

— UNDERSTANDING —
THE ELEMENTS OF
SOCIAL
RESEARCH
Students' Guide



ELIASU ALHASSAN

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UNDERSTANDING THE ELEMENTS OF SOCIAL RESEARCH

Students' Guide



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PREFACE

This book advances a plan, a process, and approaches for understanding Social investigation in the human and social world, a comprehensive approach for understanding qualitative, descriptive, and triangulation as well as basic terminologies in social research. The continued usage of these approaches and the terminologies in Social Research by students and researchers necessitated the production and need for this book. The explanations of the very important approaches begin with a preliminary consideration of philosophical and theoretical understanding of the core and conceptual issues in social research.

The review of literature, an assessment of the linkage between theory and conceptual framework in social research designs and proposal writings are very important in scholarly research. The book addresses a general introduction, the purpose of social research, an understanding of some key basic terms, a literature review and a theoretical framework. It also addresses proposal writing essentials in both qualitative, descriptive, and triangulation approaches to social research.

At each step in the process, the reader is taken through the basic understanding of key terminologies and purposes of social research, literature review, proposal writings and understanding of approaches in social research. The book is intended to guide Social Researchers and Students, especially, postgraduate students who seek assistance in preparing a plan or proposal for a scholarly journal, thesis and dissertations. At a broader level, the book may be useful as a reference, a

guidebook for graduate courses in research methods. Examples in the book are drawn from the life experiences of researchers and research tutors in the Universities. The book is not a detailed research methods text it only highlights the essential ideas, elements, and features of research methods.

The coverage of research methods in social investigations is limited to the frequently used forms of research, theory and terminologies which are very useful in social research approaches. Consistent with the accepted convention of scholarly writing in research, discriminatory words are eliminated in all chapters. Readers should note that in many examples cited in the book, references are made.

Prof. Eliasu Alhassan
August, 2023

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AN OVERVIEW OF RESEARCH

Introduction

The purpose of this chapter is to equip students with the general knowledge as well as the general purpose of social research in both rural and urban communities in and outside Ghana. The chapter addresses the deficiency of students understanding of some basic terms in social research and how they are used in research. The main objective of this chapter is to enable researchers to communicate effectively using research terms and also allow the students to write their dissertations and apply the appropriate research terminologies in social research.

Meaning and Purpose of Research

The role of research in development is more important than ever before, environmental pollution, the quest for economic development, social and political disorders, and the scarcity of natural resources have broadened the interest given to research. Many governments in the world especially, in Africa, have realised and recognised the direct link between national development and research.

To research is to carry out a diligent inquiry or a critical examination of a given phenomenon. This implies extensive study, investigation, or experimentation following some logical sequence (Breakwell, Hammond, Fife-Schaw & Smith, 2006). According to Burns & Groove (2014), research involves a

critical analysis of existing conclusions or theories about newly discovered facts. This is very necessary in an ever-changing world with advanced technology continually creating new possibilities. Research therefore means, a continued search for new knowledge and understanding of the world around us. Bryman (1984) defined research as a process of arriving at effective solutions to problems through systematic collection, analysis and interpretation of data. Bryman (2004) explained that the main purpose of social investigation is to discover new knowledge and this involves the discovery of new facts, new ideas and their correct meanings, interpretation and practical application. Also, the purpose of social research is to describe a phenomenon or event. Accurate identification of any event involves descriptions, for example, size, shape, age, weight, colour, and height. These can change over time.

Another purpose of research is to enable prediction. Prediction is the ability to estimate a phenomenon. For example, our knowledge about the movement of the moon, earth, and the sun helps us predict with amazing accuracy the occurrence of the eclipse of the moon and the sun. Research also is to enable control. In scientific research, control is the ability to regulate the phenomenon under study. Again, research is to enable an explanation of a phenomenon and this involves accurate observation and measurement of the phenomenon. It is also to enable theory development formulation, laws and concepts of generalisation of phenomenon (Bryman, 1998).

Note: Depending on the type of research or project, a researcher, either a consultant or a student is doing, the purpose of such research will definitely fall under any of the purposes stated above. Research Students should have in mind the purpose for which they are carrying out a particular research this will facilitate the outcome of research and reduce time wasting.

Sources of Research Knowledge

- Mugenda & Mugenda (1999) explained that research is an important source of knowledge because it is objective and involves systematic procedures.
- Experience is a common mode of obtaining knowledge. Human beings learn through their experiences in life. E.g. a farmer often growing beans for several years may come to conclude that beans do well during the season of short rains.
- Tradition is another source of knowledge. All human beings inherit culture. The socio-cultural system embodies accepted knowledge of how things are or are scheduled to be. Acquisition of this knowledge is through socialisation.
- Authority is another source of knowledge. This takes the form of an expert in a specialised area giving his opinion on an issue, the acceptance of such an opinion by others depends on the status of a person. For example, we are likely to accept the fact that HIV/AIDS is not transmitted through a handshake if the person is a qualified doctor rather than a professional footballer.

- Knowledge can also be obtained via institutions of learning and media houses (Bryman, 2006).

Research and Science

A lot of students are confused with the terms research and science. Some students use the two to mean differently whilst others use the terms interchangeably. In a strict sense, the two terms have different meanings. Remember earlier that one of the definitions of research is the critical examination or inquiry to discover facts. Science is a systematic knowledge of natural or physical phenomena obtained by observation, experimentation and ordered arrangement of facts known under classes of headings (Check & Schutt, 2011).

Even though research and science are both concerned with the discovery of new facts. In research, facts are often collected to serve useful purposes. In science, however, facts are collected with the sole aim of testing or developing theory. Its focus is on basic research whilst research focuses on applied research.

In other cases, and according to Bryman (2016), studies that are conducted to test theoretical concepts in a real situation to develop generalisation and application, are usually referred to as **applied research**. This includes research that may not be theory-guided.

Note: Students especially, PhD students should have in mind that not all social research needs a theory to guide the study, conceptual frameworks or models can also be used to guide the study depending on the type of research.

Basic Forms of Social Research

According to Bulmer (1977), Basic research: or scientific inquiry aims at developing theories, and the existence of viable theories facilitates progress in science and all other areas of human behaviour. There are other types of research in relation to scientific inquiry. These include the following:

- **Action research:** is conducted with the primary intention of solving a specific immediate and concrete problem in the local setting. E.g. a researcher could investigate ways of overcoming water shortage in a given geographical area for example, the University for Development Studies, or causes of teenage Pregnancy in the Tamale Metropolitan Area. Action research is not concerned with whether one research's results are generalised to other settings since its major goal is to seek a solution to a given problem (Bryman 2008).
- **Evaluation research:** According to Cohen et al (2002), this is the systematic process of collecting and analysing data to make decisions. Evaluation research is, therefore, a process of determining whether the intended results were realised. For example, a study of Ghana's school feeding

programme, a programme which has already been implemented.

- **Description research:** Christensen et al, (2011) explained that descriptive research is the process of collecting data to test hypotheses or to answer questions concerning the current status of the subject in the study. E.g. description of possible behaviour, attitudes, values and characteristics of people of the Northern Region of Ghana.
- **Causal comparative research:** is used to explore the relationship between variables e.g. maternal education and child education (Grant, 2008).
- **Survey research:** This is to determine the current status of the population and this requires large sample data from the field.
- **Historical research:** a study that requires the collection of information from the past. For example, Ghana's independent struggle in 1957.

According to Creswell (2003), there are basically three (3) types of research – **QUALITATIVE, QUANTITATIVE and MIXED METHOD**. All the forms of research stated above can take the processes and procedures of any of these three.

Qualitative research: is the study that does not produce discrete numerical data, more often, the data are in the form of words rather than numbers and these words are often grouped into categories. Observation, participant observation and interviews.

Quantitative research: involves a procedure using discrete numerical or quantifiable data (Collins & Hussey, 2003).

Mixed Method: This involves the combination of elements of qualitative and quantitative research, questions, data collection and sampling processes as well as analysing and mixing both qualitative and quantitative analytical tools.

Research and Theory

Creswell (2009) noted that a theory is defined as a system of explaining phenomena, concepts and laws that are interrelated to one another. To explain this definition, let us consider Abraham Maslow's theory of motivation. This theory is based on the assumption that human behaviour is goal-directed and originates from unfulfilled needs which produce tension and motivate human beings to act. Hierarchies of needs are (1) food, drink, shelter, (2) safety, financial protection, avoidance of pain (3) social love and acceptance (4) self-esteem prestige, status, and respect).

This theory according to Creswell (2003), is designed to explain human behaviour with respect to needs in a given environment. You must as a student be able to understand the following questions and answer them wherever you meet them. Your ability to answer them is a clear demonstration of your understanding of the basic concepts and also attests to the fact that you can communicate effectively in research.

Note: It is important to acquire a sound understanding of the basic terms used in Social and Scientific research. A clear grasp of the meaning of these terms is a prerequisite for effective communication in research.

Definition of Key Terms in Social Research

Population

According to Mugenda & Mugenda (1999), Population refers to an entire group of individuals, events, or objects having common observable characteristics. Examples of population in social research are as follows:

- All postgraduate students in the University for Development Studies
- All patients suffering from diabetes in Tamale
- All women in Agriculture in the Northern Region
- All first-year Sociology Students in the faculty of social sciences of UDS

Sampling

Mugenda & Mugenda (1999) further explained that Sampling is the process of selecting a number of individuals for a study in such a way that the individuals selected represent the larger group from which they were selected. It should be obvious that dealing with all members even of a smaller accessible population would still involve a tremendous amount of time and resources. Researchers, therefore, further select a given accessible population. This sub-group is carefully selected to be representative of the whole population with relevant characteristics. According to Creswell (2003), a small group

obtained from an accessible population is known as a **Sample**. For example:

- 15 Social Administration students at UDS
- 100 Malaria Patients in Tamale
- 200 Women involved in agriculture in Tamale
- 400 Level 400 students of Sociology at UDS

As a student, be mindful, that the purpose of sampling is to secure a representative group which will enable the researcher to gain information about the population. Various methods are used to get a sample from a population and these methods are referred to as sampling techniques.

Variable

Hammarberg et al (2016) defined a variable as a measurable characteristic that assumed different values among the objects. Some variables are attributes that are expressed quantitatively. For example, 'age' is expressed in numbers, area is expressed in square meters and weight is expressed in kilograms. Other variables are expressed in categories. For example, occupation may be expressed as a farmer, teacher, nurse etc. Gender is expressed as male or female. Colour as red, blue, black etc.

Remember that there are different classifications of variables. There may be E.g. dependent variables, independent variables, intervening variables, confounding variables and antecedent variables (Hammond & Wellington, 2012).

Dependent variables

An attempt to indicate the total influence arising from the effects of independent variables. It therefore varies as a function of an independent variable. For example:

- The influence of hours studied on the performance of students in research tests.
- The effects of overcrowding on the performance of University for Development Studies students (UDS)
- The determinants of girl-child education in Tamale.

The variables underlined are all dependent variables because they are influenced by the effects of overcrowding, influences hours, and the determinants.

Independent variable

This is a variable the researcher manipulates to determine its effects on another variable. They are also called predictor variables because they predict the outcome of dependent variables. For example:

- The influence of learning hours on students' performance
- The influence of income on housing conditions
- The influence of gender on job opportunities.

Data

Data refers to all the information a researcher gathers for his or her study. Mugenda & Mugenda (1999) has recognised two types of data; Primary data and secondary data, whilst Bryman (2004) & Hennink et al (2020) recognised in addition to Primary and Secondary, three forms of data; Qualitative, Quantitative and Mixed data.

Parameter

A parameter is a characteristic that is measurable and can assume different values in a population, like a variable. The difference between a variable and a parameter is that a parameter refers to a population characteristic whilst a variable relates to a characteristic of a sample drawn from the population. An example of a parameter is the average age of Sociology students in UDS.

Statistics

According to Johnson & Onwuegbuzie (2004) Statistics is the science of organising, describing and analysing quantitative data. There are two types of statistics, descriptive and inferential statistics. Note the following definitions as defined by Mugenda & Mugenda (1999).

Descriptive Statistics

Measures of central tendency (mean, mode, media. Percentages, frequencies and charts.

Inferential Statistics

Testing of hypotheses for generalisation. Standard deviation, Multiple Regression and ANOVA.

Objectives

This is any kind of desired end condition. In research, it refers to a specific aspect of the phenomenon under study that the researcher desires to bring out at the end of the study.

Literature Review

This involves locating readings and evaluating reports of previous studies, observations and opinions related to the subject under study.

Problem Statement

This is a specific statement that clearly conveys the purpose of the research under study. It is normally expressed in a question form or a puzzle.

Units of Analysis

It is the individual units about whom or which descriptive or explanatory statements are to be made. E.g. individual human beings, student residents, and groups can also be units of analysis. E.g. females, married women, cities, and even geographical areas, social artefacts are sometimes used as units of analysis. E.g. books, buildings etc.

Units of Observation

This is related to the unit of analysis in some research works, but sometimes they are not the same. E.g. in studying a University like UDS, the unit of observation will be the Vice chancellor, Administrators, Lecturers and Students who give information and the unit of analysis will be the University itself.

Hypotheses

This is the researcher's anticipated explanation or opinion regarding the result of the study.

Note: These are terms that you need to understand before you can communicate effectively in research. Therefore, every researcher/student needs to be abreast with them. It is also important to note that in writing dissertations or a thesis, the number of chapters depends on the voluminous nature of the data. Sometimes, research institutions may spell out the number of pages required for long essays, dissertations and thesis. Johnson et al (2003) explained that it is required to introduce your next chapter at the end of each chapter when writing your research report. This will pre-inform the reader of what to expect in the next chapter.

CHAPTER TWO LITERATURE AND THEORIZING IN SOCIAL RESEARCH

Introduction

This chapter is devoted to the relevance and purpose of the Literature Review as well as to understanding theories in social research. It is important to note that literature review plays an important role in research and without which there cannot be meaningful research. Let us consider this quotation from the works of Bryman (2004) *“Literature review involves the systematic, identification, location and analysis of documents related to the research problem being investigated. It should be extensive and thorough because it is aimed at obtaining detailed knowledge of the topic being studied.”*

Purpose of Literature Review

- To determine what has been done already relating to the research problem being studied. This is to avoid unnecessary duplications.
- It will reveal what strategies procedures and measuring instruments that have been found useful in investigating the problem in question.
- It is also to make research formulation with previous studies and facilitate the interpretation of results.
- It helps determine new approaches and stimulates new ideas.
- Approaches that have proven futile will be revealed through a literature review.
- It pulls together, integrates and summaries what is known in the area of social research.

Sources of Literature Review

- **Primary sources:** These include direct data from the field by means of interview guides, questionnaires, focus groups, group discussions and observations.
- **Secondary sources:** These include scholarly journals, theses and dissertations, government documents, papers presented, books, references, international indices, abstracts, and computer and internet searches (Johnson et al, 2003).

Bryman (2004) and Creswell (2004) explained that the literature acts as an impetus in a number of ways; the researcher may seek to resolve an inconsistency between different findings or between interpretations, the researcher may have spotted a

neglected aspect of the topic, the literature acts as a proxy for a theory. In many instances, the theory is latent or implicit in the literature.

Note: According to Kuhn (1962), in reviewing literature, there are two methods which must be known to all students writing a dissertation or thesis. That is, the author's last name and year of publication are put after a paraphrased statement in the text. The name and year are put in brackets. Example 1, among the economic factors that affect satisfaction with quality of life, income has been found to be positively related to satisfaction with quality of life. Berry and Williams (1987), found a positive relationship between income and satisfaction with quality of life. For example, communication is an important planning tool that enables a household to realise its goals.

In the above, example 1 refers to the number against the particular reference as listed in the cited reference. 1987 is the publishing year. The information obtained in the review of the literature will help the researcher or the students avoid mistakes that have been made by other researchers. It is also to help you pull together and summarize what is known in the area of your study. Also, to avoid unnecessary and unintended duplications from a framework within which the research findings are to be interpreted. Again, to demonstrate your familiarity with the existing literature or body of knowledge which will go a long way to increase your confidence and your research ability.

Steps in Reviewing Literature

- Be familiar with the library before you begin the review.
- Make a list of words or phrases to guide your reviews. For example, if the study deals with family conflict, words such as family violence, abuse, family dissolution, etc. should be looked for.
- As much as possible see the library officials to guide you search for books that may contain the phrases or words you are looking for.
- Summarise the references for easy organisation.
- Once the material is collected, organise and report in an orderly manner.
- Outline the main topics or themes and decide on the number of headings in the review.
- Studies contrary to the received wisdom should not be ignored when reviewing literature. Such studies should be analysed and possible explanations given for the difference.
- Some may have a summary section of the review; this is optional but if your supervisor wants it fair enough.

