UNIVERSITY OF LUSAKA

RESEARCH METHODOLOGIES

UNDERGRADUATE MODULE

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# COURSE OUTLINE FOR RESEARCH METHODOLOGIES

# INTRODUCTION TO RESEARCH.

### Syllabus

1. Aim

The course aims at equipping participants with an overview of and practical experience in methods of research, research analysis and interpretations of data.

1. Objectives

At the end of the course students should be able to:

1. Define research, evaluation and related concepts;
2. Demonstrate skill in formulating a research problem , sub-problems and hypotheses;
3. Understand the relevance of Literature Review in research work.
4. Understand various sampling techniques and justifications
5. Understand various data collection tools, data analysis and interpretation
6. Demonstrate basic understanding of the use of SPSS software for data analysis
7. Write a research proposal and research/evaluation report; and
8. Write bibliography and references using appropriate style.
9. Course content
   1. WHAT IS research

* Meaning of research
* Purpose of research
* Features of research
* Classification of research
* Major components of Research
* Tools of Research
* Ethics in Research
  1. **RESEARH PROCESS**
     + Identification of a Research problem and possible sources
     + Finding a legitimate problem and criteria of selection
     + Stating a Research Problem
     + Quantitative and Qualitative research process
     + Literature review
     + Understanding the role and importance of the Review
     + Types of Literature review and knowing when to quit
     + Guidelines for writing a solid review
     + Formulation of sub-problems
     + Characteristics of sub-problems
     + Stating and Formulation of Hypotheses
     + Types of Hypotheses
     + Variables and types

3.2.4

* Research designs and methods
* Major purposes of Research for deciding on research design
* Qualitative and Quantitative approach Characteristics
* Qualitative research Designs
* Quantitative research designs
* Other research designs and approaches: Evaluation, Unobtrusive research,
* Participatory Research Designs and Approaches

3.2.5

* Sampling and sampling techniques
* Data collection techniques
* Questionnaire and guidelines for Designing
* Interviews and guidelines
* Hints for a successful interview

3.2.6

* Data analysis and interpretation
* Processing data
* Uses of statistics/analysis
* Similarities and differences between quantitative and qualitative
* Designing a Code book
* Uses of SPSS( Statistical package for Social Sciences)
* Qualitative and Quantitative data analysis
* Interpretation of results
* Writing and disseminating research findings
* Research proposal format
* Research report format

**Prescribed Books**

Ary, D. and associates (1990). *Introduction to Research in Education.* Forth worth, Texas: Holt, Rinehart and Winston

Bog Dan,R.C. and Bikelen, S.K. (1992). *Qualitative research for Education*. *An introduction to theory and methods. Allyn and bacon.*

Borg, W.R. and Gall, M.D. (1983). *Educational Research. New York:*  Long man.

**Recommended books**

Allyn and Garrison, D.R.(1994). *Research Perspectives in adult education ,* Melbourne, Florida: Kreiger publishing company.

Earl,B.M. and Payze,V.B.P 2001. The practice of Social Research. Oxford University Press. Cape Town.SA

Glesne, C. and Pestikin, A. (1992).*Becoming qualitative researchers. An introduction .*  White Plains

Lawrence,W. Neuman. (2006) *Social Research Methods: Qualitative and Quantitative Approaches)*.Pearson Education Inc. USA.

Merriam, S.B. and Simpson, E.L. (1995). *A guide to research for Education* *and trainers of Adults.* Melbourne, Florida: Krieger publishing company

Paul,D.L. and Jeanne,E.O.(2001) *Practical Research. Planning and Design.* Courier/Kendllville, Inc.New Jersey Columbus, Ohio-USA.

Donald, K.K. and Delno,L.A. ( 2006) *Proposal and Thesis Writing-An Introduction*. Paulines Publications Africa, Nairobi, Kenya.

<http://www.investopedia.com/terms/n/null_hypothesis.asp#ixzz1WgoOyjdY>

<http://wiki.answers.com/Q/Give_an_example_of_a_null_hypothesis#ixzz1WgqsXit1>

# Disclaimer:

*Information and notes in this module is collected from various sources and the most common being literature by Paul,D.Leedy and Jeanne ,E. Ormrod. 2001.( Practical Research: Planning and Design) ,W.Laverne Thomas. 1995( Sociology: The study of Human relationships), Lawrence Neuman 2006 ( Social Research Methods: Qualitative and Quantitative Approaches),Earl Babbie Mouton. 2001. (The practice of Social Research) and various internet articles etc. For details refer to the reference section of the module.*

# INTRODUCTION TO RESEARCH METHODOLOGIES

## What is Research

The word research is used in everyday speech to give various meanings which sometimes can be confusing to students and requires one to unlearn some of such false concepts. Research is endless quest for knowledge or unending search for truth. It brings to light new knowledge or corrects previous errors and misconceptions and in an orderly manner to the existing body of knowledge. The knowledge obtained by research is scientific and objective and is a matter of rational understanding, common verification and experience

## What Research is not

@It is not an information discovery exercise

@ It is not a mere transportation of facts from one source to another

@ It is not a mere rummaging for information  
@ it is not a mere information gathering about a particular subject matter

# Definitions of Research

Research is such a vast and multi-dimensional concept that no single definition can comprehensively project its meaning completely.

* It is the process of arriving at dependable solutions to problems through the planned and systematic collection, analysis and interpretation of data.
* The best research is that which is reliable, verifiable and exhaustive so that it provides information in which we have confidence.
* Research is a systematic process of collection, analyzing and interpretation of data in order to increase our understanding of the area of interest.
* Research can also be seen as an honest, exhaustive, intelligent search for facts and their meanings or implications with reference to a given problem.

# General Purposes of research

* Research adds to existing knowledge
* It addresses gaps in knowledge
* It expands knowledge
* It adds voices of individuals to knowledge
* Research helps improve the field of practice e.g. It helps in gaining new ideas, it helps in gaining new insight into methods and corrects misperceptions. It does this by explanations beyond common sense.
* Research creates data for policy discussions.
* Research helps people weigh different perspectives on issues.
* Research helps people make informed decisions regarding policy
* Research helps students build skills; Organization skills; Analytic skills; Writing skills and presentation skills.
* Research helps in business management decisions
* Research helps in making formal, objective measurement and appraisal of the extent to which a given activity, project, or program has achieved its objectives. This is referred to as evaluation research.
* Regularly provides feedback for evaluation and control
* Indicates what things are or are not going as planned
* Research may be required to explain why something “went wrong”
* Research in business management decision-making process is mainly associated with the development and implementation of strategy.
* Research helps in reducing uncertainty and to focus on decision making

# General Features of Research

* Research gathers new knowledge or data from primary or first hand sources. It is not research when: one simply restates or re-organizes what is already written. Research Endeavour’s to reach the first data.
* Research is expert, systematic and accurate investigation. The researcher plans his/her procedures carefully, gathers data, records and analyses it as accurately as possible, and uses standardized and valid data gathering tools or instrument as could be found or devised.
* Research is logical and objective .it applies every possible test to verify the data collected and the procedures employed. The researcher should eliminate personal feelings and preferences from his /her research activity.
* Research Endeavour’s to organize data in quantitative terms as far as possible.
* Research is patient and unhurried. The researcher is willing to make painstaking effort. S/he works patiently towards sound conclusions, knowing that significant findings do not come as a result of hurried careless efforts.
* Research requires courage. The researcher should not be afraid of unpleasant consequences of his or her findings. The truth should be spoken and recorded even when the procedure reveals conclusions that may be unpopular and bring social disapproval.
* Research is highly purposive. It deals with a significant problem which demands a solution.
* Research places emphasizes upon the discovery of general principle and scientific generalizations that can be applied to the solution of a wide range of problems.
* Research maintains rigorous standards. The researcher is expected to be scholarly, imaginative, with integrity who keeps his or her work scrupulously free from loopholes. Research is a job of great responsibility and its findings may have far reached implications.
* The research usually involves a step, a hypothesis or a set of a solution concerning the tentative explanation of a phenomenon or the solution of a problem
* Research is carefully recorded and reported. Every term is carefully defined, all procedures are described in detail, all limiting factors are recognized, all references are carefully documented and all results are objectively recorded. All conclusions and generalizations are cautiously arrived at with due consideration for all of the limitations of methodology, data collected, and errors of human interpretation.

