

Chapter Two:- Research Designs Strategies and Research Methodologies

Chapter Objectives: at the end of this chapter, the student will be able to:

- Recognize Qualitative, Quantitative and Mixed Research Approaches
- Explain research design and strategies
- Demonstrate Quantitative and qualitative design strategies

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 see as emerging from	Reality see as emerging from the

	the controlled environment as experiments.	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 specific: controversial.

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 documentary 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.

Exercise

Qualitative and quantitative approaches differ in terms of the objectives of research. Discuss. Which of the two approaches emphasizes the use of intuitive insights in conducting research?

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 nonrandomized 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 (Moustaas, 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 form 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	Are rarely used. Methods of analysis are	Standard statistical methods

Standard Methods of Analysis	formulated during the data collection process.	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 concepts and relations. The contents of the new concepts are studied and illustrated. Practical application of theory is illustrated by cases.	A-priori deducted theories are operationalised and tested on data. The process 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

Dear students 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.

? Dear students, what are the activities that has 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

Dear students, the previous section discussed about what research design means, its importance and the main activities that should be handled in preparing research design. Among one of the activities in research design is the selection of study design to conduct the research. 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

Dear students 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 programme to teach them about malaria how do we know this programme 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 raising on malaria)

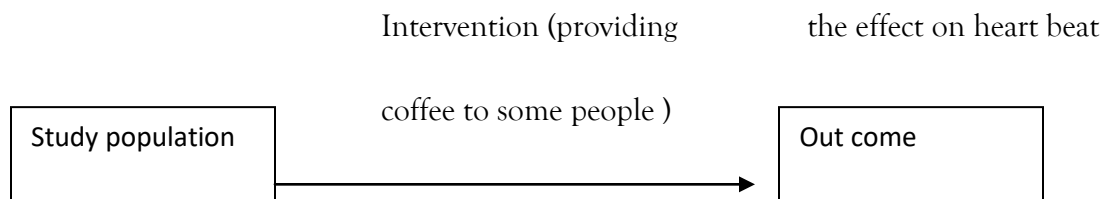
that requires you two communications before & after the intervention. However, what if the need is to investigate patterns of changes at different times in a community?

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 effect 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;

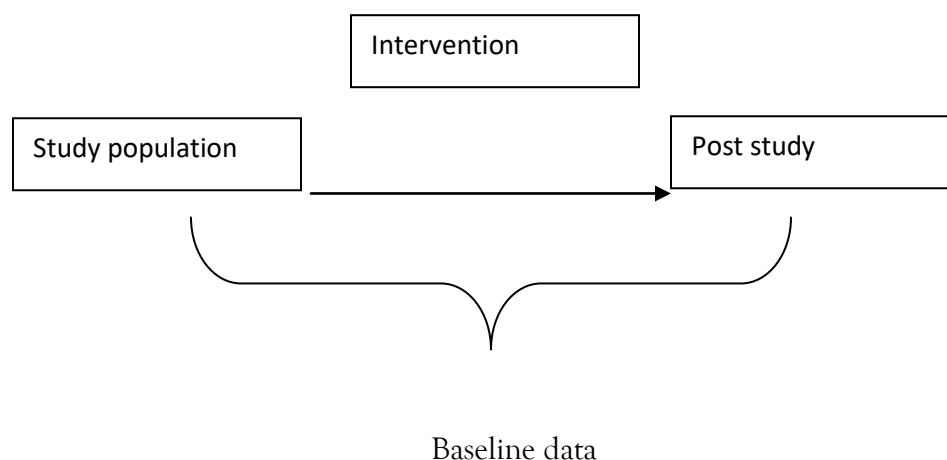


cause and effect

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 data 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 intervention 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.



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 the following designs employ the use of control and experimental group.

2.2.3 Pre test-Post-test control group design

? Dear students, what is control group? What is experimental group?

In the previous designs there is only one study population on which intervention is introduced & the outcome studied. But in this case the researcher selects two population group 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 & an 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... dear students 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 Study design |
| 2. Summary/Abstract | 3 Study participants/subjects |
| 3. Introduction/Background | 4 Eligibility Criteria (if any) |
| 4. Statement of the problem | 5 Sample size |
| 5. Conceptual framework | 6 Sampling methods |
| 6. Objective/ Hypotheses /Questions | 7 Method of data collection |
| 7. Significance | 8 Description of variables |
| 8. Delimitation | 9 Data quality assurance |
| 9. Operational definitions | 10 Plan of data analysis |
| 10. Literature review | 12. Work plan |
| 11. Research methods, materials and procedures | 13. Budget |
| 1 Study area | 14. References |
| | 15. Appendices/Annexes |

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