Theorising in Social Research

Social research abounds in theory. You should by now be familiar with some basic sociological and Social Theories as well as Philosophies such as functionalism, structural functionalism, Poststructuralism, positivism, feminism, modernism and many others. Theories in general may be classified into three major types. The first is what is known as the grand theories. For example, Talcott Parson's (1971), notion

of pattern variables, functional requisites and Giddens's (1986) structural theory.

Note: Philosophies and theories are intertwined, therefore, researchers or students should be able to explain their philosophy of life or about the society after using appropriate theory in their dissertations or thesis. This is crucial in passing especially, a Master of Philosophy and Doctor of Philosophy oral defense.

The second, is the interpretative theories, such as the symbolic interactionism of Herbert Mead and others. The third is the middle range theories or intermediate theories. For example, Robert Merton's theory of social deviance. Where a particular theory has not yet been formulated on these three types, researchers and students are required to do a literature search on available writings on the relationship or phenomenon being studied. The literature in this case helps to direct the research and therefore provides questions for which solutions are sorted.

Theories arrived in Social Sciences are based on two modes of thinking or logic and these are known as deductive and inductive logic (Lunenfeld, 2003). These are the two approaches that are often applied to qualitative, quantitative, or mixed method. For most **qualitative research** some social scientists will begin an investigation from a conclusion and then gather the facts to refute or accept a proposition. This is a **deductive logic** as explained by Mugenda & Mugenda (1999).

In quantitative research and according to Mason (2002), the data is often gathered, subject to vigorous scientific analysis, compared or verified and then conclusions are drawn from which generalizations are made. This is **inductive logic**. These two theoretical approaches are based on what we call the logic of science.

Mugenda & Mugenda (1999) explained that in applying **Inductive Logic**, the researcher begins an investigation with data collection followed by his findings, the hypothesis confirmed or rejected and the theory revised. This is where the researcher contributes to knowledge. In **Deductive Logic**, the researcher has his starting point, either he makes a statement or proposition and makes an attempt to arrive at a specific concrete truth by the process of reasoning. The **researcher** begins with a known theory or conclusion, draws his hypothesis from it, collects the data, comes out with his findings, confirms or rejects his hypothesis and revises the theory.

Key Issues in Theorising

- The theory that is used in a scientific investigation must be relevant to the study.
- The study must be able to explain the relationship between the problem and the theory.
- The researcher must understand the theory very well before it is applied in the study.

- The researcher should as much as possible, look for a single theory that will fully explain the phenomenon being studied. In a situation where one theory does not fully explain the study, the researcher can combine the study with other relevant theories.
- Theorizing should be extensive and thorough, because, it aims at obtaining detailed knowledge of the topic being studied (Mcburney 2001).
- Where a theory fully explains the concepts in the study, there is no need for a conceptual framework. A conceptual framework is needed to support the theoretical framework where the concepts are not clearly stated in the theory.
- Also, there are instances where a conceptual frame and a theoretical framework are used in a single study. For example, studies that involve the collection of mixed data
- Students should as much as possible read to know which categories their theories belong to, (Macro theories, Micro Theories, or Middle Range Theories).
- Theories and conceptual frameworks as well as literature are not stated for nothing. Researchers as well as students should use them in the Methodology and Analysis of the data.
- The entire research should demonstrate the linkages between the theory and the methodology.
- The researcher's or student's theory should inform them about which research approach to use. Qualitative or Quantitative because all theories were propounded with a type of methodology. There is therefore a link between theory and research methodology which all researchers and

students must be aware of, because it is the theory that informs the methodology of every study, be it qualitative, quantitative, or mixed research.



CHAPTER THREE

WRITING A RESEARCH PROPOSAL

Introduction

According to Creswell (2004), a proposal is a document which details an intended activity. E.g. a research or a project. It is a contract in that, once accepted by an institution or a funding agency, the writer of the proposal is obliged to follow the steps outlined in the proposal. The institution or the funding agency also must honour the terms of the contract. A proposal demonstrates the researcher's ability to think clearly about the intended research or project. A proposal should be a

straightforward document, uncluttered with extraneous and irrelevant information. Proposals should also be clearly organised, simple and presented in a logical form. Bryman (2014) indicates that there are two main types of proposals namely:

- Academic Research Proposal
- Project Research Proposal

Academic Research Proposal

In an Academic Research Proposal, a researcher proposes to undertake a piece of research on some pertinent issue. A research proposal may be an academic research proposal leading to the award of a Bachelor's degree, a Master's degree, or a Ph.D. The various sectors that go into an academic research proposal are generally the ones most institutions will require. This chapter describes them. However, there may be variations in the format from institution to institution and sometimes from faculty to faculty within each institution. The accepted format should be known to the student before embarking on writing a proposal. Other research proposals may not be academic-oriented but are still aimed at researching to solve a problem for example Action Oriented Research.

Though most components found in academic research proposals can also be relevant in the other type but also some sections may not be relevant and could be left out without affecting the quality of the proposal. For example, not all action-oriented research proposals will require hypotheses or theoretical backgrounds. However, the logical way of ensuring quality from the institution or prospective funding agency in project research proposals is to acquire the right or agreed-upon format from the institution or prospective funding agency.

Project Research Proposal

This refers to a proposal which is not Academic Research Oriented but is action-oriented and aimed at undertaking certain activities to solve a specific problem. However, it is common to find a project proposal with research proposal components. This may be the case especially when some baseline and evaluation data are required. The difference between a project proposal and a research proposal is that a research proposal focuses on the expected outcome and the implementation process. In a project proposal, a specific problem would have been solved. For example, some training will have been offered and resource provision like water and snacks would have been provided.

In a research proposal project, the outcome will be the data, which can be used as a basis for proposing a project or data that will contribute to knowledge and form the basis for recommendations and action. In a research proposal, data collection and analysis are carried out and a research report is written. In a project proposal, proposed strategies and activities are implemented and eventually, evaluation will be conducted to ensure that the project's objectives were met. The book now concentrates on Academic Research Proposal because most students in Tertiary Institutions find it difficult to write Academic Proposal as part of their programmes of study.

Components of A Research Proposal

Before discussing the components of a good Academic Research Proposal or Research Plan, the reader needs to realise that there are main sections of Proposal Writing that are considered mandatory and that should be included regardless of one's discipline of study (Alhassan, 2015). These are:

- Introduction section which includes the background to the problem. The statement of the problem, the purpose, objectives and justification of the study.
- Literature review section where the researcher reviews literature relating to the topic under investigation.
- Methodology section which includes the description of the research design, population, sample and sampling techniques, data collection procedures and methods of data analysis.
- A schedule in which the researcher explains the time needed to carry out the research.
- A budget may not be necessary, especially for students writing their proposals for academic purposes. In situations where such a proposal by the student is to be sponsored, then a section of the budget is necessary in the proposal for the funds to be released for such a purpose.

According to Newby (2014), ...again, there are certain limitations when writing proposals for academic purposes. Under the introduction section, there are subsections which are normally included but which do not have to be included depending on the topic under investigation.

Examples

1. A researcher might find that there is not enough information to enable him to formulate hypotheses.
2. Though most studies will have some limitations, one can write a very comprehensive proposal without presenting any limitations.
3. Some research areas may be so unexplored that no theories have been formulated to guide the researcher, or the literature is too scarce to enable the researcher to formulate

a conceptual model. In such cases, a researcher should not be compelled to come up with a theoretical framework or conceptual model. Only relevant theories and well-thought-out conceptual frameworks should be included (Newman et al, 1998).

The components described in this chapter mainly refer to quantitative research proposal writing. However, these major components still apply to a qualitative research proposal. What differs is the description of the methodology section, where qualitative as opposed to quantitative research methods are emphasised.

Abstract

A proposal abstract is a paragraph summary of what the researcher intends to do. It should be brief, precise and to the point. An abstract gives the reader an overview of what the problem is and how the researcher intends to solve the problem through the proposed research.

Introduction

This is a very important component of a proposal. A well-written introduction tells a lot about what is to be followed in the rest of the proposal. An introduction section should include the background, problem statement, the purpose of the study, the objectives or research questions, and hypotheses (if any). The rationale or justification of the study, limitations, and underlying assumptions (if any). The theoretical framework or conceptual model and definition of terms.

The Background to the Problem

In this section, the researcher should broadly introduce the topic under investigation. This is where a global, regional and national overview of the research topic is briefly discussed. For

example, if the research topic is *Female Education in Ghana*, the research should give an overview of the status of female education globally, regionally (i.e. in Africa) and nationally (i.e. the Ghana experience). This enables the reader to have an idea of what is happening regarding the area under investigation.

The Problem Statement

After describing the background to the problem, Oancea & Punch (2003) explained that the researcher should narrow down the focus and state the problem under investigation. This section is referred to as "the problem statement section". In this section, the researcher states the problem under investigation e.g. "High Dropout rates among female pupils in primary schools in Tamale". In addition, the researcher describes factors that make the stated problem a critical issue to warrant the study. In other words, the researcher makes a case for the research.

In the above example, the researcher could elaborate on the consequences of girls dropping out of school; for example, marginalisation in the formal sector, high fertility rate, child labour, poor family nutritional status and a high child mortality rate. The researcher may refer to relevant literature whilst describing the issues related to the problem under investigation. However, the problem statement should be brief and precise. Only very relevant issues should be briefly discussed in this section since these can be elaborated on under the literature review. The problem statement should range from half to one page.

The Purpose of the Study

According to Paten & Newhart (2017), there are two formats for writing the purpose of the study. One is to state the purpose of the study at the end of the problem statement section. In such a

case, the researcher's statement is based on the problem stated. "The purpose of this study is to....." Also, in this format, the researcher states the problem, and makes the statement towards the end of the section.

The purpose statement is declarative and uses verbs to describe the intended task. In a second format, a researcher could decide to have a separate sub-section on the purpose statement. This way, the purpose statement is separated from the statement of the problem but comes immediately after it. In this format, the purpose is stated, again in declaratory terms. It is to follow the purpose statement with a brief rationale of the stated purpose. When the purpose statement is discussed under a separate subheading, it should not exceed a paragraph.

In some studies, the focus of the study may be broad making it impossible to have one purpose statement. In such a case, it is preferable to have two statements of purpose rather than to have an overloaded statement which could make the statement vague. In other words, one could have a multi-purpose study. Some researchers do not differentiate the statement of the problem and purpose.

The Objectives of the Study

The objectives of the study should be stated clearly and should be testable according to Patton (1990). The difference between the purpose statement and the objectives is that the purpose statement is broad, whilst the objectives are derived from the purpose and are more specific. Objectives are very crucial in any research study mainly because:

- Objectives determine the kind of questions that will be asked. The questions asked should address the objectives stated. It is possible to address one objective using only one question in the research instrument. However, in some

cases, researchers find it necessary to use more than one question to address one objective

- Objectives determine the data collection and analysis procedures to be used. It is therefore important for the objectives to be clear, unambiguous and brief.

Research Questions

Research questions are questions that a researcher would like to answer by undertaking the study. The difference between research questions and objectives is that a research question is stated in a question form whilst an objective is a statement. If the research questions and objectives are referring to the same phenomenon, then one set becomes redundant. In such a case, only one set should be included in the study proposal, that is, either the objectives or the research questions. More often than not, qualitative researchers prefer research questions whilst quantitative researchers prefer research objectives. However, it is possible to have objectives and research questions in a single proposal but only when the objectives are broader and the research questions more specific (Collins, Hussey & Hussey, 2003).

Hypotheses

According to Devine & Heath (1999), a hypothesis may be directional (if a positive or negative relationship is suggested) or non-directional (if no direction is suggested). A researcher is only able to state a directional hypothesis when some information on the phenomenon under study is available. Such information is derived from past experience, literature review, or existing theories. Some researchers may not include hypotheses in their proposals simply because the study is exploratory.

Theoretical Background or Framework

In many fields, according to Eichler (2013), theories and propositions about concepts and relationships have been formulated. In such fields, the researcher may be interested in ascertaining or testing a particular theory or framework. Such a theoretical framework should be clearly explained in the proposal. The researcher must then show how the study in question is related to the theoretical background. In some studies, the researcher is interested in testing only a particular relationship in a theory. Other researchers may only want to deal with a few selected concepts from a particular theory. Whatever the intent, the theory must be well described and how the particular study fits into that theory must be clearly explained. An example of a common theory used across disciplines is the systems theory. The argument behind the systems theory is that a system consists of various components or sub-systems that must function together for the system to work. If a sub-system fails, the whole system is put in jeopardy (Fellows & Liu 2021).

Conceptual Framework

When a researcher conceptualises the relationship between variables in the study and shows the relationship graphically or diagrammatically. It is a hypothesised model identifying the concepts under study and their relationship (Frankfort & Nachmias, 2007). The purpose of a conceptual model is to help the reader to quickly see the proposed relationships. The researcher puts the conceptual model to the test to establish the significance of the proposed relationships. A researcher may, after the study, give another reduced model excluding the variables and the relationships that were not supported by the results and that will be a significant contribution to knowledge.

Rationale or Justification and Significance of the Study

The words rationale and justification may be used synonymously. This section highlights the reasons for conducting the study as well as the importance of carrying it out. The section will often address questions like

- What gaps in knowledge will the study address?
- Why is the study important?

The section on significance addresses questions like:

- How will the results be used?
- Who will benefit from the results?
- What is the expected end product?
- Is the study worth it?

The rationale or justification and significance must be strong enough because the researcher needs time, energy and money to carry out the research.

Limitations and Assumptions

Ghaauri et al. (2020), explained that a limitation is some aspect of the study that the researcher knows may negatively affect the results or generalizability of the results, but over which he or she probably has no control. In other words, most common limitations have to do with sample size, length of the study, or data collection procedures. The researcher should be very honest whilst stating limitations so that the readers can make intelligent deductions from the results. Researchers should never hesitate to state limitations because no study is so perfect that it lacks limitations.

Assumptions of the Study

To state assumptions is also very important. An Assumption is "any important fact presumed to be true but not actually verified." Assumptions in a particular study are unique under the conditions under which that study is carried out. Stating assumptions helps the researcher justify the study and consequently the findings. The results should be interpreted in

the light of the stipulated underlying assumptions. It is important to note that a researcher could agree or disagree with the assumptions and this is acceptable. Whether limitations and assumptions underlying a study are convincing or not will of course influence the acceptability of the findings (Grant, 2008).

Literature Review

The literature review is another very important part of a proposal because according to Gratton & Jones (2010),

- It enables the researcher to know what has been done in that particular field of study.
- Makes one aware of what achievements have been made and what challenges remain.
- Gives good suggestions on the variables and procedures that could form the hypotheses of the study.

The literature review should lead logically to the objectives and hypothesis of the study. A short introductory paragraph should be included at the beginning of the literature review section. A researcher should not only report findings from other researchers and scholars. An analysis of the information must be done to reveal the gaps that need attention and also to show how the existing literature ties in with the objectives of the proposed study. It is advisable to have a summary of the literature review towards the end of the section.

Methodology

The methodology component of a proposal mainly includes the Proposed Research Design, Population and Sample, Data Collection Procedures, Data Analysis Procedures and sometimes measurements of variables.

Research Design

A good proposal should discuss the type of research design to be used. For example, through a survey or cross-sectional,

experimental, longitudinal, case study etc. It is also important to briefly point out why the chosen design is appropriate for the proposed study (Gravetter & Forzano, 2018).

Population and Sample

This section describes the population from which the sample will be drawn. The sample size and sample selection methods are also discussed. For example, if one wants to study all lecturers in public universities of Ghana, then, all lecturers become the **population**. A random sample of two hundred lecturers drawn from all the public universities constitutes the **sample**.

Data Collection Procedure

This section describes the data collection procedure. The data collection instrument is identified and defined, and its relevance is discussed. Information about the organisation of the instrument can also be included. If the data collection instrument is pretested, it should also be reported. Sometimes tests of validity and reliability are subjected to instruments used. In such cases, the validity and reliability coefficients should be reported as well. (Mugenda & Mugenda, 1999).

Data Analysis

This component of the proposal is crucial and should be clearly thought out (Graziano et al 1993). The researcher should describe the techniques intended for use in analysing the data. In most cases, more than one method of analysis is used. The method of analysis chosen depends on the type of research, the objectives and the hypotheses to be tested which researchers and students should be aware of. Most studies utilize selected descriptive and inferential statistics. According to Perry et al. (1997), descriptive statistics summarises the data and describes the sample, whilst, inferential statistics enable the researcher to

make inferences from the sample results and relate the results to the population. Sometimes, it is possible to use inferential statistics, for example, correlation and regression as descriptive tools. In such cases, no inferences are made to the larger population.