# Classification of research

Research can be classified under three broad categories: Basic or fundamental research, applied research and action research. It must not, however, be forgotten that the lines of demarcation between these Categories are not very clear-cut and sharp. In many ways they appear to overlap one another.

## 1. Basic or fundamental research

It is also called pure research. It is not concerned so much with day to day phenomena and problems. Rather it is concerned with the solution to fundamental problems and major vital issues. An example of this type of research in the education field can be discovery of concepts such as the role in activity in learning’ role of heredity and environment ‘curriculum, etc.

Thus basic research attempts to expand the limit of knowledge and is not directly involved in the solution to a pragmatic problem. This type of research is done by outstanding experts with the help of choicest facilities. It demands a higher level of problems, procedures, tools, controls, analyses, etc.

This type of research is one whose findings have no immediate applicability or use, often uswed to develop theories for future use.

# 2. Applied research

It is also called field research. It is primarily this type of research work whose results find direct application in the field. It is more interested in the theories, principles or laws which work. Fundamental or basic research may propound a theory or discover a law and stop at that. But applied research is concerned primarily with the testing of such theories or laws in actual field setting. Applied research is however, subject to sacrifice controls and precision to some extent as compared to fundamental research. In business research applied research is conducted when a decision must be made about specific real-life problem. E.g. should nandos add Italian pasta dinners to its menu?

This type of research is one whose findings have an immediate applicability and the main targeted audience are the Practitioners such as Social workers, Economists, Counselors, Police, Program persons etc.

Applied research has various types including the following 3:

## 2.1. Action research

Type of research whose focus is on contributing to improved conditions or changes in a particular scenario or community. **Action research** is a research initiated to solve an immediate problem or a [reflective process](http://en.wikipedia.org/wiki/Reflective_process) of progressive [problem solving](http://en.wikipedia.org/wiki/Problem_solving) led by individuals working with others in teams or as part of a "[community of practice](http://en.wikipedia.org/wiki/Community_of_practice)" to improve the way they address issues and solve problems. It sometimes called [participatory action research](http://en.wikipedia.org/wiki/Participatory_action_research).

Action research involves the process of actively participating in an organization change situation whilst conducting research. Action research can also be undertaken by larger organizations or institutions, assisted or guided by professional researchers, with the aim of improving their strategies, practices and knowledge of the environments within which they practice. As designers and stakeholders, researchers work with others to propose a new course of action to help their community improve its work practices.

## 2.2 Evaluation Research

This is a kind of research that focuses on assessing the REEIS( Relevance, Efficiency, Effectiveness, Impact and Sustainability of a particular program. The primary purpose of evaluation, in addition to gaining [insight](http://en.wikipedia.org/wiki/Insight) into prior or existing [initiatives](http://en.wikipedia.org/wiki/Initiative_(enterprise)), is to enable [reflection](http://en.wikipedia.org/wiki/Human_self-reflection) and assist in the identification of future change.

## 2.3 SOCIAL IMPACT ASSESSMENT

This is a research which documents potential consequences as a result of some change introduced into a community. Or Social impact assessment (SIA) is a methodology to review the social effects of infrastructure projects and other development interventions. According to the International Association for Impact Assessment, "Social impact assessment includes the processes of analyzing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, projects) and any social change processes invoked by those interventions. Its primary purpose is to bring about a more sustainable and equitable biophysical and human environment."

# COMMON CHARACTERISTICS OF RESEARCH

Although research projects vary in complexity and duration, research typically has eight characteristics common to various other characteristics that may be described by different authors:

1. It emanates from question or a problem
2. It articulates a goal
3. It subdivides the problem into sub problems
4. It is guided by a set of questions and hypothesis
5. It involves Collection, Analysis and Interpretation of data
6. It is Cyclical in nature
7. It is Helical in Nature
8. It involves dissemination of data

Summary:

* That research begins with unanswered question
* That research defines the goal
* That research subdivides the problem into sub problems
* There is formulation of tentative explanations ( hypothesis)
* This is followed by sampling, data collection and analysis
* Research proceeds to data interpretation and confirmation of which hypothesis in form of dissemination of research findings.

1. However, **Research is helical** in that as one explores an area, there would be additional problems that need resolving. In other words, research beget more research.

# TOOLS OF RESEARCH

It is only true to say that every professional needs specialized tools to work effectively. Without a hammer and saw a carpenter is out of business, without a scalpel or forceps, a surgeon cannot practice. Researchers likewise, have their own tool kit to carry out their plans and achieve their goals. While tools may vary in various disciplines or field of study, the six general tools usable by any researcher include the following:

1. **Use of Library:** Generally, researchers have several library resources at their disposal to locate the required information through the use of catalogs, indexes, abstracts, reference librarians etc. Libraries have certain way materials have been shelved and lined up, and one using a library ought to have an idea how the whole process works if they were to have maximum usage of the libraries.

**2. The Computer and its software:**Over the past 2-3 decades, computer software packages have become increasingly user friendly such that a novice researcher can learn to use them easily and quick enough. However, suffice to mention that computers have their own limitations. Learning on how to use a computer therefore is inevitable for any one intending to try research work.

**3. Computer software;**

1. **Internet:** The internet provides many resources and these include World Wide Web ( WWW), telnet, file transfer protocol, electronic mail and news.
2. **Web site:** is the most common site on the internet.
3. **Telnet:** This feature enables one to log on to other computer systems on the internet. For instance one can log on to an electronic library in another university using a given password and log number etc
4. **File Transfer Protocol:** This is another powerful feature of the internet that enables one to share files and data even across continents. One has to have the FTP address location and a password.
5. **Electronic Mail:** The commonly known as email allows people to communicate quickly with one another and it is cheap enough to the user.

**4. Measurement as a tool of Research**

There are four scales of measurement:

1. **Nominal scale of measurement:** This means measuring data by assigning names to them. E.g., we can measure a group of children by dividing them into two groups: Boys and Girls.
2. **Interval Scale of measurement:** For instance , you can rate the students on specific qualities of effectiveness such as : Never available, seldom available, generally available etc.
3. **Ratio Scale of Measurement:** These express values in terms of multiples and factional parts . 3:36, 1:12 etc.
4. **Ordinal Scale of measurement:** One can compare various pieces of data in terms of greater or higher than another. We can measure level of education using ordinal scale by classifying people as being unschooled or as having an elementary , high school or college

**5. Statistics as a tool of research:** Statistics are important in social sciences as they give a more tangible idea of the data obtained and contribute to easy interpretation of data.  
  
