



AMBO UNIVERSITY WOLISO CAMPUS

COLLAGE OF LAW AND GOVERNANCE

DEPARTMENT OF CIVICS AND ETHICAL STUDIES

Program: Undergraduate (BA Degree, Regular) ; Academic year: 2012 E.C/2020 G.C

Year: 2nd year, Semester II; **Course Title:** Research Methodology for Social Sciences

Course Code: CESt 2081; **Credit point value:** 3CHR /5ECTS

Instructor: Jemal .E (MA)

Contact address; E-mail; jemal.endris234@gmail.com;

Course Description

The course, Research Methodologies for Social Sciences, is designed to introduce students of Civics and Ethical Studies with fundamental knowledge, skills and values of research and the practices there to in a critical and analytical manner. In doing so, it delves itself into the explanation of philosophical and epistemological foundations of research; the conceptualizations of research designs and methodologies; Sampling Strategies; modes of observations; identification and application of the different methods and tools of data collection; data processing and analysis; and interpretation and write-ups of research. Moreover, ethical principles, aspects and dilemmas of practicing social research are also among the focus of discussion.

Course Objectives

Up on the successful completion of the course, students will be able to:

- ✓ Define the meaning, nature and language of research
- ✓ Explain the essence of research designs, design strategies and research methodologies focus being given to qualitative methodologies
- ✓ identify the different techniques and approaches of sampling, and sampling strategies
- ✓ Elaborate social research modes of observation (such as survey research, experimental research, field work and unobtrusive measures) and methods (Interviews, Focus groups discussions, observations) and tools of undertaking social research such as questionnaires, schedules, interview guides etc.)
- ✓ Explain data processing, analysis, interpretation and report writing
- ✓ Express the safeguards against errors during data collection and data analysis and reporting.

CONTENTS

Chapter One: Foundations of Research

1. Inquiry and Source of inquiry

1.1 Meaning and nature of Social inquiry

1.2 Sources of Social Inquiry

1.2.1 Time-Based Knowing: Traditional Knowledge

1.2.2 Credential-Based Knowing: Authoritative Knowledge, More Risky Knowledge Sources, Common Sense and Intuition Science as a Trustworthy Way of Knowing.

1.3. Meaning and characteristics of research

Purposes of social Science research (Description, Explanation, Exploration, & Evaluation

1.3.1. Methodological approaches in Social science research

A. Positivist approach

B. The interpretive approach

C. The critical approach

1.4. Important distinctions about research

1.4.1. Qualitative versus quantitative research

1.4.2. Applied versus basic research

1.4.3. Descriptive versus co-relational research

1.5.The successive stages in conducting research (the research process)

- Problem identification
- Formulating a research design
- Developing instruments for data collection
- Selecting sample
- Writing a proposal
- Data Collection
- Data analysis
- Writing the research report

1.5. Paradigms in social Science research

1.6. Selecting and Planning Research Project

1.6.1. Defining the Research problem

1.6.2. Selecting a Research Topic

1.6.3. Reviewing Literature

1.6.4. Hypotheses, Variables, concepts, indicators, and measurement

Chapter Two: Research Designs Strategies and Research Methodologies

2.1 Recognizing Qualitative, Quantitative and Mixed Research

2.2 Understanding the Qualitative-Quantitative Methodological Debate

2.3 Meaning of Research Design and Design Strategies

2.4 Introduction to Some Qualitative Design Strategies

- ❖ (Phenomenology; Ethnography; Ethno methodology; Heuristics; Grounded Theory; Critical Theory (focus being given to Feminist Methodology); Hermeneutics; & System Theory)

2.6 Basic format of Research Designs (The Process of Proposal Development)

Chapter Three: Introduction to Sampling and Sampling Strategy

3.1 The Nature and Meaning of Sampling

3.2 Representativeness of samples

3.3 Sampling Methods

3.3.1 Probability Techniques

3.3.2 Non-probability Techniques

Chapter four: Modes of Observation and Data Collection Methods

4.1 Modes of Observation

4.1.1 Experimental Research

4.1.2 Survey research

4.1.3 Field research

4.1.2 Unobtrusive Research

4.2 Methods and Tools of Data Collection

4.2.1 Collection of Primary Data (Qualitative and Quantitative)

4.2.1.1 Systematic and Naturalistic Observational Methods

4.2.1.2 Interview Methods

- 4.2.1.3 Focus Group Discussions
- 4.2.1.4 Questionnaires
- 4.2.1.5 Collection of Data Through Schedules
- 4.2.1.6 Difference Between Questionnaires and Schedules
- 4.2.1.7 Some Other Methods of Data Collection (Telephone and Internet Assisted Interviews)
- 4.2.2 Collection of Secondary Data
- 4.3 Selection of Appropriate Method for Data Collection
- 4.4 Guidelines for Constructing and Successful Questionnaires/ Schedules and Interview

Chapter Five: Processing and Analysis of Data

- 5.1.1 Nature and Meaning of Data Processing
 - 5.1.1.1 Qualitative Data Processing
 - 5.1.1.2 Coding
 - 5.1.1.3 Memoing
 - 5.1.1.4 Concept Mapping
 - 5.1.1.5 Quantitative Data Processing
 - 5.1.1.6 Development of Code Categories
 - 5.1.1.7 Code Book Construction
 - 5.1.1.8 Data Entry
- 5.2 Some Problems in Data Processing
 - 5.2.1 Nature of data Analysis
 - 5.2.1.1 Qualitative Data Analysis
 - 5.2.1.2 Discovering Patterns
 - 5.2.1.3 Grounded Theory Methods
 - 5.1.2.1 Semiotics
 - 5.1.2.2 Conversation Analysis
 - 5.1.2.3 The Qualitative Analysis of Quantitative Data
- 5.3 Statistical analysis: Statistics in Research
 - 5.3.1 Introduction
 - 5.3.2 Measures of central Tendency

5.3.3 Measures of Variation

5.3.4 Measures of Asymmetry

5.3.5 Measures of Relationship

5.3.6 Simple Correlation and Regression Analysis

5.4 Analysis of Secondary data

Chapter Six: Interpretation and Report Writing

6.1 Meaning of Interpretation

6.2 Why Interpretation

6.3 Techniques of Interpretation

6.4 Precautions in Interpretation

6.5 Significance of Report Writing

6.6 Different Steps in Writing Report

6.7 Layout of Research Report

6.8 Types of Report

6.9 Oral Presentation

6.10 Precautions for Writing Research Report

6.11 Mechanics of Writing Research Report (The APA Citation Guide)

Chapter Seven: Research Ethics

7.1 The Principle of Voluntary Participation

7.2 Principles of Confidentiality and Anonymity

7.3 Researchers Should Obtain the Informed Consent of Subjects

7.4 Researchers Should Respect Subjects' Privacy

7.5 Researchers Should Avoid Conflicts of Interest

7.6 Ethical Reporting: The Whole Truth and Nothing but the Truth?

Chapter one

Foundation of Research

1. Meaning and nature of Social inquiry

- ❖ **Social Inquiry** refers to the search for an answer for *different human and natural experiences*; since ancient time human being has been searching for explanations for natural phenomena like **drought, earth quack, disease, famine, flood, the fluctuation of light and darkness as well as the nature of life and death**. The journey of human knowledge from the first sedentary society through the emergence of religion up to the modern Era is a journey of social inquiry from the darkest era to the era of science technology. **Thus, social inquiry** is to be understood as the phenomenological development of the method of knowing human and natural experiences.

1.1.Sources of Social Inquiry

Based on the justification for the acceptability of a given mode of inquiry social inquiry can be categorized in to **four** major typologies.

1.1.1. Time-Based Knowing: Traditional Knowledge

Knowledge accumulated and experience tested through cross-generational inheritance is one source of inquiry and knowledge. Every society before the advancement of scientific knowledge passes through this source of knowledge that serves as the bases for the emergence and advancement of **scientific knowledge**. Although *often misjudged as traditional and backward*, however, other than lack of complete measurement, rationality and explanation to actions prescribed by **time-based knowledge**, it has **pragmatic effectiveness**. *At times time-based knowledge happens to be more effective than scientific one and serve as entry point for scientific knowledge advancement.* Yet, there are dark corners to it that may cause harm to society. A case in point is the **knowledge of indigenous or traditional medicine**, despite its uncommon excellence that sometimes **overwhelms scientific medicine**, *due to lack of proper dose determination and antidote happens to cause harm to users*. Moreover, some time-based knowledge among others patriarchy, female genital mutilation, culture of violence and religious oppression etc, are to be considered to Harmful Traditional Practices which require change. The

careful and selective application of this source of inquiry is of **practical and theoretical development of knowledge**. Therefore, with proper caution, it can be considered as viable source of scientific inquiry.

1.1.2. Credential-Based Knowing: Authoritative Knowledge

This source of knowledge based on proven professional competence or accredited individuals who assumed to be dependable source of scientific research. *Certification of life and death by medical doctors, forensic (crime investigator) doctors, engineers and educators as well as various experts is few among instances of authoritative knowledge*. This is based on the assumption that *accredited sources are unbiased, rational and accountable to make personalized and unverified information*. However, this *does not mean that they are immune from abuse and biases* that, in undertaking research care must be taken to filter errors from the authenticity of information gathered from authoritative sources.

1.1.3 More Risky Knowledge Sources: Common Sense and Intuition

This category of source of knowledge is based on commonsense and institution that lacks both rational verification and time based knowledge. Most people depend on this source of knowledge in their day to day personal life, social and institutional affairs. **Pseudo-believes**, magic tricks, fortune telling, interpretation of bad and good omens are few among numerous examples of this category of sources of inquiry. Hence, **it is most risky and unreliable source of scientific inquiry**. However, as to why such views develop and their implications for society can be subject of scientific investigation.

1.1.4 Science as a Trustworthy Way of Knowing

Science is the systematic collection, analyses and interpretation information to draw rational, verifiable and dependable conclusions about ranges of phenomena. It is based on evidence, proof, correlation and causality the validity, dependability and consistency of which is the measurement of the quality of outcomes of science based inquiry. *It is the most trustworthy source for scientific research inquiry provided the unique characterizing requirements are qualified*. However, care must be taken not to *confuse and apply science as trustworthy source of inquiry for everything*; because there are some categories like religion and mysticism

unverifiable with whatsoever scientific method and others like the secret of the unexplored realm of *UFOs (Unknown Flying Objects which religion calls them spirits)* and other solar systems are dark corners of science that using science as the most trustworthy source of inquiry too requires careful application.

1.2. Meaning and characteristics of research

As an organized & systematic scientific inquiry research has some common characteristics features across different professions. This part is also committed to acquaint you with some common features of research in addition to defining it.

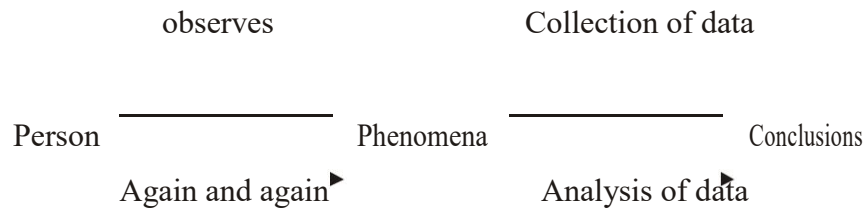
Research activities are conducted in almost all professions. As you might know, all professions have pre-existing constructed knowledge based on which their students specialize. However, the search for knowledge is an unending process and that is why people in different professions engage themselves in scientific inquiries and search answers for them. *The main purpose of scientific inquiry is to understand, explain & critically examining observed realities, seeking solutions to problems, construction of new theories and testing hypothesis.* These all activities are related in one or another way with searching **for truth and new facts.**

At times we might involve in searching for truths and facts in our daily lives but does it mean we are conducting research in its actual scientific meaning?. The response to this question may help us to differentiate between the inquiries that we made in our daily lives and the procedures followed to obtain answers to them, and scientific inquires & investigations.

The term ‘Research’ consists of two words:

Research = Re + Search

‘Re’ means again and again and ‘Search’ means to find out something, the following is the process:



❖ **The research** is a process of which a person observes the phenomena again and again and collects the data and on the basis of data he draws some conclusions. Research is oriented towards the discovery of relationship that exists among phenomena of the world in which we live.

The fundamental assumption is that invariant relationship exists between certain antecedents and certain consequents so that under a specific set of conditions a certain consequents can be expected to follow the introduction of a given antecedent.

🚦 According to Rusk

Research is a point of view, an attitude of inquiry or a frame of mind. It asks questions which have hitherto not been asked, and it seeks to answer them by following a fairly definite procedure. It is not a mere theorizing, but rather an attempt to elicit facts and to face them once they have been assembled. **Research** is likewise not an attempt to bolster up pre-conceived opinions, and it implies a readiness to accept the conclusions to which an inquiry leads, no matter how unwelcome they may prove. When successful, research adds to the scientific knowledge of the subject.

🚦 According to George J. Mouly

He defines research as, “The systematic and scholarly application of the scientific method interpreted in its broader sense, to the solution of social studiesal problems; conversely, any systematic study designed to promote the development of social studies as a science can be considered research.”

According to Francis G. Cornell

“To be sure the best research is that which is reliable verifiable and exhaustive, so that it provides information in which we have confidence. The main point here is that research is, literally speaking, a kind of human behaviour, an activity in which people engage. By this definition all intelligent human behaviour involves some research.”

“In social studies, teachers, administrators, or others engage in ‘Research’ when they systematically and purposefully assemble information about schools, school children, the social matrix in which a school or school system is determined, the characteristic of the learner or the interaction between the school and pupil.”

According to Clifford Woody of the University of Michigan

He writes that in an article in the Journal of Social Studies Research (1927), **research** is a carefully inquiry or examination in seeking facts or principles; a diligent investigation to ascertain something, according to Webster’s New International Dictionary. This definition makes clear the fact that research is not merely a search for truth, but a prolonged, intensive, purposeful search. In the last analysis, **research constitutes a method for the discovery of truth which is really a method of critical thinking.** It comprises defining and redefining problems; formulating hypotheses or suggested solutions; collecting, organizing and evaluating data; making deductions and reaching conclusions; and at last, carefully testing the conclusions to determine whether they fit the formulating hypotheses.

According to C.C. Crawford

He writes that “**Research** is simply a systematic and refined technique of thinking, employing specialized tools, instruments, and procedures in order to obtain a more adequate solution of a problem than would be possible under ordinary means. It starts with a problem, collects data or facts, analysis these critically and reaches decisions based on the actual evidence. It evolves original work instead of mere exercise of personal. It evolves from a genuine desire to know rather than a desire to prove something. It is quantitative, seeking to know not only what but how much, and measurement is therefore, a central feature of it.”

🚩 **John W. Best** thinks, “**Research** is considered to be the more formal, systematic, intensive process of carrying on the scientific methods of analysis. It involves a more systematic structure of investigation, usually resulting in some sort of formal record of procedures and a report of results or conclusions.”

“**Research** is but diligent search which enjoys the high flavor or primitive hunting.”– *James Harvey Robinson*

“**Research** is the manipulation of things concepts or symbols for the purpose of generalizing to extend, correct or verify knowledge, whether that knowledge aids in the practice of an art.”– *Encyclopedia of Social Science* “**Research** is a systematized effort to gain new knowledge.”– *V. Redman and A.V.H. Mory*.

🚩 **According to C. Francies Rummel**

“**Research** is an endeavor to discover, develop and verify knowledge. It is an intellectual process that has developed over hundreds of years, ever changing in purpose and form and always searching for truth.”

The term **research** is composed of two other terms ‘**re**’ and ‘**search**’. The dictionary meaning for “**re**” is “**again**”, “**a new**” or “**over again**”, and for that of “**search**” is; ‘**examine closely and carefully**’, ‘**to test and try**’ or ‘**to probe**’. Combined together it gives the meaning a

careful, systematic, patient study and investigation in some field of knowledge, undertaken to establish facts or principles. (Kumar, 2005)

Scientific research is not an abrupt or accidental situation rather it is an organized, systematic and logical process of inquiry that uses empirical observation to resolve problems and test hypothesis. Therefore, there is great difference between research and non-research activity in searching for truth & facts, or finding answers to questions. The process must meet certain requirements to be called research. It should go through certain conventional procedures that have been used before & tested for their reliability. (Punch, 2006; Kumar, 2005)

This is why most scholars emphasize on the application of scientific procedures and the search for new facts in defining what research is. Let us see how some prominent scholars defined it; According to Perlinger (n.d) research is “a systematic, controlled, empirical and critical investigation of propositions about the presumed relationships among natural phenomena.” This implies that, there could be simply observed a phenomenon that has to be tested scientifically than simply assuming some unverified facts about it.

On the other hand to Helmstadter (n.d) “Research is the activity of solving problems that leads to new knowledge using methods of inquiry which are currently accepted as adequate by scholars in the field.” The above two definitions generally imply that, research is a structured inquiry that utilizes acceptable scientific methodology to solve problems and create new applicable knowledge.

Very simply stated, **research** could be conceived as the collection of information needed to answer a question that can help you solve a problem. But it is a formal, systematic and intensive data collection accompanied with employing scientific analysis of the raw obtained data.

The systematic collection and analysis of data may finally result in the development of generalizations, principles, theories, predictions and generally new knowledge & solution to

- ❖ Scientific investigation or research follows some logical steps. This makes the process a well thought and planned activity than abrupt and accidental.

- ❖ **For an investigation to qualify a scientific inquiry it has to go through:**

1. Recognition or awareness of a problem
2. state a research question/s
3. systematic collection of reliable and dependable data
4. Systematic organization of the data
5. logical and scientific analysis of the data obtained
6. interpretation of data
7. Report writing

In this regard the collection of an already available data may not be considered as research because it adds very little to the already existing stock of knowledge. Using an already available data or information to a new end can be considered as a research activity. Research is thus an original contribution to the existing stock of knowledge making for its advancement. In short it searches for knowledge by employing objective and systematic method.

❖ ***What basic characteristics features do you know about research?***

- Research can be considered as a chain of reasoning beginning at problem formulation proceeding through investigation & ending with findings. The whole process involves scientific methods and procedures.
- Research is aimed at solving problem. **No research** is conducted without identifying a problem. Therefore all good research is aimed at solving some type of problem. If a problem is already investigated and sufficient answer is available to it currently there is no need to conduct research on it. Conducting research becomes necessary when;
 - There is no data to investigate on a research problem
 - There may be some data but insufficient
 - There may be some data but incorrect & less reliable
- A good research adds new knowledge on the already available knowledge & it enables to make generalizations. The dissemination of an already existing knowledge could not be considered as research. Therefore, research has to fill gap in the existing knowledge.
- It is a rigorous process whereby the procedures followed to find answers to questions are relevant, appropriate & justified. Therefore, it should follow carefully designed procedures.

- It is a systematic process whereby the procedures used to make an investigation should follow a certain logical sequence. It should start at some point, go through logical steps & end somewhere.
- It is valid and verifiable in that whatever is concluded based on one's own findings has to be correct and can be verified by other people following the same procedure.
- It is empirical in that research is based on observable experience and findings should be based on hard evidence in real life experience. Therefore it requires collection of original data from primary sources or the use of existing data to a new aim.
- Objectivity and un-biasdness: research requires precise observation and description of observed facts. The prevalence of subjectivity or biasedness critically degrades the outcome of a research study and reduces its applicability to real life situation.

A purpose of social Science research serves many purposes. Three of the most common and useful purposes, however, are exploration, description, and explanation. Many studies can and often do have more than one of these purposes, however each have different implications for other aspects of research design.

1.2.1. Methodological approaches in Social science research

We have different methodological and philosophical approach in conducting social science research. These approaches have their own assumptions on how to study human behavior. Among this the positivist approach is originated from **the physical sciences** and mainly **emphasizes numerical analysis** to study social behavior, on the other hand there are also the **Positive, interpretive and critical approach** holding their own philosophical assumptions.

A. Positivist approach

The positivist approach has its origin from the physical sciences and later extended in to the social sciences. Two earlier social scientists; the French scholar Augusta Comte (1789-1857) and Emile Durkheim (1858-1917) encouraged the use of positivist approach in social science research to study social behavior.

The main intent of a positivist approach is that social sciences should adopt the methods used in physical sciences to study social behavior.

This approach requires social researchers to treat and analyze social facts objectively as the physical scientists treat numbers and data. For this approach social facts have their own patterns or regularities in societies and they can be studied by means of numbers and statistics. For instance the rate at which rape is committed, the rate at which people become addicted to drugs, rate of suicide committed etc... Therefore, numbers and the tools that are used to analyze them got much attention in this approach than analyzing social phenomena in their underlying subjective reality.

For positivists science refers to “an objective, logical and systematic method of analysis of phenomena, devised to permit the accumulation of reliable knowledge.” Therefore, **an objective approach** is necessary to minimize bias, to promote impersonality and opinions. Systematic approach must be organized that makes use of statistical analysis. They try to understand overall patterns of human activity in its objective setting and mathematical precision has greater value. Subjective interpretation of social realities and individual perceptions are of little value to positivists.

For them research should be value free. Researchers should avoid their personal values and perceptions a side to reduce their influence on the final outcome. Positivists mainly use experiments, surveys and secondary data as a research design and they give much place to numerical analysis then verbal descriptions.

❖ Criticisms.

- a. Purely value free research is unattainable researchers can not totally avoid their expectations and biases to influence the research outcomes.
- b. The positivists neglect the fact that individuals may perceive similar things in different way, since they recommend objective interpretation of social realities. But the social world can be alternatively explored from its subjective dimension.

B. The interpretive approach

Unlike the positivist the interpretive approach emphasizes on the importance of subjective interpretation that individuals give to their action and to the actions and reactions of others. This approach recommends researchers to imagine how individuals perceive social actions, how do they feel? What meaning do they attach to particular events? etc... Therefore, their emphasis is not on the objective study of social patterns but on how individuals perceive social actions.

It also examines how people make sense of their lives & how they define their situation because they are influenced by how they see themselves and how others see them. This implies that, for this approach values are relative or subjective based on specific social experiences & socialization. The definition that we give to social actions varies across societies and time, which means we cannot give objective judgments.