The researcher should state what he or she hopes to achieve by using the data analysis technique chosen. For example, if central tendency, Pearson Product - Moment Correlation, or regression is to be used, it should be stated that this method shows the direction and magnitude of the relationship between given variables. It is also important to point out the advantages the selected technique has over others.

Operational Definition of Variables

Dependent and independent variables in the study should be defined operationally. This means that the researcher should state how the variables will be measured in a particular study. For example, a variable income can be operationally defined as "the amount of money earned by the household head through salary and any other source per month."

Schedule

A schedule according to Polkinghorne (1998) refers to how long the researcher will take to finish the research. This is a very important component for both new and experienced researchers. In most cases, the funders have a deadline to stop funding a study and such a deadline should be adhered to. Graduate students also have a deadline to finish their work and this will guide them in formulating a schedule. Obviously, very rarely will a researcher have as long as necessary to conduct a study because of money and time constraints, hence, the importance of a schedule. A schedule includes a listing of major

activities and the corresponding anticipated time it will take to accomplish in months' activity.

An important consideration to bear in mind is that most activities can overlap so that one does not have to finish one activity completely before starting the next one. For example, one can start writing the report whilst still analysing data. Activities should not be squeezed into very little time. Allowances should be made for unforeseen delays. It is wiser to finish before schedule than to go beyond the schedule, since this may affect the budget.

Budget

Richey & Klein (2014) defined a budget as a list of items that will be required to carry out the research and their approximate cost. The budget should be well thought out to avoid asking too little or too much. The prices of items should be well-researched to avoid over-pricing or under-pricing. If the research is to be submitted for funding, it is advisable to include all the requirements. As long as the requirements are reasonable and genuine and the costs are not exaggerated, funders will normally provide the funds subject to their regulations and guidelines. If the amount of money available is known, the budget should be worked out so that it is within the available funds. The budget should be detailed enough and precise on items needed. Details of requirements in each budget will be governed by the type of research. However, most budgets will normally include the following items:

- The cost of hiring or employing personnel and clerical assistants
- The cost of equipment. E.g. computers, overhead projectors, cameras, etc.
- The cost of computer time.
- The cost of stationery e.g. papers, pens, files, etc. Travel expenses e.g., hiring cars, petrol expenses.

- Subsistence allowances e.g., for lunch and accommodation costs.
- Overhead or incidental expenses, i.e., any unforeseen costs like the price of petrol being raised or a piece of equipment breaking down.
- Per diems for researchers - this is a kind of compensation or "salary" for the job to be done. Per diem is a Latin word which means "for each day."

A researcher should first find out the budget limits of the particular donor to whom the proposal will be submitted. This avoids overbudgeting or asking for too little, to the detriment of the study. Most donors will indicate the kind of items that they fund and this information should be sought before writing the budget.

References

Every proposal should have a list of cited references. This list will show the sources of the literature reviewed. The bibliography should be up-to-date if necessary. An up-to-date bibliography shows the researcher or the donor that one is aware of new information in a particular discipline. A comprehensive bibliography also adds weight to the proposal because it shows that the researcher has not missed out on important information. It also shows that the problem being investigated has not been addressed before (Sale, Lohfield & Brazil, 2002).

Appendix

Sometimes, it is necessary to enclose a short curriculum vitae or any other document that the researcher may find important. For example, one may decide to include budget notes giving more details on budget lines or any other supporting documents, which may add weight to the proposal. In cases of

academic research, the data collection instrument should be included in the appendix (Sale, Lohfield & Brazil, 2002).

Qualities of a Good Research Proposal

A good proposal should be:

- Clearly written. A vague proposal will discourage funders or may not be accepted by the advisors (in the case of an academic proposal).
- Precise: Remember that a proposal is actually a research plan and the researcher should stick to it during the entire study. Of course, a few changes are inevitable later but these should only be minor.
- Reasonable length: The number of pages does not really matter as long as the key components are included and adequately explained. However, a proposal that is too wordy, making it unnecessarily long discourages readers.
- Worth the time and money being proposed. The rationale and significance of the study should be carefully thought out.

Basic Characteristics of Fundable Proposals

Saunders, Lewis & Thornhill (2007), explained that before writing a Project Proposal, it is wise to visit the prospective agency and find out whether one's ideas fit within their general operating framework and objectives.

This enables one to focus better and avoid wasting resources in developing a proposal that is not fundable. A lot of funding institutions prefer collaborative projects mainly because, such projects bring together experts from various disciplines thus, making the proposal richer and the proposed project more viable. There may also be more accountability and transparency in a collaborative project. The component of a

project proposal is similar to the ones found in an Academic Proposal. According to Sevilla (1992), the basic characteristics include a cover sheet that gives crucial and important information at a glance and a prospective funder who would like to see key issues that may determine funding clearly highlighted. Such information should include:

1. A project title
2. A proposed grant period
3. The amount of funds requested
4. The implementing agency
5. The funding agency
6. A credibility schedule

Note: All the other components clearly described in the earlier paragraphs are also very relevant in writing a project proposal which the candidate should be aware of.

Monitoring and Evaluation of Project

Monitoring refers to the continuous assessment process in the implementation of the project and is arrived at by continuously measuring discrepancies between the objectives, expected outcomes and what has been accomplished. Monitoring allows the early revision of project objectives and activities where necessary. The revision may include a few modifications or a complete overhaul depending on the monitoring feedback. Evaluation on the other hand is a midterm or final assessment of the project (Shajahan, 2005).

Some results of monitoring may be part of the final evaluation. Evaluation of projects is important for the improvement of future projects and for assessing original objectives against outcomes. This is crucial information for justifying the use of funds in the completed project and for planning future projects.

Evaluation may be internal or external. An external evaluation is when an outside evaluator is requested to evaluate a project. An internal evaluation is when the project co-coordinators undertake an evaluation themselves. In most cases, external evaluators are used for reasons of objectivity and for their expertise.

Timeframe, Calendar of activities, Schedule

These terms are sometimes used synonymously. They suggest a detailed list of activities necessary to implement the project and are normally presented in chronological order. The duration of the particular activity is also stated. Most activities in a project take place simultaneously and therefore the periods in a schedule should reflect these overlapping activities.

As in an Academic Research Proposal, the writer of the proposal should find out the following information before writing for funding:

- Funder limits in terms of how much money will be provided.
- The types of items funded by the particular funding agency.
- What currency is acceptable to the funding institution?
- Whether the agency has fixed budget lines that should be adhered to.
- The details required in the budget.
- The actual cost of items requested.

Where necessary, a budget should be accompanied by budget notes. Budget notes are short descriptions clarifying or providing more information about a certain budget line (Shaughnessy & Zechmeister, 2000).

Sustainability of Project

The sustainability of the proposed project is another important component of a project proposal. A funding agency would like to know how the project will be sustained after the funding is over. A donor will be reluctant to fund a project which will die after 1-3 years depending on the proposed duration of the project. Measures to sustain the project either through the community or other initiatives should be clearly spelled out.

Institutional support

Stokes & Wall (2017) explained that in line with the principle of cost-sharing, many donors would like to see some support coming from the implementing agency, such support is usually in kind (e.g. provision of premises, time, etc.). However, it is a useful contribution in kind, coming from the implementing agency to show the donor the monetary value of the institutional support.

References and Logical Framework

According to Tharenou et al. (2007), It is important always to acknowledge authors that are referred to in the project proposal. A lot of funders now prefer a logical framework (referred to as "log frame" in short) to show the relationship between various components of the proposal. This makes the proposal less wordy, clear, focused and to the point. A log frame is a table showing either all or some of the following components: Objectives, strategies, activities, expected outcomes, indicators of outcomes, budget and critical assumptions.

The following is an example of a log frame layout.

Strategy (approach)
Activity (specific tasks)
Expected outcome
Indicators of outcome

Time frame
Budget line
Critical assumptions

Where it is difficult to relate all the components in a log frame, some of the components may be discussed on their own. E.g. The budget and the time.



CHAPTER FOUR

QUALITATIVE METHODS IN SOCIAL RESEARCH

Introduction

This chapter deals essentially, with the nature, scope and limitations of qualitative methods of data collection, compilation and data handling. The methods that are dealt with in this chapter include in-depth Interviews, Focus Group Discussions (FGD). Participant Observations, Life Histories, Case Studies, Genealogies, Rapid Appraisal Methods and other combined methods of data collection, analysis and presentation. The chapter also provides guidelines for computer software analysis of qualitative social research.

Historical Roots of Qualitative Research

According to Fayorsey (2004), qualitative research grew out of several disciplines including literary criticism, social sciences and psychoanalytic theory. Qualitative studies have also been part of sociological traditions. For instance, in Sociology, credit is often given to Interpretive Social Scientists like, the German Sociologist, Max Weber (1864-1920) and German Philosopher, Wilhelm Dilthey (1833-1911) cited in Gddens (1986).

Max Weber emphasized the need to study meaningful social action or social action with purpose. He felt that researchers must learn the personal reasons or motives that shaped a person's internal feelings and guide decisions to act in particular ways.

In writing about interpretive social science and the place of qualitative research, Wan (2002) indicates that interpretive social science is related to hermeneutics, a theory of meaning that originated in the nineteenth century. The term comes from a god in Greek Herman who had the job of communicating the desire to mutate. Literally means making the obscure Plain (Wellington& Szczerbinski (2007). A researcher conducts research to discover meaning embedded within the text. Each reader of the text brings his or her subjective experience to the text. When studying the text, the researcher or reader tries to absorb or get inside the viewpoint it presents as a whole, and then develop a deep understanding of how its parts relate to the whole.

Sociologists and Anthropologists make extensive use of qualitative methods. Anthropologists like Malinowski, (1884) Morgan (1871) Radcliffe Brown (1881) and Rattray (2019), cited in Kuhn (1962) made extensive use of ethnography, participant observations and in-depth interviews in their research. They spent several hours in direct personal contact with those they studied With Technological advancement, qualitative researchers make use of tape recorders to record interviews and the computer to transcribe data. They also make use of videotapes and study human behaviour in astonishing detail.

They interpret and synthesize ideas and concepts emanating from such field observations.

Sampling Techniques in Qualitative Research

According to Williams (2007), Non-probability sampling is used in most qualitative Research and when a researcher is not interested in selecting a sample that is representative of the population. The focus is on in-depth information and not on making inferences or generalisations.

Purposive Sampling

It is a sampling technique that allows the researcher to use cases that have the required information with respect to the objective of his study. Subjects are therefore handpicked because they are informative or they possess the required characteristics. A researcher who proposes to use a purposive technique must specify the criteria for choosing the particular case. E.g. Certain age range, religious sector, or educational level. Some use it as part of multi-stage sampling. Multi-stage sampling according to Williams et al., (1988), is sampling at different stages using different sampling techniques.

Snowball Sampling

In this method, initial subjects with desired characteristics are identified using a purposive technique. The few identified subjects name others that they know have the required characteristics, they are handpicked until the researcher gets the number of cases required. E.g. Armed robbers, prostitutes, occultism, etc.

Quota Sampling

This technique is similar to stratified sampling, and the objective is to include various groups or quotas of the population in the study, based on a certain criterion. E.g. A researcher may want to include a certain religious group or social class in the sample and therefore, pick quotas for each.

Convenient Sampling or Accidental Sampling

This technique involves selecting cases or units of observation as they become available to the researcher. It is also referred to as volunteer sampling. For example, a radio programme may ask a few questions to radio listeners and tell them to take the answers to a specified place. Such a sample could be referred to as convenient, the technique is biased because only those people who have radios will answer. It can also mean selecting somebody who is available such as a roommate or a neighbour provided the person meets the criteria (Willis, 2007).

Considerations for the Use of Qualitative Methods for Data in Social Research

Qualitative studies are appropriate for use when the research question involves learning about, understanding, or describing a group of interacting people. There are several reasons why one would want to use qualitative research methods. These reasons may be reclassified as both theoretical and realistic. Theoretically, qualitative research provides greater depth of response and understanding of a social phenomenon than one can get from purely quantitative techniques. The goal is to

develop an understanding of how people construct meaning in the empirical world. For instance, the in-depth one-on-one interview enables the researcher to tie together clusters of behaviour that relate to a given social phenomenon to come up with a comprehensive holistic view of the phenomena. For example, a Sociologist may want to understand the reasons behind certain marriage rites or practices by an ethnic group and would therefore interview knowledgeable persons in a local community about marriage ceremonies.

In a qualitative study, the researcher can easily piece together information that can give him or her a clear view of the sociological significance of the marriage ceremony among the Dagomba. For example, the issue of 'the commoditisation of ceremonies, issues of modernisation of the ceremonies and the social functions of the ceremonies are explained in ways that purely quantitative research cannot unravel. A quantitative study of the same study would perhaps provide data on individual steps within the process. For example, the number of people who attend the ceremony, the number of marriages held in a month in the community, the days on which the marriage ceremony is held and all such measurable indicators.

The Focus Group Discussion

Focus Group Discussion is a qualitative method of investigation (FGD). It has assumed enormous popularity in recent years but is guided by rules and regulations that must be adhered to for effective unbiased information.

Main Characteristics of FGDs

Focus Group discussions capitalize on group dynamics and allow a small group of participants to be guided by a skilled moderator to discuss an issue. They are by far, the most widely used qualitative technique. FGDs are characterized by extensive probing and open-ended questions among a homogeneous group of people. FGDs are characterized by group interaction which stimulates responses by individuals and allows the generation of new ideas as the discussion proceeds.

The moderator can observe the participants and gain insight into their behaviour, attitudes, language and feelings as the discussion proceeds. In terms of cost and timing, FGD groups can be completed quickly at minimal cost and in less than a week. FGD can produce detailed information that can be obtained in any scientific research. The requirements would not be as tedious as producing a report-based field cross-sectional survey within the same time frame. Thus, information gathered from the FGD can quickly be evaluated and utilized for many different programs within the shortest possible time. According to Fayorsey (2004), the minimum required number for FGD should be 8 and the maximum should be 12. Any number exceeding these cannot be treated as FGD but rather a group discussion

When to use the FGD

- FGDs are best used when group dynamics are valuable in challenging the thinking of participants to come up with more ideas and opinions.
- FGDs may also be used when the subject matter or the topic under discussion is not very sensitive and issues can be openly discussed without inhibition. Sometimes, even when sensitive issues are the topic for discussion, such issues can be discussed with anonymity and made less personal.
- FGDs are also used in situations where opinions can be over-expressed quickly on a given issue. It is not good for controversial subjects, because it means the discussions will not end and will drag on and on. Controversial issues are difficult to moderate in FGDs.
- According to Burns and Groove (2014), FGDs are best used when a single subject is being examined in depth and strings of behaviour are less relevant.

Setting up Focus Group Research

In setting up the Focus Group Discussion, several issues have to be considered. The researcher must make many decisions about the design and implementation of the research. These decisions include determining the number of groups required and the respondent qualifications for each group. The length, size, location and time for the groups must also be determined.

Such requirements include:

- Preparing the Topic Guide
- Determining the number of Groups Needed
- Determining the Focus Group Composition

- Determining the Length of the Focus Group
- Determining the Size of the Focus Group
- Determining the Group Setting
- Determining the Group Seating Arrangement.
- Preparing a Topic Guide and A Screener

Usually, before a FGD is conducted, the investigator would have prepared a topic guide or a broad outline of the questions that would be discussed during the FGD. The Topic guide is a list of question areas that would be covered in the discussion, it serves as a summary statement of the issues and objectives of the study. The questions are purely used to stimulate discussion on a particular issue. The topic guide serves as a memory for the moderator and helps the moderator to steer the discussion to flow naturally and spontaneously from respondents and pursue new issues raised by respondents if they are relevant to the research objectives.

Fayorsey (2004), explains that the first section of the topic guide is usually termed a warm-up section. It should not take more than 5 to 10 minutes to moderate. It starts with an introduction which thanks the participants for coming and assures them that their presence at the meeting for the discussion is important. It then describes what a focus group is in just about a sentence or two.

For example, focus group discussion is a research tool used to solicit ideas or opinions about an issue, social phenomenon, or a given situation. After this brief introduction, the moderator

will then introduce the purpose of the particular discussion. In introducing the purpose, the moderator would go further to stress that everybody's ideas, comments, suggestions and opinions are welcome- that there are no right or wrong answers. He/she points out that all positive and negative comments are welcome and that participants should feel free to disagree with each other.