**6. Human mind as a Tool of Research:** This is the most important tool on the researchers’ workbench as from this emanates logic, inductive reasoning and critical thinking.  
**7. Language as another tool of Research**: Language allows us to communicate as well as think more effectively. E.g., one knowledgeable in a particular language.

# ETHICAL ISSUES IN RESEARCH

Codes of ethics provide guidance but being ethical is a moral and professional obligation of any individual researcher, even when the respondents are not aware of the same ethics. As long as a research endeavor involves dealing with human beings, ethical issues are inevitable. Ethics are simply moral principles that guide our behavior and based on shared values and beliefs about what is good or bad. Ethical principles actually help ensure that research is directed towards achieving worthwhile goals.

1. **Protection from Harm:** the researcher should not expose respondents to undue physical or psychological harm. Respondents should not be subjected to unusual stress, embarrassment, Loss of self esteem, legal risks etc.
2. **Informed Consent:** Respondents should be informed of the nature of study to be conducted and be given the choice of ether participating or not. They should also be told that should they want to change their minds later, they are free to withdraw at any time. Thus any participation in a research study should be strictly voluntary.
3. **Right to privacy:** A researcher should respect the respondent’s right to privacy. Under no circumstance should a researcher record orally or written about a respondent in such a way that they are aware of which respondent behaved or responded in particular manner.
4. **Principle of Anonymity and confidentially:** This is where a participants’ identify is not disclosed and is done by anonymity and confidentiality E.G -The respondent’s name is not collected or a researcher gives a fictitious name and location etc. in case of a research report where one finds a need to provide a social picture in the report. This also means that data collection tools such as a questionnaire do not contain traceable details of the respondents such as names and physical address etc.
5. **Honesty with professional Colleagues:** This is where a Researcher is expected to report their findings in a complex and honest fashion without misrepresenting what they have done or the nature of their findings.
6. **Value-**neutrality: Researchers should not attempt imposing their values on others or alter their respondent’s behavior, and one hand they should guard against letting their values influence interpretation of their findings.
7. **Non guarantee to respondents:** Researchers should not make any guarantees to respondents, groups or organizations unless there are intentions to honor such commitments.

# RESEARCH PROCESS

### Stages in Research Process

The research process usually follows a particular pattern and more often involves standard stages:

1. Identifying and formulation of research problem or Selection of a topic and focusing it into a research question or declarative statement. Defining a research problem is the fuel that drives the scientific process, and is the foundation of any research method.
2. Undertaking of Literature review
3. Formulating of sub-problems and hypothesis ( Subdivision of the main problem into sub problems)
4. Deciding on a Research Design
5. Selecting and implementing a course of action ( Sampling, Data collection, Data Analysis)
6. Interpretation of Research findings
7. Writing and dissemination of research findings.

There are basically 7 major steps in research process, but the steps vary slightly depending on whether the study involves quantitative or qualitative approach .

## QUANTITATIVE RESEARCH PROCESS

The steps involved in a Quantitative research process are highlighted in figure 1 below:

FIGURE 1.

INFORM OTHERS

INTERPRET DATA

ANALYSE DATA

COLLECT DATA

DESIGN STUDY

FOCUS QUESTION

SELECT TOPIC

## 

EXPLAINING THE STAGES

The researcher begins with selecting a topic of personal or professional interest. Then the researcher narrows it down to a specific research question that can be addressed, since the topic is too broad. Often this requires a careful review of related literature, developing of sub-problems and hypothesis etc. The next step which is designing of the Study involves making decisions about the type of sample to select, data collection techniques to be deployed etc. After designing the study, the researcher then proceeds to actual collection of data where information would be recorded and verified accordingly. The data is then coded in the form of numbers and transferred in a computer readable format in readiness for data analysis.

Once data has been collected and transferred in numerical or statistics, the next step is that of Data Analysis. The step involves manipulating data or numbers using computer software to create charts, tables, graphs and statistics. Often this leads to a condensed picture of the data.

The next step is where the researcher gives meaning to or interpret data accordingly. Basically, by looking at the analyzed data, using background knowledge on the research topic and question, and drawing on theory, a researcher answers the original research question.

After this, a researcher will be ready for a final step of informing others. This basically means writing a research report about the study in a specific format as well as presenting it to professional audiences.

## QUALITATIVE RESEARCH PROCESS

The steps involved in a Qualitative research process are highlighted in figure 2 below:

FIGURE 2.

INFORM OTHERS

INTERPRET DATA

ADOPT PERSPECTIVE

ACKNOWLEDGE SOCIAL SELF

ANALYSE DATA

DESIGN STUDY

COLLECT DATA

EXPLAINING THE STAGES

In a qualitative research process, a researcher begins with self –assessment and reflections about themselves, where there is an acknowledgement of social self on the researcher’s position in society. EG..The author is a politician who has had experience in social welfare issues and whose main interest is the study of human behavior etc……

The next step on adopting a perspective entails the view points of the researcher are made known on a particular issue or situation. The remaining steps are the same as the quantitative process, however, at data collection stage, a qualitative researcher is likely to begin creating theory as they prepare to inform others in a report style that is somewhat different from the quantitative approach,

## Research stages/process explained

### Selection and formulation of the research problem

The first stage is the identification and formulation of the problem. If the problem is stated in a clear cut and logical manner, the reader is able to get a sufficiently clear insight into the study from the very beginning. The problem should be finalized and stated after sufficient study, reflective thinking, consultation, discussion and guidance.

In the identification of the problem, we must understand that the world we deal in is very fast and complex” It is this vastness and complexity that makes us focus or pick out the finite from the infinite. By doing this you only get that which has value to you.

Stating the problem clearly is very important because this is a foundation for further development of research proposal. There are two different ways of stating a problem:

* Posing question/questions: The question form has an advantage in sharpening and focusing the issue.
* Making declarative statement/statements: This is another option to state the problem and it ought to be clear and within context.

Both the statements ought not to lose meaning and context.

## Criteria for selecting a research problem/Research Topic

Some of the factors that contribute to a successful selecting of the research problem include the following criteria of selection.

* **Relevance and IMPORTANCE**-The problem should be significant enough and involve an important principle or practice. If it is not worth while, if it neither adds to knowledge nor lead to any improvement in the current practices, it would be in vain. No research should be undertaken unless its consequences promise to improve significantly to an important education practice. How widespread is the phenomenon? Example: AIDS. How severe is the problem? Who is affected by the problem? What constitutes a research problem? The existence of a problem is occasioned by a discrepancy between what exists and what you think should be, i.e. discrepancy between the ideal; situation and what actually exists, e.g. problem of AIDS and AIDS campaign.

*Ideal situation-condom sales- Aids cases reduced*

*Actual situation- condom sales- Aids cases still increasing Question: why has this happened? By asking the question “WHY”, this is threshold of the research problem* and *you are at stage of formulating a hypothesis*.

