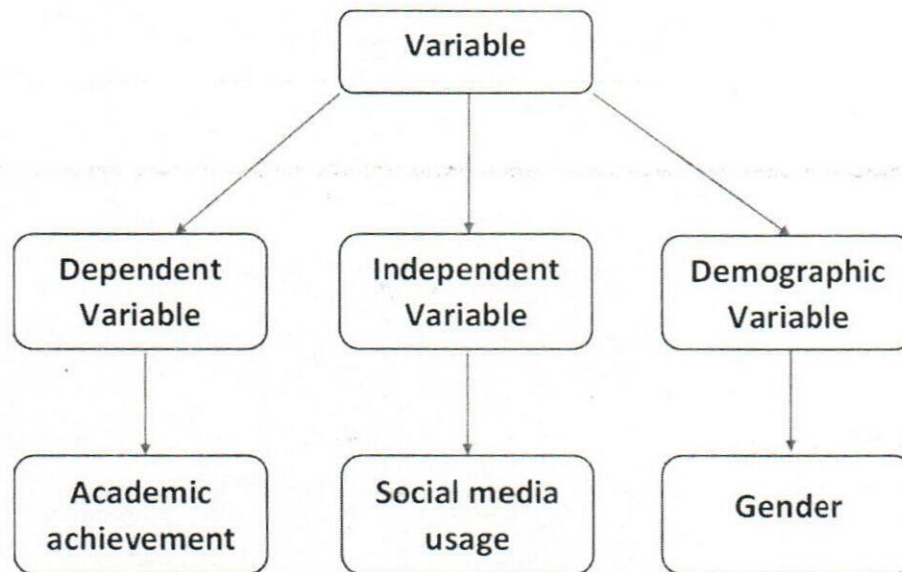


Figure 3.2: Showing schema of variable

3.0.7 Tool used:

In order to collect data from the sample tool developed by the researcher with expert consultation. That is

3.7.1 Social media usage survey Questionnaire of senior secondary students

Social media usage survey Questionnaire of senior secondary students have been developed to collect information from the prepared list of senior secondary students to know their influence of academic achievement towards the social media usage. The questionnaire consisted of 45 multiple choice questions related to the subject matter. First 5 questions were to collect the data like the social media platforms used by the students, the time they spend while using and the purpose for which they are using the social media, rest 40 questions that were prepared by the researcher were of Yes and No type to check the hypothesis.

The scoring of positive items of the social media usage scale was done by assigning scores of 1 for Yes and 0 for No and for the negative items of the social media usage scale the scoring was 1 for No and 0 for Yes

Table 3.3-Number of positive and negative items in social media scale

ITEMS	SCORIN G		Questions
	Yes	No	
Positive item	-1	-0	Item.no-12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,37,39,40
Negative item	-0	-1	Item.no-1,2,3,4,5,6,7,8,9,10,11,33,34,35,36,38

Academic Achievement is taken as final marks obtained by the students studying in class 11th the previous class, i.e., class 12th in the session 2021-22

3.7.2 Validity:

Since questionnaire was a one-time data-gathering instrument with a very short life, content validity was estimated for the questionnaire. The items constructed for the questionnaire under two parts were made free from ambiguity, and were short and stated clearly. While preparing questionnaire, the researcher consulted colleagues and a group of experts and obtained their suggestions to improve the items. Therefore, the content validity of the questionnaire was ascertained.

3.0.8 Procedure of data collection:

Data collection is one of the most laborious tasks in a study. A well plan organized by the researcher that helped her to collect the required data in a sequential manner, with the prior permission of head of the institution. The researcher met the selected senior secondary students of different schools and colleges. After giving self-introduction, the researcher explained the purpose of research and encouraged them to be free and frank in giving responses. To win confidence of respondents and to elicit genuine responses from them, the researcher promised to keep their responses confidentially. After completion of responses the researcher collected the filled questionnaires and scores it by using the scoring key for the research tools.

3.0.9 Analysis of data-

After administering the data, the next step was to analyse the information so obtained from the samples. For analysing part, the researcher used various statistical techniques

1. Descriptive statistics for measuring the level of social media usage-frequency is taken and bar graph and pie chart is designed.
2. Inferential statistics-Correlation- Pearson Product Moment Correlation to know the relationship between the variables.

Inferential statistics are used to describe and make inferences about the population. Inferential statistics is employed when generalizations from samples to populations are made (Sekaran, 2003; Huck, 2004). It includes testing of the hypotheses by using suitable statistical tests. A brief description of the inferential statistical techniques:

3.9.1 Pearson Product Moment Correlation: -

The investigator used Pearson product moment correlation to analyse the relationship between the variables in the present study as all the variables involved in the present study were continuous and measured on an interval scale. The formula for calculating the coefficient of correlation from obtained scores of variables is as follows -

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{[n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2]}}$$

Were,

n = Number of scores

$\sum x$ = Sum of x scores

$\sum y$ = Sum of y scores

$\sum xy$ = Sum of the product of x and y scores

$\sum x^2$ = Sum of squared x scores

$\sum y^2$ = Sum of squared y scores (Garrett, 2009)

3.9.2 Independent Sample t-test: - to know mean scores of academic achievement and social media usage among male and female students.

The investigator used Independent Sample t-test to analyse mean comparison of two independent groups. The value of t is calculated by the formula given by-

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\left(\frac{(N_1 - 1)s_1^2 + (N_2 - 1)s_2^2}{N_1 + N_2 - 2}\right)\left(\frac{1}{N_1} + \frac{1}{N_2}\right)}}$$

Where,

\bar{X}_1 =Mean of first sample

\bar{X}_2 =Mean of second sample

N_1 =Size of first sample

N_2 =Size of second sample

s_1^2 =Standard deviation of first sample

s_2^2 =Standard deviation of second sample

3.10 Computation of Data

A comprehensive data sheet was prepared along with proper coding of the variables including demographic variables also. The data was fed in the SPSS worksheet with the utmost care and cross-verified. SPSS 21 was used to do the analysis of the research. All the necessary commands and inputs were given for calculations.