The moderator would then go on to explain the procedure for the moderation. The moderator should assure participants that either an audio or video tape recorder would be utilized and that these were for research purposes only. The moderator would also emphasize that the meeting is a group discussion and therefore, participants need not wait to be called upon to talk. For the purpose of sound recording, participants should talk one at a time and no one person should dominate the discussion. Having described the procedure for moderation, the moderator would then ask participants to introduce themselves perhaps stating their names and saying a little about themselves. This first section of the topic guide is to allow participants to know the procedure for moderation, and also know fellow discussion participants. It is usually to set the right atmosphere for the discussion.

The subsequent sections are to be structured with the very general questions first. The topic guide should allow for spontaneous suggestions and probe into these ideas from the participants themselves. The topic guide should not cover too many issues, or the participants will become bored and tallied,

and the group will jump from topic to topic in an unnatural manner. Having too many different issues in the topic guide suggests that the research has not been sufficiently focused, or that a different type of research is needed. One should also review the topic guide and eliminate questions that may be more appropriately addressed in a quantitative study. For example, questions of “how many? Or how often (Burns and Groove (2014). It is important to prepare different topic guides for different groups of people, since there may be slight variations in responses, even if the subject matter is the same.

A screener is a short questionnaire that helps the researcher identify the homogeneous group to be included in the group discussion. It is administered to or completed by the recruitment group participants. The essence is to use the screener to eliminate those participants who should not take part or are not eligible to take part in the discussion. Sometimes there is the need for minimal basic information which may be qualitative or quantitative, and a screener may be utilized for this purpose. The caution here is not to make the screener too long. Half a page or one page can add value to the opinions gathered in the main group discussion (Fayorsey, 2004).

Ethnography and Participant Observation

Most Social Science research requires direct observation of the people being studied. Ethnography and Participant observation as a method and technique in Science has been key to all scientific enquiries. In the Social Sciences, it has assumed

significance among Anthropologists and Sociologists in Community studies.

Ethnography and Participant Observation are research methodologies and techniques that entail the researcher, immersing him or herself into the social life of a community for an extended period of time and observing behaviour, listening to what is said in conversations and asking questions. The two terms are used synonymously, but often one denotes a technique (Participant Observation) and the other, the output of that technique (Ethnography). In this method of investigation, the researcher sometimes makes use of key informants to understand what he has observed. In some cases, he refers to documents on a particular issue, observes the phenomena and then asks questions. Ethnography has been associated primarily with anthropological research and more social scientists currently prefer to use the term.

In social anthropology, the investigator visits a (usually foreign land), gains access to a group (for example, a tribe, or a village), and spends a considerable amount of time (often many years) with that group, intending to uncover its culture, watches, listens to what people say and do, engages people in conversation to probe scientific issues of interest, takes copious field notes and returns home to write up fruits of his or her labour (Bryman, 2004).

Distinguishing Characteristics of Ethnography and Participant Observation

- A participant observer or ethnographer immerses him or herself in a group for an extended period, observing behaviour, listening to what is said in conversations both between others and with field workers and asking questions.
- The participant observer is encouraged to see things through the eyes of the people he studies.
- The researcher makes regular observations of the behaviour of the group under investigation.
- The researcher listens and engages in conversations with all categories of people including knowledgeable persons in the community.
- Participant observers and ethnographers gather data through interviews and documents, especially, on issues that are not directly amenable to the observation that the ethnographer is unclear about.
- The researcher based on what is observed, develops an understanding of the culture of the group and people's behaviour within the context of that culture.
- Although ethnographic studies are conducted for extended periods, there are situations in which micro-ethnographic studies are conducted on particular aspects of the topic for a shorter period. For example, as students, you cannot run a full-scale ethnographic study of the culture of a particular community within a short period. With observational techniques, you can study for example, the Damba Festival among the Dagomba of the Northern Region of Ghana which is just one aspect of the culture of the Dagomba people.

Conducting Ethnographic Studies

According to Bryman (2004), one of the most difficult steps in ethnography is gaining access to a social setting that is relevant to the research problem in which you are interested. Gaining access to a community depends on whether the community is public, Open or Closed. Nonpublic settings are likely to be organisations of various kinds, such as firms, schools, cults, social movements and so on. The open or public setting is likely to be everything else - that is research involving communities, gangs, drug users, and so on.

Bryman 2004, suggests that one way of gaining access to a closed setting is to assume a covert role - a role in which the identity of the researcher and the purpose of the research are not disclosed. The researcher, therefore, enters the group of settings and becomes one of them. He is passive and hardly noticed. As earlier indicated, Passive Participant Observation is mainly used for studying organisations, factories, and huge offices. The observer gets closest to activities being observed and yet remains socially isolated from the group.

There are however several problems associated with assuming a covert role in participant observation,

- The researcher is limited to the extent to which he or she can take notes on the observed phenomenon without being caught.
- There may be serious practical and ethical considerations.
- The researcher may not be able to use other research methods.

The advantages of the covert role are that;

- There is no problem with access because the researcher does not have to seek permission to gain entry to a social setting or organisation.

Ethnography and the use of participant observation depend heavily on;

- Purposive sampling
- Convenience sampling

In the case of participant observation, respondents are often selected by snowballing. Ethnographers gather information from whatever source is available because of its holistic nature, individual biases are discovered and dealt with appropriately over time. It is important to stress that probability sampling is not employed in ethnographic research.

Since probability sampling cannot be utilized in ethnographic studies, another way to ensure validity and representative of the information gathered is to test it against existing theory, or information on the topic. This is known as theoretical sampling and was advocated by Check & Schuit (2011). The ethnographer does not rely on questionnaires but rather on field notes based on his or her observations. These notes are often very detailed summaries of events and behaviours. The researchers' initial reflections and comments are also often noted. Notes should be taken spontaneously or at the least opportunity after observation of the phenomena.

There should be mini-test detail in other to make some interrelationship between events later. Who, where, what, how and when, should guide the researcher to take such notes. Field notes can be in different forms, either as mental notes, jotted scratch notes or full field notes. Tape recorders may help but these become obstructive; they may be used when permissible.

One of the major limitations of ethnographic studies is gaining continued access to the participants or individuals within your identified setting. You may have gained permission or access to a group, but you have to be able to interview or observe participants without raising suspicions about you. It is important for the researcher not to be castigated as an instrument of management, a spy set up to investigate workers, an agent of the ruling government and a tax collector and so on.

Personal Histories and Rapid Appraisal Methods

The life History

A life history or biographical interview entails research focused on the life of an individual or a group. The focus is usually on the aged, someone who has had experience regarding the research topic. The life history is therefore retrospective information. The life history is often structured along issues of the life cycle. For example,

- Birth, parentage, siblings, kinship
- Childhood experiences, education. Residence, etc.

- Puberty and adolescence, peers, education
- Adult life, marriage. Work, life experiences, politics, religion, kinship
- Old age experiences, pensions, care and support

Participatory Rural Appraisal

Participatory Rural Appraisal (PRA) is a research approach that has evolved as a response to overcome the limitations of externally dominated approaches to development planning. Robert Chambers, one of the most well-known proponents of PRA, described it as "a family of approaches and methods to enable rural people to share, enhance and analyse their knowledge of life and conditions to plan, and act" (Ramirez & Shultz, 2000). In a PRA both qualitative and quantitative methods are employed in data gathering. However, as the name implies. The PRA process emphasises the full participation of the people who constitute the focus of the research in needs assessment, goal setting, planning, policymaking, implementation and evaluation.

In the PRA exercise, the researcher is supposed to act as a facilitator in applying the PRA methods or techniques to enable participants to take full control of the process. PRA is a qualitative research approach aimed at facilitating rural people in collecting, presenting and analysing information by themselves in community development. In PRA the focus of participation is on the researched and less on the researcher, the role of the researcher is more of a facilitator.

Until recently, PRA exercises have been focused on rural settings and the focus can be on an entire community, or an organisation. Typically, due to its emphasis on the participation of community members, the effectiveness of a PRA exercise is based on its application in smaller communities to ensure manageability. Consequently, in a large community, a PRA can be applied to particular sectors or stakeholder groups within the community. PRA has been adopted in farming systems of rural people and other agro-based societies of the developing south. However, in recent times, PRA has increasingly gained diversity in its application. A combination of it is equally applicable in urban settings as well. PRA has been applied in almost every domain of development and community action, both urban and rural. Examples include natural resources management, establishing land rights of indigenous people, slum development, HIV/AIDS awareness and action, anti-poverty programs, disaster management, negotiation and conflict resolution, adult literacy, agroforestry and farming systems.

Analysing and Presentation of Qualitative Data

It is far from presenting a one-stop, straight-jacket approach for processing, analysing and presentation of qualitative data. It is just an attempt to do, as suggested by Babbie (2020), there are no cut-and-dried steps that guarantee success (Bryman, 2004). A major reason for this state of affairs is that qualitative work or research produces large, cumbersome data because it relies on prose. This situation notwithstanding, qualitative researchers still need to find a ' path ' or their way through the

data they generate. Given this, many writers on qualitative data analysis, only provide general strategies for dealing with the situation. One of such general strategies is that data processing and analysis in qualitative research occur in tandem with data collection. Which is repeatedly referred to each other.

Strategies for Making Meaning of Qualitative Data Manually

Data analysis is the process of bringing order and structural meaning to the mass of information collected. After a typical qualitative data collection session, a debriefing (meeting) is held to examine what has just gone by. Some writers even suggest a long debriefing is necessary. Later, the recorded data, if on tape, are to be transcribed (converted to notes). If note-taking was part of the data collection process, this could complement the transcription. In doing all these, some editing may be done, for example, removing responses that were forced from the research subjects, or poorly transcribed portions (Babbie 2020).

Data analysis in qualitative research is something ambiguous and time-consuming. Qualitative data analysis seeks to make general statements on how categories or themes of data are related. In qualitative research, data is in the form of text materials and photographs, which describe events and occurrences. Data collection and analysis in qualitative research go hand in hand and are done simultaneously. Interview schedules, observations and checklists are used for the collection of qualitative data.

Steps in Qualitative Analysis

1. **Data Organisation:** Qualitative data derived from reading and field notes can be voluminous and something overwhelming. Such data needs to be read thoroughly so that the researcher is very familiar with it. During the reading process, the researcher attempts to organise the data.
2. **Creating categories, themes and patterns:** This is a complex process and requires that the researcher be very familiar with the data. He must be able to detect the various categories in the data which should be distinct from each other. He should establish the relationship among these categories and this is the first step towards theory development. Creating themes and categories is done using codes that can be assigned manually or by the use of a computer.
3. **Analysing and interpreting data:** Once the themes, categories and patterns have been identified, the researcher then evaluates and analyses the data to determine the adequacy of information and the credibility, usefulness, consistency and validation of hypotheses if any. The researcher closely evaluates the usefulness of information in answering the research questions.
4. **Report Writing:** report writing in qualitative research is time-consuming but also very interesting. Normally, the report gives a vivid descriptive account of the situation under study. It also gives an analytical view citing the significance and implications of findings. It also shows how

different or similar the findings are compared to the researcher's expectations.

Using the NVivo Software

This software must be first installed on your computer before you can follow the presentations that follow. First, the NVivo has to be launched on your computer. Immediately after launching NVivo, a welcome screen is opened. At this point, four options are offered, namely, create a project, open a project, open a tutorial project, and exit NVivo. Since you are starting, you select the first option, i.e. create a project. Two options are available here; open a typical or custom project. As a first-time user, select the former. After this selection, you are offered the opportunity to name your work, for example, **Eliasu Alhassan Project** and then select next. From here, the details of your project will be presented to you and if you are okay with them, select finish. At this stage, the project pad is presented with several options like creating a document, exploring a document and browsing a document. At this point, we assume our transcript already exists as a document on our computer. We therefore need to import this work into NVivo. Indeed, this is the most common route to create documents for processing by NVivo.

To import word-processed documents, your documents should be saved as rich text or plain text files. Now from the project pad:

- Select Create a document

- The new document wizard: creation dialogue box appears/opens.
- Locate and import a readable external text file (s)
- Select Next
- The select file to read dialog box opens
- Now you select the file or files you want to use (the transcriptions selecting the files. More than one file can be selected by holding down the Ctrl key and selecting the files.
- Now that you have selected the document (s) or file (s) you want to work with your NVivo.
- Select Open (the New Document Wizard: Obtain Name) dialog box opens.
- Select Use the source file name as the document name.
Select Finish

From this point, the selected file will be copied into your NVivo project and you will be taken back to the project pad. Now you can edit any part of the document or file you have entered into your project by selecting browse a document. Select a document and then select open. This opens the document, browser and from this, you can edit any part of the document as if you were working with a Word processor. NVivo allows you to code and perform all manner of tasks. Just explore as necessary.



CHAPTER FIVE
ISSUES OF QUANTITATIVE, MIXED METHODS AND
TRIANGULATION IN SOCIAL RESEARCH

Introduction

Quantitative methods, mixed methods and Triangulation of data collection are part of the general scientific approaches to social research, data collection and analysis. Quantitative research shares the theoretical assumptions of the functional or positivist paradigm. This paradigm is based on the assumption that social reality has an objective ontological structure, and that, individuals are responding agents to an objective environment (Bryman, 1984, 1998, and 2004), These methods or approaches differ from others in terms of the fact that the data they generate are quantifiable. Lancaster (2007) defines quantitative methods of research as involving counting, measuring events and performing statistical analysis of a body of numerical data.

The concerns of these methods are that measurements are reliable, valid and generalisable in their clear prediction of cause and effect (Creswell, 2009). In other words, social researchers who employ quantitative methods in collecting their data have in mind, the view to quantify the data they generate to establish relationships between variables, predict cause and effect relationships by conducting statistical tests of hypotheses and generalizing the results of the study to the populations from which the samples have been taken. Some statistical tests are chi-square tests, correlations, and regression among others. These methods offer the advantage of achieving high levels of reliability of gathered data due to controlled observations, laboratory experiments, mass surveys, or other forms of research manipulations (Kuhn 1962).

Identifying a Research Problem

The first step in any research project after identifying the topic is to state as clearly as possible, what you hope to investigate—that is, to define a problem. To isolate a problem capable of being studied systematically, the researcher must first have the insight to see that a possible relationship exists between two or more aspects of a complex societal issue. In this instance, it is important to define the problem and ask specific questions to provide a focus for the study.

There are a few attributes of a research problem that have to be noted.

- The question must be clearly and unambiguously stated; clarity is very important.
- The problem must have an empirical reference, that is, the problem exists in time and space.
- The problem must be answerable in objective terms.
- It should be easy to subject to a standard unit of measurement and easy to define.
- Problem is often not easy, so the rule is to break complex problems into component parts.
- Formulation of the problem as much as possible should be theory-oriented.

A clear definition of a problem helps to define scope, brings focus, and facilitates the translation of the problem into observable events, occurrences, processes, etc. for purposes of designing appropriate observation techniques. It is important to bear in mind that there is no limit to the number of good

research problems that can be identified and studied because, knowledge in any field, is indefinite and we process only a portion of it.

The first step in selecting a research problem is to identify a broad area that one is interested in, such an area should be related to the professional interest and goal of the researcher. After selecting a broad area, the next step is to identify a specific problem within it that will form the basis of the research study. This implies that the researcher should narrow down from a broad area to a specific problem.

In selecting a specific problem, the researcher should consider the likely factors that help, in identifying a researchable problem. The research problem should be an important one. An important research problem is one that should

- a. Lead to findings that have widespread implications in a particular area.
- b. Challenge some commonly held belief
- c. Review the inadequacies of existing laws, views, or policies
- d. Cover a reasonable scope.

Factors to determine the scope are:

- i. availability of time
- ii. availability of finances
- iii. availability of equipment (if needed)
- iv. availability of subjects or units of study

There are various ways of identifying a specific research problem from broad arrears. These include:

1. **Existing theories:** An existing theory in an area is a good source of research or problem. A theory contains generalisation and hypothesised principles which can be scientifically tested, and tests can be done through the research process.
2. **Existing literature:** A systematic reading in the general area of interest is perhaps the best way of locating a specific problem.
3. **Discussions with experts:** Discussions on general topics either in class or seminars and sources of current research problems that could be researched. Such discussions usually involve experienced and well-informed researchers in a particular area that one may be interested in previous research studies.
4. **Replication:** This involves a study carried out on a research project that has been previously done. It is usually done to find out whether the findings hold over time and across regions. Frequent reports on certain issues or events personal experience. For example, let us consider that Eliasu, a sociology lecturer, made the casual observation when he was on vacation in his hometown that, unlike the boys, young girls in the village did not attend school. The majority of the boys were enrolled in both the primary and junior high schools in the village. Eliasu therefore, decided to investigate the situation.