* **Feasibility**- the research may have a good problem but the researcher may not be able to carry it out to its successful conclusion. The researcher should posses the required competence, knowledge, skill and understanding. There may be constraints in conducting a research, e.g. the magnitude of the problem. The size of the problem matters and it is important to make it feasible so as to handle it better. Also, some resource related problems may arise, e.g. monetary constraints-Time can also be a constant especially if the sample size is big. Equipment (transportation, data processing) may also be constrained- other constraints are non- material. Cooperation from the subjects; personnel, i.e.
* **Avoidance of duplication**- The research problem should be sufficiently original so that it does not involve objectionable duplication. Originality is the basic credit of research. Ignorance of prior studies may lead a student to spend time on a problem already investigated by some other worker. Moreover the research should employ the most recent data.
* **Political and social acceptability** is a situation where a chosen topic is based on a certain political situation- this may not be acceptable due to sensitivity which may hinder findings. Acceptability attracts funding.
* **Level of research**- The nature and scope of a study will be determined in the light of such as, a diploma, degree, master’s degree, ph. D. It may simply be an action researcher or a research to produce a research paper or an experimental project.
* **Interesting-** The problem must be interesting to the investigator him/ herself. If the investigator is not interested in the problem, he or she will not be able to face and overcome obstacles which come at every step in research. If the problem statement seems dull and boring to the investigator, there is little hope that he/she will do justice to it. The investigator must have strong inherent motivation in the problem. This interest must be purely intellectual and should not be there only for a reward, material benefit, and advancement in position, increased authority and so forth.
* **Ethical (issues) responsible**-The sensitivity of the subjects should be taken into account. The investigation should not be harmful to subjects. Subjects should be willingly consent to personal matters.
* **Availability of data**- The researcher should ensure the availability of valid data and reliable data gathering devices and procedures. In case the study demands confidential, sensitive and classified information, will it be possible for him to obtain it?
* **Experience and creativity**-Good research problems stem from a clear understanding of the theoretical, empirical and practical aspects of the subject derived from personal experience and from a thorough review of literature. Conversely, lack of familiarity with the subject is almost certain to result in poor choice.
* **Courage and confidence**. Will I have enough courage and determination to pursue the study in spite of the difficulties and social hazards that may be involved? Will I be able to work aggressively when data is difficult to gather and when others are reluctant to cooperate? Will I be willing to risk criticism, suspicion or controversial study may rise? Sex Education, religious education, communism and other controversial problems are most certain to stir up emotional reactions.

# IDENTIFYING THE AREA OF RESEARCH

**RULE OF THUMB**

 Any research is likely to take a significant amount of your time and energy, so whatever problem you study, should be worth that time and energy. As one begins the process of identifying a suitable research problem to tackle, it is wise to keep two criteria in mind:

* It should address an important question whose answer should make a difference in some way
* It should advance the frontiers of knowledge such as leading to new ways of thinking, suggesting possible applications or paving way for further research in the field.
* As one identifies the research topic of interest, ensure that you are sufficiently knowledgeable about the same topic so that you are aware of what projects might make important contributions to the field of study. Some strategies one can employ as novice or expert researcher therefore include:

**I. Reading literature:** Find out what things are already known about your topic of interest and avoid reinventing the will. The existing literature is also likely to tell one what is not known in the area, what still needs to be done etc. Reading literature is also advantageous in that it gives one theoretical base to build ones study. It can also help one interpret findings and relate them to what is already known in the field.

**II. Attending professional conferences:** One can be lucky to find new research projects at a national/regional conference in their discipline as they learn what could be “hot” and not in their field. It can also be an avenue to meet and interact with professionals, experts with whom ideas can be shared.

**III. Seek the advice of experts:** Simply seek advice of an expert as you try to identify a research problem in a particular field as they will endeavor to answer some questions.

## SOURCES OF POSSIBLE RESEARCH PROJECTS

Problems for research are everywhere. One simply takes a look around them and there lies your interest! One asks themselves as to which discipline could host their area of interest, is it in agriculture, education, medicine, economics, engineering, sociology, language and literature, music etc..

Other sources include:

* **Education agencies**, schools, home, community etc could have prevailing educational practices that require research evidence.
* **Social Development** and technological changes do bring about new developments and new opportunities for research.
* **Record of previous** research such as encyclopedia of research, research abstracts, research bulletins, research reports, journals, dissertations and other similar publications.
* **Discussions** such as classroom discussions, workshops and exchange of ideas with fellow scholars and students would suggest optional stimulating research problems.
* **Consultations** with experts, research supervisors, research guides etc could be helpful in finding researchable areas or problems.

# TOPIC SELECTION

The term TOPIC refers to subject, issue or area under discussion. The topic one selects to research is essential in the success of the research project. This is mainly because one’s interest in the topic will sustain the research. If the researcher is interested in a particular area they will enjoy reading related materials and will put more time and effort into that work. The researcher will also be keen to collect the required data, analyzing it and finding out the results.

## STEPS IN TOPIC SELECTION

1. Identify what interests or puzzles one in an area of study

There are many issues in life that may puzzle or interests a researcher. These may be social, economical, health, political, cultural, environmental, etc.. However it is always important to identify a puzzling aspect in one’s area of study. This not only enables the researcher to go in-depth in one’s professional area, but also to defend the researched work with authority. For instance, in school of education one may be puzzled as to why in spite of adequate teachers in secondary schools, the grade nine exam results are still too low, one in the school of Accounting may be puzzled why , in spite of yearly audit reports by the auditor general, misappropriation of funds in the public institutions seem to be increasing, one in the school of Public health, may be puzzled as to why despite awareness programs and mosquito net distributions, malaria rates seem to be on the increase etc. These may be fertile grounds in which students can identify research topics.

1. Identify key words for the topic

The researcher should then zero down to the real aspect puzzling them and express it is specific keywords. These are words that represent the issue that has puzzled them. For instance, the topic POVERTY can be looked at from different angles by various researchers. Some key words would be …impact, consequences, challenges, causes, opportunity windows, effects, social factors contributing, economic factors contributing, political factors contributing etc …to Poverty. Or to a researcher from Public health school, their key words may be Awareness Creation verses Malaria Prevalence. One from Accounting school, their keys words would be Auditors General Financial Report verses Fund misappropriation etc. Basically the researcher should think of what to concentrate on based on these words.

1. Define the Topic

After identifying the key words the researcher wants to concentrate on, they need now to define the topic. Defining the topic involves analysing selected keywords keenly. This is so because out of the key words identified there are actually a number of topics that can be extracted from them or that can be studied. For example, a TOPIC on Poverty, and imagine one of the key words is CAUSES or Poverty. CAUSES is broad in its sense, therefore, from different perspectives of social, economic, environmental, health, political etc…what factors would you as a researcher concentrate on. It may be Economic factors contributing to Poverty, Social aspects contributing to Poverty etc. Once one defines the topic according to what they would like to concentrate on, it enables them to or the study to be focused.

1. Formulate the Topic

After defining the Topic, the researcher should now formulate the Topic into a Research Title. This is the start of having other aspects of the research to fall in place. Such as Statement of the Problem, Objectives etc. However the researcher ought to search for articles or materials related to the topic so that they develop clarity over the topic selected before they formulate the TITLE.

### QUALITIES OF AN EFFECTIVE RESEARCH TOPIC

1. It is researchable; This means the research instruments can easily be developed and the formulated objectives measurable.
2. It captivates the interest of the Researcher: Basically the topic selected should be one where the researcher has sufficient interest.
3. It makes a contribution to knowledge: Meaning it ought not be knowledge already existing, but rather new knowledge contributed.
4. It is provocative-open to other views and interpretation: This means it is open to varied views and interpretations.
5. It is clear and focused: This means the topic is not VAGUE or alien to the researcher.