Researchers in this approach mainly rely on field studies like participant observation, in depth interviews and case studies. They focus on few cases and their detailed description. After conducting research results are communicated through verbal description rather than numerical analysis.

If you are asked how you do criticize this approach?

- Some scholars argue that, all values could not be equally valid as argued by the interpretive approach.
- Their emphasis on specific cases & field studies do not enable these researchers to make clear generalizations to other similar cases.
- Since they emphasize on individual cases they could not analyze social patterns. For instance, we cannot generalize on interactions among social groups by studying individuals.
- Emphasis on individual cases leads to knowing more about lesser/narrower events.

C. The critical approach

For these theorists certain values are correct while others are not. So their judgment towards values is absolute. This simply means that values can be out rightly judged as good or bad giving little consideration to individual and cultural differences.

They also believe that human beings are composed of groups where by powerful groups impose their interests over less powerful one. **For instance males' dominance over females.** They argue that, human interactions are characterized by conflicts. Based on this they recommend that

research outcomes by social scientists should result in bringing social justice and their research directed more towards social problems. The fundamental goal of this approach therefore, is to bring about social justice and equality.

In their methodology since they are interested in inter group interactions they usually use historical materials, pay particular attention to comparative studies and analyses of secondary data. Research outcomes and explanations are judged as valid if they could improve life condition of humanity and encourage social justice and equality. This implies that this approach has strong practical orientation.

❖ **Which approach is correct & results in good research outcome based on your own judgment?**

We cannot say that one of these approaches is best & leads to best research outcome. Each approach plays its own role to increase our understanding of human behavior. We cannot disregard or reject any of them for each is valuable in adding more knowledge to us about human behavior.

❖ **Philosophical Paradigm and Interpretive Frameworks**

Every research brings their own worldviews, paradigms, or sets of beliefs to the research project, and these inform the conduct and writing of the quantitative, qualitative, qualitative or mixed study. This carries five philosophical assumptions lead to an individual's choice of research design: **ontology, epistemology, axiology, rhetorical, and methodological assumptions**. This includes answering the following questions:

- What philosophical assumptions are being implicitly acknowledged?
- What alternative paradigm stances are they likely to use?
- What interpretive or theoretical frameworks are they likely to use?
- In the practice of designing or conducting research, how are assumptions, paradigms, and interpretive and/or theoretical frameworks used?

❖ **Philosophical Assumptions**

In the choice of a research design, inquirers make certain assumptions. These philosophical assumptions consist of a stance toward the nature of reality (**ontology**), how the researcher knows what she or he knows (**epistemology**), the role of values in the research (**axiology**), the language of research (**rhetoric**), and the methods used in the process (**methodology**) (Creswell, 2003).

These are summarized in the table below.

Table 1.1 Philosophical Assumptions With implications for practice			
<i>Assumption</i>	<i>Question</i>	<i>Characteristics</i>	<i>Implications for practice(Examples)</i>
Ontological	What is the nature of reality?	Reality is subjective and multiple, As seen by Participants in the study	Researcher uses Quotes and themes in worlds of participants and provides evidence of different perspective

Epistemological	What is the relationship between the researcher and that being researched?	Researcher attempts to lessen distance between himself or herself and that being researched	Researcher Collaborates, spends Time in field with Participants, and becomes an “insider”
Axiological	What is the role of values?	Researcher acknowledges that research is value laden. And that bases are present	Researcher openly discusses values that shape the narrative and include his or her own interpretation in conjunction with the interpretations of participants
Rhetorical	What is the language of research?	Researcher writes in a literary, informal style using the personal voice and use qualitative terms and limited definitions	Researcher uses an engaging style of narrative, may use first-person pronoun, and employs the language of qualitative research
Methodological	What is the process of research?	Researcher uses inductive logic, studies the topic within its context, and uses an emerging design	Researcher works with particulars(details) before generalizations, describes in detail the context of the study, and continually revises questions from experiences.

❖ The three Dimensions of Scientific Inquiry

Different philosophical assumptions about the nature of **reality**, **epistemology**, **values**, **the rhetoric** (speech or writing to influence others which is not honest and sincere) of research and methodology (Creswell, 1994) affect nature of research.

❖ Several developments in the last decade have caused a reexamination of this stance.

- To include only quantitative and qualitative methods falls short of the major approaches being used today in the social and human sciences. Mixed methods research has come of age.
- Although philosophical ideas remain largely “hidden” in research they still influence the practice of research and need to be identified.
- The situation today is less quantitative versus qualitative and more how research practices lie somewhere on a continuum between the two (e.g., **Newman and Benz, 1998**). The best that can be said is that studies tend to be more quantitative or qualitative in nature. Yet, the typical scenarios of quantitative, qualitative, and mixed methods research have to be equally considered.
- Finally, the practice of research (such as writing a proposal) involves much more than philosophical assumptions. Philosophical ideas must be combined with broad approaches to research (Strategies) and implemented with specific procedure (methods). Thus, a framework is needed that combines the elements of philosophical ideas, strategies, and method into the three approaches to research.

In crafting the framework of combination in designing a research proposal, the following four questions have to be considered:

1. **What epistemology** --- theory of knowledge embedded in the theoretical perspective --- informs the research (e.g., objectivism, subjectivism, etc.)?
2. **What theoretical perspective** --- philosophical stance-lies behind the methodology in questions (e.g., objectivism, subjectivism. etc)?
3. **What methodology** -- strategy or plan of action that links methods to outcomes --- governs our choice and use of methods) e.g., experimental research, survey research, ethnography, etc.)?
4. **What methods** -- techniques and procedures --- do we propose to use (e.g., questionnaire, interview, focus group, etc).

These four questions show the interrelated levels of decisions that go into the process of designing research. Moreover, these are aspects that inform a choice of approach, ranging from the broad assumptions that are brought to a project to the more practical decisions made about how to collect and analyze data.

Alternative knowledge Claims

Setting a knowledge claim means that researchers start a project with certain assumptions about how they will learn and what they will learn during their inquiry. These claims might be called paradigms (Lincoln and Guba, 2000; Martens, 1998); or broadly conceived research methodologies (Neuman, 2000). Philosophically, researchers make claims about what is knowledge (ontology), how we know it (epistemology), what values go into it (axiology), how we write about it (rhetoric), and the processes for studying it (methodology) (Creswell, 1994).

❖ The summary is provided in the table below

Philo. Assumptions	<i>Alternative knowledge Claims and Designs</i>					
	Quantitative		Qualitative		Mixed (Triangulation)	
	Positivism	Post posit.	Social cons	Advocacy	Pragmatism	Interpretation
Ontology	objective	less/more	Subjective	Subjective	Subjective	Subjective

		object				
Epistemology	Impersonal	Less Impersonal	Personal	V. Personal	Conditional	Conditional
Axiology	Value free	Relatively VF	Value Laden	Value Laden	Conditional	Conditional
Theoretical	Objective	Relatively Obv	Subjective	Subjective	Conditional	Subjective
Methodology	Deductive	Deductive	Inductive	Inductive	Conditional	Inductive
Method	Expt or Survey Qntv Qnr	Expt or Survey Qntv Qnr	Ethnography, Qltv interview FGD, Observn	Qltv interview FGD, Observn	Conditional	Document analyses, Qltv interview FGD, Observn
Rhetoric	Formal	Formal	Literary	Literary	Conditional	Literary

1.3.Important distinctions about research

How we can classify research studies and the basis for their classification. For instance, based on **the mode of inquiry** and **how data analysis is conducted** a research study can be classified as **qualitative or quantitative** on the other hand based on **its function or application** it can be classified as **basic (pure) and applied research**. Moreover, based on **the objectives** that the research tries to achieve it can be further classified as **Descriptive and Exploratory, and correctional & explanatory**. In this part you will be introduced with these all classifications. Note that these categories are not exhaustive since other classifications might exist **like ethnographic, historical, evaluative** etc...However; the above categories are much more relevant to your discipline.

1.3.1. Qualitative versus quantitative research

The qualitative and quantitative types differ from each other mainly in terms of **the process** a researcher adopted to find answers to his questions. The difference lies on the degree to which

the research study is analyzed by converting observations in to numbers. The two types also differ based on the **type of questions asked, the type of data (evidence) used and the method used to process (analyze) the data.**

Based on this quantitative research is a type of research that usually applies the use of numbers to quantify the variation in a **phenomenon, situation, problem or issue**. It emphasizes precise **measurement and the testing of hypotheses based on statistical and numerical** analysis of data. Usually quantitative researches are much more structured in terms of the instruments used & the questions to be asked **than qualitative researches**. In the later case the field situation may determine how to collect data or what by type of questions are to be asked. In this case, the quantitative researcher attempts to describe relationship among variables mathematically.

Data is also usually gathered by using structured research instruments like questionnaire.

The analysis of data is usually conducted by means of numerical application & mathematical formulas. Therefore, great variety of statistical procedures is available to a quantitative research and it is important to learn which procedure is more applicable to which research problem. Therefore generally in quantitative research; Data is available in the form of numbers. Data is gathered by using structured instruments. The researcher is objective that giving less attention to behavior, attitudes & motivation of its respondents.

On the other hand qualitative research has more focus on describing a situation, phenomenon, problem or event than quantifying it. It is concerned with verbal description and explanation of human behavior. Instead of quantifying situations or events it emphasizes on detailed descriptions of how people understand and explain their own world. So it gives due attention to behavior, motivation & attitude of people. The tools that are used to collect data may not be well structured. It uses tools like an in depth interview, participant observation or an in depth analysis of individual case.

Data analysis do not require statistical procedures or in depth mathematical analysis.

Rather findings are typically expressed by quoting interviews from respondents or describing what the researcher experienced during field observation. More subjectivity may be reflected in

qualitative research since the judgment of the researcher matters in collecting and analyzing data with less application of structured instruments and mathematical methods.

❖ **Which type of research ensures good research outcome? *Qualitative or quantitative?***

Both qualitative and quantitative researches have their own advantages and disadvantages. It is recommended that nobody has to simply attach to one of these methods. Since neither are superior to the other. Even many studies require combining both methods. Generally the research problem should determine whether the study is carried out by **quantitative or qualitative methods**.

1.3.2. Applied versus basic research

Researches can also be classified based on the functions that they are going to serve or their mode of application to practical situations on the ground.

The main aim of basic or pure research is the development and testing of theories & hypotheses that could be intellectually very much important but with less practical application currently or in the future. It is a systematic and creative research conducted with the basic aim of increasing scientific knowledge. Therefore, it deals with **very abstract and specialized concepts having lesser applicability**. For instance developing an instrument for the best way of *measuring people's attitude, developing a new sampling technique to conduct a specific type of research, studying monkey's behavior in its relation with humans* etc. can be categorized as **basic research**.

In applied (field) research the main aim is to find a solution to a specific research problem/question. It is also aimed at increasing scientific and technological knowledge, but with the primary aim of applying it to the real world situation and resolving practically existing problems on the ground. In this case, **basic research searches** knowledge for the sake of knowledge where as **applied research** wishes to have an impact on some specific issues or problems on the ground. The information gathered & the outcome of the research is used in many other ways like policy formulation, administration, changing real world situation like teaching methodology, method of production etc...

1.3.3. Descriptive versus co-relational research

Mainly the distinction between these two types is done based on the objective that research aspires to attain. For instance if the research is designed to simply describe *a situation problem, phenomena, an organization, a certain region etc...* the research is **classified as descriptive**. **Descriptive research** has the primary concern of accurately describing a certain phenomena or situation as it is available in its real world situation. For instance, describing the functions of Ambo University Woliso Campus, what is its administrative structure, how many programmes are opened in distance education, how many academic staff does the Campus have etc... tells simple **description of facts about a certain organization**.

However, on the other hand co-relational research is conducted to identify the existence of relationships, association, and interdependence between two or more aspects of a situation. For instance, if somebody asks what is the influence of academic staff composition of Ambo University Woliso Campus over the quality of distance education, what is the relationship between the organizational structure of Ambo University Woliso Campus & the services provided to distance students, how does advertisement influences the sale of a product etc... could serve as examples of co-relational research.

There is also another category which is called as **explanatory research**. This type of research *focuses on why and how there is a relationship between two aspects of a situation or phenomenon*. For instance *why staff composition of Ambo University Woliso Campus affects the quality of distance education, why smoking causes lung cancer, how parental behavior affects children behavior etc... are examples of explanatory research*.

Finally there is also a type of research which is called as **exploratory**. The main objective of such type of research **is to explore an area which is known very little by the researcher and other people**. It is also used to investigate an area to decide whether research study can be conducted in that area or not. Therefore, it is a kind of feasibility study before launching a full scale research study. As the name itself indicate its main task is to explore and make a small scale study before going in to the main task of conducting a full scale research

1.4.The successive stages in conducting research (the research process)

A research process consists of a series of actions or steps necessary to effectively carry out research and the desired sequencing of these steps. In conducting a research you may need to

decide on two basic issues. One is what you would like to study about or which problem do you like to deal with, and the other is how to go about to study the problem and come up with findings. The first steps tell you about your research problem & the questions that you raised where as the second is what method to follow in addressing the inquiry. To accomplish this you should go through other detailed activities which are parts of the research process. These steps are not as **such mutually exclusive or one may overlap over the other. *The sequence of these steps is not also absolute.*** They may not necessarily follow from each other in any specific order since the researcher anticipates the subsequent stages while conducting the earlier one. Anyways a researcher may follow the following steps;

what do you think is the first step in conducting research?



1. Problem identification

The first step in initiating a social research is to perceive a problem. It is a researcher's perception or recognition of a problem that motivates research. A researcher should decide what he/she wants to find out about because; the direction of where the research is going is mainly determined by the research problem.

The other aspects of the research process like the study design, the sampling strategy, the style of writing and others are influenced by the research problem. If a problem is clear and specific it would be simple to deal with.

2. Formulating a research design

The very crucial step in conducting a research is to determine the appropriate method to come up with reliable findings. The strength of what the researcher finds significantly depends on how it was found. Therefore, clear explanation has to be given on the closest appropriate method identified. At this stage a researcher decides on the study design, the method of data

collection, the sampling strategy, the method of analysis and others. Ill-designed research would not enable to come up with reliable & valid findings (findings based on empirical data that are collected using appropriate methods and analyzed with scientific tools), which is the whole purpose of conducting a research. This shows that a researcher has to be over cautions in selecting his design.

3. Developing instruments for data collection.

At this stage a researcher develops what is called as ‘**a research tool**’ or ‘**a research instrument**’. Any data collected for the purpose of a research is to be collected by using these **research tools**. These research tools mainly include *questionnaires, interview schedules, interview guides, observation forms and others*. *What kinds of instruments are more applicable depends on the type of design selected and based on the kind of data needed to address the research problem.*

4. Selecting sample.

The first step in selecting sample is identifying the target population on which the study is to be conducted. This step also needs to consider as **to what kind of sampling procedure** enables to get representative amount of sample from the total population. Whether the amount of sample selected is representative of the whole population or not determines the reliability of the data collected. Therefore, the researcher still has to be very careful in selecting the sampling technique.

5. Writing a proposal

Before launching the actual practical task of collecting data a researcher need to put all the above stated activities in to a research plan called **proposal**. It gives a detailed explanation on the research problem and the methods that are designed to deal with it.

Generally it is an operational plan based on which any professional verifies the validity of the **methods used to address the problem**. There may not be a universally agreed up on components of a research proposal since it differs from one institution to the other, across disciplines and even individual professional (advisors)

6. Data Collection

At this stage the research tools that were developed previously play vital role in collecting the necessary data. By making use of the instruments the researcher **collects the data**. The method of data collection had already been decided at **the stage of research design**.

7. Data analysis

After collecting data from the field a researcher has **to process and analyze them in order to arrive at certain conclusions**. The analysis may *combine qualitative or quantitative or both types depending on the research problem & the method used to obtain data*. The analysis could be done either manually or by using computer programs. **Qualitative analysis** may involve description of what has been observed in the field situation where as **quantitative analysis** uses various statistical methods from which the researcher has to select the appropriate one.

8. Writing the research report.

Writing the report is the final step of conducting a research. This is the step at which a researcher communicates his findings to others. The organization of the report writing and the extent to which it is clear determines whether other people understand what has been done in the whole process. **Clarity & organization** enables other people to comprehend & make use of the discovery and conclusions reached.

❖ The sequential steps of conducting a research and their vitality.

1.6. Selecting and Planning Research Project

1.6.1. Defining the Research problem

After having provided a broad introduction to the area under study, now focus on issues relating to its **central theme**, identifying some of the gaps in the existing body of knowledge. Identify some of the main unanswered questions. Here, some of the main research questions that you would like to answer through your study should also be raised, and a **rationale (justification)** for each should be provided. **Knowledge gained from other studies and the literature** about the issues you are proposing to investigate should be an integral part of this section.

❖ Specifically, this section should:

- Identify the issues that are the basis of your study
- Specify the various aspects of/ perspectives on these issues

- Identify the main gaps, if there is any in the existing body of knowledge
- Raise some of the main research questions that you want to answer through your study
- Identify what knowledge is available concerning your questions, specifying the difference of opinions in the literature regarding these questions if differences exist
- Develop a rationale for your study with particular reference to how your study will fill the identified gaps

A **research problem** is like the foundation of a building. The type and design of the building is dependent upon the foundation. If the foundation is well designed and strong you can expect the building to be also. The research problem serves as the foundation of a research study: If it is well formulated, you can expect a good study to follow.

? What need to be considered in selecting a research problem?

When selecting a research problem there are a number of considerations to keep in mind:

- **Interest-** interest should be the most important consideration in selecting a research problem.
- **Magnitude-** You should have sufficient knowledge about the research process to be able to visualize the work involved in completing the proposed study.
- **Measurement of concepts-** If you are using a concept in your study, make sure you are clear about its indicators and their measurement.
- **Level of expertise-** make sure you have an adequate level of expertise for the task you are proposing.
- **Relevance-** Select a topic that is of relevance to you as a professional.
- **Availability of data-** If your topic entails collection of information from secondary sources, before finalizing your topic, make sure that these data are available and in the format you want.
- **Ethical issues-** How ethical issues can affect the study population and how ethically examined at the problem formulation stage.

❖ Research questions or research problems?

Some writers tend to focus on the research **question as central**. By contrast **some writers** tend to focus **more on the ‘problem behind the research’**, or **on research problems**, rather than on **research questions**. Thus, **proposal writing** includes *the entire process of assessing the nature*

of the problem, developing solutions or programs to solve or contribute to solving the problem, and translating those into proposal format. This approach makes **research questions central**.

Thinking about research in terms of research questions is a more general approach, which can be used in naturalistic research (it studies the world ‘as it is’ without manipulating the situation being studied), basic and applied research. A problem, as something requiring a solution, can always be phrased as questions. Likewise a question, as something requiring an answer, can always be phrased as a problem.

❖ ***What is research question?***

The point about this section is to tell the reader what questions the research is trying to answer or what questions will initiate the inquiry in an unfolding study. This section is often what proposal readers turn to and concentrates on first, in order to get as clear picture as possible of the purpose of the research. It also applies that an emerging, unfolding type of study needs to indicate here what general questions will initiate the research, and how they might be refocused and refined as the study progress.

For example, if you are planning to conduct a research on ‘**factors associated with the incidence of youth suicide**’, **your research questions would be:**

- What is the relationship between family income and the incidence of youth suicide?
- What is the relationship between parental break-up and the incidence of youth suicide?

1.6.2. Selecting a Research Topic

Defining the problem is the first step and one of the most difficult in research undertaking. There is a tendency for the beginner in research to ask questions that are usually diffuse or vague. Each topic that is proposed for research has to be judged according to certain guidelines or criteria. There may be several ideas to choose from. Before deciding on a research topic, each proposed topic must be compared with all other options.

❖ **The guidelines or criteria discussed on the following can help in this process:**

❖ **Criteria for selecting a research topic:**

- ✓ Relevance/Significance
- ✓ Avoidance of duplication
- ✓ Urgency of data needed (timeliness)

- ✓ Feasibility of study
- ✓ Applicability of results
- ✓ Interest to the researcher
- ✓ Ethical acceptability

1.6.3. Reviewing Literature

❖ *What is literature review?*

The literature review is an integral part of the entire research process and makes a valuable contribution to almost every operational step. It has value even before the first step; that is, when you are merely thinking about a research question that you may want to find answers to through your research journey. It is therefore part of the researcher's responsibility to deal with such questions as:

- What literature is relevant to the research?
- What is the relationship of the proposed study to its relevant literature?
- How will the proposed study deal with the literature? In particular, how will the argument in the proposal use the literature?

❖ **Reviewing literature helps you to:**

- **Bring clarity and focus to your research problem.** The literature review can play an extremely important role in shaping your research problem because the process of reviewing the literature helps you to understand the subject area better and thus helps you to conceptualize your research problem clearly and precisely.
- **Improve your methodology** – A literature review tells you if others have used procedures and methods similar to the ones that you are proposing, which procedures and methods have worked well for them, and what problems they have faced with them.
- **Broaden your knowledge base in your research area.** The most important function of the literature review is to ensure you read widely around the subject area in which you intend to conduct your research study. It also helps you to understand how the findings of your study fit into the existing body of knowledge.
- **Contextualize your findings.** Obtaining answers to your research questions is comparatively easy: the difficult part is examining how your findings fit into the

existing body of knowledge. Placing your findings in the context of what is already known in your field of inquiry is important.

❖ **Procedure for reviewing the Literature**

❖ ***What are the procedures for reviewing the literature?***

If you don't have a specific research problem, you should review the literature in your broad area of interest with the aim of gradually narrowing down to what you want to find out about. After that the literature review should be focused around your research problem.

❖ **There are four steps involved around in conducting a literature review:**

➤ **Search for existing literature in your area of study.**

To effectively search for literature in your field of inquiry, it is imperative that you have in mind at least some idea of the broad subject area and of the problem you wish to investigate, in order to set parameters for your search. The main sources for identifying literature are books and journals.