It is important to state that Social Scientists must ask specific questions; they must design research that goes beyond the impressionistic and unscientific data. Sociological research

must conform to the rules of the scientific methods and findings from sociological research lead to changes in theories and to new research. In all research, certain basic steps must be followed. The first step is therefore to outline a topic for investigation and define a specific problem related to the topic under investigation.

A possible topic for the above observation by Eliasu could be;

- Factors affecting gender disparities in basic education in Zangbalug of the Northern Region of Ghana.
- Let us look at what a research topic entails and the different formulations of topics social researchers can come up with. A research topic is the title one gives to a piece of investigation. A good topic should always be short and should reflect in general terms of the problem to be investigated. The topic is simply the subject or topic of interest. The topic should also reflect on the location or context in which the problem is being investigated.
- As much as possible, dependent and independent variables should be taken into consideration.
- Most often, students make the mistake of generalising the location of the topic whilst, in fact, the problem is peculiar to only a small community. For example, “Female genital Mutilation in Ghana” whereas the research is only being conducted in a small village e.g. Zangbalung in the Northern Region of Ghana. A better formation of this topic should have been “Female Genital Mutilation (FGM) in the Zangbalung Village of the Northern Region of Ghana”.

- Another Topic of interest could be “The Socio-Cultural Contexts of Female Education in the Tamale Metropolis of the Northern Region of Ghana”. Note that this second topic presupposes that, the researcher intends his or her findings to represent what pertains to the Tamale Metropolis. This also means that the researcher should design a research that covers a representative sample of the Tamale Metropolis.
- A third topic could be HIV/AIDS in Ghana. This is a wide topic and presupposes that findings would cover issues on HIV/AIDS in the whole country.

Each of these three topics demands different strategies and research designs to accomplish what the researchers intend to discover.

Stating the Problem

A researcher usually starts with a brief introductory section. In this section, the researcher introduces briefly the general area of study. The researcher then narrows down to the specific problem to be studied. A good statement of research problem has the following characteristics;

- It is written clearly and in such a way that the reader’s interest is captured immediately.
- The specific problem identified in the problem statement is objectively researchable.
- The scope of the specific research problem is indicated.
- The importance of the study in adding new knowledge is stated.
- It must give the purpose of the research.

Stating the Objectives

In previous discussions, we defined research objectives as those specific issues within the scope of the stated purpose that the researcher wants to focus on and examine in the study. Objectives help the researcher to keep to the scope of the study by defining the area of knowledge that the researcher is focusing on. Objectives are normally formulated from the purpose. The words used in stating the purpose also apply to the stating of objectives. E.g. To identify the socio-economic status of small-scale business women in the rural areas of Tamale.

In formulating an objective, it is important not to include more than one object in the sentence. Break up complex issues into smaller components. Researchers have come up with an acronym that best describes how an objective for a piece of scientific investigation should be framed. The acronym is **S.M.A.R.T**: This stands for Specific, Measurable, Attainable/Achievable, Realistic, Targeted or Time specific

Specificity: Objectives must be specific to the aspect of the problem investigated, they must clearly and unambiguously relate to the specific aspect of the problem as defined.

Measurability: Objectives must be stated such that they can be measured or evaluated in identifiable units to which values can be assigned.

Achievability: Research involves the mobilization of resources. There is no need to spend on something which cannot be

achieved with available resources. If research objectives are so formulated that they cannot be achieved, then the study itself becomes a fruitless endeavour. As much as possible, objectives must be conceived and formulated in a manner that can be achieved with available resources and research instruments. There is no need mobilising resources to research into mere fantasy. Just as the research problem must be demonstrated to exist, so also must the achievement of the objective be realistic. What is aimed at must be something realistic and realisable.

Time specificity: The time factor in the research process especially, in social research, is a crucial one. Research results refer to a situation/condition as it exists at a specific time and may change with time as new intruding factors set in. Research results, therefore, refer to particular situations, under specific conditions at a specified time and place. Besides, social research results intended for the prediction or control of social situations must be produced as quickly as possible to reflect conditions at the time of the study and not months/years after the study has been conducted. Thus, research must be specific, measurable and achievable and time-bound.

Types of Hypotheses

- **Null Hypotheses:** This is usually stated that no differences exist between variables. E.g. there is no difference in the performance of Sociology students and Social Work students in UDS.
- **Alternative non-directional hypotheses:** This is also known as research hypothesis. This type states that there is a relationship or differences e.g. there is a difference in

performance between sociology students and social works students in UDS.

- **Alternative directional:** This specifies the nature of the relationship or differences between two or more variables. For example, high alcohol content in the blood decreases the reaction time of car drivers in Tamale. The more effort sociology students put into the examination the more they perform well.

Research Design

Basically, all research follows the same general principles, steps and procedures. What distinguishes one Research from the other is the choice of design, which goes with several other characteristics peculiar to the particular design. This section will cover considerations in the Research Design.

What Is a Research Design?

A research design provides a framework for the collection and analysis of data, it details a standard accepted process in the scientific methodology. It also involves a set of designs from which a researcher makes a choice.

A distinction should be made from the onset between a research design and a research method. A method involves a set of guiding principles in the design of research. These principles have been collectively outlined in specific modes or techniques of conducting the research, such as observation, the mode of collecting data, sources of data to be considered and types of instruments to be utilised. These techniques come under the

rubric of research methods guided by the scientific principles and steps earlier outlined.

A research design represents a structure that guides the execution of a research method and the analysis of the subsequent data (Bryman, 2004). As earlier explained in the overview, an analogy can be made between research designs and putting up a building. The most important consideration is what the building is going to be used for. Is it a factory, is it an office, a bungalow, or a school block? In the same way, studies should be conducted to suit the purpose of the study. We can ask questions like, is the research exploratory, is it descriptive, is it explanatory? We can also at the onset make critical decisions about whether the researcher will use mainly quantitative or qualitative methods or triangulation of methods.

Having established the purpose and approach to the study, the researcher should also formulate a strategy or general plan on how to gather the data. The combination of purpose, approaches and strategies, defines specific designs from which we can choose. Designs have been classified by different authors, and there may be a myriad of such classifications. The designs are:

- Cross-sectional or survey design
- The longitudinal designs
- The case study design
- The comparative design
- The experimental design

What is a Cross-Sectional Design?

The cross-sectional design is also synonymously known as the survey design. A survey is both a technique and method as well as a framework. In the latter case, it is qualified as a design. A study that limits its observation to a single point in time is called a cross-sectional design study (Howe (1992)). In other words, the cross-sectional design is a research design that entails the collection of quantitative data from a respondent or several respondents or from a number of documents on several variables at a single point in time. Such data allows for the cross-classification or matching of variables to detect patterns of association and variation. The cross-sectional design is aptly described by Bryman (2004) as follows:

A survey is a method or technique used in several research designs both quantitative and qualitative. Survey as a technique has found application in National Censuses, sample surveys, longitudinal surveys, multipurpose surveys and many other types of classified surveys. These same techniques and applications may be classified in terms of designs.

Let us now examine some of the essential features of a cross-sectional design or survey design.

The Essential Features of a Cross-Sectional Design

The cross-sectional design is also known as a survey design because it entails the survey or gathering of information from a group of persons by use of a questionnaire. A sociological

survey would normally ask people to give precise information about their behaviour, their attitudes, and at times, the behaviour and attitudes of others, (e.g. information on household members). The survey is conducted on many identified persons.

The identification is often based on one or more defined criteria based on sampling. This could be based on a probability or non-probability sample. Surveys in the past were based on nonprobability sampling and often attempted to present an unbiased, factual account of the social conditions of a specific community, their findings could not be applied to other groups.

Currently, most social surveys use probability sampling and researchers can now generalize from a small sample of respondents. Researchers can on the basis of their findings, also predict future trends. It is unusual to have a survey of just one person. It would be known otherwise as an in-depth interview. A survey is usually conducted on several persons defined by the sample size utilized. Sometimes, a cross-section design may be based on a sample of documents or existing data from a number of sources.

Cross-sectional survey design is not only defined based on the large number of persons interviewed, which gives a variety of responses, depending on the respondents for a number of variables but it is also defined based on the fact that a structured questionnaire would have a variety of variables to be investigated. In a demographic survey, for example, one would by custom have a section on the demographic

characteristics of the respondent, detailing for example, 'age', 'sex', marital status 'number of children ever born', number of children surviving', educational status etc. Depending on the type of investigation the questionnaire would contain, many sections covering several variables pertaining to the individual respondent should be included in the questionnaire.

In a cross-sectional design, the research is carried out at a single point in time or within a short time earmarked for a single round of survey. Data from a number of respondents are therefore collected, processed and analysed more or less simultaneously. The data derived from a cross-sectional design are usually quantitative data. The data can be derived from primary field investigations or from secondary sources of data. In the latter case, one could have a content analysis on a sample of documents. A cross-sectional design may sometimes be applied to qualitative interviews or focus groups at a single point in time or to qualitative content analysis of a set of documents relating to a single period.

A cross-sectional design allows for the examination of relationships between variables. It does not confirm or deny causative effects. For example, if there is a relationship between the education of mothers and child nutrition, the researcher can only make a statement of facts perhaps, highly educated women often have healthy children. One cannot say that education causes good health. All that can be said is that high education is related to good health. Occasionally, one can make inferences from established relationships, but these have to be

internally validated especially, since there may be several other intervening variables.

The Longitudinal Design

If a study extends over time, describing a trend or making a series of before-and-after observations, it is called a longitudinal study. The design involves time series data in which a sample is surveyed several times at different points in time. Longitudinal Studies may be classified as follows:

- Retrospective study
- Prospective study

Or it could be classified based on the timing or trends in time as:

- The panel study
- The cohort study

The Comparative Design

This type of research design makes use of historical data. It examines aspects of social life in a past historical era or across different cultures.

The design can focus on one historical period or several historical periods and compare one or more cultures, or mix historical periods and cultures. This kind of research combines theory with data collection. This research design is constructed to compare and contrast two or more causes using identical methods of study. It embodies the logic of comparison in that it implies that we can understand social phenomena better when they are compared in relation to two or more meaningfully

contrasting causes or situations. The comparative design may be applied to either quantitative or qualitative research.

To meaningfully compare and contrast two sets of data or situations, events, organisations, or communities, the comparison should be made within a similar context. You cannot compare the results generated from qualitative data in one community to qualitative data in another community.

There should be similarly defined criteria or context for the comparison. The data collected in the two cases should be comparable in terms of categories, data collection methods, instruments utilised, sampling employed and generally the techniques and methods of data collection, processing and analysis.

The comparison should also take into consideration cultural specificities. This is because most social science research is often culturally specific. The key to comparative design is its ability to allow the distinguishing characteristics of two or more cases to act as a springboard for theoretical reflections about contrasting findings (Bryman, 2004).

The Case Study Design

A research design is used mainly by social workers, psychologists, anthropologists and health researchers. This is the case study and it has found application in many different disciplines.

Cases are usually the same as a unit of analysis or unit for which variables are measured. Qualitative researchers typically measure variables of their hypothesis across many cases. Quantitative researchers tend to a “case-oriented approach (that) places cases not variables, centre stage (Ragin, 1992 cited in Creswell 2003). They examine a wide variety of aspects of one or a few cases. In the case study, explanations or interpretations are complex and may be in the form of an unfolding plot or a narrative story about particular people or specific events. Rich details and astute insight into the cases, replace the sophisticated statistical analysis of the quantitative methods. A case study usually involves qualitative methods and focuses on one or a few cases during a limited period (Newnman and Benz, 1998).

The study of a case provides the basis for formulating a hypothesis which can then be tested by other methods. This is because one generalises with a single case, and also because generalisation must be based on a large mass of carefully processed data. After the hypothesis has been tested and the researcher has arrived at some sound generalisation, a good case may be used as an illustration of the phenomenon.

In a case study design, the researcher may “intensively investigate one or two cases or compare a limited set of cases, focusing on several factors. The case study uses the logic of analytic instead of enumerative induction. In it, the researcher carefully selects one or a few key cases to illustrate an issue and analytically studies it (or them) in detail. He or she considers

the specific context of the case and examines how its parts are configured. This contrasts with longitudinal studies in which the researcher collects data on many units or cases and then looks for patterns in the mass of numbers. The researcher looks more for averages or patterns across many units or cases" (Kreuger and Neuman,2006). There are two types of case study design and these include:

The single-case design

This is a design that is often utilised by social workers, psychologists, counsellors and health workers. It is also called a single-subject design. This design combines the best thinking and practice available in clinical practice with some basic elements of the experiment method. This allows clinical practitioners to perform interventions on an identified case. The single case design is one in which the researcher uses a single case to illustrate a situation. This single case may be a typical or rare event. In most such cases especially for sociologists, it is the case that best illustrates the event or situation.

In social work, psychology and medical research, the case study has found application and has been extended in terms of methodology. In such cases, the case which could be an illness or behavior is observed over a baseline period. This becomes the base "A", or control or independent variable. The naturally occurring frequency of the targeted behaviour is then

accurately measured before intervention. As emphasized by Kreuger and Neuman (2006), “no intervention is introduced during this stage, as the “A” period is analogous to the control group in a classic experiment design.”

An intervention to rectify the situation is then applied and this is known as the second phase of the design or B or treatment period. The target behaviour or the dependent variable is then observed. Note that researchers, are aware of the effects of other factors during the treatment period and attempts are made to control the intermediary factors that can affect the situation. The changes that may result during the treatment period, may be due not only to the treatment but to also, other extraneous factors.

The single-case design has a number of advantages and disadvantages. According to Kreuger and Neuman (2006), cited in Polkinghorne (1989), “Single case designs can be used in practice with minimal disruption of service or intervention efforts. Single-case designs offer one tool for evaluating effectiveness by providing continuous information about how the client is changing (hopefully benefitting) with regard to treatment.” Whilst it may be difficult to draw inferences or generalisations in one case at a time, advocates feel that this form of clinical evaluation is critically important to social work because it can be highly integrated into practice whilst it generally avoids the use of outside evaluators, and it is reasonably easy to use (Cohen, Manion & Morson 2022). Also, according to Creswell (2003), single case designs provide a

great deal of useful information to practitioners about clients and treatment progress that might not otherwise have been available.

The Extended Case Study Design

The extended case method is discussed by Kreuger and Newman (2006). The author explained that, in the extended case study, the research is a dialogue between the researcher and the people being studied. The context is aptly presented by Kreuger and Neuman (2006).

The extended case study includes the following:

1. The researcher interacts with subject participants. Disruptions or disturbances that develop out of their mutual interaction help to expose and better illuminate social life.
2. The researcher adopts the subject-participants' view of the world in specific situations but does not stop there. The researcher adds together many views from individual subjects and specific situations, aggregating them into broader social processes.
3. The researcher sees the social world simultaneously, from the inside outward (i.e. from the subjective viewpoint of the people being studied) and from the outside inward (i.e. from the viewpoint of external forces that act on people).
4. The researcher constantly builds and rebuilds theory. This takes in a dialogue with the people studies and in a dialogue with other researchers in the scientific community.

Mixed Methods in Social Research

For social research, it is always advisable to use mixed methods instead of a quantitative or qualitative study, as it can give a more comprehensive and complete picture of the combined benefits of both methods. Mixed methods research, is a method where researchers collect and analyse quantitative and qualitative data within a single study to answer their research questions or objectives of the study.

This type of research method helps provide a more complete picture than a study that relies solely on either quantitative or qualitative methods. It allows the researcher to gain deep knowledge and understanding of a specific concept whilst offsetting the weaknesses that are inherent when using either approach. By both quantitative and qualitative data, in your social research, you obtain a more holistic view of the concept in question (Mason, 2002). You also get to enjoy the strengths of both data types. Your research will be detailed and contextualised, due to the qualitative data, and will also be generalizable and externally valid due to the quantitative data.

Creswell (2014) explained that the strengths of quantitative data can often mitigate the weaknesses of qualitative data and vice versa. For instance, qualitative data tends to have low external validity as there is potential for biased interpretations. However, quantitative data does not have this weakness and instead has high external validity. Therefore, integrating both methods can offset the weaknesses of both.

According to Bulmer (1997), integrating the elements of both methods allows more flexibility when designing your research as mixed methods are not as strictly tied to established research paradigms. This flexibility allows you to synthesize aspects of different studies to curate a research design that can produce the most informative results.