## CHALLENGES ENCOUNTED IN TOPIC SELECTION

Selecting a research Topic requires a lot of care because the topic selected has a lot of influence on then success or failure of the project/study. Suffice to mention that they are various challenges uncounted in Topic selection and these may cause one to abandon the work halfway or the project takes longer to be completed than anticipated. Some challenges may include the following:

1. Choosing a Topic that is too Wide: A researcher may select a Topic that is too wide and fails to limit the scope. For instance “ The Effects of High Interest Rates”. This topic may be problematic since the issues of interest rates may vary according to sector, such as banks, microfinance institutions, etc. The scope of the topic is not clearly specified.
2. Choosing a Topic that is Too complex:

Sometimes one can choose a topic that is too complex for research at the level of the student. The complexity may be based on sample size, study period required, financial requirements etc.

1. Poor Timing:

Sometimes one may be tempted to select a topic that would require huge amount of time to undertake, given the duration specified to students. So timing remains key.

1. Limited accessibility to Materials and Respondents:

A particular topic may prove unsuitable simply because there is no ready accessibility to the requisite source materials or indeed the kind of respondents suitable for the study may not be readily available.

# RESEARCH TITLE SELECTION

The term TITLE refers to heading or label or tag. The title of the proposal thesis describes what the study is about. The title is amini abstract, a summary of key ideas in a proposal or thesis. EG. ***Abortion in Zambia’: An examination of its causes and effects on female students in secondary schools and colleges……..***

The title clearly shows that the study is on abortion, and that the may focus is on causes and effects, and that it is targeting female students in secondary schools and Colleges.

## STEPS IN TITLE SELECTION

1. Identify keywords for the Title:

Before formulating a title, the researcher should identify key issues in the topic the researcher is interested in.

1. Reflect on key issues:

The researcher should brainstorm the key issues identified. This includes attempting to find out the independent and dependent variables. The variables ought to link in order to form a title.

1. Formulate The Title:

After the researcher is clear about the independent and dependent variables, the title can be formulated. The formulation of the title involves trying to link the key variables by using terms such as…The effects of, The impact of,…An assessment of…An examination of…etc

1. Evaluation: After formulating the Title, the researcher ought to ensure that it is clear and specific. This means the independent and dependent variables are easily identified. For example if the topic is on Free Primary Education, the Title can be : The effect of free primary education on student accessibility retention and academic performance.

### QUALITIES OF AN EFFECTIVE TITLE

* It should be brief and specific. Some guidance states 12+ or – 4. Meaning minimum number of words could be around 8 and maximum around 16. This would be able to bring out the title and easier to identify the independent and dependent variable.
* It should be in line with the set objectives: The title is a brief summary on what is to be studied. It should therefore portray the aims and objectives of the study. The words used in the Title should clearly reflect the focus of the study.
* It should be clear and unambiguous: The title should not lead to various interpretations of the study.
* It should reflect a relationship between the independent and dependent variables.
* It should portray an issue that is reachable. The aspects in question should be measurable.

CHALLENGES ENCOUNTERED IN TITLE SELECTION

1. Choosing a Title that is not Specific. E.g Poverty in Zambia….is a wide Title that is open to various interpretations. This is because Poverty can be seen from various perspectives be it social, political, economic, etc.
2. Writing Title that is too wordy; A brief Title is more effective than a long one simply because variables are easily identified. If one part Title fails, two part title can be used separated by a colon. EG. Abortion in Zambia: An examination of it causes and effect on female students in Secondary Schools and colleges.
3. Poorly formulated Titles: Some titles are difficult to comprehend . For instance ..Understanding Poverty in Zambia. It is difficult to comprehend what the term….”understanding” means.
4. Lack of consistency: Some Titles do not tally with the objectives et nor the problem statement.

### INFORMATION TO CONSIDER UNDER STATEMENT OF PROBLEM

In a research proposal, there is section on Statement of the Problem which ought to be considered. Apart from formulating a research problem either in the form of question or declarative statement, the researcher ought to consider various issues to include under this section. Basically, one ought to make a description of the social, economic, cultural and political characteristics. This will help put the problem into context and give an overview of the situation. Consider giving some statistics to highlight the problem, magnitude of the problem and how severe the problem is and who is affected the most etc.(For details Ref to proposal format section).

### Others aspects to consider

* In describing the nature of the problem, the discrepancy between the ideal and reality should be given
* There should be an analysis of the major factors contributing to the problem and one should convince the reader that the available knowledge is not sufficient or adequate in showing the problem.
* Give a brief description of the type of information you hope to obtain from the research and your intention to use the information in solving the problem.
* Give a brief description of any solutions that may have been tried in the past and why they failed. Justify your research.

# 2.0 Literature Review

The second critical stage in the process is **Reading literature** that relate to your topic of interest and this can help one formulate a specific research problem. It should be known that research proposals and reports typically have a section that reviews related literature. Basically the review describes theoretical perspectives and previous research findings related to the problem at hand.

Some benefits include the following:

* It gives one an opportunity to look at what others have done in similar areas of interest
* It increases one’s confidence in the topic of interest after discovering that others have invested time and energy in the similar area.
* To demonstrate a familiarity with a body of knowledge and establish credibility.
* To learn from others and stimulate new ideas.
* It can provide one with new ideas and approaches that might not have occurred to ones mind
* It can inform about other researchers conducting work in the area for possible contact for advise and feedback
* It can reveal sources of data one may not know existed
* It can introduce you to methods used by other researchers for possible learning and emulation
* It can help one interpret and make sense of findings and be helped to tie ones results to the work of those who have gone before. Once literature has been reviewed accordingly, a researcher is now ready to go through the process of formulating some hypotheses.

## Types of Literature Review:

* **Context Review:** This review is a type in which the author links a specific study to a larger body of knowledge.
* **Historical Review:** This review allows the author to trace an issue over time.
* **Integrative Review:** This review allows the author to present and summarize the current state of knowledge on a topic.
* **Self-study Review:** This review allows an author to demonstrate their familiarity with a subject area.

It must be noted that in a good literature review, a researcher does not merely report related literature, but rather evaluates, organizes and synthesizes what others have done.

Evaluation of literature involves one to critically look at the methods and conclusions of others, as well as not taking such conclusions at face value, but rather determine whether such conclusions are justified.

Addition to that, a researcher ought to organize ideas encountered during the review. Basically, sub problems within ones main problem must in many cases provide a general organizational scheme one can use.

Synthesizing what has been learned from the review remains paramount for a successful literature review. One ought to pull together the diverse perspectives and research results which one has come across during review into a cohesive manner.

## HINTS TO A SUCCESSFUL REVIEW

One may consider to do the following suggestions:

* Compare and contrast varying theoretical perspectives on the topic
* Show how approaches to the topic have changed over time
* Describe general trends in research findings
* Identify discrepant or contradictory findings and suggest possible explanations for such
* Identify general themes that run through the literature which has been reviewed etc

It is envisaged that once a researcher endeavors to do the above, basically one will have contributed something to the knowledge in the related field even before the study is conducted.

### GUIDELINES FOR WRITING A SOLID REVIEW

***Get a proper psychological orientation:*** Be clear in your thinking and know precisely what you are attempting to do. Basically when one writes a section of the Literature Review, it is a discussion of the studies, research reports and other scholarly writings that bear directly on one’s effort and to what one plans to do.

***Have a Plan:*** Writing a review of related literature takes planning organization, where by one decides areas for discussion and the order or flow of the discussion in relation to the research problem.

***Emphasize relatedness:*** One ought to ensure that the discussion of the literature review section maintains relatedness to ones research problem by precisely pointing out what the relationship is, with appropriate citations.