➤ **Review the literature selected**

Now that you have identified several books and articles as useful, the next step is to start reading them critically to pull together themes and issues that are associated. A good literature review is much more than a summary of relevant literature. **While summarizing literature is important**, your review should go beyond mere summarizing in two main respects. **First**, reviewing literature requires the building of an argument. This, in turn, requires a synthesis of the literature, not merely a summary of it. **Second**, your review is expected to be critical, especially with respect to research literature. This means routinely examining and critiquing the methods used in reported research, with special reference to the generalizability (quantitative) or transferability (qualitative) of research findings.

❖ **In general**, in reviewing literature, be careful not to:

- ✓ **Quote in excess-judgment- experience and the reactions of supervisor(s)** about the amount of quoting are useful, but too many direct quotes, or direct quotes that are too long, ***raise doubts about your mastery of the literature.***
- ✓ **Rely too much on secondary sources**-At this level of work, you are expected, where possible, to study primary sources. Secondary sources are acceptable where the primary

source is not available or accessible or where the secondary source adds significantly to the discussion.

- ✓ **Give into the temptation** to include and report everything you know or have read. Your review needs to be selective, on an appropriate basis.

➤ **Develop a theoretical framework**

Examining the literature can be a never-ending task, but as you have limited time it is important to set parameters by reviewing the literature in relation to some main themes pertinent to your research topic. The information obtained from different books and journals now needs to be sorted **under the main themes, theories, highlighting agreements and disagreements among the authors and identifying the unanswered questions or gaps**. You will also realize that the literature deals with a number of aspects that have **a direct or indirect bearing** on your research topic. Use these aspects as a basis for developing your theoretical framework. Your review of the literature should sort out the information within this framework. Unless you review the literature in relation to this framework, you will not be able to develop a focus in your literature search; that is, your theoretical framework provides you with a guide as you read.

➤ **Develop a conceptual framework**

The conceptual framework stems from the theoretical framework and concentrates, usually, on one section of that theoretical framework which becomes the basis of your study. The latter consists of the theories or issues in which your study is embedded, whereas the former describes the aspects you selected from the theoretical framework to become the basis of your inquiry.

1.6.4. Hypotheses, Variables, concepts, indicators, and measurement

❖ ***What is hypothesis?***

A **hypothesis** is a statement of your assumptions about the prevalence of a phenomenon or about a relationship between two variables that you plan to test within the framework of the study. Hypothesis brings clarity, specificity and focus to a research problem, but in social science, researchers rarely use hypothesis.

- ❖ **There are a number of considerations to keep in mind when constructing a hypothesis**, as they are important for valid verification:

- ***A hypothesis should be simple, specific and conceptually clear.*** There is no place for ambiguity in the construction of a hypothesis, as ambiguity will make the verification of your hypothesis almost impossible. For example, in the hypothesis “The average age of the male students in this class is higher than that of female students”, it tells you what you are attempting to compare (average age of this class), which population groups are compared (female and male), and what you want to establish (higher average age of the male students). Hence, the above hypothesis is clear, specific and easy to test.
- ***A hypothesis should be capable of verification.*** Methods and techniques must be available for data collection and analysis.
- ***A hypothesis should be related to the existing body of knowledge.*** It is important that your hypothesis emerges from the existing body of knowledge, and that it adds to it, as this is an important function of a research.
- ***A hypothesis should be operational sable.*** This means that it can be expressed in terms that can be measured.

❖ **Identification of Variables**

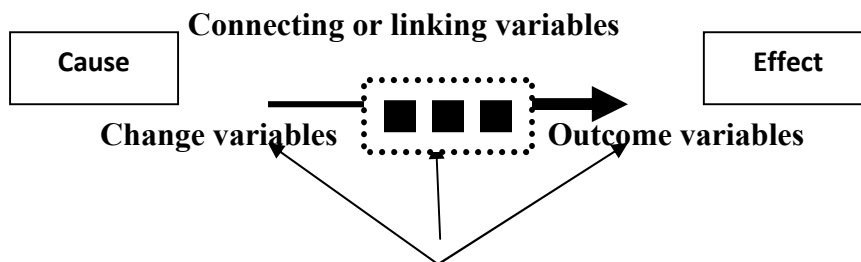
❖ ***What is Variable?***

- ❖ **Variables** refer to an image, perception, or concept that is capable of measurement, hence, capable of taking on different values. In other words, a concept that can be measured is called a **variable**.

❖ ***What are types of variable?***

1. **Independent Variable**- the cause supposed to be responsible for bringing about change(s) in a phenomenon or situation.
 2. **Dependent Variable**-the outcome of the change(s) brought about by introduction of an independent variable
 3. **Extraneous Variable**-Several other factors operating in a real life situation may affect changes in the dependent variable
 4. **Intervening Variable (confounding variable)** links the independent and dependent variables.
- The following figure shows a causal relationship or association, of the four sets of variables

Figure 1 Types of variables in a causal relationship



❖ Variables that affect the relationship

For example, suppose you want to study the relationship between smoking and cancer. Studies have shown that there are many factors affecting this relationship, such as the number of cigarette or the amount of tobacco smoked every day; the duration of smoking; the age of the smoker; dietary habits; and the amount of exercise undertaken by the individual. *All of these factors may affect the extent to which smoking might cause cancer.*

Thus, in the above example the extent of smoking is the independent variable, cancer is the dependent variable and *all the variables that might affect this relationship, either positively or negatively, are extraneous variables.*

Chapter Two

Research Designs Strategies and Research Methodologies

Introduction to Methods: Quantitative, Qualitative and Mixed

In any form of research, you will be required to either count things and or talk to people. We can broadly classify research methods using this distinction. These three types of research method and their output data are classified as: **Qualitative, Quantitative and Triangulation**

Quantitative: as the name suggests, is concerned with trying to quantify things; it asks questions such as 'how long', 'how many' or 'the degree to which'. Quantitative methods look to quantify data and generalize results from a sample of the population of interest. They may look to measure the incidence of various views and opinions in a chosen sample for example or aggregate results.

Qualitative: concerned with a quality of information, qualitative methods attempt to gain an understanding of the underlying reasons and motivations for actions and establish how people interpret their experiences and the world around them. Qualitative methods provide insights into the setting of a problem, generating ideas and/or hypotheses. The following table provides a breakdown of the key features of each of these categorization of research method and data.

Factors	Quantitative	Qualitative
Aim	The aim is to count things in an attempt to explain what is observed.	The aim is a complete, detailed description of what is observed.
Purpose	Generalisability, prediction, causal explanations	Contextualization, interpretation, understanding perspectives
Tools	Researcher uses tools, such as surveys, to collect numerical data.	Researcher is the data gathering instrument.
Data collection	Structured	Unstructured
Output	Data is in the form of numbers and statistics.	Data is in the form of words, pictures or objects.
Sample	Usually a large number of cases representing the population of interest. Randomly selected respondents	Usually a small number of non representative cases. Respondents selected on their experience.
Objectivity/Subjectivity	Objective – seeks precise measurement & analysis	Subjective - individuals' interpretation of events is important
Research Role	Researcher tends to remain objectively separated from the subject matter.	Researcher tends to become subjectively immersed in the subject matter.
Analyzes	Statistical	Interpretive

In principle the purpose of both methods is to collect the data that will provide the bases for further thinking and operation. However, their structures are rather different, predominantly because they are based on theoretical bases and are geared towards a methodology which is fundamentally different. In some cases qualitative and quantitative researchers employ different methods. Nevertheless, in most cases, the methods both employ are similar. Both may employ

for instance content analyzes, interview or observation (often assumed as qualitative). But their structures and theoretical orientation are different. One method may be designed to operate in qualitative research in one project but in qualitative research in another.

Therefore, it is not the primary nature of the method that determines its affiliation with one type of research or the other, but rather its theoretical framework and its design. Moreover the choice of design assigns to methods certain attributes that change their structure and approaches, places them in a theoretical framework with definite principles, standards and goals, equip them with methodological attributes to suit the research environment in question. The choice of either qualitative or quantitative method as assigned by the choice of design is based on a number of relevant criteria summarized in the table below.

Criteria	Quantitative	Qualitative
Closeness of Researcher	Detached and dispassionate	Closer to social reality and social interaction: part of the research process
Openness of Method	Fixed and Close to adjustment	Can be changed and adjusted while they are employed and while data are being collected.
Flexibility of Method	Ridged to on research change	Highly flexible to accommodate change at any stage of the research process
Communicative Method	Methods are designed to capture reality in objectively defined fashion	Methods are designed to capture reality in <i>communication and interaction</i>
Naturalistic Methods	Reality seen as emerging from the controlled environment as experiments.	Reality seen as emerging from the communication and interaction of members of society in its natural setting
Collection and analyzes	Data analyzes takes place only when the process of data collection has been completed	The simultaneous collection and analyzes of data, the one leading to and enhancing the other. The initial steps of data analyzes take place during the data collection.
Instrumentation	Instruments are chosen before the study begins.	Instruments can be chosen during the study Yet, the choice for and against little instrumentation before the study is case

A ***mixed methods*** approach is one in which the researcher tends to base knowledge claims on pragmatic grounds (e.g., consequence- oriented, problem-centered, and pluralistic). It employs strategies of inquiry that involve collecting data either simultaneously or sequentially to best understand research problems. The data collection also involves gathering both numeric information (e.g., on instruments) as well as text information (e.g., on interviews) so that the final database represents both quantitative and qualitative information

Triangulation: in general the research design describes the number and nature of methods to be employed in the research project. Normally, the study will employ one basic methodology and one basic method, taken from one methodological context, the qualitative or the quantitative. Nevertheless, it has become common place for researchers to employ combination of methods of data collection, for instance survey and experiment, experiment and observation or observation and document methods when studying the same social issues. Such a combination of methods is called *Triangulation* (for specifics of blending see chapter one and two). Triangulation can be of two types: *inter-method triangulation* and *intra-method triangulation*. While *inter-method triangulation* includes two or more methods of different methodological origin and nature; *intra-method triangulation* employs two or more techniques of the same method. This method is usually useful to investigate different aspects of the same phenomena. More over it provides variety of information, uses the strengths of each method that it is preferable for high degree of validity and reliability, and overcome deficiencies of dependence on one method.

The Quantitative Approach and Associated Strategies

During the late 19th century and throughout the 20th, strategies of inquiry associated with quantitative research were those that invoked the post positivist perspectives. These include the true experiments and the less rigorous experiments called quasi-experiments and correlation studies (Campbell and Stanley, 1963), and specific single-subject experiments (Cooper, Heron, and Heward, 1987; Neuman and McCormick, 1995). More recently, quantitative strategies involved complex experiments with many variables and treatments (e.g. factorial designs and repeated measure designs). They also included elaborate structural equation models that incorporated causal paths and the identification of the collective strength of multiple variables. In this book, we will focus on two strategies of inquiry: experiments and surveys.

- **Experiments** include true experiments, with the random assignment of subjects to treatment conditions, as well as quasi-experiments that use non randomized designs (Keppel, 1991). Included within quasi-experiments are single-subject designs.

- **Surveys** include cross-sectional and longitudinal studies using questionnaires or structured interviews for data collection, with the intent of generalizing from a sample to a population (Babbie, 1990)

The Qualitative Approach and Associated Strategies

In qualitative research, the numbers and types of approaches also become more clearly visible during the 1990s. Books have summarized the various types (such as the 19 strategies identified by Wolcott, 2001). And complete procedures are now available for specific qualitative inquiry approaches. For example, Clandinin and Connelly (2000) have constructed a picture of what "narrative researchers do," Moustakas (1994) discussed the philosophical tents and the procedures of the phenomenological method, and Strauss and Corbin (1990, 1998) have explicated the procedures of grounded theory. Wolcott (1999) has summarized ethnographic procedures, and Stake (1995) has identified the processes of case study research. In this book, illustrations will be drawn from the following strategies:

- **Ethnographies**, in which the researcher studies an intact cultural group in a natural setting over a prolonged period of time by collecting, primarily, observational data (Creswell, 1998). The research process is flexible and typically evolves contextually in response to the lived realities encountered in the field setting (Lecompte and Schensul, 1999).
- **Grounded theory**, in which the researcher attempts to derive a general, abstract theory of a process, action, or interaction grounded in the views of participants in a study. This process involves using multiple stages of data collection and the refinement and interrelationship of categories of information (Strauss and Corbin, 1990, 1998). Two primary characteristics of this design are the constant comparison of data with emerging categories and theoretical sampling of different groups to maximize the similarities and the differences of information
- **Case studies**, in which the researcher explores in depth a program, and event, and activity, a process, or one or more individuals. The case (s) are bounded by time and activity, and researchers collect detailed information using a variety of data collection procedures over a sustained period of time (Stake, 1995).
- **Phenomenological research**, in which the researcher identifies the "essence" of human experiences concerning a phenomenon, as described by participants in a study. Understanding the "lived experiences" marks phenomenology as a philosophy as well as a method, and the procedure involves studying a small number of subjects through extensive and prolonged engagement to develop patterns and relationships of meaning (Moustakas, 1994). In this process, the researcher "brackets" this or her own experiences in order to understand those of the participants in the study (Nieswiadomy, 1993).

- **Narrative research**, a form of inquiry in which the researcher studies the lives of individuals and asks one or more individuals to provide stories about their lives. This information is then retold or restoried by the researcher into a narrative chronology. In the end, the narrative combines views from the participant's life with those of the researcher's life in a collaborative narrative (Clandinin and Connelly, 2000).

○ **Characteristics of Qualitative and Quantitative Research**

The main characteristics of qualitative and quantitative research are summarized in the following table.

Characteristics Qualitative Research and Quantitative Research

Characteristics	Qualitative	quantitative
• Typical Data Collection Methods	Participant observation, semi-structured interviews, introspection.	Laboratory observations, questionnaire, schedule or structured interviews.
• Formulation of Questions and Answers	Open loosely specified questions and possible answers. Questions and answers are exchanged in two way communication b/n researcher and research participant.	Closed questions and answer categories to be prepared in advance.
• Selection of Respondents	Information maximization guides the selection of respondent. Every respondent may be unique (key person).	Representativeness as proportion of population N. Sample selection, sample size according to assumptions about distribution in population N. Respondents should be directly comparable.
• Timing of Analysis	Parallel with data collection	After data collection
• Application of Standard Methods of Analysis	Are rarely used. Methods of analysis are formulated during the data collection process.	Standard statistical methods are frequently used.
• Typical forms of Analysis	Critical analysis and interpretation of source materials. Selection, systematizing and summarizing interview transcripts and observations.	Cross tabulations, correlation analysis and tests of significance on numerical data
• The Role of Theories in the Analysis	Existing theories are typically used only as point of departure for the analysis. Theories are further developed by forming new	A-priori deducted theories are operationalised and tested on data. The process

	concepts and relations. The contents of the new concepts are studied and illustrated. Practical application of theory is illustrated by cases.	of analysis is basically deductive.
--	--	-------------------------------------

○ Differences between Qualitative and Quantitative Research

The above summary also provides us with important features where qualitative and quantitative researches differ. **In addition we may summarize the differences between the two approaches as follows:**

1. They differ in terms of the nature of reality. Quantitative researchers believe that there are human characteristics and processes that constitute a form of reality in that they occur under a wide variety of conditions and thus can be generalized to some degree. On the other hand, qualitative researchers believe that there are no human characteristics and processes from which generalizations can emerge. Instead, each subject or phenomenon is different and can only be studied holistically.

2. They also differ in terms of the relationship of the researcher to the research participants. In quantitative research, the researcher can function independently of the participants of the research to a major degree, although some interaction is probably inevitable. Whereas in qualitative research the researcher and the research participant interact to influence one another and are inseparably interconnected. In addition, in qualitative research the research participants play a role in interpreting the outcomes of the study.

3. Qualitative research often does not know what it is looking for whereas quantitative research does - designs and measurements decisions are made prior to conducting the research. In qualitative research the design of the research emerges as the research progresses. That is, in qualitative inquiry the investigator starts with a very tentative design and develops the design as the inquiry progresses.

4. Qualitative researchers are often immersed in the data and look at it more subjectively whereas quantitative research demands objectivity.

5. Qualitative research typically employs small samples than quantitative research.

6. The ultimate goal of research in quantitative research is to develop a body of knowledge in the form of generalization that will hold at least to some degree over time and in contexts similar to those in which the generalizations were developed. In Qualitative research the aim of inquiry is to develop a body of knowledge that is unique to the individual being studied, and that can be used to develop hypotheses about the individual.

7. Qualitative research describes meaning or discovery whereas quantitative establishes relationship or causation. That is, in quantitative research, given sufficient research with valid measures, every action or effect can be explained by a cause or combination of causes that

precede the effect in time. In qualitative research all elements in the situation are in a state of mutual simultaneous interaction so it is impossible to distinguish causes from effects.

8. Quantitative inquiry should be made as value-free as possible through the use of sound research design and objective data collection procedures. Qualitative research, on the other hand, is value-bound because inquiries are inevitably influenced by the values of the researcher, the choice of theory, the methodology employed, and the values inherent in the context of the inquiry.

9. Qualitative research uses unstructured data collection whereas quantitative research uses structured data collection methods. In qualitative research, humans are the primary data-gathering instrument. Non-human instruments measurement instruments are the data gathering tools in quantitative research.

Strategies Associated with the Mixed Methods Approach

Less well known than either the quantitative or qualitative strategies are those that involve collecting and analyzing both forms of data in a single study. The concept of mixing different methods probably originated in 1959, when Campbell and Fiske used multiple methods to study validity of psychological traits. They encouraged other to employ their "multi method matrix" to examine multiple approaches to data collection in a study. This prompted others to mix methods, and soon approaches associated with field methods such as observations and interviews (qualitative data) were combined with traditional surveys (quantitative data) (S.D. Sieber, 1973). Recognizing that all methods have limitations, researchers felt that biases inherent in any single method could neutralize or cancel the biases of other methods. Triangulating data sources-a means for seeking convergence across qualitative and quantitative methods -were born (Jack, 1979). From the original concept of triangulation emerged additional reasons for mixing different types of data.

For example, the results from one method can help develop or inform the other method (Green, Caracelli, and Graham, 1989). Alternatively, one method can be nested within another method to provide insight into different levels or units of analysis (Tashakkori and Teddlie, 1989). Or the methods can serve a larger, transformative purpose to change and advocate for marginalized groups, such as women, ethnic/racial minorities, members of gay and lesbian communities people with disabilities, and those who are poor (Mertens, 2003).

These reasons for mixing methods have led writers from around the world to develop procedures for mixed methods strategies of inquiry and to take the numerous terms found in the literature, such as multi method, convergence, integrated, and combine (Creswell, 1994) and shape procedures for research (Tashakkori and Teddlie, 2003).

In particular, there general strategies and several variations within them will be illustrated in this book:

- **Sequential procedures**, in which the researcher seeks to elaborate on or expand the findings of one method with another method. This may involve beginning with a qualitative method for *exploratory* purposes and following up with a quantitative method with a large sample so that the researcher can generalize results to a population. Alternatively, the study may begin with a quantitative method in which theories or concepts are tested, to be followed by a qualitative method involving detailed *exploration* with a few cases or individuals.
- **Concurrent procedures**, in which the researcher converges quantitative and qualitative data in order to provide a comprehensive analysis of the research problem. In this design, the investigator collects both forms of data at the same time during the study and then integrates the information in the interpretation of the overall results. Also, in this design, the researcher nests one form of data within another, larger data collection procedure in order to analyze different questions or levels or units in an organization.

Transformative procedures, in which the researcher uses a theoretical lens (see chapter 7) as an overarching perspectives within a design that contains both quantitative and qualitative data. This lens profiles a framework for topics of interest, methods for collecting data, and outcomes or changes anticipated by the study. Within this lens could be a data collection method that involves a *sequential* or a *concurrent* approach.

Definition and function of research design

What is research design?

Once the research problem is identified, objectives are set and hypothesis constructed the next step that the researcher faced with is how to conduct the study in the most reliable and acceptable manner. This is the stage at which the research has to pass the test of validity by other observers. Because it is at this stage that the researcher decides the methods of data collection, the instruments to be used, the sampling technique & size, the time frame of the research, how the study population is communicated etc... These activities are very much important because it determines the reliability of the information (data) collected based on which generalizations are derived. The research design generally determines; how the researcher is going to conduct the study? What procedures will be used to obtain answers to the research question?, what the researcher should do and should not do in the process of conducting the research?

Nachamias and Nachamias (1987) defined research design as, “ A program that guides the investigator in the process of collecting, analyzing and interpreting observations (data). It is a logical model of proof that allows the researcher to draw inferences concerning causal relation among variables.”

Thyer quoted in (Kumar: 2005) also defined it as “ a blue print or detailed plan for how a research study is to be completed – operationalizing variables so that they can be measured, selecting a sample of interest to study, collecting data to be used as a basis for testing hypothesis & analyzing the results.”

Generally a research design sets the structure and strategy of investigation to answer the research questions validly, objectively accurately and economically by facilitating conditions for the collection and analysis of data. Careful observation has to be made to ensure the use of appropriate method of data collection, the representativeness of the sample selected, the validity of instruments developed and others.

The research design has two basic functions/ importance in conducting research. On the one hand it helps to identify & conceptualize the procedures that are very much necessary to complete the research study. While on the other hand it helps to ensure as to whether the procedures set are objective, accurate and reliable to obtain answers to the research questions. Any professional or senior academic verifies the reliability and validity of research findings based on the appropriateness of the design to the research questions. If the design of a particular research is under a severe criticism in its inability to collect reliable data the research findings will also be put under a big question in its capacity to reflect the reality on the ground.

What are the activities that have to be specified in preparing research design?