When is it appropriate to use a Mixed Methods Research Approach

- When the integration of qualitative and quantitative data can provide a better understanding of the research problem than a standalone approach.
- When a researcher wants to view a research question from many perspectives to identify unexpected findings and potential contradictions.
- When one method cannot be used to effectively substantiate the findings of another method.

Newby (2014), noted that there are few and most commonly used mixed methods. These are listed below.

Embedded or Concurrent Type

In the embedded type, both qualitative and quantitative data are collected, handled and analysed at the same time, with the use of a larger quantitative or qualitative approach. One data set will provide a supportive secondary role in the study. This is a useful approach when you want to use mixed methods research but have financial or time constraints that will not permit it.

Convergent Parallel

Within this research method, the researcher conducts the quantitative and qualitative elements parallel in the same phase of the research process. This method is then weighted equally and analysed independently before the results are interpreted together.

Exploratory Sequential

This method involves data collection over some time in two consecutive phases. First, qualitative data is collected and analysed, followed by quantitative data. The quantitative results are used to explain the initial qualitative results.

Explanatory Sequential

This research method is the opposite of exploratory research and involves following quantitative data collection and analysis with qualitative data collection and analysis. The qualitative results are used to substantiate and support the initial quantitative result.

Triangulation in Social Research

Bryman (1998) explained that triangulation in Social investigation is the use of multiple datasets, methods, theories and possible investigators to address a research question or problem. It is an investigation strategy that can assist a researcher in improving the validity and credibility of his research findings and reduce the presence of any research biases in the study. Triangulation is often used by qualitative

investigators/researchers but is sometimes also applied in quantitative investigation or social research. Mixed methods social researchers will always use methodological triangulation. Triangulation can be done in different types of social research, and this includes the following

- **Qualitative research:** In this type of investigation, the researcher conducts in-depth interviews with different groups of stakeholders for example parents, teachers and children.
- **Quantitative research:** In quantitative research, you run an eye-tracking experiment and involve three researchers in analysing the data.
- **Mixed methods research:** In this case, the researcher conducts a quantitative investigation and then follows a few (qualitative) structured interviews.

Types of Triangulation in Social Investigation

There are four main types of triangulation:

Data Triangulation

The researcher uses data from different times, spaces and people. For example, to apprehend the motivations behind changing behaviour, you gather and analyse data from a sample of 120 UDS students over 9 months. Then, you repeat the investigation with comparable samples on different campuses. You collect data from participants on the Nyankpala campus and Tamale campus to test your hypothesis using a wider sample. When you collect data from different samples,

places, or times, your results are more likely to be generalisable to other situations.

Investigator Triangulation

It involves multiple researchers in collecting or analysing data. An example of investigator triangulation involves behavioural data, which also involves multiple observers to observe your participants' behaviour. You provide them with training sessions and a manual to follow closely so that they observe behaviour the same way.

They review video recordings of your participants playing team games in pairs and analyse. Note down any cooperative behaviours, and check that their code sheets line up with each other to ensure high interrater reliability. They also compare the way they code behaviours intermittently for consistency. Investigator triangulation helps you reduce the risk of observer bias and other experimenter biases.

Theory Triangulation

It involves the use of various theoretical perspectives in the investigation. For example, micro and macro theories address one study.

Methodological Triangulation

The researcher uses different methodologies to approach the same study or investigation. For example, study and use of neural data and theories to get a complete picture of what motivates people to behave differently.

Purpose of Triangulation

According to Creswell (2003), triangulation helps enhance credibility and validity therefore It's important to gather high-quality data for rigorous research. When you have data from only one source or investigator, it may be difficult to say whether the data are trustworthy. Credibility is about how confident you are and how your findings reflect reality. The more your data converges, the more credible your results will be.

Triangulation also helps you to get a more complete understanding of your research problem. When you rely on only one data source, methodology, or investigator, you may risk bias in your research. Observer bias may occur when there's only one researcher collecting data. Similarly, using just one methodology means you may be disadvantaged by the inherent flaws and limitations of that method.

For example, in your study, you use three different methods to study your main topic of behaviours.

- Behavioural observations from the field.
- Self-data survey from respondents reflecting on their daily lives.

Each of these methods measures different aspects of actions, either directly or indirectly. It's helpful to use triangulation when you want to capture the complexity of real-world phenomena. By varying your data sources, theories, and methodologies, you gain insights into the research problem from multiple perspectives and levels.

Sampling Procedure

The method of research study describes the procedures that have been followed in conducting the study. At this stage, techniques for obtaining data are developed. The steps involved in conducting the study should be described in detail and this helps the researcher to understand his study.

Sample Size

Where time and resources allow, a researcher should take as a large sample size as possible. With a large sample, the researcher is confident that if another sample of the same size were to be selected, findings from the two samples would be similar to a higher degree. The danger with small samples is that they do not reproduce the salient characteristics of the accessible population to an acceptable degree. The smaller the sample, the larger the sampling error, and the larger the sample, the smaller the error.

There are particular situations where large sample sizes are required. Such cases include;

1. When many variables are held constant in the study.
2. The study requires the sample to be broken down into sub-groups. E.g. Groups of teachers, students and administrators.
3. When it is expected that many subjects or cases in the sample may not respond.
4. When the accessible populations are homogeneous, then, a small sample size is required, however, resources, and time,

tend to be the major constraints in determining the sample size to use.

Sampling Procedures in Quantitative Research

After determining or deciding the sample size, the researcher formulates a procedure for selecting the subjects or respondents to be included in the sample. There are two methods of sampling involved in selecting the subjects or respondents, the probability sample and the non-probability sample. In probability sampling, to select a representative sample, the researcher must have a sampling frame. In some cases, a sampling frame does not exist at all, in these cases, a nonprobability sampling procedure must be used. The procedure or techniques for selecting a sample are described below.

Probability Sampling

The goal of probability sampling is to select a reasonable number of subjects or respondents that represent the target population. Previous studies have shown that probability sampling can provide us with accurate information about groups that are too large to study.

Random Sampling

Random sampling is the key to obtaining a representative sample. In random sampling, every sample of a given size in the accessible population has an equal chance of being selected.

This allows generalisation to a large population with a small margin of error. It also allows the researcher to make inferences accurately in the population. There are 4 common techniques of random sampling:

- i. Simple random sampling,
- ii. Systematic random sampling,
- iii. Stratified random sampling,
- iv. Cluster sampling.

Simple Random Sampling

This technique of sampling involves, giving a number to every subject or number to the accessible population, placing the numbers in a container and then picking any number at random. The subjects corresponding to the numbers picked are included in the sample. E.g. If a researcher wants to select 500 first-year Sociology students to participate in a research study, supposing the total number of students is 2000, how do you go about it?

1. The researcher, will first of all, compile a list of 2000 students (first year) and assign numbers from 0001 to 2000.
2. After deciding the sample size of 500, put all the numbers in a container, and blindly pick any number. Whichever number you pick, is included in the sample, till you pick the 500 numbers.

Systematic Random Sampling

In systematic random sampling, for example, every k^{th} case in the population frame is selected for inclusion in the sample. To obtain a truly random sample using this technique, a list of all

members in the sample frame must be arranged, alphabetically or in numerical order. For example,

1. List all first-year sociology students in random order (0001-2000).
2. After determining the sample size of (500), also determine the sample interval by dividing the total population over the sample size, that is $2000/500 = 4$
3. Blindly select from the list of students or from the table and consider the first and the last objects of the number e.g. if you select 0456, consider the student who is assigned to that number, and continue to pick every 4th person on the list, since your sample interval is 4.
4. The process continues until 500 samples are achieved.

Stratified Random Sampling

The goal of stratified random sampling is to achieve a desired representation from various subgroups in the population. In stratified random sampling, subjects are selected in such a way that the existing sub-groups in the population are more or less reproduced in the sample, this will consist of two or more subgroups. In stratified random sampling, the population is divided into two or more sub-groups, and a given number of cases, are randomly selected from each population. Variables that can be used for stratification include sex, income levels, ethnicity, size, colour, age, religion etc. Each sub-group from which a sample is made is called a stratum or strata.

1. Identify the population
2. Define the criterion for stratification

3. List the population according to defined strata or sub-groups.
4. Determine the required sample size.
5. Select using random numbers on the appropriate number for each stratum.

Cluster Sampling

Cluster sampling is used when it is not possible to obtain a sampling frame because the population is either very large or scattered over a large geographical area. Cluster sampling involves selecting an **intact group**. All members of such an intact group are then included in the sample and each member becomes a limit of observation. For example, a researcher in an organisation wants to study patients suffering from malaria in Ghana. It would be time-consuming and expensive for the researcher to try and list all malaria patients who are hospitalised in Ghana. He then confines himself to a district hospital. A list of all district hospitals is then made and a random sampling will be used to select.

In this case, it is a group of clusters that are randomly selected and not individuals because the cluster is similar in characteristics e.g. schools, towns, cities, hospitals and industries.

1. Identify the population
2. Define the cluster forming the population
3. Determine the required sample size.
4. List all clusters in random order.
5. Select the required member of clusters according to sample size.

Pre-analysis of Data

Coding and Editing

The only method used for collecting data in quantitative research is the questionnaire. Once the questionnaire has been administered, the mass of raw data collected must be systematically arranged and organised in such a manner that will facilitate analysis. If empirical or quantitative analysis is anticipated, the responses in the questionnaire will have been assigned numerical values. For example, if the responses anticipated Yes and No, one would have to assign the number [1] to Yes, and {2} to No or vice versa.

Assigning numbers to responses is easily accomplished if the items or questions in the questionnaire are close-ended. It is important to note that a researcher might include open-ended items to obtain qualitative data or non-empirical data. Analysing this type of data requires experience in qualitative data analysis techniques.

To permit quantitative analysis, data must be converted to numerical codes representing attributes or measurable variables. The conversion of data into these numerical codes is referred to as Coding. It is important that coding should include as much information as possible because once the coded data is entered into the computer, it is impossible to recover details which were initially omitted.

The coding scheme should be clearly understood by those who are coding so that there is consistency in coding. Code categories in questionnaires or other measuring instruments should be exhaustive and mutually exclusive. For example, one code should be assigned to each response category. The coding process should start with the preparation of a code book. The code book is a document that describes in specific detail the coding scheme to be followed. The code book describes the code assignment for each response category and each item in the questionnaire. It also indicates the location, column and width of each variable in the spreadsheet.

The code book is used to transfer the information to a code sheet. A code sheet is designed to correspond to the number of columns in the spreadsheet. Only numerical numbers representing responses from the questionnaire are transferred to a code sheet. If one wants to check what the numbers represent, one has to go back to the code book. Advances in technology have simplified the process of data coding and entry, for more experienced researchers, the preparation of code sheets may be skipped and the data is entered into the computer from the questionnaire. The data entry expert picks the values representing the subjects and enters them into the computer.

The numbers representing various categories are then entered into the computer. The computer software is known as Statistical Package for the Social Sciences (SPSS), a software package used for the analysis of statistical data. The researcher

after collecting data edits the data by correcting errors and duplication before processing. Editing can be done before the field and after the field. It is the process of cleaning the data before analysis. This is important because the researcher may experience small errors during data analysis or will not experience errors at all.

Descriptive Statistics

The first step in data analysis is to describe or summarise the data using descriptive statistics. The second step is to explain the data using the theories, conceptual framework and literature, and the third step is to interpret the data in relation to the titles of the study and the objectives. The purpose of descriptive statistics is to enable the researcher to meaningfully describe a distribution of scores or measurements using a few indices or statistics. Each statistic(s) used in descriptive statistics has a purpose or role. The types of statistics or indices used depend on the type of variables in the study and the scale of measurement used (ratio, interval, ordinal and nominal).

Main types of descriptive statistics

Measures of central tendency are used to determine the typical or expected score or measure from a sample of measurements or a group of scores in a study. In the social sciences, measures of central tendency are used to give expected summary statistics of variables being studied. There are three main types of commonly used measures of central tendency. These are the mode, mean and median. The formulas for the calculation of the three are in the box below.

$$\text{Mean} = \frac{\text{sum of all values}}{\text{total number of values}}$$
$$\text{Median} = \text{middle value (when the data are arranged in order)}$$
$$\text{Mode} = \text{most common value}$$

The mode

The mode is the most commonly attained measurement or value. It is the measurement that appears most in a particular variable among a sample of subjects. The mode is established by examining a set of scores and identifying the score that occurs most frequently.

Example: Variable number of people in a family: 3 4 5 6 6 6 7 9 10 12

In the above example, the mode is 6 since it is the value that occurs most frequently in the sample. This statistic is a quick but crude way of describing a distribution of measurements or scores. It is easy because a glance at the data automatically shows the value that occurs most frequently. It is also important to note the following points about the mode:

A set of scores may have more than one mode. For example, Scores: 3 4 4 4 5 6 7 7 7 8 10 11.

In the above set of scores, there are two modes: 4 and 7, such a set of scores is said to be "bimodal".

The mode tends to be unstable. For example, equal-sized samples randomly selected from the same population are likely to have different modes, although they may be very similar in the characteristics being measured. It is possible for a set of scores or measurements not to have any mode when all the scores in a group occur with the same frequency. In this case, the mode does not help describe the distribution.

The median

The Median is the 50th percentile in a group of scores. It is the score that divides ranked scores into two equal parts, such that half of the scores are larger than the median, and the other half are smaller

Example: Scores: 75, 80, 82, 84, 87

In the above example, the median is 82; that is, the middle score. It is important to note that the scores must be arranged in ascending order to be able to determine the median. If the number of scores is even, the Median is the average of the two middle scores.

Example: Scores: 21, 23, 24, 25, 27, 30

Median is $(24 + 25) / 2 = 24.5$

One characteristic of the median is that it does not take into account the extreme values in a distribution since it is only a score in the middle of the distribution. This is disadvantageous because the median does not reflect the very low or the very

high values that may be in the distribution. In some cases, this is an advantage because we may want to exclude extreme scores when describing a distribution. After all, as outliers, these extreme values distort the distribution.

The mean

The mean is the average of a set of scores or measurements. It is the most frequently used measure of central tendency. It is calculated by adding up. For example:

To calculate the mean, we need to add all the values up and divide by the number of values.

$$\frac{5 + 9 + 12 + 4 + 5 + 14 + 19 + 16 + 3 + 5 + 7}{11} = \frac{99}{11} = 9$$

In this case, the *mean* is 9 which is one of the values in the list. Sometimes the mean will not appear in the original list. It might even be a decimal value.

Note: It is recommended that when the researcher is not interested in further calculations like correlation and the standard deviations, other measures of central tendency should be used as an average instead of the mean.

Types of measures of variability

Measures of variability provide us with the indices, which we can use to further describe a distribution of scores. There are three most commonly used measures of variability. These are the range, the variance, and the standard deviation.

The range

The range is defined as the difference between the highest score and the lowest score in a distribution. The range is determined by subtracting the highest from the lowest score.

Example: Scores: 78, 79, 80, 81, 82, 85. The range is $85 - 78 = 7$

A small range signifies that the scores are not spread out, and a big range gives a quick rough estimate of variability which implies that scores are spread out. The big weakness of the range as a measure of variability is that it only involves two scores, the highest and the lowest scores, hence, not sensitive to the total distribution.

Note: The essence of the outcome of the Mode, Median, Mean and range is to interpret the values in relation to the variables (s) under investigation.

The Standard Deviation and the Variance

Standard deviation is defined as the extent to which scores in a distribution deviate from their mean or average. The standard deviation therefore involves subtracting the mean from each score to obtain the deviation. If we square each deviation, sum the squared deviations and then divide this total by the degrees of freedom, we have a measure of variability called variance. If the value is small, it implies that the variance is small. This means that the scores are close together. If the value is large, it implies a large variance and therefore the scores are more spread out.

By taking the square root of the variance, one gets the standard deviation. The bigger the value derived by calculating the standard deviation, the larger the deviations from the mean denoting greater variability. A small standard deviation denotes less variability of scores in the distribution.

Properties of Standard Deviation

- Standard deviation takes into account, all scores and responds to the exact position of every score, relative to the mean of the distribution. This means that if one score is shifted further from the mean, the standard deviation also increases.
- Standard deviation is very sensitive to extreme scores. For example, if the obtained scores are 15, 16, 18, 24, 20, and 70, the score of 70 is an extreme score or an outlier. This extreme score will affect or distort the standard deviation. The standard deviation of this distribution will be artificially large because of the outlier. If the score of 70 is removed, the standard deviation of the new distribution will be much smaller but more realistic in relation to the majority of the scores.