***Review literature and Do not reproduce it:*** As much as a researcher would cite other authors, it is important to ensure that emphasis should be always be on how a particular idea or research findings relates to one’s problem.

***Summarize what you have said***: Every discussion of the related literature should end with a brief summary section where one gathers up what has been said and describe its importance in terms of the research problem.

THEORETICAL FRAMEWORK

This is a collection of interrelated ideas based on the theories. A theoretical framework accounts for and explains phenomena. It attempts to clarify why things are the way they are based on the theories. This is a general set of assumptions about the nature of phenomena.

One has to analyze theories in order to understand a theoretical framework.

A theory is a group of statements supported by evidence, meant to explain phenomena. They are a systematic explanation of the relationship among phenomena. They provide a generalized explanation to an occurrence.

While there are several theories that exist, a researcher concentrates only on those applicable within their area of study. Where a theory fails to be supported by data, it can be revised or rejected. In a practical situation, theories are testable.

Theories provide tentative theoretical answers to questions and issues before the researcher practically confirms through research that the answer is correct.

Researchers apply theories to guide their work and help interpret findings. They provide a foundation for inquiries.

IMPORTANCE OF THEORETICAL FRAMEWORKS

This plays a major role in research which may include the following:

1. It introduces a researcher to a new view of the research problem. The researcher tends to understand the total realm of the problem.
2. It enables the researcher to conceptualize the topic in its entirety, or it enables one to understand the problem from wider perspective and not from a narrow personalized self interest approach.
3. It enhances the researcher’s objectivity

QUALITIES OF AN EFFECTIVE THEORETICAL FRAMEWORK

1. It accounts for and explains a phenomena
2. It is specific and well articulated
3. Reflects the research problem being addressed
4. Be measured in a practical situation
5. Provides a tentative answers to the questions, issues and problems addressed in a research problem
6. Should systematically address various aspects of the problem particularly key factors assumed to influence or cause a problem.

GUIDELINES TO FORMULATE THEORETICAL FRAMEWORK

1. Reflect on the existing theories for the purpose of identifying a fitting context
2. Analyze the research title to identify the independent and dependent variables. Reflect on the relationship between variables
3. Find out which theories best explain the relationship between the variables. You can do this through the use of the library, reading books, articles related to the topic, professional publications, journals, theses, doctoral dissertation and master’s theses etc. One should look out for theories that relate to their area of study.
4. Formulation: This is where the researcher writes down the theories applicable, link the ideas and identify the relationship. After this the researcher can now formulate a theoretical framework. This will involve discussing several theories in an attempt to answer the research question.
5. Evaluation: After formulating, the researcher then can evaluate to find out if it addresses all sections of the research problem.

CHALLENGES FACED IN FORMULATING THEORETICAL FRAMEWORKS

One of the major challenges may include the following

1. Lack of differenciation between a theory and a theoretical framework
2. The difference between the two is that a theory simply states what proponents relate to a particular issue while a Theoretical Framework uses a particular theory or theories to account for and clarify why things are the way they are. So the researcher should go beyond simply stating a theory.
3. Another challenge is failure to identify appropriate theories that relate to the area of study or issue under discussion or study.

RELATIONSHIP BETWEEN CONCEPTUAL AND THEORETICAL FRAMEWORKS

1. Firstly, both frameworks help the researcher to make meaningful findings. However, a conceptual framework is based on the researcher’s own perception and can be drawn from observations, experiences etc. While a theoretical framework is based on recognized theories.
2. A conceptual framework cannot be refuted or tested through research while a theoretical framework is testable and can be rejected or revised.
3. Ideas in a conceptual framework are from the mind of the researcher with a few references to support them, whole a theoretical framework is a discussion of the related theories attempting to predict a phenomenon. A conceptual framework is an idea stated.
4. EG…..This study is based on Abraham Maslow’s Theory……etc

Conceptual Framework in Research

A concept is basically an abstract or general idea derived from specific instances. It is a word or phrase that symbolizes several interrelated ideas.

To Conceptualize therefore is to invent an idea or explanation and formulating it mentally. It is act of creating or formulating something but thinking up particular ideas or actions intended to deal with the problem or situation. Conceptualizing is a simplified view of the world that we wish to represent for some purpose.

FRAME (FRAMING) is the formulation of plans and important details. It is a way of conceiving something.

A CONCEPTUAL FRAMEWORK therefore is a set of broad ideas and principles taken from relevant fields of inquiry and used to structure a subsequent presentation.

A conceptual Framework is a research tool intended to assist a researcher to develop awareness and understanding of the situation under scrutiny and to communicate it.

When well articulated, a conceptual framework has potential usefulness as a tool to assist a researcher to make meaning of subsequent findings.

USEFULNESS OF THE CONCEPTUAL FRAMEWORKS

A conceptual framework increasing helps to keep the research on track by:

* Providing clear links from literature to the research goals and questions
* Contribute to the formulation of the research design
* Provide reference points for discussion of literature, methodology and analysis of data
* Contribute to trustworthiness of the study
* Giving a broad scope of the research
* Conceptualize the problem and provide means to link ideas and data so that deeper connections can be revealed.
* It helps a researcher to organize their thinking and complete an investigation successfully. It must explain the relationship a, among interlinked concepts. It must explain a possible connection between variables and answers and the why questions.

In order to find out how effective one’s conceptual framework is, one should analyze whether their set objectives have been addressed.

STRATEGIES TO DESIGN EFFECTIVE CONCEPTUAL FRAMEWORKS

1. Reflection-Assessing situations from social, economic and philosophical perspectives. One has to be clear about what the research is all about (Titles, objectives).
2. Aspects of dependent and independent variables should also be put into perspective
3. Defining key issue(problem), to be addressed and defining its practical boundaries
4. Identify key uncertainties( gaps in understanding/knowledge) about the situation or the social/economic systems etc( the question that needs to be answered by the study)
5. Identifying and assessing different possibilities for action
6. A well constructed conceptual framework can guide the entire research writing process, keep the researcher in track, save time and enable researchers to defend their augments soundly and readily.

QUALITIES OF AN EFFECTIVE CONCEPTUAL FRAMEWORK

1. Should be clear and concise
2. Language used should be simple and straight forward
3. The conceptual framework should be self explanatory
4. Should have supportive evidence of ideas used
5. Should be logical and address the title, research objectives, and statement of the problem
6. Should be consistent with the literature review
7. It should act as reference point from which to locate the research questions
8. It should provide a structure within which to provide the contents of the research and frame conclusions within the context.

STEPS IN PREPARING AND EFFECTIVE CONCEPTUAL FRAMEWORK

1. Selection of concepts: One has to select some concepts to use in relation to the problem. One has to consider alternative ideas that bear directly on the problem or situation, the ideas that relate directly to the problem.
2. Creation of options: Possible actions ought to be constructed prior to the selection. The need to imagine the circumstances immediately help give rise to mental sets in relation to those circumstances. The mental sets may include our own knowledge of what to do and potential outcomes
3. Seek the tools to conceptualize: This is where the ideas are now linked and their relationship identified.
4. Direct the conceptualization process: This is where one offers certain insights write the conceptual framework. Generally the conceptual framework highlights the effect of the independent variable on the dependent variable (outcome). In other words after identifying the variables, one should be able to interpret and link the conceptual framework with the current study.