To make things more clear, in preparing research design the researcher should clearly specify the procedures that he/she is going to follow starting from naming the study design to other detailed information. These involve;

- **Deciding on the study design to be used:** For instance as longitudinal, cross sectional, experimental, case study etc... This will be further discussed in the coming section.
- Giving detailed information about;
 - Who will constitute the study population?
 - What will be the sampling procedure to be followed if sample has to be taken?
 - What method of data collection will be used & why? (The method of data collection determines the instruments to be prepared).
 - If questionnaire has to be used how it is going to be distributed & returned back.
 - In the case of interview who and where will be conducted.
 - What are the ethical issues that should be taken care of in relation to the sample population and respondents?
 - What method of data analysis has to be employed

Types of study design

There are various types of study designs that we might need to consider as indicated by Kumar (2005). For instance you might need to decide on the frequency with which you make contact with your study population. Based on this you determine your study design as cross sectional, before and after study design or longitudinal. Based on the nature of the investigation the design is classified as experimental, non-experimental or quasi-experimental. If you need to make an in depth analysis of a specific case you may need to select case study as your research design. Therefore this section introduces you with different study designs. Read carefully & attempt the activities to differentiate between them.

2.1 Study designs based on the frequency of contact with the study population

How can you classify study designs based on the frequency of contact with the study population?

The amount of time with which researchers make contact with their study population may differ based on the nature of the issues to be studied. Some research activities may require data

collection & observation of the study population only at one time & then reach to generalizations (most commonly used in social sciences). On the other hand others may require two times or more frequent contact with the study population. Based on these research designs are classified as follows:

2.1.1 Cross sectional study design

This is the commonly used design in most social science researches. In this design a researcher make only a one time contact with the study population to study a phenomenon or an issue at that specific point in time (at the time of the study). Therefore, the investigation of the study population is carried out only once to study a particular phenomenon as it takes place during the time of the study. That is why this design is called as one shot or status study. It is simple and cheap type of design since it requires only one time contact with the study population. It requires the identification of the issue to be studied, the study population to be investigated, take sample from the population, collect data and generalize. But this study design is less applicable when there is a need to study changes in the issues or the phenomena under investigation within the study population, since it is conducted only on time.

2.1.2 The pre and post study design.

This study design composed of two cross sectional study designs conducted on the same study population to measure any pattern of change in the phenomena under investigation after some time. This could be best applicable to measure the impact of a particular programme implemented on a community. For instance if a Woreda administration is launching community awareness raising programmes to teach them about malaria how do we know this programs has effected change on the awareness of the community towards malarias. In this case you might need to study the population level of awareness before the implementation of the teaching program. Later on, you conduct another study after the implementation to measure the changes effected as the result of the programme. Therefore, such studies are called as pre and post study design. The effects could be positive, negative or none. In a nutshell, this design helps you to investigate changes effected as a result of a particular intervention on a community (like awareness rising on malaria) that requires you two communications before & after the

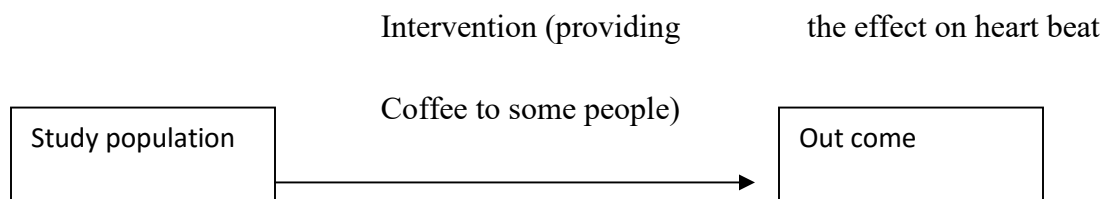
intervention. However, what if the need is to investigate patterns of changes at different times in a community?

2.1.3 Longitudinal study design

This design allows studying the patterns of change of the phenomena under investigation by making frequent contact with the study population for a long period. The time interval could be a month, one year or many years. For instance if the world Health Organization (WHO) is planning to eradicate Polio from Ethiopia by the year 2012, It may launch vaccination programme each year and after each programme it may conduct study to see the effects. In this case the study population is investigated many times. In conducting longitudinal design the data collected at each interval is similar, from similar population but possibly from different respondents (individuals).

2.2 Designs based on the type of investigation

In this case you might need to use experimental or quasi- experimental types of investigation to conduct your research. Experimental design usually helps to determine cause and affect relationships between variables. Let us see a very simple example. If you want to study the effect of drinking coffee on the rate of heart beat in human beings you are studying cause and effect relationship. The cause-drinking coffee is independent variable and the effect – heart beat is dependent variable. You might come to observe the effect after implementing an intervention which could be providing coffee to a certain group of people. Experimental design may have such elements as experimental group, controlled group, post-test, pre-test, random assignment, comparison, manipulation etc... very simply stated in experimental study you may have;

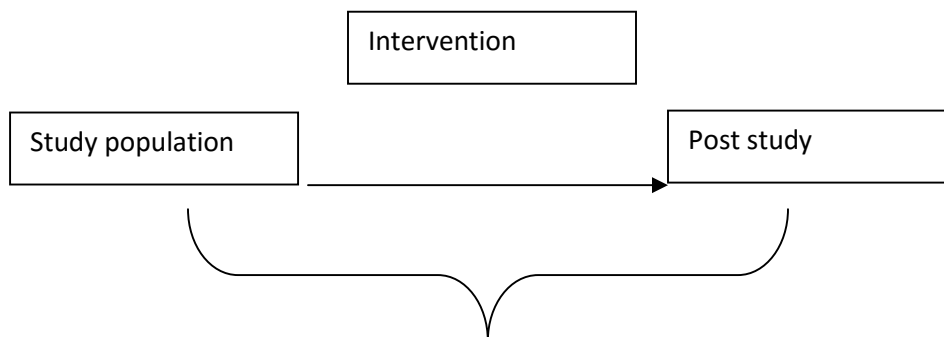


Cause and effect

Quasi experimental designs involve combinations of the above elements but not all of them. The non equivalent-group designs, regression discontinuity design, the proxy pretest design etc... are among some of the quasi experimental design. However, for this module we will see only some of the experimental designs. Let us see only some of them:

2.2.1 Post – test only design

In this design a researcher tries to investigate impacts of a programme or intervention already conducted on a community. Base line information is not collected to assess the situation before the intervention. Rather it depends on respondents' opinion of the situation before the intervention or from information available in the existing records. The change occurred after the intervention is measured by comparing the baseline date before the intervention and the observation after the intervention. Therefore this design involves only full investigation of post intervention period. This method lacks appropriate data collected before the intervention that makes comparison between the two periods difficult. It is also difficult to conclude that the changes occurred after the interventions are resulted only because of the intervention since it has no control group. For instance in your community the government may teach the people to send their children to school (an intervention) fortunately school enrollment increased by 20%. But how do you know that the change happened because of the intervention. For instance what if the harvest (production) increased in that year and farmers get increased income & send their children to school. Dear students, the following designs may resolve this problem especially a design with controlled & experimental groups.



Baseline data

2.2.2 Pre test - post test design

This design is similar with post test design in that, a researcher investigates changes occurred as a result of intervention on a community. However the difference is that investigation is conducted before the intervention to assess the situation and another investigation after the intervention. The impact of the intervention is measured by comparing data obtained in the two periods. Even if this design may resolve the problem of insufficient data in the post intervention period of the previous design it still lacks mechanisms to ensure whether the changes occurred in the post intervention period are only because of the intervention or other factors influenced the changes. To resolve this following designs employ the use of control and experimental group.

2.2.3 Pre test-Post-test control group design

What is control group? What is experimental group?

The researcher selects two population groups one is called as the **control group** and the other is an **experimental group**. The experimental group is the group on which the intervention is conducted on and the control group is the group on which no intervention is introduced. Dear students this enables you to conclude that, the changes occurred after the intervention is resulted from it. For instance if you would like to assess that drinking much coffee increase rate of heart beat, first you prepare the control and experimental groups. Provide certain amount of coffee to the experimental group & leave the control group as it is.

After some time you assess the heart beat of both groups. Finally any change occurred in the heart beat of the experimental group compared to the control group can be attributed to the intervention (coffee). Still this approach calls for making sure that the two groups are comparable for every respect except the treatment. Therefore, the members of each group should not be determined but randomly selected. For instance similarity in age, working condition, sex etc... could be considered. In our example can you compare the heart beat of a 20 year old young

boy & 80 years old women by just providing coffee? Therefore the members should be assumed similar in every other aspect except the treatment or intervention.

In this design test is conducted in the pre intervention period on both groups and another test is done after the intervention for both of them. That is why it is called **as pretest – post- test control group designs.**

2.2.4 Post – test only control group design

This design is similar in every respect with pre test-post test control group. It has control and experimental groups and intervention done on experimental group. However, there is no investigation of the two groups in the pre-intervention period. This approach may help to measure the effects of the intervention by only comparing the two groups, without knowing the magnitude of change occurred within the experimental group as the result of the intervention.

2.3 Case study

This design makes an in depth analysis of a specific case. The cases could be specific geographical area, institution, organizations or even individuals. All data relevant to the case are gathered and organized in terms of the case. Detailed collection and analysis of data is conducted because any generalization about the case is assumed to apply to all other similar cases. Other types of studies may not look a specific case in a detailed manner by overlooking some vital issues about the case. Therefore, case study provides the opportunity to investigate many specific details. Data could be obtained from both primary and secondary sources & also applies the use of both qualitative and quantitative data. It can use observations, questionnaire, interview, books, magazines, newspapers etc... if you for instance like to study the impact of decentralized administration on quality of education in your Woreda you are studying a specific Woreda on a specific issue in a detailed manner. Your finding could be used to be generalized for other Woreda in similar status.

2.4 Survey

This design is applied when the study covers wider areas and collection of information from larger number of cases. Therefore, it covers wider areas compared to case study. It usually

collects data by using questionnaire from wider areas. A survey may also make use of already available data collected for another purpose. A survey could be cross sectional (data collected at one time). Because of large number of cases, a survey will generally involve quantitative analysis. It has better level of generalize ability than case studies because case studies cover analysis of specific areas to be concluded for other similar areas.

2.1.Basic format of Research Designs (The Process of Proposal Development)

The term "research proposal" indicates that a specific course of action will be followed. It is a document which sets out your ideas in an easily accessible way. The intent of the written research proposal is to present a focused and scholarly presentation of a research problem and plan.

Components of a research proposal:

1. Title page
2. Summary/Abstract
3. Introduction/Background
4. Statement of the problem
5. Conceptual framework
6. Objective/ Hypotheses /Questions
7. Significance
8. Delimitation
9. Operational definitions
10. Literature review
11. Research methods, materials and procedures

12. Study area
13. Study design
14. Study participants/subjects
15. Eligibility Criteria (if any)
16. Sample size
17. Sampling methods
18. Method of data collection
19. Description of variables
20. Data quality assurance
21. Plan of data analysis
22. Work plan
23. Budget
24. References
25. Appendices/Annexe

Flowchart: Steps in the development of a research proposal

Questions you must ask	Steps you will take	Important elements of each step
What is the problem and why should it be studied?	Selection, analysis and statement of the research problem	<ul style="list-style-type: none"> - problem identification - prioritising problems - analysis - justification
What information is available?	Literature review	<ul style="list-style-type: none"> - literature and other available information
Why do we want to carry out the research? What do we hope to achieve?	Formulation of research objectives	<ul style="list-style-type: none"> - general and specific objectives - hypotheses
What additional data do we need to meet our research objectives? How are we going to collect this information?	Research methodology	<ul style="list-style-type: none"> - variables - types of study - data collection techniques - sampling - plan for data collection - plan for data processing and analysis - ethical considerations - pre-test or pilot study
Who will do what, and when?	Work plan	<ul style="list-style-type: none"> - human resources - timetable
What resources do we need to carry out the study? What resources do we have?	Budget	<ul style="list-style-type: none"> - material support and equipment - money
How will the project be administered? How will utilisation of results be ensured?	Plan for project administration and utilisation of results	<ul style="list-style-type: none"> - administration - monitoring - identification of potential users
How will we present our proposal to relevant authorities, community and the funding agencies?	Proposal summary	<ul style="list-style-type: none"> - briefing sessions and lobbying

Chapter Three

Introduction to Sampling and Sampling Strategy

3.1 What is sampling?

One of the biggest concern of a researcher in his/her preparation to gather information is the selection of who should be contacted to get information. As a matter of fact not all members of the population in your study area can be communicated. For instance if you like to study the educational background of civil servants in a specific Woreda office where only 20 people are employed, you can easily gather information from each and conclude about them. However, what if you like to study the income status of civil servants in the Woreda where there are more than twenty thousand of them, can you gather data from all of them? Here is when you need to select some of them and conclude about the whole population. In selecting sample from the whole population you need to have a sample design.

A **sample design** is a definite plan for obtaining a sample from population. It refers to the technique or the procedure the researcher would adopt in selecting items for the sample. The sample design may as well lay down the number of items to be included in the sample i.e. the size of the sample.

Generally sampling refers to the process of selecting a few (a sample) from a bigger group (the sampling population) to become the basis for estimating or predicting the prevalence of ... a situation or old come regarding the bigger group. A sample is the sub group of the bigger group that the researcher is interested in.

Taking some proportion from the whole population is justifiable from different dimensions. Let us discuss some of them;

- i) **Economical in expenditure:** dealing with whole population incurs you large amount of resource so it is feasible to deal with smaller population.
- ii) **Greater speed:-** dealing with smaller proportion of the whole population saves time for the researcher.

- iii) **Greater scope:-** reducing the larger population into sample also enables to widen the scope of the information to be collected by incorporating larger categories.
- iv) **Practicability:-** taking sample increases the possibility of conducting the research instead of being constrained by lack of resources and time.
- v) **Greater accuracy** ... sampling increases the accuracy of the data collected since small group is contacted with greater focus.

Even if selecting sample has these advantages it also has disadvantages. After taking sample the data that you gathered may not represent the whole characteristics of the general population from which sample is selected. This gap is filled through estimation or prediction and an error may exist in estimations or predictions.

In a situation where information is gathered from the whole population the possibility of committing error in estimation or prediction is minimum or none at all. Therefore, one important consideration of selecting sample from the total population is tolerance of the possibility of error and use appropriate sampling technique to reduce the margin of error.

3.2 The sampling process

- i) **Defining the population:-** The study population or the universe is the population to which the researcher directs his study. This is the whole group to which the researcher would want to generalize after selecting some amount of sample. In the previous example all the civil servants that reside in the Woreda are your universe or study population. The whole population towards which the researcher directs his/her attention is called as study population usually represented by the letter (N).
- ii) **Specify the sampling frame:-** The sampling frame is the physical material from which sample is chosen. This is a document that lists the study population. It may include telephone directory, list of business establishment in a town, list of households and residents in a kebele etc. .. In the previous case for instance to study the income status of civil servants in a particular Woreda you may get the name list of

the whole civil servants in the Woreda personnel administration office, which you can use as a sampling frame.

- iii) **Specify the sampling unit (element):-** sampling unit represents the basic unit containing the element of the population to be sampled. It may contain one or several population elements. In your case there is only one unity of population & that is civil servants in a Woreda.
- iv) **Specify the sampling method:-** refers to the method that you need to follow in selecting the sample from the whole population. For instance, what sampling methods did you use to select only 200 civil servants from a sum total of 20,000. Dear students we will discuss varieties of sampling methods in the coming section.
- v) **Determine the sample size:-** Here the amount to be selected from the total population (sample size) is determined. The sample size is the specific population from which you obtain information.
- vi) **Specify sampling plan:-** In this step you need to specify operational procedure by which you communicate each sample unit.
- vii) **Select the sample:-** here all office and field activities necessary to select the sample is completed and the sample is selected for the study.

The most vital consideration in the choice of the sample is to ascertain its representativeness. The sample size should be representative of the total population (universe). The only mechanism by which the researcher ensures the representativeness of the sample size is to follow accurate procedures and use appropriate sampling technique. Dear students what if a researcher selects a sample size of 10 people from the total population of one thousand. Does the sample size accurately represent the total population? That is why you need to use different techniques of sampling. Types of sampling techniques will be discussed in the next section.

Techniques of sampling

Under this section you will be familiarized with different sampling techniques. These techniques are broadly classified into **probability sampling techniques & non probability sampling techniques**. Each category has further sub categories of specific sampling techniques. For instance probability sampling technique involves simple random sampling, stratified random sampling, cluster sampling, where as the non probability category has Quota sampling, convenience sampling & purposive sampling.

4.1 Probability sampling techniques.

Probability sampling technique is distinct and important in that it allows each element in the study population equal and independent chance of being selected as a sample. Every member of the study population is provided equal chance to be represented in the sample with no personal interest and preference of the researcher. Independence is also important in that each unit would be selected without being influenced by the selection or rejection of another unit. In the example that we discussed previously about civil servants, the researcher's preference should not be reflected in selecting a particular civil servant into the sample or not that reflects equity. In the case of independence if you select the wife or friends of a particular respondent (sample) to include him in the sample your sample lacks the criteria of independence. Therefore, the selection or rejection of one person should not affect the selection or rejection of another person. Probability sampling techniques are discussed as follows;

4.1.1 Simple Random sampling

Simple random sampling is the most commonly used random sampling technique where by each and every element in the total population has equal and independent chance of being selected. In implementing this technique each and every elements in the total population will be allotted with specific number. Later on samples will be drawn in the form of lot until you get the decided amount of sample size. For instance, if you want to study the educational status of students in a class room of 120, you first determine the sample size (assume it is 30), then you give number to each students (from 1-120) & finally draw the numbers until you reach 30 students. Finally, the numbers that have got the chance to be selected will be your sample from

whom you collect information. Selection of sample in this case is done without replacement i.e. once a sample is picked out it will not get another chance of being selected.

4.1.2 Stratified random sampling

The quality of data collected in conducting a research study can be evaluated by the extent to which different groups are represented within the study population. The researcher may stratify the study population into different groups based on the homogenous character that they have. For instance if you like to study the study habit of students in a class room you may categorize the students based on their academic status as outstanding, medium, fair and poor. After this stratification sample will be selected from each non-overlapping groups using the simple random sampling technique. Sample could be selected either proportionally or in the form of disproportional stratified sampling. In the first case sample will be selected from each group based on the number of population in each group. That is, the larger the number in a group the larger sample will be taken from it and vice versa. In the case of disproportionate stratified sampling, sample will be selected from each group irrespective of the number of people in the group.

4.1.3 Cluster sampling

Stratified sampling is employed for small number of study population. But when you are required to select sample from large number of population scattered across large geographical area cluster sampling is a better option. In this technique first you select randomly natural groups/units called clusters from the whole study population (universe). Then after all or parts of the units within the clusters are chosen to makeup the sample. Simply stated, the researcher first divides the study population into groups called clusters and elements could be further selected from each cluster based on simple random sampling. Let us assume the Ethiopian government wanted to study the attitude of Ethiopian population towards the system of decentralization. First the population could be classified into geographical clusters. For this there are already available 9 regional governments. You might select sample woredas from each regional government (or from some randomly selected regions) and sample kebeles from each woredas selected by using

simple random technique. Finally you might still select people from each kebele through random sampling from whom data will be collected. as you can see you used different groups and sub groups to select sample. In this example the population is already classified by administrative units but there are cases when the researcher's ability is critical to categorize the population in to homogeneous groups at each stage.

4.2 Non – probability sampling techniques

As opposed to probability sampling in non- probability sampling there is no way to estimate or ascertain that each elements in the study population has an equal & independent chance of being included as a sample.

This is because sample is selected based on the researchers own preference & based on the criteria of convenience. Therefore, selection of sample in mainly based on other considerations than random selection to represent the whole study population. These methods are also employed when the number of elements in the study population is unknown or cannot be identified by the researcher for different reasons. For instance can you get a real data available on the number of visually impaired people in your Woreda? Here we are going to see three types of non-probability sampling techniques;

4.2.1 Quota sampling.

In this type of sampling the researcher specifies to communicate a certain group of people with similar attributes and goes to the place where he can obtain such people. Therefore the samples are usually selected from a place where it is convenient for the researcher to easily get the target population. In this type of sampling people are selected none randomly according to some fixed quota. The two types of quota sampling are proportional and non proportional. In the case of ***proportional quota sampling*** different categories of your study population are represented proportionally in selecting sample. For instance if the total number of your study population is 400 out of which 40% is female and 60% male and your sample size is 100 you will take 60 male and 40 females according to their proportion. In this case we used gender as a basis for category

but it could also be educational level, age, religion, race etc... In the case of ***non proportional quota sampling*** the researcher simply specifies the minimum number of sampled units from each category with little concern for numbers that much proportions in the population. This depends on the researchers' judgment of how much unit is enough from each category to assure sufficient representation.

4.2.2 Accidental Haphazard (convenience) sampling.

Accidental sampling is usually based on the convenience in accessing the sampling population. In this case a researcher may go out on the street, pick any body and collect data about a certain issue, until the sample size reaches to a certain predetermined level. The sampling is accidental in that, the person communicated may not have any information regarding the issue raised by the researcher.

For instance a journalist may go out on the street to gather data from people about the new environmental policy of the government. He may communicate with students, taxi drivers, street vendors, civil servants etc... walking on the street, many of these respondents may not have information on the issue. Therefore it differs from quota sampling in that it does not specify a specific target group from which information can be collected.

4.2.3 Purposive or Judgment sampling

The main consideration of the researcher in employing this technique is the determination of who can provide him with detailed information about the issue under the study. Therefore, the researcher uses his own opinion to go to those people who have rich information and are willing to provide him. Still the sampling frame and the representativeness of the information collected is unknown. It is mainly applicable when it is used by an expert who knows the population very well, to identify a typical case, to construct a historical reality, to describe about an unfamiliar phenomenon etc...

a. Sample size determination

Researcher should also be concerned about how to select your sample size. You have to ask yourself ‘how big a sample should I select?’, ‘what should be my sample size?’ and ‘how many cases do I need?’ Sample size is among one of the most crucial aspects that determines the accuracy of your findings. Representativeness of the sample units to the total study population is one of the issues that have to be dealt carefully. In qualitative research the concern is mainly to explore and describe issues or situations and the question of sample size is less important. Data is collected until it reaches to saturation point. Once the researcher is convinced that he/she has got sufficient new information data collection will be stopped. But sample size determination for quantitative study takes some very important issues into consideration like the level of confidence in testing the results, the degree of accuracy with which the population is needed to be tested and level of variation or standard deviation.