Frequency Distribution Tables

A frequency distribution table shows the distribution of scores in a sample for a specific variable. In other words, a frequency distribution table gives a record of the number of times a score or a response occurs. For example, in educational research, frequency distribution would report the number of students who score 30, 33, 34, 35 or 36 points on a test. The following is

an example of a frequency distribution table of scores from a test administered to 20 students.

Note: This is to guide the reader, otherwise, there are now software computing frequencies and graphs for students. The essence of these values and the graph is to make a standard meaning that will reflect on the problem being investigated.

Table 1. Frequency distribution of test scores

Scores	Frequency
30	3
40	3
50	2
60	6
70	2
80	3
90	1
Total	N=20

In social science research, frequency may also refer to the number of subjects in a given category.

For example, a frequency distribution of the variable “marital status” would be:

Table 2. Marital Status of UDS staff

Scores	Frequency
Single	30
Married	60

Divorced	20
Separated	10
	N=20

Note: The total number of frequencies should always be equal to the sample size ' n ' and if this is not the case, one should check the data for errors.

For various reasons, scores are sometimes combined into smaller categories. Such reasons would include:

- When the scores are distributed in such a way that certain scores are not obtained by any subject.
- When the sample is very big, the frequency distribution would be too long and difficult to interpret.
- When information sought is sensitive, such as annual income and the response categories in the questionnaire are given in intervals.

Example:

Score limits for the interval 61-63 take into account values between 60.5 to 63.5. For this reason, intervals are normally written in terms of score limits. Expressing class intervals in terms of score limits is less cumbersome. The class width for the interval 61-63 is three e.g. 61, 62 and 63.

Table 3. Example of grouped frequency distribution

Class intervals	Frequency
40-49	18
35-39	12

30-34	5
25-29	5
20-24	10
	N=50

It is important to note that when scores or data are grouped, some information is lost. For example, if there are 5 scores in the class interval near 129 or whether the scores are distributed evenly within that class 120-129, it is not possible to tell whether the scores are all near 120 or near 129 or whether the scores are distributed evenly within that class interval.

Principles governing the conversion of raw scores into grouped scores.

- All intervals should have the same width. Unequal class intervals cause problems when advanced statistical work is needed.
- Intervals should be continuous throughout the distribution. That is, even if there are no scores in a particular class interval, that class interval should be retained and a frequency of zero indicated against it.
- Too few class intervals lead to a loss of accuracy and too many class intervals result in inconveniences. Normally, class intervals should range between 10 and 15 in number as stated before.

Manual Graphic Representation of a Frequency Distribution

Histograms

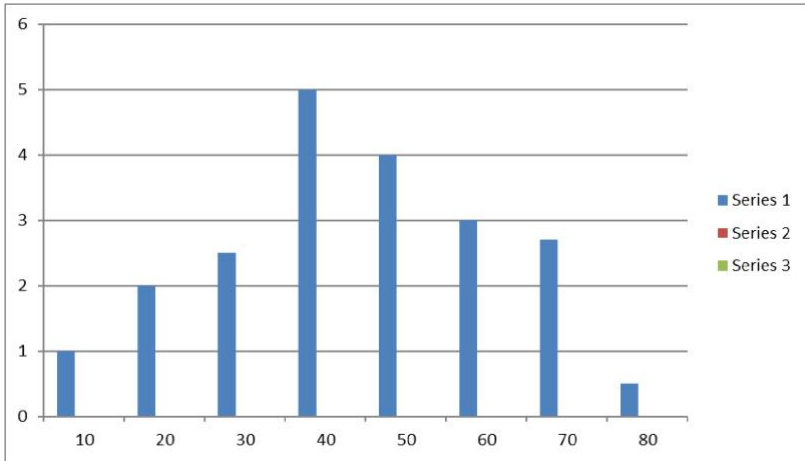
A histogram comprises a series of adjacent bars whose heights (y-axis) represent the number of subjects obtaining a particular score or the number of respondents belonging to a particular category. The scores are usually on the horizontal axis (X-axis). Exact limits are normally used to construct a histogram. This makes it possible to have a continuous histogram where there is no space between bars.

For example, the distribution of scores from a Sociology test administered to 70 form one (1) students is as follows:

Table 4. Distribution of scores from a sociology test

Score limits	Exact limits	Frequencies
90-100	90.5-100.5	1
81-90	80.5-90.5	3
71-80	70.5-80.5	6
61-70	60.5-70.5	10
51-60	50.5-60.5	14
41-50	40.5-50.5	18
31-40	30.5-40.5	12
21-30	20.5-30.5	4
11-20	10.5-20.5	2
Total		N=70

Figure 1. Distribution of scores for the above table.



Bar charts are preferred when data is discrete or categorical or when the scale is **nominal or non-ordered**. This is mainly because the categories in a nominal scale do not imply any order. The bar chart is very much like the histogram except the spaces are left between the bars to signify a lack of continuity or flow between the categories.

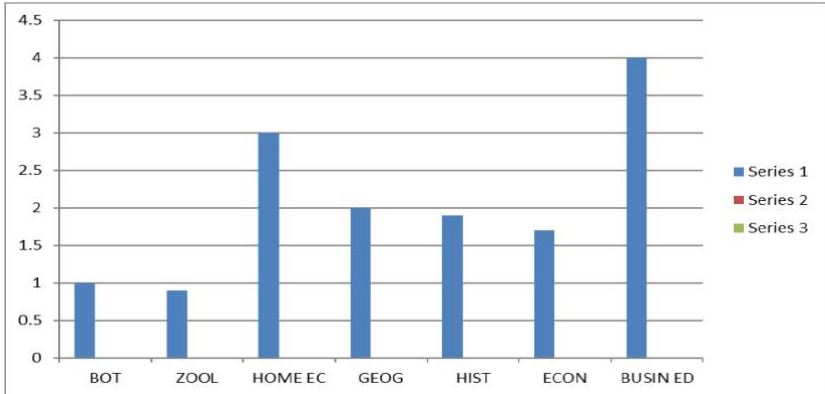
Example

Table 5. Shows the enrolment in eight departments at the University for Development Studies

Group or category	Frequency	frequency
Botany	40	8
Zoology	30	6
Family studies	100	20
Geography	70	14
History	60	12
Economics	50	10
Business economics	150	30

Total	N = 500	100
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Figure 2. Chart based on data presented in table 5



Which graph is the best to choose

- The graph chosen should depend on the data to be represented. As mentioned above, for **discrete variables**, it is better to use a bar chart.
- Frequency polygons have an advantage in that several polygons can be among various distributions and can be made more easily.
- If sample sizes are different, it is important to change frequencies to relative frequencies, that is, in terms of proportions or percentages where frequencies are expressed as proportions of 1 or 100 respectively. This conversion should be done before graphing. Frequency polygons also give a much better conception of the trend of the distribution than histograms.
- Histograms on the other hand are easier to understand, especially when only one distribution is being represented. However, histograms give the impression that subjects

fitting within each interval are evenly distributed over the interval, which is not always the case.

Percentages

A percentage is defined as the proportion of a subgroup to the total group or sample and ranges from 0% to 100%. For example, the frequency of the "marital status" variable given, can also be expressed in percentages.

Table 6: Marital Status

Marital status	Frequency	Percentage frequencies
Single	30	25.0
Married	60	50.0
Divorced	20	16.7
Separated	10	8.3
	N=120	100%

Percentages are extremely important, especially if there is a need to compare groups that differ in size. As earlier stated, computer programs will compute Means, Standard deviations, Frequencies, Percentages, etc. This saves time since doing these computations manually can be very exhausting, especially with a large sample.

Note: The above tables and charts were extracted from a survey conducted in 2020.

Definition and Purposes of Inferential Statistics

The ultimate purpose of research is to be able to generalize the results from samples to populations. We use hypothesis testing techniques to generalize from the sample to the population.

These techniques are often referred to as inferential statistics. Inferential statistics deals with inferences about the population based on results obtained from samples. Inferring sample results to the population is necessary since most research in many fields deals with samples. The more representative a sample is, the more generalizable the results will be. Inferential statistics are therefore, concerned with determining population and how likely it is for the results obtained from a sample to be similar to results expected from the entire population.

Statistical Procedures used in Inferential Statistics

There are many statistical techniques used in testing hypotheses but we shall discuss only a few common ones. Generally, these techniques are categorised as parametric or non-parametric. In parametric techniques, we make certain assumptions about the data. In non-parametric techniques, no such assumptions are made about the data. Parametric techniques are more powerful than non-parametric techniques when making inferences.

Correlation

The correlation technique is used to analyse the degree of relationship between two variables. Various correlation techniques are normally used. The choice of which technique to use depends on:

- Whether the variables of the study are discrete or continuous

- Whether the scale of measurement used is nominal, ordinal interval, or ratio. For the purposes of this book, only the Pearson Product - Moment correlation will be discussed.

Pearson Product - Moment Correlation

This type of correlation is used when both variables that the researcher wishes to study are measured on ratio or interval scales and are continuous. Age, income and years of education are examples of such variables.

Because most social sciences research uses continuous variables, Pearson Product - Moment correlation is most commonly used. When variables are categorical, other types of correlations, like Spearman's Rho, are used. *All these can be calculated using computer software.*

In some cases, categorical variables can be used in computing Pearson Product-Moment correlation, if they are changed into dichotomous variables. A dichotomous variable is a variable with only two categories. For example, the categorical variable, "marital status" has the following coded categories:

1- Married 2 - Divorced 3 - Separated 4- Single

The above categories cannot be used in computing a correlation coefficient because the numbers assigned to each category have no meaning at all. It is difficult to argue that being divorced is better than being separated or being married is worse than being single. However, the above categories can be changed into a dichotomous dummy variable with only two mutually

exclusive categories. Such categories would be dichotomous dummy "married" and "unmarried". The categories of variable are normally assigned the values of 1 and 0.

The Correlation Coefficient

The computation of a correlation coefficient yields a statistic that ranges from -1 to 1. This statistic is called a correlation coefficient (r). The correlation coefficient tells the researcher:

- The magnitude of the relationship between two variables. The bigger the coefficient (absolute value), the stronger the association between the two variables.
- The direction of the relationship between the two variables. If the correlation coefficient is positive (+), it means that there is a positive relationship between the two variables. A positive relationship means that as variable X , increases, variable Y , increases as well, or as variable X , decreases, variable Y , decreases. In other words, the two variables X , and Y , vary together in the same direction. A negative relationship (-) means that as variable X , decreases, variable Y increases and vice-versa. That is, variables X , and Y , vary together in opposite directions. Which is sometimes referred to as an inverse relationship.

Test of significance of the correlation coefficient

We can make inferences using correlational analysis. For example, if we compute a correlation coefficient of 0.70 between income and years of formal education of workers, we could test the hypothesis that a similar correlation exists. To test this hypothesis, we would need to establish a level of significance

or confidence level. In general, researchers often use a significance level of 0.05 or 0.01 although other levels of significance can be used.

A significance level is really the probability of obtaining similar results through chance. In other words, if we repeated the study many times using different but equal random samples, we would obtain a correlation coefficient of about 0.70. That is ninety-five percent confidence if our level of significance is 0.05.

The computer usually indicates whether the obtained correlation coefficient is significant at either 0.01 or 0.05. The computer can also give the actual level of significance for each pair of variables. Alternatively, one can establish whether the correlation coefficient is significant using statistical tables.

Chi-square Test

Chi-square (X^2) is a statistical technique which attempts to establish the nature of the relationship between two variables both of which are categorical in nature. For example, we may want to test the hypothesis that there is a relationship between gender and the number of road accidents caused by drivers. The variable "gender" is categorized as male and female. The variable "number of accidents" is categorized as "none", "few" and "many."

We would need to establish the significance level of our test beforehand. As already stated, the significance level can be set at 0.05 or 0.01. The Chi-square technique yields one value

which should be equal to or greater than zero. To determine the significance of our test, we compare the obtained Chi-square value with a critical or tabled value. If the obtained value is greater than the critical value, we reject the null hypothesis. If one is using a computer for analysis, the computer will give the Chi-square value and also the actual probability of the computed Chi-square value.

In this case, one does not need the table to determine if a Chi-square value is significant. If the probability of the computed Chi-square value is less than the level of significance set, you should reject the null hypotheses and conclude that the two variables are not independent of each other and vice versa.

A Chi-square test is a non-parametric technique and therefore, no assumptions about the data or the parameters in the population are made. It is therefore a less powerful technique for establishing relationships when compared to the correlational techniques. Therefore, to approximate the population estimates of the proportion in each mutually exclusive category, one needs a very large sample.

Regression

Regression analysis is a type of analysis used when a researcher is interested in finding out whether an independent variable predicts a given dependent variable. Regression analysis could be categorised into:

- Simple regression
- Multiple regressions

Simple Regression

Simple regression is used when the researcher is dealing with only one independent variable and one dependent variable. For example: A researcher might be interested in finding out whether education predicts the financial status of households. In this example, education is the independent variable and financial status is the dependent variable.

Multiple Regressions

Multiple regression attempts to determine whether a group of variables together predicts a given dependent variable. For example: A researcher might be interested in finding out whether age, education, household size, and marital status influence the financial status of households. The four independent variables are considered together (in one equation) as predictors of financial status (dependent variable).

Regression Model

A typical simple regression model is of the form: $Y = B + B_1 X_1 + E$ where: B is the constant or intercept

B_1 - is the slope or change in Y, given a one-unit change in x_i

Y- is the dependent variable, X, X_1 - is the independent variable

e- Is the error

In multiple regression, the regression model is of the form:

$$Y = B + B_1 X_1 + B_2 X_2 + B_3 X_3 + \dots + B_n X_n + E$$

where: Y - is the dependent variable X_1 - n -are the independent variables

B_0 - is the constant

B_1 - n .- are the regression coefficients or change induced in Y by each X E - is the error.

Regression analysis also yields a statistic called the coefficient of determination or R . The R refers to the amount of variation explained by the independent variable or variables. For example, if R is calculated to be 0.48, it means that 48 % of the variation in a given dependent variable is explained or predicted by variables in the equation. The rest (52%), cannot be explained by the variables in the equation.

Assumption of Regression

- Each independent variable is linearly related to the dependent variable.
- The observations are independent of each other, which implies that the sample was drawn at random.
- Homogeneity of variance exists, i.e., at each level of X , the variance of the Y values is constant.
- Y values are normally distributed around the mean at each level of X in the population.
- Each independent variable contributes to the outcome of the dependent variable when other variables are held constant.

Regression and Test of Significance

For every value of B (slope), the computer will give a t-value and the probability level for each t-value. The significance level of each regression coefficient can also be determined manually using t-tables. An independent variable is said to be a significant predictor of the dependent variable if the absolute t-value of the regression coefficient associated with that independent variable is greater than the absolute critical t-value.

Analysis of Variance (ANOVA)

Analysis of variance is a data analysis procedure that is used to determine whether there are significant differences between two or more groups or samples at a selected probability level. The questions to be answered by analysis of variances are: "What is the probability that the variation among a group of sample means has occurred as a result of randomly selecting the samples from a common population", Are the differences among the groups due to the treatments given or due to chance?

One-Way Analysis of Variance

This refers to the analysis of variance where groups are being compared on only one variable but at different levels. In other words, there is only one independent variable that is measured at either nominal or ordinal levels. The dependent variable is measured at either the ratio or interval scale.

For example:

A researcher might be interested in finding out whether teaching methods influence performance in class. For this purpose, a class might be randomly divided into three groups and a different method of teaching used for each group.

Group 1: lecture method

Group 2: discussion method

Group 3: individual study

The researcher then gives a test and obtains the mean score from each group.

Group 1 (lecture) $X_1 = 60$

Group 2 (discussion) $X_2 = 45$

Group 3 (individual study) $X_3 = 55$

In this example, the independent variable (teaching method) is measured at the nominal scale and performance, the dependent variable, is measured at the interval scale. The hypothesis being tested here is whether the type of teaching method makes a difference in performance among the students.

CHAPTER SIX

GUIDE TO WRITING YOUR LONG ESSAY

Introduction

This chapter provides a step-by-step guide on writing your long essays, dissertations and thesis. It is useful to both undergraduate and post graduate schools in tertiary institutions who, need to conduct research on relevant fields as part of their programs of study. Even though students are always being assigned supervisors, this guides will more or less help them overcome the constant thoughts of how to organise their chapters for effective reading and understanding.

Undergraduate Long Essay/Project Guide

Chapter One

Introduction/ Background

- Global explanation of the problem you are investigating.
- Narrow the explanation to a particular continent.eg; Africa.
- Further, narrow it to a country with concrete examples.eg: Ghana.