# 3.0 HYPOTHESIS FORMULATION

A hypothesis is a reasonable guess, a prediction that a researcher ought to formulate after the review of relevant literature in relation to the area of interest. It is seen as a supposition, an alternative explanation of the situation. However, in dealing with the research problem, a researcher ought to consider sub dividing the major problems into sub-problems , putting some factors that could have been learnt through Literature review as contributing to the major problem into perspective.

Before some hypotheses could be formulated therefore, sub-problems ought to be formulated. In other words, when the various related factors to the major problem have been identified, one now moves towards SUBDIVISION of the major problem into SUBPROBLEMS.

It is generally understood that most research problems are too large to tackle without subdividing them. The strategy therefore is to divide and conquer. From a research view point, every problem can be broken down into smaller units and these units are easier to address and resolve, towards the main problem. The smaller units are referred to as **SUBPROBLEMS.**

## 3.1 CHARACTERISTICS OF SUBPROBLEMS

**I. Each sub problem should be a completely researchable unit:** A sub problem might be researched as a separate subproject within a larger research goal. The solutions to the sub problem taken together combine to resolve the main problem. That is why it is important that each sub problem is stated clearly.

**II. Each sub problem must be clearly tied to the interpretation of data**: One needs to remain within the confines of the subject matter.  **III. The sub problems must add up to the totality of the problem**: Ensure that all sub problems represent the significant areas of the main problem

**IV. Sub problems should be small in number:** generally a researcher might come up with at least between 2-6 sub problems. For a novice researcher, the attempt to come up with sub problems might lead to more that 10 sub problems. That should be seen as positive in itself in that after the various sub problems, one has an opportunity to analyze and conclude on the sub problems which are more appropriate and related to the main problem.

## 3.2 TYPES OF HYPOTHESIS

**NULL hypothesis:** This is an hypothesis that states there is no significant effect of an independent variable on a dependent variable. A null hypothesis actually predicts no relationship between variables. It is important to understand that the *null hypothesis can never be proven*. A set of data can only **reject** a null hypothesis or **fail to reject it**. For example, if comparison of two groups (e.g.: treatment, no treatment) reveals no statistically significant difference between the two, it does not mean that there is no difference in reality. It only means that there is not enough evidence to reject the null hypothesis (in other words, one *fails to reject the null hypothesis*). A type of hypothesis used in statistics that proposes that no statistical significance exists in a set of given observations. The null hypothesis attempts to show that no variation exists between variables.

An example of a null hypothesis would be 'There is no relation between voter preference and the sex of the mayoral candidate.  
 **Alternative Hypothesis**: This is an hypothesis paired with the null hypothesis that says an independent variable has significant effect on a dependent variable. An alternative hypothesis says that a

relationship between variables exist. An alternative hypothesis is one that specifies that the null hypothesis is not true. The alternative hypothesis is false when the null hypothesis is true, and true when the null hypothesis is false. An example of an alternative hypothesis would be, ' There is a relation between voter preference and the sex of the mayoral candidate.

**Double –barreled Hypothesis:** A confusing and poorly designed hypothesis with two independent variables in which it is unclear whether one or other variables, or both in combination, produces an effect. In fact researchers should avoid using it as it shows unclear thinking and creates confusion.

# VARIABLES

A Variable is something that can be changed, such as a characteristic or value. It can be seen also as a logical set of attributes.

Variables aren't always 'quantitative' or numerical. The variable 'gender' consists of two text values: 'male' and 'female'. We can, if it is useful, assign quantitative values instead of (or in place of) the text values, but we don't have to assign numbers in order for something to be a variable. It's also important to realize that variables aren't only things that we measure in the traditional sense. For instance, in much social research and in program evaluation, we consider the treatment or program to be made up of one or more variables (i.e., the 'cause' can be considered a variable). An educational program can have varying amounts of 'time on task', 'classroom settings', 'student-teacher ratios', and so on. So even the program can be considered a variable (which can be made up of a number of sub-variables).

An ***attribute*** is a specific value on a variable. For instance, the variable *sex* or *gender* has two attributes: *male* and *female*. Or, the variable *agreement* might be defined as having five attributes:

* 1 = strongly disagree
* 2 = disagree
* 3 = neutral
* 4 = agree
* 5 = strongly agree etc.

# TYPES OF VARIABLES

### INDEPENDENT AND DEPENDENT VARIABLES

A variable can be **Independent and Dependent**: An independent variable is one produces an effect or results on a dependent variable in a causal hypothesis. It isthe presumed cause, whereas the *dependent variable* is the presumed effect. In other words, it is the effect or result that is caused by an independent variable in a causal hypothesis. In an experiment, the *independent variable* is the variable that is varied or manipulated by the researcher, and the *dependent variable* is the response that is measured. Or, the IV is the variable that is controlled and manipulated by the experimenter; whereas the DV is not manipulated, instead the DV is observed or measured for variation as a presumed result of the variation in the IV.

## CHARACTERISTICS OF CAUSAL HYPOTHESIS

* It has at least two variables
* It expresses a causal or causal-effect relationship between the variables
* It can be expressed as a prediction or an expected future outcome
* It is logically linked to a research question and a theory
* It is falsified i.e. it is capable of being tested against empirical evidence and shown to be true or false.

**Examples of hypothesis with causal relationships**

* Religious attendance reduces the likelihood of divorce
* Religious attendance is associated with reduced divorce
* The higher the religious attendance, the lower the likelihood of divorce.

## IMPORTANCE OF HYPOTHESES

1. Hypotheses form the starting point of investigation.
2. Hypotheses make observation and experiment possible.
3. Hypotheses are an aid of explanation
4. Hypotheses make deduction
5. It guides the direction of the body
6. It identifies facts that are relevant and those that are not
7. It suggests which form of research design is likely to be most appropriate
8. It provides a framework for organizing the conclusions ETC

# 4.0 RESEARCH DESIGNS AND RESEARCH METHODS

* Research Design is about determining what one is going to observe, analyze, why and how. Research design is a plan to be followed using a particular process or methods.
* Research Design is a plan while Research method is a process of carrying out that plan.
* Research Design focuses on the end-product while Research Method focuses on what kind of tools, procedures etc would be required or used. EG> Construction of the house follows the basic process of Fixing Foundation, slab and type of slab, laying of bricks etc.
* Once one has formulated a research problem either in the form of question or declarative statement, the next step is to select the appropriate research design. In other words, one should ask themselves and say” what kind of study would they want to undertake”? What type of study best answer your question?

Suffice to mention that there are various purposes to undertake a Research, but three (3) of the most common include:

## Explorative:

These are studies whose questions are explorative in nature. They endeavor to explore a topic and provide a basic familiarization with a particular topic. This is typical when a researcher examines a new area of interest or when the study is relatively new. Exploratory studies can also be undertaken to simply satisfy a Researcher’s curiosity and desire for better understanding. These studies often use in-depth interviews, use of key informants, use of case studies etc. The studies has questions such as ‘What is the case? What are the key distinguishing features of a good leader? What are the key contributing factors ….?Etc

## Descriptive

These are studies which deal with questions such as...how many? What is the incidence of x? How many people died of HIV in Zambia last year? Is there a correlation between parental guidance and substance abuse? Etc. The main purpose is to describe situations and events e.g. CSO census in Zambia, opinion polls of who is most famous among electorate? Etc.

## Explanation

The third general purpose of scientific research is to Explain Things. Reporting the intentions of the electorate for instance is a Descriptive activity while reporting why some people plan to vote for candidate A is an Explanatory activity. A researcher has an explanatory purpose if he wishes to know the causal and effect scenario. E.g. the recent uprising in Egypt. In other words, indicating causality between variables or events.