Determining sample design

All the items under consideration in any field of inquiry constitute a ‘universe’ or ‘population’. A complete enumeration of all the items in the ‘population’ is known as a census inquiry. It can be presumed that in such an inquiry when all the items are covered no element of chance is left and highest accuracy is obtained. But in practice this may not be true.

Even the slightest element of bias in such an inquiry will get larger and larger as the number of observations increases. Moreover, there is no way of checking the element of bias or its extent except through a resurvey or use of sample checks. Besides, this type of inquiry involves a great deal of time, money and energy. Not only this, census inquiry is not possible in practice under many circumstances. For instance, blood testing is done only on sample basis. Hence, quite often we select only a few items from the universe for our study purposes. The items so selected constitute what is technically called a sample.

The researcher must decide the way of selecting a sample or what is popularly known as the sample design. In other words, a sample design is a definite plan determined before any data are actually collected for obtaining a sample from a given population. Thus, the plan to select 12 of a

city's 200 drugstores in a certain way constitutes a sample design. Samples can be either probability samples or non-probability samples. **With probability samples** each element has a known probability of being included in the sample but the non-probability samples do not allow the researcher to determine this probability. **Probability samples** are those based on simple random sampling, systematic sampling, stratified sampling, cluster/area sampling whereas non-probability samples are those based on convenience sampling, judgment sampling and quota sampling techniques.

A brief mention of the important sample designs is as follows:

(i) ***Deliberate sampling:*** Deliberate sampling is also known as purposive or non-probability sampling. This sampling method involves purposive or deliberate selection of particular units of the universe for constituting a sample which represents the universe. When population elements are selected for inclusion in the sample based on the ease of access, it can be called *convenience sampling*. If a researcher wishes to secure data from, say, gasoline buyers, he may select a fixed number of petrol stations and may conduct interviews at these stations. This would be an example of convenience sample of gasoline buyers. At times such a procedure may give very biased results particularly when the population is not homogeneous. On the other hand, in *judgement sampling* the researcher's judgement is used for selecting items which he considers as representative of the population. For example, a judgement sample of college students might be taken to secure reactions to a new method of teaching. Judgement sampling is used quite frequently in qualitative research where the desire happens to be to develop hypotheses rather than to generalise to larger populations.

(ii) ***Simple random sampling:*** This type of sampling is also known as chance sampling or probability sampling where each and every item in the population has an equal chance of inclusion in the sample and each one of the possible samples, in case of finite universe, has the same probability of being selected. For example, if we have to select a sample of 300 items from a universe of 15,000 items, then we can put the names or numbers of all the 15,000 items on slips of paper and conduct a lottery. Using the random number tables is another method of random

sampling. To select the sample, each item is assigned a number from 1 to 15,000. Then, 300 five digit random numbers are selected from the table. To do this we select some random starting point and then a systematic pattern is used in proceeding through the table. We might start in the 4th row, second column and proceed down the column to the bottom of the table and then move to the top of the next column to the right.

When a number exceeds the limit of the numbers in the frame, in our case over 15,000, it is simply passed over and the next number selected that does fall within the relevant range. Since the numbers were placed in the table in a completely random fashion, the resulting sample is random. This procedure gives each item an equal probability of being selected. In case of infinite population, the selection of each item in a random sample is controlled by the same probability and that successive selections are independent of one another.

(iii) *Systematic sampling:* In some instances the most practical way of sampling is to select every 15th name on a list, every 10th house on one side of a street and so on. Sampling of this type is known as systematic sampling. An element of randomness is usually introduced into this kind of sampling by using random numbers to pick up the unit with which to start.

This procedure is useful when sampling frame is available in the form of a list. In such a design the selection process starts by picking some random point in the list and then every n th element is selected until the desired number is secured.

(iv) *Stratified sampling:* If the population from which a sample is to be drawn does not constitute a homogeneous group, then stratified sampling technique is applied so as to obtain a representative sample. In this technique, the population is stratified into a number of non overlapping subpopulations or strata and sample items are selected from each stratum. If the items selected from each stratum is based on simple random sampling the entire procedure, first stratification and then simple random sampling, is known as *stratified random sampling*.

(v) *Quota sampling:* In stratified sampling the cost of taking random samples from individual strata is often so expensive that interviewers are simply given quota to be filled from different

strata, the actual selection of items for sample being left to the interviewer's judgement. This is called quota sampling. The size of the quota for each stratum is generally proportionate to the size of that stratum in the population. Quota sampling is thus an important form of non-probability sampling. Quota samples generally happen to be judgement samples rather than random samples.

(vi) Cluster sampling and area sampling: Cluster sampling involves grouping the population and then selecting the groups or the clusters rather than individual elements for inclusion in the sample. Suppose some departmental store wishes to sample its credit card holders. It has issued its cards to 15,000 customers. The sample size is to be kept say 450. For cluster sampling this list of 15,000 card holders could be formed into 100 clusters of 150 card holders each. Three clusters might then be selected for the sample randomly. The sample size must often be larger than the simple random sample to ensure the same level of accuracy because in cluster sampling procedural potential for order bias and other sources of error is usually accentuated. The clustering approach can, however, make the sampling procedure relatively easier and increase the efficiency of field work, especially in the case of personal interviews.

Area sampling is quite close to cluster sampling and is often talked about when the total geographical area of interest happens to be big one. Under area sampling we first divide the total area into a number of smaller non-overlapping areas, generally called geographical clusters, then a number of these smaller areas are randomly selected, and all units in these small areas are included in the sample. Area sampling is especially helpful where we do not have the list of the population concerned. It also makes the field interviewing more efficient since interviewer can do many interviews at each location.

(vii) Multi-stage sampling: This is a further development of the idea of cluster sampling. This technique is meant for big inquiries extending to a considerably large geographical area like an entire country. Under multi-stage sampling the first stage may be to select large primary sampling units such as states, then districts, then towns and finally certain families within towns.

If the technique of random-sampling is applied at all stages, the sampling procedure is described as multi-stage random sampling.

(viii) Sequential sampling: This is somewhat a complex sample design where the ultimate size of the sample is not fixed in advance but is determined according to mathematical decisions on the basis of information yielded as survey progresses. This design is usually adopted under acceptance sampling plan in the context of statistical quality control.

In practice, several of the methods of sampling described above may well be used in the same study in which case it can be called mixed sampling. It may be pointed out here that normally one should resort to random sampling so that bias can be eliminated and sampling error can be estimated.

But purposive sampling is considered desirable when the universe happens to be small and a known characteristic of it is to be studied intensively. Also, there are conditions under which sample designs other than random sampling may be considered better for reasons like convenience and low costs.

The sample design to be used must be decided by the researcher taking into consideration the nature of the inquiry and other related factors.

CHAPTER FOUR

Methods and Tools of Data Collection

4.1 Data collection Techniques

Selecting a method or methods is based on what kind of information is sought, from whom and under what circumstances. There are two major approaches to gathering information about a situation, person, problem or phenomenon. Sometimes, information required is already available and need only extracted. However, there are times when the information must be collected. Based upon these broad approaches to information gathering, data are categorized as:

- Primary data
- Secondary data

Information gathered using the first approach is said to be collected from secondary sources, whereas the sources used in the second approach are called primary sources.

4.1.1 Collecting data using primary sources

Primary sources are sources which are not based on any other existing or kept source. Primary sources provide first-hand information. It serves as an original source of [information](#) about the topic. Finding out firsthand the attitudes of a community towards health services, ascertaining the health needs of a community, evaluating a social program, determining the job satisfaction of the employees of an organization, and ascertaining the quality of services provided by a worker are example of information collected from primary sources. One of the advantages of primary sources is that it provides researchers with "direct, unmediated information about the object of study".

Several methods can be used to collect primary data. The choice of a method depends upon the purpose of the study, the resource available and the skills of the researcher. There are times when the method most appropriate to achieve the objectives of a study cannot be used because of constraints such as a lack of resources and/or required skills. In such situations you should be aware of the problems these limitations impose on the quality of the data.

In the following sections each of the methods of data collection is discussed from the point of view of its applicability and suitability to a situation, and the problems and limitations associated with it.

4.1.1.1 Observation

As the actions and behavior of people are central aspects in virtually any enquiry, a natural and obvious technique is to watch what they do, to record this in some way and then to describe, analyze and interpret that we have observed. Observation is a purposeful, systematic and selective way of watching and listening to an interaction or phenomenon as it takes place. There

are many situations, in which observation is the most appropriate method of data collection; for example, when you want to learn about interaction in a group, study the dietary patterns of a population, ascertain the functions performed by a worker.

A. Types of Observation

There are two types of observation:

- Participant observation;
- Non-participant observation

Participant observation is when you, as a researcher, participate in the activities of the group being observed in the same manner as its members, with or without their knowing that they are being observed. For example, you might want to examine the reactions of the general population towards people in wheelchairs. You can study by their reactions by sitting in a wheelchair yourself. Or you might want to study the life of prisoners and pretend to be a prisoner in order to do this.

Non-participant observation, on the other hand, is when you, as a researcher, do not get involved in the activities of the group but remains a passive observer, watching and listening to its activities and drawing conclusions from this. For example, you might want to study the functions carried out by nurses in a hospital. As an observer, you could watch, follow, and record the activities as they are performed. After making a number of observations, conclusions could be drawn about the functions nurses carry out in the hospital.

B. Advantages and Disadvantages of observation

A major advantage of observation as a technique is its directness. You do not ask people about their views, feelings or attitudes; you watch what they do and listen to what they say. This directness contrasts with, and can often usefully complement, information obtained by virtually any other technique. Interview and questionnaire responses are notorious for discrepancies between what people say that they have done, or will do, and what they actually did or will do.

On a questionnaire we only have to move the pencil a few inches to shift our scores from being a bigot to being a humanitarian. We do not have to move our heavyweight behavior at all.

Observation also seems to be pre-eminently the appropriate technique for getting at 'real life' in the 'real world'. It is, of course, possible to observe through one-way glass in a laboratory, or set up some other contrived situation and observe that; but direct observation in the field permits a lack of artificiality which is all too rare with other techniques.

However, the use of observation as a method of data collection may suffer from a number of problems, which is not to suggest that all or any of these necessarily prevails in every situation. Some of the disadvantages using observation as a method of data collection includes, among others

- When individuals or groups become aware that they are being observed, they may change their behavior. Depending upon the situation, this change could be positive or negative-it may increase or decrease, for example, their productivity-and may occur for a number of reasons. When a change in the behavior of persons or groups is attributed to their being observed it is known as the *Hawthorne Effect*. The use of observation in such situation may introduce distortion: what is observed may not represent their normal behavior. Moreover, there is a lingering logical problem here in that, how do we know what the behavior would have been like if it hadn't been observed?
- There is always the possibility of observer bias. If an observer is biased, s/he can easily introduce bias and there is no easy way to verify the observations and the inferences drawn from them.
- The interpretation drawn from observations may vary from observer to observer.
- There is the possibility of incomplete observation and/or recording, which varies with the method of recording. An observer may watch keenly but at the expense of detailed recording. The opposite problem may occur when the observer takes detailed notes but in doing so misses some of the interaction.

4.2. The interview

4. 2.1 the interview

The interview is a kind of observation; a conversation with a purpose. It is one initiated by the interviewer for the specific purpose of obtaining research-relevant information and focused by him on content specified by research objectives of systematic, description, prediction or explanation.

It is a flexible and adaptable way of finding things out. The human use of language is fascinating both as a behavior in its own right, and for the virtually unique window that it opens on what lies behind our actions.

Face-to-face interviews offer the possibility of modifying one's line of enquiry, following up interesting responses and investigating underlying motives in a way that postal or other self-administered questionnaires cannot. Non-verbal cues may give messages which help in understanding the verbal response, possibly changing or even, in extreme cases, reversing its meaning.

However, interviewing is time-consuming. The actual interview session itself will obviously vary in length. Anything under half an hour is unlikely to be valuable; anything going much over an hour may be making unreasonable demands on busy interviewees, and could have the effect of reducing the number of persons willing to participate, which may in turn lead to biases in the sample that you achieve.

4. 2.2 Types of interviews

A commonly made distinction is based on the degree of structure or formality of the interview. Hence, interviews are classified according to the degree of flexibility.

4.2.2.1 Unstructured interviews

The strength of *unstructured interviews* is the almost complete freedom they provide in terms of content and structure. Hence, you are free to order these in whatever sequence you wish. You also have complete freedom in terms of the wording you use and the way you explain questions

to your respondents. There are several types of unstructured interviewing; for example; in-depth interviewing, focus group interviewing, narratives and oral histories.

In-depth interviews

The theoretical roots of in-depth interviewing are in what is known as the interpretive tradition. Accordingly, in-depth interviewing is repeated face-to-face encounters between the researcher and informants directed towards understanding informants' perspectives on their lives, experiences, or situations as expressed in their words'.

This definition underlines two essential characteristics of in-depth interviewing;

- 1) It involves face-to-face, repeated interaction between the researcher and his/her informant(s); and
- (2) It seeks to understand the latter's perspectives. Because of repeated contacts and hence extended length of time spent with an informant, it is assumed that the rapport between researcher and informant will be enhanced, and that the corresponding understanding and confidence between the two will lead to in-depth and accurate information.

Focus group interviews

The only difference between a focus group interview and an in-depth interview is that the former is undertaken with a group and the latter with an individual. In a focus group interview, you explore the perceptions, experiences, and understandings of a group of people who have some experience in common with regard to a situation or event. For example, you may explore with relevant groups such issues as domestic violence, physical disability or refugees.

In focus group interviews, broad discussion topics are developed beforehand, either by the researcher or by the group. These provide a broad frame for discussions which follow. The specific discussion points emerge as a part of the discussion. Members of a focus group express their opinions while discussing these issues.

Narratives

The narrative technique of gathering information has even less structure than the focus one. Narratives have almost no predetermined contents except that the researcher seeks to hear the personal experience of a person with an incident or happening in his/her life. Essentially, the person tells his/her story about an incident or situation and tells you, as the researcher, listen passively.

Narratives are a very powerful method of data collection for situations which are sensitive in nature. For example, you may want to find out about the impact of child sexual abuse on people who have gone through such experience. You, a researcher ask these people to narrate their experiences and how they have been affected.

Oral histories

Oral histories, like narratives, involve the use of both passive and active listening. Oral histories, however, are more commonly used for learning about a historical event or episode that took place in the past or for gaining information about a cultural, custom or story that has been passed from generation to generation. Narratives are more about a person's personal experiences whereas, historical, social or cultural events are the subjects of oral histories.

Suppose you want to find out about the life after the invasion of Italy in some regional town of Ethiopia. You would talk to persons who were alive during that period and ask them about life at that time.

Data collection through unstructured interviewing is extremely useful in situations where in-depth information is needed or little is known about the area. The flexibility allowed to the interviewer in what s/he asks of a respondent is an asset as it can elicit extremely rich information. As it provides in-depth information, many researchers use this technique for constructing a structured research instrument. On the other hand, since unstructured interview does not list specific questions to be asked of respondents, the comparability of questions asked and responses obtained may become a problem. As the researcher gains experience during the

interviews, the questions asked of respondents change; hence, the type of information obtained from those who are interviewed at the beginning may be markedly different from that obtained from those interviewed towards the end. Also, this freedom can introduce investigator bias into the study. Using an interview guide as a means of data collection requires much more skill on the part of the researcher than does using a structured interview.

Questions to avoid in interviews

- **Long questions-** The interviewee may remember only part of the question, and respond to that part.
- **Double-barreled (or multiple-barreled questions)** - e.g. ‘what do you feel about current pop music compared with that of five years ago?’ The solution here is to break it down into simpler questions (e.g. ‘what do you feel about current pop music?’ ; ‘Can you recall any pop music from five years ago?’ ; ‘How do you feel they compare?’)
- **Questions involving jargon** Generally you should avoid questions containing words likely to be unfamiliar to the target audience. Keep things simple to avoid disturbing interviewees; it is in your own interest as well.
- **Leading questions e.g.** ‘Why do you like Jimma? It is usually straightforward to modify such questions, providing you realize that they are leading in a particular direction.
- **Biased questions** Provided you are alert to the possibility of bias it is not difficult to write unbiased questions. What is more difficult however is not (perhaps unwittingly) to lead the interviewee by the manner in which the question is asked, or the way in which you receive the response. Neutrality is called for, and in seeking to be welcoming and reinforcing to the interviewee you should try to avoid appearing to share or welcome her or his views.

4.2.2.2 Carrying out structured interviews

In a structured interview the researcher asks a predetermined set of questions, using the same wording and order of questions as specified in the interview schedule. An *interview schedule* is a written list of questions, open-ended or closed-ended, prepared for use by an interviewer in a person-to-person interaction (this may be face-to-face, by telephone or by other electronic

media). Note that an interview schedule is a research tool/instrument for collecting data, whereas interviewing is a method of data collection.

One of the main advantages of the structured interview is that it provides uniform information, which assures the comparability of data. Structured interviewing requires fewer interviewing skills than does unstructured interviewing.

Much of the responsibility for the structured interview achieving its purpose falls on the preparatory work which precedes the interviews themselves. This may include observation and informal interviews, with likely pre-pilot (to develop areas for questions) and pilot (to develop the questions themselves) work. This culminates in the preparation of a detailed interview schedule which covers:

- What the interviewer says by way of introduction
- Introductions to particular questions, groups of questions
- The questions (word for word)
- Prompts (and how they are to be used)
- Response codes
- Possible ‘skips’ in sequence (e.g. where a ‘yes’ answer is followed by a particular question, a ‘no’ answer by a ‘skip’ to a different question)
- Closing comments
- Reminders to the interviewer about procedure

The codes for different responses are usually circled directly, during the interview, by the interviewer to assist in subsequent analysis. Any apparently open-ended questions are often provided with a set of pre-categorized responses, and it is the interviewer’s responsibility to decide in which of these categories the response lies.

General advice for interviewers carrying out structured interviews.

1. ***Appearance:*** Dress in a similar way to those you will be interviewing. If in doubt err on the side of neatness and neutrality.

2. **Approach:** Be pleasant. Try to make the respondent comfortable.
3. **Familiarity with questionnaire:** view your script as an actor, with the interview schedule as your script. Know it thoroughly.
4. **Questions wording:** Use the exact wording of questions and keep to their sequence.
5. **Answers:** Record the answers exactly. Don't make cosmetic adjustments, correct or fabricate.
6. **Probes:** Use the standard probes only.

4. 2.2.3 carrying out semi-structured interview

Semi-structure interview is used to collect qualitative data by setting up a situation (the interview) that allows a respondent the time and scope to talk about their opinions on a particular subject. The focus of the interview is decided by the researcher and there may be areas the researcher is interested in exploring.

The objective is to understand the respondent's point of view rather than make generalizations about behavior. It uses open-ended questions, some suggested by the researcher ("Tell me about...") and some arise naturally during the interview ("You said a moment ago...can you tell me more?").

Interviewers have their shopping list of topics and want to get responses to them, but as a matter of tactics they have greater freedom in the sequencing of questions, in their exact wording, and in the amount of time and attention given to different topics.

Advantages of semi-structured interview include the following:

- **Positive rapport** between interviewer and interviewee. Very simple, efficient and practical way of getting data about things that can't be easily observed (feelings and emotions, for example).
- **High Validity.** People are able to talk about something in detail and depth. The meanings behind an action may be revealed as the interviewee is able to speak for themselves with little direction from interviewer.

- Complex questions and issues can be discussed / clarified.
- **Pre-Judgment:** Problem of researcher predetermining what will or will not be discussed in the interview is resolved.
- Easy to record interview (video / audio tapes).

Some of the weaknesses of semi-structured interview include the following:

- Depends on the **skill** of the interviewer (the ability to think of questions during the interview, for example) and articulacy of respondent.
- Interviewer may give out **unconscious signals** /cues that guide respondent to give answers expected by interviewer.
- Time Consuming / expensive
- Depth of qualitative information may be **difficult to analyze** (for example, deciding what is and is not relevant).

The *interview schedule* can be simpler than the one for the structured interview. It will be likely to include the following:

- Introductory comments (probably a verbatim script)
- List of topics heading and possibly key questions to ask under these headings
- Set of associated prompts
- Closing comments

4.2.3 Advantages and Disadvantage of the interview

Advantages

- The interview is more appropriate for complex situations. It is the most appropriate approach for studying complex and sensitive areas as the interviewer has the opportunity to prepare a respondent before asking sensitive questions and to explain complex ones to respondents in person.
- It is useful for collecting in-depth information. In an interview situation it is possible for an investigator to obtain in-depth information by probing.

- Information can be supplemented. An interviewer is able to supplement information obtained from responses with those gained from observation of non-verbal reactions.
- Questions can be explained. It is likely that a question will be misunderstood as the interviewer can either repeat a question or put it in a form that is understood by the respondent.
- Interviewing has a wider application. An interview can be used with almost any type of population: children, handicapped, illiterate or the very old.

Disadvantages

- Interviewing is time-consuming and expensive. This is specially so when potential respondents are scattered over a wide geographical area.
- The quality of data depends upon the quality of the interaction. In an interview the quality of interaction between an interviewer and interviewee is likely to affect the quality of the information obtained.
- The quality of data depends upon the quality of the interviewer. In an interview situation the quality of the data generated is affected by the experience, skills and commitment of the interviewer.
- The quality of the data may vary when many interviewers are used. Use of multiple interviewers may magnify the problems identified in the two previous points.
- The researcher may introduce his/her bias. Researcher bias in the framing of questions and the interpretation of responses is always possible.
- The interviewer may be biased. If the interviews are conducted by a person or persons, paid or voluntary, other than the researcher, it is also possible that they may exhibit bias in the way they interpret responses, select response categories or choose words to summarize respondents' expressed opinions.

4.2.4 Content of the interview

In interviews which are to a greater or lesser extent pre-structured by the interviewers, the content, which can be prepared in advance, consists *of a set of items (usually questions)*, often with alternative subsequent items depending on the responses obtained; suggestions for so-called

probes and prompts; and a proposed *sequence for the questions* which, in semi-structured interview, may be subject to change during the course of the interview.