Problem Statement

- State what the problem is.
- What has been done to solve the problem by either NGOs or government or the community?
- Have all these agencies succeeded?
- If possible use statistical evidence to justify the problem's existence.
- What has been left for you to investigate?
- Always end the problem statement with a question mark or puzzle.

Objectives of the Study

- From the problem, state clearly what you want to find out
- Use appropriate words such as to find, to investigate, to examine, to assess, to determine and to explain. Note: Express these terms depending on what you are researching.
- Consider the abbreviation **SMART** which is Specific, Measurable, Attainable/ Achievable, Realistic and Time-Bound.
- The objectives should be stated in such a way that it meets the requirement above.

Relevance/ Significance of Your Study

- How is your study relevant to the individual?
- Society/Community
- The Nation/Government

Organisation of the Study

- How are you organising your chapters for effective reading? For undergraduates, it should be five chapters. **(Supervisor's assistance is needed here).**

Chapter Two: Literature Review

- This chapter should be devoted only to the literature review
- Critical examine what others have said about what you are investigating.
- Your own views are very important in this regard.
- Accept or reject what others have said after stating what they have said. Use words such as 'noted that', 'explained that', 'confirmed that' or 'according to' or 'found that' etc. E.g. Eliasu 2014 noted that or explained that or found that or confirmed that etc.
- Theoretical framework/conceptual framework.
- Always try as much as possible to find a theory that explains the basis of your study or a conceptual framework that is able to outline the relationships between the variables in your study.

Chapter Three: Research Methods/ Methodology

- State the profile of the study area.
- Note that profiling should be related to what you are investigating.
- Leave out the profile that has nothing to do with your study.
- Population is always very important for sampling purposes.

Research Design

- What type of research design are you using? Is it a cross-sectional, longitudinal, experimental, or case study? Read on these types before choosing one.
- What type of research are you embarking on? Is it qualitative or quantitative or both?

Target population

- Who are your target population, your study population and your units of analysis or units of observation?

Sampling Technique

- What sampling technique are you using to draw your sample from the target group?
- Probability or non-probability or both?
- What are your sources of data?
- Which instruments are you going to use for data collection? Especially for primary data and secondary data or both.
- How are you going to analyse your data if the data is qualitative or quantitative or both?
- The limitation of your study, that is, the problems you encountered in the course of the research.

Chapter Four: Analysis and Presentation of Findings

- Chapter four should be the Analysis and presentation of the findings.
- With qualitative data, you need to only organise your findings in themes.
- Explain your findings in relation to the objectives supporting it or rejecting it with relevant literature.
- Interpret your findings in relation to the objectives.
- With quantitative data. Present the findings using tables with percentages, charts or any other statistical tool like regression, chi-square or correlation.
- Describe the tables or the charts in terms of the percentages, explain them with your literature and interpret them in relation to the objectives.

Chapter Five: Summary, Conclusions and Recommendations

- Try to summarise your findings using themes or headings.
- Each chapter must be summarised to bring out very important findings.
- Your conclusions should be based on your findings.
- Give at least five or six key points recommendations. It should be based on your findings.
- References.
- Appendixes if any.

Note: The supervisor may use his discretion so far as the arrangement of the work is concerned. What is contained in each chapter is very important, and all undergraduate students should take note of it.

Postgraduate Thesis Format

Abstract

- The abstract should be as brief as possible at least **250 words**.
- This should comprise your summary of the problem
- The objectives.
- The methodology.
- Your findings and
- Your recommendations

Chapter One - General Introduction

Introduction/ Background

- Global explanation of the problem you are investigating.
- Narrow the explanation to Africa
- Further, narrow it to Ghana with concrete examples

Problem Statement

- State what the problem is.
- What has been done to solve the problem by either NGOs or government or the community?
- Have all these agencies succeeded?
- What has been left for you to investigate?
- Always end the problem statement with a question mark or puzzle.

Objectives of the Study

- From the problem, state clearly what you want to find out.
- Use appropriate words such as to find, to investigate, to examine, to assess, to determine and to explain. Note, express these terms depending on what you are researching.
- Consider the abbreviation **SMART** which is Specific, Measurable, Attainable/ Achievable, Realistic and Time-Bound.
- The objectives should be stated in such a way that it meets the requirement above.

Relevance/ Significance/Justification of Your Study

- How is your study relevant to the individual?
- Society/Community.
- The Nation/Government.

Organisation of the Study

- How are you organising your chapters for effective reading? For postgraduate students, it should be six or more chapters depending on the voluminous nature of the data and the objectives. **(Supervisor's assistance is needed)**

Chapter Two: Literature Review

- This chapter should be devoted only to literature review.

- Critical examine what others have said about what you are investigating.
- Your own views are very important in this regard.
- Accept or reject what others have said. Use words such as 'noted that', 'explained that', 'confirmed that' or 'according to' or 'found that' etc. For example, Alhassan (2014) noted that or explained that or found that or confirmed that etc.
- Try as much as possible to find a theory/model/ conceptual framework that explains the basis of your study or a conceptual framework that is able to outline the relationships between the variables in your study.
- Critically examine your theoretical framework/ conceptual framework.

Chapter Three: Research Methods/ Methodology

- A brief profile of the study area is very important in post-graduate studies
- Note that profiling should be related to what you are investigating.
- Leave out the profile that has nothing to do with your study.
- Population is always very important for sampling purposes.

Research Design

- What type of research design are you using? Is it a cross-sectional, longitudinal, experimental, or case study? Read on these types before choosing one.
- What type of research are you embarking on? Is it Qualitative or quantitative or both or triangulation? Please state clearly and explain.

Target population

- Who are your target population, your study population and your units of analysis?

Sampling Technique

- What sampling technique are you using to draw your sample from the target group?
- Probability or non-probability or both?
- What are your sources of data?
- Which instruments are you going to use for data collection? Especially for primary data and secondary data or both.
- How are you going to analyse your data if the data is qualitative or quantitative or both?
- Limitation of your study, that is, the problems you encountered in the course of the research.

Chapter Four: Analysis and Presentation of Findings

- With qualitative data, you need to only organise your findings in themes.
- Explain your findings in relation to the objectives supporting or rejecting them with relevant literature you have read.
- Interpret your findings in relation to the objectives.
- With quantitative data, Present the findings using tables with percentages, charts or any other statistical tool like regression, chi-square, or correlation.
- Describe the tables or the charts in terms of the percentages, explain them with your literature and interpret them in relation to the objectives.

Chapter Five: Discussions of the Major Findings

- Here, no table charts or diagram is provided.
- Explain in detail your findings and implications.

- Your own views about your research are critical at this point.
- This is where you need to demonstrate your contribution to knowledge.
- Please note that chapter five can be left out if what is supposed to be discussed is combined and done well in chapter four. **(Supervisor's assistance is needed here).**

Chapter Six: Summary, Conclusions and Recommendations

- Try to summarise your findings using themes or headings
- Each chapter must be summarized to bring out very important findings.
- Your conclusions should be based on your findings.
- Give at least five or six key points recommendations. It should be based on your findings.
- References
- Appendixes if any.

Note: The chapters can be more than six (6) depending on the number of objectives.

CONCLUSIONS

Based on the analysis of the five chapters, it can be stated that research involves processes and procedures and all the departments in research are connected one way or the other. The understanding of the concepts and terms of research leads to good communication in research and the production of quality thesis or dissertation in social sciences. Right from the understanding of the population, units of analysis and units of observation as well as sampling in the research process, make it easy for data collection and data handling.

Students should, therefore, understand these terms and all the processes and procedures involved in social research. There is no watertight separation between the research title, problem statement, objectives, literature, research methodology, design and data handling in Social Research. This book is very useful to students especially, postgraduate students who are still writing their dissertations and thesis. Also, useful to all those who teach research methods at the tertiary levels of education.



REFERENCES

- Alhassan, (2015). *Writing a thesis: A guide for social science students*. Cantonment- Accra Supreme Concept.
- Babbie, E. R. (2020), *The practice of social research*, Cengage Learning.
- Breakwell, G. M., Hammond, S. E., Fife-Schaw, C. E., & Smith, J. A. (2006). *Research methods in psychology*. Sage Publications, Inc.
- Bryman, A. (1984). The debate about quantitative and qualitative research: A question or method of epistemology? *British Journal of Sociology*, 35, 78-92
- Bryman, A. (1998). *Quantity and Quality in Social Research*. London: Routledge
- Bryman, A. (2004). *Social Research Methods (2nd Edition)*. Oxford: Oxford University Press

- Bryman, A. (2006). Integrating quantitative and qualitative research: How is it done? *Qualitative Research*, 6, 97-113
- Bryman, A. (2008). *Social Research Methods* (3rd Edition). Oxford: Oxford University Press
- Bryman, A. (2016). *Social research methods*. Oxford University Press.
- Bulmer, M. (Ed.). (1977). *Sociological research methods*. Transaction Publishers.
- Burns, E., & Groove, W. (2014). Research method. *Ergonomics*, 32(3), 237-248. Cantonments-Accra: Supreme Concept
- Check, J., & Schutt, R. K. (2011). *Research methods in education*. Sage Publications.
- Christensen, L. B., Johnson, B., Turner, L. A., & Christensen, L. B. (2011). *Research methods design, and analysis*.
- Clements, F. E. (1905). *Research methods in ecology*. University Publishing Company.
- Cohen, L., Manion, L., & Morrison, K. (2002). *Research methods in education*. Routledge.
- Collins, J. & Hussey, R. (2003). *Business Research* (2nd ed.). London: Palgrave
- Collins, J. Hussey, R. & Hussey, J. (2003). *Business Research: A Practical Guide to Postgraduate Students* (2nd ed.). Basingstoke: Palgrave
- Creswell, J. W. (2003). *Research Design, Qualitative, Quantitative and Mixed Approaches*. Thousand Oaks, CA: Sage
- Creswell, J. W. (2014). *Research Design, Qualitative, Quantitative and Mixed Method Approaches*. SAGE, Thousand Oaks, 4th edition
- Creswell, J. W. (2009). *Research Design, Qualitative, Quantitative and Mixed Method Approaches* (3rd ed.). London: Sage
- Creswell, W., Clark, P. V., Guttman, M. & Hanson, W. (2003). Advanced mixed methods designs. In A. Tashakkori & C. Teddlie (Eds.). *Handbook of Mixed Method Research in the Social and Behavioral Sciences*. Thousand Oaks, CA: Sage
- Devine, F., & Heath, S. (1999). *Sociological research methods in context*. Bloomsbury Publishing.
- Eichler, M. (2013). *Nonsexist research methods: A practical guide*. Routledge.

- Fayorsey, C. (2004), *Research Methods: Qualitative approach*, Lecturer Notes, Tamale Workers College.
- Fellows, R. F., & Liu, A. M. (2021). *Research methods for construction*. John Wiley & Sons.
- Frankfort-Nachmias, C., & Nachmias, D. (2007). *Study guide for research methods in the social sciences*. Macmillan.
- Ghuri, P., Grønhaug, K., & Strange, R. (2020). *Research methods in business studies*. Cambridge University Press.
- Giddens, A. (1986) *the nation state and violence capital and class*. V. 10(2) pp. 216-230
- Grant, W. (2008). *Research methods in politics*. Bloomsbury Publishing.
- Gratton, C., & Jones, I. (2010). *Research methods for sports studies*. Routledge.
- Gravetter, F. J., & Forzano, L. A. B. (2018). *Research methods for the behavioral sciences*. Cengage learning.
- Graziano, A. M., & Raulin, M. L. (1993). *Research methods: A process of inquiry*. HarperCollins College Publishers.
- Hammarberg, K., Kirkman, M., & de Lacey, S. (2016). *Qualitative research methods: when to use them and how to judge them*. *Human reproduction*, 31(3), 498-501.
- Hammond, M., & Wellington, J. (2012). *Research methods: The key concepts*. Routledge.
- Hennink, M., Hutter, I., & Bailey, A. (2020). *Qualitative research methods*. Sage.
- Howe, K. R. (1992), *Getting over qualitative and quantitative debates*. *American Journal of Education*. V. 100, pp.238-256
- Johnson, R. B. & Onwuegbuzie, A. J. (2004). *Mixed methods research: A research paradigm whose time has come*. *Educational Researcher*, 33, 14-26
- Johnson, R. B., Meeker, K. M., Loomis, E. J. & Onwuegbuzie, A. J. (2004). *Development of philosophical and methodological belief inventory*. A paper presented at the annual meeting of the American Educational Research Association, San Diego, CA.
- Johnson, R.B. & Turner, L. S. (2003). *Data collection strategies in mixed methods research*. In A. Tashakkori & C. Teddlie (Eds.). *Handbook of Mixed Method Research in the Social and Behavioral Sciences*. Thousand Oaks, CA: Sage

- Kuhn, T. S. (1962). *The structure of scientific revolutions*. Chicago: University of Chicago Press.
- Lancaster, G. (2007). *Research methods in management*. Routledge.
- Lunenfeld, P. (2003). *Design research: Methods and perspectives*. MIT press.
- Mason, J. (2002). Quantitative interviews: Asking, listening and interpreting. In T. May (Ed). *Qualitative Research in Action*. London: Sage
- McBurney, D. H. (2001). *Research methods*. Wadsworth/Thomson Learning.
- Newman, I, & Benz, C. (1998), *Qualitative and Quantitative Research Methodology: Exploring the Interview*, Centinum, Carbondale, University of Illinois Press.
- Mugenda M. & Mugenda G. (1999) *Research Methods: Qualitative and Quantitative Approaches*. African Centre for Technology Press, Nairobi Kenya.
- Newby, P. (2014). *Research methods for education*. Routledge.
- Newman, I. & Benz, C. R. (1998). *Qualitative-quantitative Research Methodology: Exploring the Interactive Continuum*. Carbondale: University of Illinois Press
- Oancea, A. E., & Punch, K. F. (2014). Introduction to research methods in education. *Introduction to Research Methods in Education*, 1-448.
- Onwuegbuzie, A. J., & Teddlie, C. (2003). A framework for analyzing data in mixed methods research. In A. Tashakkori & C. Teddlie (Eds.). *Handbook of Mixed Method Research in Social and Behavioral Research* (351-383). Thousand Oaks, CA: Sage
- Patten, M. L., & Newhart, M. (2017). *Understanding research methods: An overview of the essentials*. Routledge.
- Patton, M. Q. (1990). *Qualitative evaluation and research methods*. SAGE Publications, inc.
- Parson, T. (1971), *The system of modern society*. Englewood Cliff, Nj: Prentice.
- Perry, C., Alizadeh, Y. & Riege, A. (1997). Qualitative methods in entrepreneurship research Proceedings of the Annual Conference of the small Enterprise Association Australia and New Zealand, Coffs Harbour, 21-23 September, 547-567

- Polkinghorne, D. E. (1989). Phenomenological research methods. In *Existential-phenomenological perspectives in psychology* (pp. 41-60). Springer, Boston, MA.
- Richey, R. C., & Klein, J. D. (2014). Design and development research: Methods, strategies, and issues. Routledge.
- Sale, J. E. M., Lohfield, L. H. & Brazil, K. (2002). Revisiting the quantitative-qualitative debate: Implications for mixed-methods research. *Quality and Quantity*, 36, 43-53
- Saunders, M., Lewis, P., & Thornhill, A. (2003). *Research Methods For Business Students. Essex: Prentice Hall: Financial Times.*
- Sevilla, C. G. (1992). *Research methods*. Rex Bookstore, Inc.
- Shajahan, S. (2005). Research methods for management. *New Delhi, Jaico Publication house*, 2(1).
- Shaughnessy, J. J., Zechmeister, E. B., & Zechmeister, J. S. (2000). *Research methods in psychology*. McGraw-Hill.
- Stokes, P., & Wall, T. (2017). *Research methods*. Bloomsbury Publishing.
- Tharenou, P., Donohue, R., & Cooper, B. (2007). *Management research methods*. Cambridge University Press.
- Wan, M. (2022). Research methods. In *CSR Image Discursive Construction of Banks and the Effects on Capital Markets* (pp. 69-86). Springer, Singapore.
- Wellington, J., & Szczerbinski, M. (2007). *Research methods for the social sciences*. A&C Black.
- Williams, C. (2007). Research methods. *Journal of Business & Economics Research (JBER)*, 5(3).
- Williams, F., Rice, R. E., & Rogers, E. M. (1988). *Research methods and the new media*. Simon and Schuster.
- Willis, J. W. (2007). World Views, Paradigms and the Practice of Social Science Research: Foundations of Qualitative Research: Interpretive and Critical Approaches. Retrieved from <https://www.sagepub.com/upm-data/13885> Chapter1.pdf on January 8, 2012

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