The Items or Questions

Three types are used in research interviews: *closed (or fixed-alternative)*, *open*, and *scale* items. Closed questions, as the fixed alternative label suggests, force the interviewee to choose from two or more fixed alternatives. Open questions provide no restrictions on the content or manner of the reply other than on the subject area (e.g. ‘what kind of way do you most prefer to spend a free evening?’). Scale items, which may well not be in question form, ask for a response in the form of degree of agreement or disagreement (e.g. strongly agree/agree/neutral/disagree/strongly disagree). Logically they are the closed or fixed-alternative type, but are sometimes regarded as a separate type.

Open-ended questions are probably more commonly used in interviews than in other settings. They are flexible; they allow the interviewer to probe so that he may go into more depth if he chooses, or clear up and misunderstandings; they enable the interviewer to test the limits of a respondent’s knowledge; they encourage cooperation and rapport; and they allow the interviewer to make a truer assessment of what the respondent really believes. Open-ended situations can also result in unexpected or unanticipated answers which may suggest hitherto unthought-of relationships or hypotheses. The disadvantages lie in the possibilities for loss of control by the interviewer, and in particular in being more difficult to analyze than closed ones.

Probes

A **probe** is a device to get the interviewee to expand on a response when you intuit that she or he has more to give. The use of probes is something of an art-form and difficult to transmit to the novice interviewer. Sometimes the interviewer may be given instructions to probe on specific questions. There are obvious tactics, such as asking ‘Anything more? Or ‘could you go over that again?’ Sometimes when an answer has been given in general terms, a useful probe is to seek a

personal response, e.g. ‘what is your own personal view on this?’. There are also very general tactics, such as the use of

- A period of silence;
- An enquiring glance
- ‘Mmhmm...’
- Repeating back all or part of what the interviewee has just said.

Prompts

Prompts suggest to the interviewee the range or set of possible answers that the interviewer expects. The list of possibilities may be read out by the interviewer, or a ‘prompt card’ with them on can be shown (e.g. a list of names of alcoholic drinks for a question on drinking habits). All prompts must be used in a consistent interviewees, and form part of the interview record.

The sequence of Questions

The conventional sequence is as follows,

1. ***Introduction:*** interviewer introduces him/herself, explains purpose of the interview, assures of confidentiality, and asks permission to tape and/or make notes.
2. ***Warm-up:*** easy, non-threatening questions at the beginning to settle down both of you.
3. ***Main body of interview:*** Covering the main purpose of the interview in what the interviewer considers to be a logical progression. In semi-structured interviewing this order can be varied, capitalizing on the response made (ensure ‘missed topics are returned to unless this seems inappropriate or unnecessary.) Any ‘risky’ questions should be relatively late in the sequence so that, if the interviewee refuses to continue, less information is lost.
4. ***‘Cool-off’:*** Thank you and good bye. Interviewees may, when the recorder is switched off or the notebook put away, come out with a lot of interesting material. There are various possible ways of dealing with this (switch on again, reopen the book, forget about it) but in any case you should be consistent and note how you dealt with it.

4.3. The Questionnaire

4.3.1 The Questionnaire

A **questionnaire** is a written list of questions, the answers to which are recorded by respondents. In a questionnaire respondents read the questions, interpret what is expected and then write down the answers. The only difference between an interview schedule and a questionnaire is that in the former it is the interviewer who asks the questions (and if necessary explains them) and records the respondent's replies on an interview schedule and in the latter replies are recorded by the respondents themselves.

In the case of a questionnaire, as there is no one to explain the meaning of questions to respondents. It is important that questions are clear and easy to understand. Also, the lay out of a questionnaire should be such that it is easy read and pleasant to the eye and the sequence of question should be easy to follow.

A questionnaire can be administered in different ways:

- **The mailed questionnaire**- the most common approach to collecting information is to send the questionnaire to prospective respondents by mail. Usually it is a good idea to send a prepaid, self-addressed envelop with the questionnaire as this might increase the response rate. A mailed questionnaire must be accompanied by a covering letter. One of the major problems with this method is the low response rate.
- **Collective administration**-one of the best ways of administering a questionnaire is to obtain a captive audience such as students in a classroom, people attending a function, participants in a very high response rate as you will find few people refuse to participate in your study. Also, as you have personal contact with the study population, you can clarify any questions that respondents may have.
- **Administration in a public place**-Sometimes you can administer a questionnaire in a public place such as shopping center, health center, hospital, school or pub. Usually, the purpose of the study is explained to potential respondents as they approach and their participation in the study is requested.

It is essential that you write a covering letter with your mailed questionnaire. It should very briefly:

- Introduce you and the institution you are representing
- Describe in two or three sentences the main objectives of the study
- Explain the relevance of the study
- Convey any general instructions
- Indicate that participation in the study is voluntary
- Assure respondents of the anonymity of the information provided by them.
- Provide a contact number in case they have any question
- Give a return address for the questionnaire and deadline for its return
- Thank them for their participation in the study.

4.3.2 Advantages and Disadvantage of a questionnaire

A questionnaire has several advantages:

- It is less expensive- As you don't interview respondents, you save time, and human and financial resources. Particularly, when it is administered collectively to a study population, it is an extremely inexpensive method of data collection.
- It offers greater anonymity-As there is no face-to-face interaction between respondents and interviewer, this method provides greater anonymity.

Although a questionnaire has several disadvantages, it is important to note that not all data collection using this method has these disadvantages. The prevalence of a disadvantage depends on a number of factors, but you need to be aware of them to understand their possible bearing on the quality of the data. These are;

- Application is limited: One main disadvantage is that its application is limited to a study population who can read and write. It can't be used on a population that is illiterate, very young, very old, or handicapped.
- Response rate is low: Questionnaires are notorious for their low response rates; that is, people fail to return them. If you plan to use a questionnaire, keep in mind that because not

everyone will return their questionnaire, your sample size will in effect be reduced. The response rate depends upon a number of factors: the interest of the sample in the topic of the study, the lay out and length of the questionnaire, the quality of the letter explaining the purpose and relevance of the study, and the methodology uses to deliver the questionnaire.

- There is a self-selecting bias: Not everyone who receives a questionnaire returns it, so there is a self-selecting bias. Those who return their questionnaire may have attitudes, attributes or motivations that are different from those who don't.
- Opportunity to clarify issues is lacking- If, for any reason, respondents don't understand some questions, there is no opportunity for them to have the meaning clarified.
- Spontaneous responses aren't allowed for- Mailed questionnaires are inappropriate when spontaneous responses are required, as a questionnaire gives them time to reflect before answering.
- The responses to a question may be influenced by the responses of other questions. As respondents can read all the questions before answering (which usually happens), the way they answer a particular question may be affected by their knowledge of other questions.
- It is possible to consult others. With mailed questionnaires respondents may consult other people before responding.
- A response cannot be supplemented with other information. An interview can sometimes be supplemented with information from other methods of data collection such as observation. However, a questionnaire lacks this advantage.

4.3.3 Forms of Questions

The form and wording of questions is extremely important in a research instrument as they have an effect on the type and quality of information obtained. The questions should therefore be appropriate and relevant.

In an interview schedule or a questionnaire, questions may be formulated as:

- Open-ended; or
- Closed ended

In open-ended questions the possible responses aren't given. In the case of a questionnaire, the respondent writes down the answers in his/her words, whereas in the case of an interview schedule the investigator records the answers either verbatim or in a summary describing a respondent's answer. In a closed-ended question the possible answers are set out in the questionnaire or schedule and the respondent or the investigator ticks the category that best describes the respondent's answer.

Examples of Closed-ended questions

A. Please indicate your age by placing a tick in the appropriate category.

Under 15 ☐

20-24 years ☐

15-19 years ☐

B. How would you describe your current marital status?

Married ☐

Single ☐

Divorced ☐

Separated ☐

Examples of open-ended questions

A. What, in your opinion, are the qualities of a good administrator?

1. _____

2. _____

3. _____

B. How would you describe your current marital status? _____

4.3.3.1 Advantages and disadvantages of open-ended questions

Open-ended questions have a number advantages and disadvantages.

- **Open-ended questions provide** in-depth information if used in an interview by an experienced interviewer. In a questionnaire, open-ended questions can provide a wealth of information, provided respondents feel comfortable about expressing their opinions and are fluent in the language used. On the other hand, analysis of open-ended questions is more difficult. The researcher usually needs to go through another process-content analysis-in order to classify the data.
- **In a questionnaire, open-ended questions** provide respondents with the opportunity to express themselves freely, resulting in a greater variety of information. Thus, respondents are not ‘conditioned’ by having to select answers from a list. The disadvantage of free choice is that, in a questionnaire some respondents may not be able to express themselves, and so information can be lost.
- **As open-ended questions** allow respondents to express themselves freely, they virtually eliminate the possibility of investigator bias (investigator bias is introduced through the response pattern presented to respondents). On the other hand, there is a greater chance of interviewer bias in open-ended questions.

4.3.3.2 Advantages and disadvantages of closed-ended questions

Closed-ended questions, like open-ended questions have many advantages and disadvantages.

- **One of the main disadvantages of closed-ended questions** is that the information obtained through them lacks depth and variety.
- There is greater possibility of investigator bias because the researcher may list only the response patterns that s/he is interested in or those that come to mind. Even if the category of 'other' is offered, most people will usually select from the given responses, and so the findings may still reflect the researcher's bias.
- In a questionnaire, the given response pattern for a question could condition the thinking of respondents, and so the answer provided may not truly reflect respondent's opinions. Rather, they may reflect the extent of agreement or disagreement with the researcher's opinion or analysis of a situation.
- The case of answering a ready-made list of responses may create a tendency among some respondents and interviewer to tick a category or categories without thinking through the issue.
- **Closed-ended questions**, as they provide 'ready made' categories within which respondents reply to the questions asked by the researcher, help to ensure that the information needed by the researcher is obtained.
- Because the possible responses are already categorized, they are easy to analyze.

4.3.4 Considerations in formulating questions

The wording and tone of your questions are important because the information and its quality depend upon these factors. It is therefore important to be careful about the way you formulate questions. The following are some considerations to keep in mind when self-completed questionnaires

3.4.1 Specific questions are better than general ones.

The goal of standardized measurement is central to survey research; specific questions provide more standardization. With more general questions there is wider range of interpretations by respondents, greater susceptibility to order effects: and poor prediction of behavior.

Example

General: List the newspapers and magazine you looked at yesterday

Specific: Which of these newspapers and magazines did you look at yesterday?

(Show it)

3.4.2. Closed questions are usually preferable to open questions.

The advantage is again in potential differences in interpretation with the open forum. They are also some difficult to code and analyze. However, in some circumstances the open form is preferable (e.g. when not enough is known to write appropriate response categories; and in the measurement of sensitive or disapproved behavior).

Examples:-

Open: People look for different things in a job; what would you most prefer in job?

Closed: People look for different things in a job; which one of the following five things would you most prefer in a job;

- ✓ work that pays well,
- ✓ work that gives a feeling of accomplishment,
- ✓ work where there is not too much supervision and you make most of the decisions yourself,
- ✓ work that is pleasant and the other people are nice to work with ;
- ✓ Work that is ready with little chance of being laid off?

3.4.3. Offer a ‘no-opinion’ option

Polls often assume that because a problem is of importance everyone will have an opinion about it. There is evidence that if no option is given substantial numbers of people manufacture an opinion for the survey.

Example:

Separate ‘no opinion’ filter: - The Russian leaders are basically trying to get along with the west. Do you have opinion on that? (If yes) Do you agree or disagree?

‘No opinion’ response option :-The Russian leaders are basically trying to Get along with the west. Do you agree, disagree, or not have an opinion on that?

4.3.4.4. Use of forced choice rather than ‘agree/disagree’ statements

Agree/disagree statement (as commonly used in attitude measurement) suffer from ‘acquiescence response set’ i.e. the tendency of respondents to agree irrespective of item content. Generally, forced choice items appear more apt to encourage a considered response than agree/disagree statements.

4.3.4.5. Question order

The meaning of almost any question can be altered by a preceding question. However, research hasn’t to date suggested any general rules to order questions, beyond the suggestion that general questions should precede specific questions.

4.3.4.6. Wording effects

While small changes in wording can have large effects on the answers of many respondents, it is difficult to predict in advance whether or not a particular wording change will have an effect. This indicates the importance of not basing conclusions on results from a single question. Strategies for doing this include:

Asking multiple on a topic:-This is essentially the solution adopted when attitudes or other scale are used.

4.3.5 The construction of a research instrument

The construction of a research instrument or tool is the most important aspect of a research project because anything you say by way of findings or conclusions is based upon the type of information you collect, and the data you collect is entirely dependent upon the questions that you ask of your respondents. The research tool provides the input into a study and therefore the quality and validity of the output, the findings, are solely dependent upon it. Dear students, the guidelines suggested below outline a broad approach. The underlining principle is to ensure the validity of your instrument by making sure that your questions relate to the objectives of your study. Therefore, clearly defined objectives play an extremely important role as each question in the instrument must stem from the objectives, research questions and/or hypothesis of the study.

It is therefore suggested as a beginner you should adopt the following procedures:

Step I: If you have not already done so, clearly define and individually list all the specific objectives, research questions or hypotheses, if any, to be tested

Step II: For each objective, research question or hypothesis, list all the associate questions that you want to answer through your study

Step III: Take each research question identified in step II and list the information required to answer it.

Step IV: Formulate question(s) to obtain this information.

4.3.6 The concept of Validity and reliability

The concept of validity refers to quality and can be applied to any aspect of the research process. With respect to measurement procedures it relates to whether a research instrument is measuring what it set out to measure.

There are two approaches used to establish the validity of an instrument:

- **The establishment of a logical link between the objectives of a study and the questions used in an instrument, and**
- **The use of statistical analysis to demonstrate this link.**

We use the word ‘reliability’ very often in our lives. When we say that a person is reliable, what do we mean? We infer that s/he is dependable, consistent, predictable, stable and honest.

The reliability of an instrument refers to its ability to produce consistent measurement each time. When we administer an instrument under the same or similar conditions to the same population and obtain similar results, we say that the instrument is ‘reliable’- the more similar the results, the greater the reliability. You can look at reliability from two sides: reliability (the extent of accuracy) and unreliability (the extent of inaccuracy). Ambiguity in the wording of questions, a change in the physical setting for data collection, a respondent’s mood when providing information, the nature of the interaction between interviewer and interviewee and the regressive effect of an instrument are factors that can affect the reliability of a research instrument.

4.4. Data collection techniques using secondary sources

Secondary Sources

A **secondary source** contrasts with a [primary source](#), which is an original source of the information being discussed. Secondary sources involve generalization, analysis, synthesis, interpretation, or evaluation of the original information. *Examples of secondary sources include the use of census data to obtain information on the age-sex structure of a population, the use of hospital records to find out morbidity and mortality patterns of a community, the use of organization’s records to ascertain its activities, and the collection of data from sources such*

as articles, journals, magazines, books and periodicals to obtain historical and other type of information.

We have discussed the primary sources of data collection where the required data was collected either by you or by someone else for the specific purpose you have in mind.

There are occasions when your data has already been collected by someone else and you need only to extract the required information for the purpose of your study. **This section lists some of the many secondary sources that can be grouped into the following categories:**

- **Government or semi-government publications-** there are many government and semi-government organizations that collect data on a regular basis in a variety of areas and publish it for use by members of the public and interest groups. Some common examples are the census, vital statistics registration, labor force surveys, health reports, economic forecasts and demographic information.
- **Earlier research-**for some topic, an enormous number of research studies that have already been done by others can provide you with the required information.
- **Personal records-**Some people write historical and personal records that may provide the information you need.
- **Mass media-**reports published in newspaper, magazines and so on may be another good source of data.

4.4.2 Problems of using data from secondary sources

When using data from secondary sources you need to be careful as there may be certain problems with the availability, format and quality of data. The extent of these problems varies from sources to source. While using such data some issues you keep in mind are:

- **Validity and reliability** –the validity of information may vary markedly from source to source. For example, information obtained from census is likely to be more valid and reliable than that obtained from most personal diaries.

- **Personal bias**-the use of information from personal diaries, news papers and magazines may have the problem of personal bias as these writers are likely to exhibit less rigorousness and objectivity than one would expect in research.
- **Availability of data**- it is important to make sure that the required data are available before you proceed further with your study.
- **Format**-before deciding to use data from secondary sources it is equally important to ascertain that the data are available in the required format. For example, you might need to analyze age in the categories 23-33, 34-48 and so on, but in your source, age may be categorized differently, for example 21-24, 25-29 and so on.

Chapter Five

Processing, Analysis and Data Interpretation

5.1 The Analysis of Quantitative Data

Quantitative data are data which are in the form of numbers (or measurements). Thus, quantitative research is empirical research where the data are in the form of numbers.

The analysis of quantitative data covers a wide range of things, from simple organization of the data to complex statistical analysis. Quantitative information go through a process that is primarily aimed at transforming the information into numerical values, called *codes*, so that the information can easily be analyzed either manually or by computers.

For coding quantitative data, you need to go through such steps as developing a code book, pre-testing code book, coding the data and verifying the coded data. Henceforth, you should develop a frame of analysis, which should specify

- ◆ Which variables you are planning to analyze
- ◆ How they should be analyzed
- ◆ What cross-tabulations you need to work out

- ◆ Which variables you need to combine to construct your major concepts or to develop indices (in formulating a research problem concepts are changed into variables-at this stage change them back to concepts)
- ◆ Which variables are to be subjected to which statistical procedures

In the frame of analysis the type of analysis to be undertaken (e.g. frequency distribution, cross tabulation) and the statistical procedures applied should be specified. Frequency distributions group respondents into the subcategories into which a variable can be divided. On the other hand, cross-tabulations analyze two variables, usually independent and dependent to determine if there is a relationship between them. The subcategories of both the variables are cross-tabulated to ascertain if a relationship exists between them.

5.2 The Analysis of Qualitative Data

Qualitative data are, unlike the quantitative data, data not in the form of numbers (most of the time, but not always, this means they are in the form of words, these simplified definitions are useful for getting started in research, but they do not give the full picture of the quantitative-qualitative distinction.

Qualitative data is considered an ‘attractive nuisance’. Their attractiveness is undeniable. Words, which are by far the most common form of qualitative data are a specialty of the humans and their organizations. On the other hand the unison refers to the legal doctrine that if you leave our attractive object such as an unlocked car when children can play with it, you may be liable for any injuries they sustain. Naïve researcher may be injured by unforeseen problems with qualitative data. This can occur out the collection stage where overload is a constant danger. But the main difficult is in their analysis. There is no clear and accepted set of conventions for

qualitative analysis. Quantitative data may be useful for in supplementing and illustrating the quantitative data obtained from an experiment or serves.

5.2 Approaches to analysis

Irrespective of whether your study generates qualitative or quantitative data the major task is to find answers to your research questions. This has a major influence on the kinds of analysis needed. To come up with trustworthy answers the analysis has to treat the evidence fairly and without bias and the conclusions must be compelling, not least in ruling out alternative interpretations.

The central requirement in qualitative analysis is clear thinking on the part of the analyst. Qualitative analysis remains much closer to codified commonsense than the complexities of statistical analysis of quantitative data.

However humans as ‘natural analyst’ have deficiencies and biases corresponding to the problems that they have as observers.

Thus deficiencies of the human as analyst include the following:-

- **Data overload-** limitation on the amount of data that can be dealt with (too much to receive, process and remember).
- **First impressions-** Early input makes a large impression so that subsequent revision is resisted.
- **Information availability-** information which difficult to get hold of gets less attention than which is easier to obtain.
- **Positive instances-** There is a tendency to ignore information conflicting with hypotheses already held and to emphasize information that confirms them.
- **Internal consistency-** There is a tendency to discount the novel and unusual.
- **Uneven reliability-** The fact that some sources are more reliable than others tends to be ignored.

- **Missing information**-Something for which information is incomplete tends to be devalued.
- **Revision of hypotheses**- There is a tendency either to over or to under react to new information.
- **Fictional base**- The tendency to compare with a base or average when no base data is available.
- **Confidence in judgment**- Excessive confidence is rested in one's judgment when once it is made.
- **Co-occurrence**- co-occurrence tends to be interpreted as strong evidence for correlation.
- **Inconsistency**- Repeated evaluations of the same data tend to differ.

5.2.1 The Quasi-Judicial Approach.

The quasi-judicial approach covers a set and basic rules and procedural steps for how a case study should be carried out from start to finish. It is termed 'quasi-judicial' because it is modeled on jurisprudence (the 'science' of law). It is an exercise in problem-solving rather than in interpreting the law. At its core is the notion of a systematic procedure which uses rational argument to interpret empirical evidence.

Procedural steps in the quasi-judicial approach

1. State the initial problems and issues as clearly as possible
2. Collect background information to provide a context in terms of which the problems and issues are to be understood.
3. Put forward prima facie explanations and solution to the problems and issues.
4. Use these explanations to guide the search for additional evidence. If they don't fit the available evidence, work out alternative explanations.
5. Continue the search for sufficient evidence to eliminate as many of the suggested explanations as possible in the hope that one will account for all the available evidence and be contradicted by none of it. Evidence may be direct or indirect but must be admissible, irrelevant and obtained from competent and credible sources.

6. Closely examined the sources of evidence as well as the evidence itself. All items should be checked for consistency and accuracy. This is analogous to legal cross examination in the case of personal testimony.
7. Enquire critically into internal coherence, logic and external validity of the network of argument claiming to settle the issues and solve the problems.
8. Select the most likely interpretation compatible with the evidence.
9. Formulating an acceptable explanation usually carries an implication for action, which has to be worked out.
10. Prepare an account in the form of a report. It should contribute to 'case law' by virtue of the general principles employed in explaining to specific case.

These lists of ten procedural steps emphasize that analysis is not left to the end of the process but is a continuing concern dealt with by iteration. Thus through this process one should keep in mind four important questions.

1. What is at issue?
2. What other relevant evidence might there be?
3. How else might one make sense of the data?
4. How were the data obtained?

The quasi-judicial approach does not produce tight prescriptions for analysis of the kind generated by statistical tests when dealing with quantitative data. As with the 'real' judicial approach it is to a large extent concerned with evidence and argument.

While the quasi-judicial approach provides a useful orientation and a new framework for dealing with qualitative case study data, it is admittedly less helpful in suggesting what one does with the data collected.

5.3 General Strategies for Analysis

5.3.1 Basing the Analysis on Theoretical Propositions

In many cases a study is based on a particular set of theoretical propositions. The theoretical stance, in some sense ‘given’ to you (perhaps through reviewing previous work, or more literally by you being asked to do work in these terms) will have helped from the research questions to be asked, and through them the design of the study. This strategy can be a powerful aid in guiding the analysis, indicating where and on what, attention should be focused.

5.3.2. Basing the Analysis on a Descriptive Framework

In exploratory and descriptive case studies you may, quite possibly, not start within a particular theoretical framework. An alternative is to develop a case description. You are looking for a set of themes, or areas, linked to the research questions once again, which appear to give an adequate coverage of the case. One version, common in applied, real world studies, is to work towards an issue analysis, where the issues can be used as a means of organizing and selecting material.

5.3.4 Explanation-building

It is, self-evidently, primarily concerned with explanatory case studies, where the goal is to provide an explanation of what is happening in the case. Thus, the final explanation is the result of the following series of iterations:

- Making an initial theoretical statement or an initial proposition
- Comparing the findings of an initial case against such a statement or proposition.
- Revising the statement or proposition
- Comparing other details of the case against the statement or proposition
- Again revising the statement or proposition
- Comparing the revision to the facts of a second, third or more cases, and
- Repeating the process as many times as it is needed

5.3.5. Chronologies

A Chronological analysis is a way of organizing data from a case study over time. As a strategy case study can be longitudinal, that is, it allows the enquirer to trace events over time, although this would be precluded in small scale studies for anything apart from situations where the time spans are relatively short. It is possible to extend the time dimension beyond your direct involvement by seeking retrospective information through interviews and documentary evidence.

An attraction of chronological origination is the help that it gives in determining causal relationships. Causes must precede effects in time.

A particular form of chronology is the life history approach. It is usually taken as a full length account of a single person's life in that person's own words. There are alternatives to a chronological presentation, for instance, using dimensions or aspects of the person's life, the principal 'turnings' in their life and their life conditions between them and their characteristic means of adaptation. They are typically expressed in narrative form, and are often of compelling interest.

5.3.6. Time series analysis

Time series design can be used with case study data. Analysis of time series designs is primarily an analysis of the patterning of data over time- asking questions about, for example, whether there is a discontinuity in the pattern which coincides with a change in treatment. The same is true about single subject designs, which although developed separately, overlap substantially with time series approaches.

5.3.7. Triangulations

Triangulation is an indispensable tool in real word enquiry. It is particularly valuable in the analysis of qualitative data where the trustworthiness of the data is always a worry. It provides a means of testing one source of information against other sources.

Both correspondences and discrepancies are of value. If two sources give the same messages then, to some extent, they cross-validate each other. If there is a discrepancy its investigation may help in explaining the phenomenon of interest.

A case study of the effects of introducing national testing in to primary schools might incorporate as well as the test results, interview data from the children involved in relation to their own views and feelings and further interview data from their teachers. Triangulation of information about progress might, for example, indicate that for some children the test data and teachers' views suggest good progress, whereas the children consider their own progress to have been unsatisfactory. This discrepancy might be hypothesized as related to increased stress and could help in suggesting comparisons with pupils who have realistic views about their progress in suggesting additional topics to explore in discussion or suggest including the parents views in the study.

Here, and in many cases the byproducts of triangulation are as useful as its primary purpose in validating information. It improves the quality of data and in consequence the accuracy of findings. Alertness for possible triangulation opportunities is a valuable quality in the enquirer.

5.3.8. Key events

? What is key event analysis all about?

Key or focal events are used in ethnographic style case studies where they are widely used to form a focus for analysis. They are a feature and classical anthropologic studies. Their use is not only in helping to understand the group or situation, but also in helping to share that understanding with others. Dear students, now let us see the strategies for analyzing interview and observation.

➤ Strategies for analyzing interviews

The first decision to be made in analyzing interviews is whether to begin with case analysis or cross-case analysis. Beginning with case analysis means writing a case study for each person

interviewed or each unit studied (e.g. each critical event, each group and so on). Beginning with cross-case analysis means grouping together answers from different people to common questions or analyzing different perspectives on central issues.

If a standardized open ended interview is used it is fairly easy to do cross-case or cross interview analysis for each question in the interview. With an interview guide approach, answers from different people can be grouped by topics from the guide, but the relevant data won't be found in the same place in each interview. The interview guide actually constitutes a descriptive analytical framework for analysis.

It is appropriate to begin with individual case studies where variations in individuals are the primary focus of the study. This strategy requires writing a case analysis using all the data for each person before doing cross-case analysis. For example if one has studied the juvenile delinquents the analysis could begin by doing a case description of each juvenile before doing cross-case analysis. On the other hand, if the focus is on a criminal justice program serving juveniles, the analysis might begin with a description of variation in answers to common question, for example, what were patterns of major program experiences, what did they like, what they disliked, how did they think they had changed and so forth.

These two strategies are by no means mutually exclusive. A study will often include both kinds of analysis but one has to begin somewhere. Trying to do both individual case studies cross-case analysis by issue at the same time will likely lead to confusion

➤ **Strategies for analyzing observations**

Initial analysis of observational data is greatly facilitated by clarity about how it will be most helpful to present the findings. Options include the following.

Chronology: Describe what was observed chronologically over time to tell the story from beginning to end.

Key events: Present the data by critical incidents or major events, not necessarily in order of importance.

Various settings: Describe various places sites, settings, or locations (doing case studies of each) before doing cross setting pattern analysis.

People: If individual or groups are the primers unit of analysis the case studies.

Processes: The data may be organized to describe important processes (e.g. Control, recruitment decision making socialization, communication)

Issues- The observation may be pulled together to illuminate key issues often the equivalent of the primary evaluation questions, such as how did participant change?

Again these are not mutually exclusive or exhaustive ways of organizing observational data.

5.4 Organizing Qualitative Data

There is typically not a precise point at which data collection ends and analysis begins. In the course of gathering data, ideas about possible analysis with occur.. Those ideas constitute the beginning of analysis.

The data generated by qualitative methods are voluminous. Sitting down to make sense out of pages at interviews and whole files at field notes can be overwhelming. However, the first thing to do is to make sure it's all there. Are the field notes complete? Get a sense of the data; check out the quality of information you have collected.

The analysis of qualitative data is an iterative process. It is also a process demanding intellectual discipline, analytical rigor and a great deal of hard work. Because different people manage their creativity, intellectual endeavors, and hard work is different way there is no right way to go about organizing analyzing and interpreting qualitative data.

Thus, the following sections describe some alternative ways of organizing and reporting qualitative data.

5.4.1 Content analysis

Content analysis is the process of identifying coding and categorizing the primary patterns in the data. This means analyzing the content of interviews and observations.

First we need to code our notes. You should start by reading through all the field notes or interview and making comments in the margins or even attaching pieces of paper with staples or paper clip that contain notions about what you can do with different parts as the data. This is the beginning of organizing the parts of the data. This is the beginning of organizing the data in to topics and files.

The following are examples of topics used to organize field notes ('P' is for Participants)

Abbreviation: P's React Prog.

Meaning: (Participants' reactions to the program)

This process of labeling the various kinds of data and establishing a data index is a first step in content analysis. Thus, a classification system is critical; without classification there is chaos. Simplifying the complexity of reality into some manageable classification scheme is the first step of analysis.

➤ The content of case studies

Once the raw case data have been accumulated, the researcher may write a case record. The case record pulls together and organizes the voluminous case data into a comprehensive primary resource package. The case record includes all the major information that will be used in doing the final case analysis and case study. Information is edited, redundancies are sorted out, parts are fitted together, and the case record is organized for ready access either chronologically and/or topically.

The case record is used to construct a case study. The case study includes the information that will be communicated in the final report; it represents the descriptive data presentation in the report. The report may consist of several case studies that are then compared and contrasted, but the basic descriptive data of the study are the cases.

The case study should take the reader into the case situation, a person's life, a group's life, or a program's life. Each case study in a report stands alone, allowing the reader to understand the case as a unique, holistic entity. At a later point in analysis it is possible to compare and contrast cases, but initially each case must be represented and understood as an idiosyncratic manifestation of the phenomenon of interest. The descriptions of the case should be holistic and comprehensive given the focus of evaluation and will include myriad dimensions, factors variables and categories woven together into an idiographic framework.

Chapter Six

Interpretation and Report Writing

Writing is a process. The only way to learn to write is by writing.³ It takes time and effort, and it improves with practice. There is no single correct way to write, but some methods are associated with good writing.

The process has three steps:

1. **Prewriting.** Prepare to write by arranging notes on the literature, making lists of ideas, outlining, completing bibliographic citations, and organizing comments on data analysis.
2. **Composing.** Get your ideas onto paper as a first draft, a complete report from beginning to end, not a few rough notes or an outline, by free writing, drawing up the bibliography and footnotes, preparing data for presentation, and forming an introduction and conclusion.
3. **Rewriting.** Evaluate and polish the report by improving coherence, proofreading for mechanical errors, checking citations, and reviewing voice and usage. Many people find that getting started is difficult. Beginning writers often jump to the second step and end there, which results in poor-quality writing.

Prewriting means that you begin with a file folder full of notes, outlines, and lists. You think about the form of the report and audience. Thinking time is important. It often occurs in spurts over a period of time before the bulk of composing begins. Some people become afflicted with a strange ailment when they sit down to compose writing: a temporary inability to write known as *writer's block*. The mind goes blank, the fingers freeze, and panic sets in. Writers from beginners through experts occasionally experience it. If you do, calm down and work on overcoming it. Numerous writers begin to compose by **free writing**.

Free Writing is a process of writing down everything you can as quickly as it enters into your mind.

Free writing establishes a link between a rapid flow of ideas in the mind and writing. When you free write, you do not stop to reread what you wrote, you do not ponder the best word, you do not worry about correct grammar, spelling, or punctuation. You just put ideas on paper as quickly as possible to get and keep the creative juices or ideas flowing. You can later clean up what you wrote. Writing and thinking are so intertwined that it is impossible to know where one ends and the other begins. This means that if you plan to sit and stare

at the wall, the computer output, the sky, or whatever until all thoughts become totally clear before beginning, you will rarely get anything written. The thinking process can be ignited during the writing itself.

Rewriting. Perhaps one in a million writers is a creative genius who can produce a first draft that communicates with astounding accuracy and clarity. For the rest of us mortals, writing means that rewriting—and rewriting again—is necessary. For example, Ernest Hemingway is reported to have rewritten the end of *Farewell to Arms* thirty-nine times.⁴ It is not unusual for a professional researcher

Finally, the researcher has to prepare the report of what has been done by him. Writing of report must be done with great care keeping in view the following:

1. **The layout of the report should be as follows:**

(i) **The preliminary pages;**

(ii) **The main text, and**

103 | Page

Course Title: Research Methodology for Social Sciences

Handout

By Jemal E. (MA)

(iii) The end matter.

In its preliminary pages the report should carry title and date followed by acknowledgements and foreword. Then there should be a table of contents followed by a list of tables and list of graphs and charts, if any, given in the report.

The main text of the report should have the following parts:

(a) Introduction: It should contain a clear statement of the objective of the research and an explanation of the methodology adopted in accomplishing the research. The scope of the study along with various limitations should as well be stated in this part.

(b) Summary of findings: After introduction there would appear a statement of findings and recommendations in non-technical language. If the findings are extensive, they should be summarized.

(c) Main report: The main body of the report should be presented in logical sequence and broken-down into readily identifiable sections.

(d) Conclusion: Towards the end of the main text, researcher should again put down the results of his research clearly and precisely. In fact, it is the final summing up.

At the end of the report, appendices should be enlisted in respect of all technical data. Bibliography, i.e., list of books, journals, reports, etc., consulted, should also be given in the end. Index should also be given specially in a published research report.

2. Report should be written in a concise and objective style in simple language avoiding vague expressions such as ‘it seems,’ ‘there may be’, and the like.

3. Charts and illustrations in the main report should be used only if they present the information more clearly and forcibly.

4. Calculated ‘confidence limits’ must be mentioned and the various constraints experienced in conducting research operations may as well be stated.

Section I- Report writing in research

all the activities of research that you are introduced in the previous units & sections come to its conclusion when you start to write your research report. At this stage you will communicate the research outcome to other readers. The report gives the first impression to your readers about the

research than your previous efforts. In this section you will learn about the importance of writing a good research report, how research report differs from other types of writings and some guidelines that you should follow in order to make your report clear & understandable

You might have made a very rigorous and exhaustive study of your research using appropriate methods. In doing so you might have collected reliable data & used appropriate method of analysis. What would follow from this? After this you need to present your research findings to the readers or to examiners in case you conducted research for academic purposes. Report writing is the final step in research process, but still the most important one.

Clear communication of what you have done, why it was done and what the outcomes were is crucial in order for the study to be understood by other people and the researcher gets the right academic reward and recognition. bear in mind that regardless of all the steps you gone through and challenges you faced in the due course of conducting the research, finally other people and readers get the final and written copy of it. The clarity & approach with which you presented your research gives the first impression for those who are interested in reading it.

Cognizant of this fact, you need to be cautious in equipping yourself in differentiating between writing for academic purpose (academic research) and other ordinary types of writings and basic issues that you need to consider in producing a clear, compressive & well organized report.

A research report is basically;

A well researched, clearly written, balanced, logical, objective, impartial and concise document that presents conclusions simply and clearly. It has a clear purpose, is organized systematically and targets a specific audience.

Any report usually consists of a beginning, middle and an end. The beginning introduces the overall ideas of the report, what the report composes and its objective. The middle is the main part in which the main ideas, findings, outcomes and arguments are presented. The end simply follows from the main body to inform about the summary of the report, the core out comes & recommendations. How the main body is divided and sub-divided, the language and grammar used the sequences with which issues are presented matters in affecting the quality of the report.

Writing for research purpose is different in many regards from writings for other purposes. These may include;

- i) **Writing in research is controlled:** One has to be careful in what he/she is writing, the words used, the way ideas are expressed, & the extent to which the conclusions are valid & verifiable.
- ii) **Research writing is rigorous:-** research writing needs to be accurate, clear, free from ambiguity and bias, logical and concise.
- iii) **Report in research is written cautiously:-** what ever is written in the report should be defensible for questions that may come from reader or examiners, it should not assume the knowledge of readers in writing and avoid sophisticated jargons that could not be easily understood by readers.

The quality of a research report could be affected by one's language and communication skill, clarity of thoughts, one's ability to express ideas in logical & sequential manner, the researcher's basic knowledge in the area of the research and also one's research experience. Keeping this in mind we could set some guidelines by which any body who is going to write a research report can follow for the better quality of the report produced. Actually the principles of report writing are easier to develop than to follow because many practical problems occur in the course of implementing them.

Even if it may not be exhaustive we can discuss some guidelines that would enable to improve the quality of a research report. These are discussed as follows.

- i) **Plan before writing:-** One way to ensure a good report is to plan before writing it. This saves time and promotes clarity, planning on what to write & how to write eases the burden of confusion in one's mind because it clarifies the idea of the writer. At this level one needs to decide on the purpose of the report, the precise message to be communicated & decide on the format and structure.
- ii) **Use of simple terminologies:** use of abstract and technical terms (jargons) causes barrier to communication among readers of your report. The use of clear and well known terms promotes clarity which entails that a writer has to use clear term that

could be understood by any reader than inserting purely professional terms unfamiliar to lay people.

- iii) **Clarity in language:-** Not only is the use of clear words important but also how statements are constructed clearly to the readers understanding. Actually it is difficult to teach here one how to communicate one's idea in a street forward manner because it is determined by many factors. However it can be stated that poor language obscures communication & messages cannot be easily received. Use the following rules;

- **Orderly presentation of ideas:-** try to show clearly relation ships between ideas by using conjunctions and appropriate punctuation when there is a need.
- **Smoothness of expression:-** try to avoid contradictions that might exist, & un needed ideas and statements. This may occur but can be dealt by revisiting your report & giving the draft to other people.
- **Economy of expression:-** The report will be concise and clear if you are able to say only what you want to say. Moreover it is important to avoid redundancy & use only those words that are important to express your idea. One should also make sure that, he/she is using the right word for what is intended to be written since readers may come up with different meaning.

- iv) **Use of mechanical aids to clear presentation:-**

- **Sub headings:-** use of many and appropriate sub headings helps the reader to remember ideas in relation to topics and sub-topics. For instance if you write a 50 page report with only two titles your reader may be lost in the middle. Therefore you need to dissect your report in to different titles and sub titles. Very few people can remember the total pattern of your report if it lacks divided sub-readings.
- **Use Maps, Charts & Graphs:-** specially in analyzing quantitative data you may need to use maps, graphs and charts instead of giving detailed

description of numbers in your text. Detailed description of numbers causes much more confusion, while tables, charts, graphs make them readable.

- v) **Avoid biasedness and emotionality**:- reflection of biasedness and emotionality may deter your readers understanding and puts the reliability of your research outcome in to question. Therefore, objective and unbiased analysis is recommended to increase your reader's understanding & ensure clarity to your report.

Section – II- Basic components of a research paper

The basic component of a research report. These components include the preliminaries (title page, acknowledgments, tables and figures, list of appendices, Abstract and table of contents), the main body (introduction results and discussions) and finally the list of references and appendices attached. We will discuss all these elements and what should each constitute.

2.1 The preliminaries.

The preliminaries are parts of a research report that appear before the main body and give general information about the title and organization of the paper. It generally incorporates components like;

i) The title page

The title page usually constitutes the title of the report, the name of the author and the date when the report is written or finalized. The title should summarize the main idea of the paper. It should be brief, clear and concise to inform the reader about the crux of the written report. It appears at the fore front page of your report.

Eg:-

- The impact of good governance on the promotion of investment in Jimma Town
- Micro finance institutions and their role towards local economic development the case of Mana Woreda in Jimma Zone.
- Land management practices among farmers & its impact on curbing land degradation: the case of Sokoru Woreda in Jimma Zone.

These titles are clear & concise, show your theoretical basis, and show relationships among variables under the study and your specific area of concern.

Ambo University Woliso Campus

School of Governance

The Impact of Governance in the Development of Woliso Town

By: Jemal E.

April, 2020

ii) Acknowledgment

Acknowledgement is a brief statement that recognizes other people or organizations who contributed for the success and accomplishment of the research. This may include your research advisor, organizations that funded the research, organizations that supported the study with relevant data, individuals who may have cooperated in the writings and analysis of data etc... The researcher gives public recognition to those people or organization who he/she thought made vital contribution in the course of the research.

iii) Table of contents

Under this part the researcher introduces organization of the paper. The different headings and sub-headings will be listed in sequential order. In other words every chapter will be listed in successive order together with their sub-parts to show the logical order of the paper from the introduction up to the conclusion.

Any reader might know the overall idea of your research report after going through the contents of the chapters. Moreover it enables the reader to go in to any section of the report since pages are also listed for each and every titles and subtitles of the report. (see the contents of this module).

iv) Lists of Tables, figures & appendices.

Tables and figures that are incorporated in the main body or the report should be listed on a separate page in the preliminaries. In the first place each and every tables and figures in the main report should be numbered. After this each and every table and figure should be listed by

mentioning their number and the page in which it is found in the report. This is very important because a reader who is interested to see any of the figures or tables in the report can easily access it by simply looking at the list of figures and the pages implicated parallel to them.

If there are appendices attached at the back of your research report, you should also number them and their list should appear in the preliminaries together with the pages in which they are found. (Try to find any research report & see how figures, tables and appendices are listed).

v) The abstract

An abstract is a brief and comprehensive summary of the whole idea of the research report. It should be brief, concise and informative of the whole idea of the paper. An abstract should be able to show the title of the research paper, the thematic (core idea) of the study area, objectives, the methods used in conducting the research (the research design, method of data collection & analysis), the main findings of the research and finally the recommendations. These all parts of the research report should be briefly explained to the readers understanding may be in a single page. Any reader who likes to have the brief overview of the research report could simply go to the abstract and gets the whole idea from the beginning to the end.

2.2 The Introduction

The introduction of the research mainly discusses about the research problem, objective, research question, scope of your study, the design and methods that are used (method of data collection, analysis, the research design etc...). All the components that you discussed as elements of proposal in the section two of the first module are parts of the introduction.

2.3 Results and discussions

The main part of the research report contains the results and discussions obtained from the data gathered after employing analysis. It can be explained in the form of words and statements probably supported by diagrams, graphs, charts etc... Diagrams, charts, figures etc... may simplify explanations when it is difficult to express everything in words and statements. However the use of tables, figures & diagrams depends on the type of research or subject matter & the type of data. For instance usually qualitative data is explained in the form of narration by using quotations and main ideas obtained from respondents in the form of interview or focus

group discussion. The researcher simply divides his report into chapters and sections & decides which issues to be under which part. The use of tables, graphs and charts may not be as such applicable since there is no quantitative data.

However, usually if the data collected is quantitative the use of graphs, tables and charts gives more classification to the report. In this case results can be discussed separately from discussions. The result section simply summarizes the data collected; it mentions all relevant results including those that go against the hypothesis. It is here where graphs & tables will be used to present quantitative data. This part involves the presentation of only the results of the data without including their implications. On the other hand the discussion part deals about the implications of the results of the data discussed in the previous part. Here the data will be interpreted, examined, and finally inferences will be drawn. The inferences drawn finally will be used to further draw conclusions for the research. In some cases results and discussions can be merged together in one part especially when the results are brief. Conclusion and recommendations comes next to discussions and results. The purpose of conclusion and recommendations is to sum up what has been discussed in the main body of the report and formulate recommendations if necessary.

2.5 Reference/Bibliographical list

The reference section of a report consists of all materials cited or mentioned in the report as supportive materials including books, journals, articles, newspapers etc... The reference list provides all these referred materials in alphabetical order. All cited materials in the research report should appear in the reference list. A researcher should be careful in assuring the inclusion of all books & other materials from which ideas are quoted or cited, in the reference list. Bibliography differs from reference list in that, bibliography consists of all books & other materials which the researcher read in the course of doing the research. This means all materials that the researcher identified as relevant to the study which could be cited or not cited in the research report.

2.6 Appendix

This is an optional element of a research report because you may or may not have appendix at the end of your research study. The appendix includes detailed statistical data, graphs, tables or any other notes that would not be feasible if put under the main part of the report but still important to be included in the paper. Therefore such documents are placed at the back of the research report next to the reference list. The writer should guide the readers to the appendix when it is necessary for the more understanding of the report. The appendices should be numbered according to their order of appearance and listed in appendix list of the preliminaries.

Section III- Citation, quotation & plagiarism

This section is specifically dedicated to introduce you the rules of how you can incorporate other's idea in to your research report to support your ideas. Here you have to follow the rules of citation and quotation to give credit to others. You will also be introduced with plagiarism and its consequences. The rules of citations and quotations are supported with example. You need to carefully see the examples to understand the rules.

4.1 Quotations

In writing your research report you may use others work as support to your arguments. It is also imperative to go through others previous works in similar areas to identify the gap that you need to fill. Moreover, you need to have a reviewed literature to show the theoretical ground of the research. In doing all these either you directly quote others work in to your report or paraphrase it and take only the idea. In this case there are rules that a researcher need to observe in directly quoting others work. **Quotation differs from paraphrasing** in that, when you quote you take others idea word by word where as paraphrasing implies only taking the idea and express it your own way. In both cases the author of the material from which you took the idea should by recognized by citing its name, year of publication & page number. Let us now focus on the rules of quotation.

If ideas are directly taken word by word two methods can be followed to incorporate the quotation in to the text.

- i) If the quotation constitutes fewer than 40 words it can be merged with a paragraph enclosed by double quotation marks (“ ”). Look at the following paragraph for more clarification.

Eg:- Development cannot be measured by making use of a single variable i.e. an increase in per capital income. Miller (1999:120) stated that, “Development encompasses multi dimensional faces. It has both qualitative & quantitative aspects in changing the life condition of people” Based on this we can argue that, an increase in per capita income cannot be the only measure of development.

Looking at this example, the quotation taken from an author called Miller is inserted in to the paragraph since it is a short quotation with less than 40 words.

- ii) If the quotation is long constituting more than 40 words there is no need to enclose it in double quotation marks. Rather, the quotation will be written in a new paragraph with indentation from the left margin. You indent the quotation about 5 spaces in from the left margin.

Eg:- Even if some people argue that growth in per capital income can be a dominant measure of economic development others still follow different line of argument. For instance miller (1999:120) argued that.

Instead of simply calculating the ratio of GDP to the total number of population we need to asses how much of the income generated is fairly distributed among the population at large. We need to analyze qualitative changes like how much the people is educated, how much the poor is affected, how much equality is attained... therefore per capita income could not be a good measure of development.

4.2 Citations

In both cases of taking direct quotation and paraphrasing others work you need to recognize or credit the original source of the idea. This is generally called as citation and it has its own rules. For instance, Miller is the original author of the idea quoted in the previous examples and

the source is cited as Miller (1999:120). Cited reference appear in the text of the report consisting of the authors last name, the year of the publication and if possible the page number from which the idea is quoted or paraphrased.

Eg:- Assume you paraphrased the following idea;

The link between decentralization and development is still an area that requires an in depth research & analysis. Nobody denies that decentralization can effect people centered development by making administration much more nearer to the people. Moreover imposing every thing from the centre is now becoming an old fashioned approach in line with the emergence of the new dimension i.e. development from below (Miller, 1999:120).

In this case you did not take the idea from the author word by word rather simply expressed it your own way. Therefore there is no need to put the text in to double quotation marks. In this citation “Miller” represents the last name of the author; “1999” the year of publication and 120 the page number.

4.3 Plagiarism

Plagiarism is closely related with the rules of citation and quotation you learned before. We emphasized that it is important to support our own ideas by ideas taken from others but they should be credited for it. Caution has to be taken in writing research report to separate our original ideas from that of others. Plagiarism is an academic dishonesty manifested through presenting the work of another as if it were one’s own work. This involves both the ideas as well as written words.

In simple terms it means appropriation of the idea of another without giving recognition to the source employed. The material plagiarized could be a book, journal, brochure or any unpublished material. Plagiarism must be avoided in any research activity. It should be noted that, research is usually conducted to contribute new knowledge to the academic world & resolve problems. This

implies that, other's original idea should not be presented as one's own because it is considered as academic theft which is even a crime.

Plagiarism can be avoided by citing the original source material each time one paraphrases or quotes another authors idea. Paraphrasing may include summarizing a passage, rearranging order of a sentence, changing some of the words, where as quotation is about taking every sentence word by word with no change at all. A researcher can abstain from presenting others idea as his own by applying the rules of citation and quotation in writing the research report each time he/she took others idea & incorporated it in the text of the report.

Dear students as you know theft is a crime and plagiarism is an academic theft. Therefore, plagiarizing others work has its own consequence on ones academic career, status & acceptance.

Among others plagiarism may cause;

- ◆ Lack of academic credibility and acceptance.
- ◆ Dismissal or suspension from an academic institution in which one is learning or conducting research.
- ◆ Revocation of academic license.
- ◆ In the worst case legal punishment after taking cases to court.

The type of punishment employed differs from one institution to the other depending on its rules and policies.

Section IV. Formats of referencing

The rules of referencing the books, journals, articles, brochures etc... that you cited in the text of the report. It is imperative to list all the materials that that are referred in the text at the end of the research report. This enables others to easily retrieve the books required for further reading or examine the credibility of the research. It is also another way of recognizing other's work cited in your study. However, there are rules that you need to follow in writing references. This part tries to introduce you some of the most important rules of referencing. Be cautious and try to understand the examples given for each situation. Each and every punctuations and ordering are very important.

A **complete reference** data should consist of such information as; the name of the author, year of publication, the title of the research, volume number (if any), edition number (if any), place of publication, publisher and any other information necessary.

The issue here is that, the format of reference writing differs from publication to publication and also across different disciplines. Therefore, we have to adopt one format which would be applicable to the students of governance and development studies.

There are varieties of reference format that could be followed. If you are required by your discipline you might stick to one of these formats. If not you adopt one of these approaches and use it for your research report. However, the most crucial thing is that, you should be consistent about your citation and referencing across the whole part of the research report. i.e. use the same format continuously from the beginning to the end.

look at different examples for different situations that you might need to follow as your referencing format.

The first very important rule that you need to remember in writing reference list is that, all the items (books referred) appear in alphabetical order using the last name of their authors.

Observe the following rules.

These rules will tell you how you to write your references from different sources like books, journals, newspaper, translations, bulletins, brochures and others.

➤ **Book by one author**

Author name – Spencer Clark.

Year – 1996

Title – Economic Development

Place of publication – New York

Publisher – Penguins

How are you going to write this as a reference list?

Clark, S. (1996). *Economic Development*. New York: Penguins publishing.

What changes did you observe?

- The last name is used for alphabet and the first name is abbreviated with a dot.
- The year of publication comes next to the name in a bracket followed by a full stop.
- The title follows from the year and Italicized.
- The place of publication follows from the title
- The name of the publisher and the place of publication is separated by a colon and there is a full stop

All the punctuations and orders are very important that you should use consistently. Observe these rules for the following examples with some new additions. The areas that you need to focus in each example are bolded so that you can emphasize them.

➤ **Book by two authors**

Markakis, J., and Samuelson, D. (2000). *The Politics of Development*.
London: Donald Publishers.

➤ **Book by three authors.**

Levin,D., Mahesh, K. and Andora, B. (1986). *Decentralization and Development*.
Nairobi: Kikiyu publishing.

➤ **Book by more than 6 authors**

Hellen, D., Sharon, S., Sandra, B., Tronvoll, K., Vanguan, S., Slander, V., **etal.** (2003).
Gender and Development. London: Oxford press.
etal. Represents the rest of the authors unmentioned in the reference

➤ **Book with no author or editor name mentioned.**

In this case you put the title of the book in the place of the authors name and the first significant word will be used for alphabet.

Governance for Development. (2004). Nebury Park: sage publication.

➤ **Books in which organizations and governmental offices mentioned as authors.**

Ministry of Education. (2006). *Higher Education in Ethiopia*. Addis Ababa: Birana printers.

➤ **Book in which an editor is mentioned as author.**

Criss, h. (Ed.). (2005). *Rural Development in perspective*. Brussels: Tyg pu.

Ed. In the bracket represents editor and if the editors are multiple it will be stated as (Eds.).

➤ **A book with several editions.**

Sara,V., and Adam, K. (2003). *Research for Development students* (4th ed.). New York: Chelsea House .

➤ **A book with several volume.**

Christopher, C. (1999). *Underdevelopment in the third world: Vol 5.*

The colonial perspective. Sanfransisco: canfield.

➤ **Book with revised edition**

Burke, Y. (1998). *Urban governance in Africa* (**Rev. ed.**). Villa Park: sage.

➤ **Book with contribution of articles by several authors and edited by other people.**

Spencer, J. (1999). *Agriculture the back Bone of third world economy*. **In Levin Carol and Katami Ali (Eds), *Affecting the development Trend in the Third world* (PP. 210-229).** Chicago: papyrus publ.

In this case the author has contributed a chapter in the book and his name appears in the reference list with the title of the chapter. Later on the editors are also mentioned together with the title of the book in which the chapter is situated.

The pages refer to the pages of the chapter in the book.

➤ **Article from Journal.**

If you refer an article from a journal;

Barbara, J. (2007). *How can we effect regional development: some observations*. **Journal of economic development, 23, 280-321.**

The number 23 implies that the journal is published for the 23rd times and then the page numbers of the article which you referred.

➤ **Article from a weekly or monthly magazine or newspaper**

Arthur, M.A (2001, October 25). *Global warming and the world's future*. **Newsweek, 504, 9-13.**

➤ **Pamphlet or Brochure**

The African Development Research Group.(1995)..*Factors that affect development policies and strategies of countries: guideline issues*. **(Brochure)**. Addis Ababa: Artistic printers.

➤ **Translation**

Barbara, C. (1983). *Poverty in Rural Africa*(**Maria. C. Trans.**). Tokyo: Sila publishing House.

➤ **Daily newspaper article, no author**

Ethiopian Federalism and its Impact on Regional Development. **(1995, sep 13). The New Herald, P.5.**

➤ **Encyclopedia or Dictionary**

Ronald, J. (1988). *The African Dictionary of Development Studies for students of Development*. (9th ed., Vol. 5, pp. 520-539). London. Macmillan.

Unpublished Doctoral dissertation

Ronald, K. (2003). *Impact analysis of Democratization on Development in Africa*. **Unpublished Doctoral Dissertation**, University of Dareselam, Tanzania.

➤ **Unpublished Master's Thesis.**

Mark, RM. (2005). *Education and Development. The case of Higher Education Expansion in Ethiopia*. **Unpublished Master's Thesis**, University of Addis Ababa, Ethiopia.

➤ Electronic sources (Internet)

Constraints Towards Good Governance in the Third World. (2003, August 25). Retrieved October 23, 2000, from http://www.thirdworld.org/devet_research/html

➤ **Alphabetical orders.**

All the references are alphabetically ordered. However, note the following possibilities.

➤ **Two or more books by the same author**

Frank, L. (1990). *Gender and development*. New York: Dutton.

_____. (1994). *Allowing females to participate: the development Framework*. Chicago: Saturn publishing.

In this case you use the year of publication to order the books in your references.

➤ **Reference by the same author(s) and same publication date**

Battani, R.W. (1997a). *Planning for development*. London: Oxford Press.

Battani, R.W. (1997b). *Project planning*. Chicago: Penguins.

Here you can simply order the reference by putting small letters next to the date of publication in the brackets.

The above stated examples may not be fully exhaustive but might give you basic insight on the rules of how to write your reference lists in your research report. For more and detailed information you can further refer the format prepared by the American Psychological Association (APA).

CHAPTER SEVEN

Ethical Considerations in Research

I. Definition of Ethics

? ***Where does the word ethic come from? What does it mean?***

The term ethics come from the Greek word '*ethos*'. In ancient time the term was given such meanings as custom, temperament, character and way of thinking. In ancient philosophy the term was also used to implicate the terminological meaning for permanent character of social and physical phenomenon. For example, the ethos of water (water is liquid); the ethos of fire (it burns)...etc.

Webster's New World Dictionary defines '*ethics*' as "the study of standards of conduct and moral judgment: the system of morals of a particular person, religion, group, etc". It can also be defined as, "the branch of philosophy that is concerned with the study and analysis of what is good and what is bad, what is right and what is wrong". It also attempts to arrive at an understanding of the nature of human values, of how we ought to live, what constitutes the right conduct and good life for human beings and what is the good reason for acting in one way or the other.

The definition tells that ethics has a deep concern on human actions, and it studies these actions with respect to their being right or wrong. This indicates that the subject matter of ethics is contributed more by the actions of individuals and social groups. These actions are mainly related with voluntary actions of thoughtful nature.

? ***What are principles of conduct?***

According to *Collins Dictionary* ethical means 'in accordance with principles of conduct that are considered correct, especially those of a given profession or group'. The keywords here, 'principles of conduct' and 'considered correct', raise certain questions:

- What are these principles of conduct?
- Who determines them?
- In whose judgment must they be considered correct?

'What are these principles of conduct?' is the most important question as it addresses the issue of the contents of ethical behavior in a profession. As the code of conduct varies from profession to profession, it is not possible to provide a universal answer to his question. Establishment of code of ethics is a necessity for each and every profession. For all practical reason in almost all professions, wrong way of conduct should be differentiated from the right. Literatures, reveals that the need to set higher moral standards initially felt in such professions as medicine, law, education, science, journalism and the arts.

? What is professional ethical code?

Professional Ethical code can be broadly classified into specific field related ethical codes and general (universal) professional ethical codes. Universal professional ethical codes refer to those ethical codes that can be referred and complied by all professions altogether. In other words, workers in all professions are expected to adhere themselves to a common disciplinary rules or universal professional ethical codes. On the other hand, specific professional ethical codes are code of ethics that help to shape the behavior of workers in the same areas of specialization., by showing the right way of conduct in that specific field from the wrong way of conduct.

However, in research any dilemma stemming from a moral quandary is a basis of ethical conduct. There are certain behaviors in research-such as causing harm to individuals, breaching confidentiality, using information improperly and introducing bias-that are considered unethical in any profession.

The next question is: In whose judgment must a code of conduct be considered correct? Who decides whether a particular practice is wrong? If a procedure is carried out wrongly, what penalties should be imposed? It is the overall body of professionals or government organizations that collectively develops a professional code of conduct and forms a judgment as to whether or not it is being followed.

2.1 Ethical Considerations in Research

? *What ethical issues should be considered while conducting a research?*

There are many stakeholders in a research activity; so it is important to look at ethical issues in relation to each one of them. The various stakeholders are:

1. The participants or subjects
2. The researcher
3. The funding body

2.1.1 Ethical issues concerning research participants

There are many ethical issues in relation to participants of a research activity.

➤ **Informed consent**

In every discipline it is considered unethical to collect information without the knowledge of participants and their expressed willingness and informed consent. Informed consent implies that subjects are made adequately aware of the type of information you want from them, why the information is being sought, what purpose it will be put to, how they are expected to participate in the study, and how it will directly and indirectly affect them. It is important that the consent should also be voluntary and without pressure of any kind. Moreover, all-informed consent procedures must meet three criteria: participants must be competent to give consent; sufficient information must be provided to allow for a reasoned decision, and consent must be voluntary and uncoerced.

➤ **Confidentiality and anonymity**

Sharing information about a respondent with others for purposes other than research is unethical. You need to make sure that at least the information provided by respondents is kept anonymous. Therefore, you need to ensure that after the information has been collected, its source cannot be known.

➤ **The Possibility of causing harm to participants**

Is the research going to harm participants in any way? Harm includes not only hazardous medical experiment but also any social research that might involve such things as discomfort, anxiety, harassment, invasion of privacy, or demeaning or dehumanizing procedures.

When you collect data from respondents or involve subjects in an experiment, you need to examine carefully whether their involvement is likely to harm them in any way. If it is likely to, you must make sure that the risk is minimal. Minimum risk means that the extent of harm or discomfort in the research is not greater than ordinarily encountered in daily life. If the way information is sought creates anxiety or harassment, you need to take steps to prevent this.

➤ **Seeking sensitive information**

Information sought can pose an ethical dilemma in research. Certain type of information can be regarded as sensitive or confidential by some people and thus an invasion of privacy. Asking for this information may upset or embarrass a respondent. However, if you do not ask for the information, it may not possible to pursue your interest in the area and contribute to the existing body of knowledge.

For most people, questions on sexual behavior, drug use and shoplifting are intrusive. Even questions on marital status, income and age may be considered to be an invasion of privacy by some. In collecting data you need to be careful about the sensitivities of your respondents.

➤ **Deception**

The withholding of information or the misleading of participants is unethical (unacceptable) if the participants are typically likely to object or show unease once debriefed. When this is in doubt, appropriate consultation must precede the investigation. Consultation is best carried out with individuals who share the social and cultural background of the participants in the research.

Intentional deception of the participants over the purpose and general nature of the investigation should be avoided whenever possible. Participants should never be deliberately misled without extremely strong scientific or medical justification.

➤ **Withdrawal from the investigation**

At the onset of the investigation investigators should make plain to respondents their right to withdraw from the research at any time, irrespective of whether or not payment or other inducement has been offered. It is recognized that this may be difficult in certain observational or organizational settings, but nevertheless the investigator must attempt to ensure that participants (including children) know of their right to withdraw. In the light of experience of the investigation, or as a result of debriefing, the participant has the right to withdraw retrospectively any consent given, and to require that their own data, including recordings, be destroyed.

2.1.2 Ethical issues relating to the researcher

➤ **Avoiding bias**

Bias on the part of the researcher is unethical. Bias is different from subjectivity. Subjectivity is related to your educational background, training and competence in research and your philosophical perspective. Bias is a deliberate attempt either to hide what you have found in your study, or to highlight something disproportionately to its true existence. It is the bias that is unethical and not the subjectivity.

➤ **Using inappropriate research methodology**

A researcher has an obligation to use appropriate methodology in conducting a study. It is unethical to use a method or procedure you know to be inappropriate (e.g. selecting a highly biased sample, using an invalid instrument or drawing wrong conclusions)

➤ **Providing incentives**

Is it ethical to provide incentives to respondents to share information with you? Some researchers provide incentives to participants for their participation in a study, feeling this to be quite proper as participants are giving their time. Others think that the offering of inducements is unethical.

But, most people don't participate in a study because of incentives, but because they realize the importance of the study. Therefore, giving a small gift after having obtained the information, as a token of appreciation, is not unethical. However, giving a present before data collection is unethical.

➤ **Incorrect reporting**

To use an appropriate methodology, but to report the findings in a way that changes or slants them to serve your own or someone else's interest, is unethical.

➤ **Inappropriate use of the information**

The use of information in a way that directly or indirectly adversely affects respondents is unethical. Can information be used to adversely affect the study population? If so, how can the study population be protected? As a researcher you need to consider and resolve these issues. Sometimes it is possible to harm individuals in the process of achieving benefits for organizations.

2.1.3 Ethical issues regarding the sponsoring organization

➤ **Restrictions imposed by the sponsoring organization**

Most research in the social sciences is carried out using funds provided by sponsoring organizations for a specific purpose. The funds may be given to develop a program or evaluate it; to examine its effectiveness and efficiency; to study the impact of a policy; to test a product; to study the behavior of a group or community; or to study a phenomenon, issue or attitude. Sometimes there may be direct or indirect controls exercised by sponsoring organizations. They may select the methodology, prohibit the publication of 'what was found' or impose other restrictions on the research that may stand in the way of obtaining and disseminating accurate information. Both the imposition and acceptance of these controls and restrictions are unethical, as they constitute interference and could amount to the sponsoring organization tailoring research findings to meet its vested interests.

➤ **The misuse of information**

How is the sponsoring body going to use the information? How is this likely to affect the study population? Sometimes sponsoring organizations use research as a pretext for obtaining management's agenda. It is unethical to let your research be used as a reason for justifying management decisions.

REFERENCE

- ✓ Babbie, E. 2010. The practice of social research: 12th ed. Belmont, CA: Wadsworth.
- ✓ Cresswell, J.W. 2003. Research designs: qualitative, quantitative and mixed methods approaches, 2nd ed. Thousand Oaks, CA: Sage Publications.
- ✓ Dawson, C. 2007. A practical guide to research methods 3rd ed. Oxford: How to books Ltd.
- ✓ Dunne, M., Prayor, J., & Yates, P. 2005. Becoming a researcher: A companion to the research process. New York: MacGraw Hills.
- ✓ Gill, J. 2006. Essential mathematics for political and social research. Cambridge: Cambridge University Press.
- ✓ Jackson, S.L. 2009. Research methods and Statistics: A critical thinking approach (3rd Edition). Belmont, CA: Wadsworth, Cengage learning.
- ✓ Patton, M.Q. 2002. Qualitative research & evaluation methods. Thousand Oaks, CA: Sage Publications Inc.
- ✓ Ruane, J. M. 2005. Essentials of research methods a guide to social science research. Oxford: Black well Publishing.
- ✓ Rugg, G., & Petre, M. 2007. A Gentle Guide to Research Methods. Berkshire: McGraw-Hill House.
- ✓ Vanderstoep, S., & Johnson, D. D. 2009. Research methods for everyday life blending qualitative and quantitative approaches: Research methods for the Social Sciences. San Francisco, CA: Jossey-Bass.
- ✓ Trochim, W. 2005. Research methods: A concise knowledge base. Cincinnati, Ohio: Atomic dog publishing.