### WHAT IS CAUSALITY?

When a researcher considers variables to be causally related, it means one event does affect the other event, or one issue does contribute to the occurrence of the other.

Every Research design is determined by what Research Method or approach could be used. There are two common approaches, Qualitative and Quantitative approach.

# QUALITATIVE AND QUANTITATIVE APPROACHES

Qualitative research designs are used to answer questions about the complex nature of the phenomenon often with a purpose of **describing** and **understanding** the phenomenon from the participant’s point of view, other than explaining and predicting.

The Quantitative designs are used to answer questions about relationships among measured variables with the purpose of explaining, predicting and controlling the phenomena.

Both approaches involve similar processes such as formation of hypotheses, literature review, data collection and data analysis and these processes are often combined and carried out in different ways.

## RELATED CHARACTERISTICS /DIFFERENCES

**PURPOSE**: Quantitative researchers often seek to explain, predict situations to be used for generalization. They also tend to establish, confirm, or validate relationships to develop generalizations that contribute to theory.

On the other hand, Qualitative researchers seek to understand complex situations in an exploratory manner by using observations.

**PROCESS:** Quantitative studies have structured guidelines for conducting them. Concepts, variables, hypotheses etc tend to be defined before the study begins. The approach allows for methods that are objective in measuring variables of interest as well as remain reattached from the research participants in order to draw unbiased conclusions.

Qualitative process is more holistic, with more focused design and measurement instruments such as interviews. Researchers are ready to interact with its participants.

**DATA COLLECTION:** Quantitative researchers identify one or few variables they intend to study and collect data related to the same variables. Specific methods of measuring each variable are identified and developed with attention to validity and reliability of the measurement instruments. Data are collected from a population or from a large sample that represent population and in a form convertible to numerals.

Qualitative research’s way of data Collection is more participatory in the setting. It depends on a sizeable sample size with the intent to make tangible generalization. Data such as verbal, documents, interviews comments, field notes etc may be collected.

**DATA ANALYSIS**

Quantitative approach makes use of deductive reasoning while Qualitative uses Inductive Reasoning.

**Deductive reasoning/Logic**

This type of logic begins with one or more premises or statements that are self evident and widely accepted as truths. Reasoning then proceeds logically from these premises towards conclusions that must also be true. EG

If all men are strong (premise 1)

And if all men are responsible (premise 2)

Then all men are strong and responsible (Conclusion)

Deductive reasoning also entails that the logic should be sound, the reasoning should be accurate and conclusion valid. Deductive logic is seen to be valuable for generating research hypotheses and testing theories.

**Inductive reasoning**

Inductive reasoning often begins with an observation. For instance a law on the force of gravity. That when something has been released from a high position, it always falls downwards. In inductive reasoning people use specific occurrences to draw conclusions about an entire event. In other words, a sample is used to draw conclusions about the population from which the sample comes. EG

*A sample of 500 HIV positive persons from a population of 1 million people was used to ascertain the main causes of infection. Out of 500 PLWHAs, 80% confirmed that they were infected either through sexual intercourse or blood contact. The conclusion therefore that sexual intercourse and blood contact are among major causes of HIV infection.*

**REPORTING:** Quantitative approach reduces its report to numbers as a result of statistical tests and uses impersonal language. Qualitative reports involve interpretative narratives from their data. They include participants’ own language and perspective.

## SUMMARY CHARACTERISTICS

|  |  |
| --- | --- |
| QUALITATIVE | QUANTITATIVE |
| SUBJECTIVE: In that one uses their own biasness in interpreting data | OBJECTIVE: One remain detached from the unit of analysis |
| INDUCTIVE: One tests theory from an observation | DEDUCTIVE: Self evident assumptions widely accepted as truths. |
| LESS GENERALISABLE: Less general applicability | GENERALISABLE |
| USE OF WORDS: Explanatory in nature | USE OF NUMBERS |

# QUALITATIVE APPROACH

Qualitative research is often seen as the main instrument in the research process whose main goal is that of describing and understanding rather than explanation and prediction of human behavior. It puts its emphasis on observational methods such as unstructured interviews, participant observation, use of personal documents etc in the collection of data.

#### WHEN TO CHOOSE QUALITATIVE APPROACH

Qualitative research studies serve one or more of the following purposes according to Peshkin (1993).

1. **Description:** That they can reveal the nature of certain situations, settings, processes, relationships, systems or people.
2. **Interpretation:** That they enable one to (i) gain insights about the nature of a particular phenomenon (ii) Develop new concepts theoretical perspectives (iii) discover problems that exist within a phenomenon.
3. **Verification:** That they allow a researcher to test the validity of certain assumptions, claims, theories or generalizations
4. **Evaluation**: That they provide a means through which a researcher can judge the effectiveness of particular policies, practices and innovations.

# QUALITATIVE APPROACH RESEARCH DESIGNS

# CASE STUDY

A case study is an intensive analysis of a person, group, event or problem. In other words, in case study, a particular individual, program or event is studied in depth for defined period of time. For instance a Medical researcher might study the nature, course and treatment of a rare illness for a particular patient. A case study would also be appropriate for learning more about a little known or poorly understood situation. Case studies are also useful in studying infrequent events such as riots or natural disasters e.g. When Tsunami occurred.

##### Method of Data Collection

In a case study, one collects extensive data on the individuals, programs, events on which the investigation is focused. These often include: Observations, interviews, documents etc. In many instances the researcher might spend considerable time on site interacting regularly with the people being studied. Furthermore, the researcher records the context in which the situation is found, such as physical environment, historical, economic and social factors etc. This helps one to draw conclusions about the extent to which its findings might be generalized.

## ETHNOGRAPHY

This is a study where the researcher undertakes study of a particular culture in depth. The researcher studies the group in its natural setting for a period of time investigating language, behaviors, rituals etc with an intent to identify cultural norms, beliefs, social structures and other cultural patterns. Ethnography study is also useful for an understanding of complexities of a particular intact culture.

##### Method of Data Collection

Site base field work is common, participation observations, recording of processes, interviews of key informants such traditional leaders etc.

## PHENOMENOLOGICAL STUDY

Phenomenological refers to a person’s perception of the meaning of an event as opposed to the event as it exists to the person. Thus the study attempts to understand people’s perceptions, perspectives and understandings of a particular situation. It tries to answer the question: What is it like to experience such and such? What do you think would be the outcome of such and such a situation? Etc

##### Method of Data Collection

Phenomenological researchers depend on lengthy unstructured interviews with carefully selected sample of participants. A typical sample size could be from 5-25 individuals with some direct experience with the phenomenon being studied.

## GROUNDED THEORY STUDY

The major purpose of grounded theory is to begin with the data and use them to develop a Theory. It uses a prescribed set of procedures for analyzing data and constructing a theoretical model from them. The term grounded refers to the idea that the theory that emerges from the study is derived from and ‘grounded’ in data that have been collected in the field rather than taken from researcher literature. It is also used to examine people’s actions and interactions and has been found useful for topics such as remarriage after divorce, spouse abuse etc.

### Method of Data Collection

Data collection is field based, flexible and likely to change over the course of the study. Interviews play a major role, but also observations, documents, historical records etc. The only unique issue is that the data collected must include the perspectives and voices of the people being studied.

## CONTENT ANALYSIS

This is a detailed and systematic examination of the contents of a particular body of material for the purpose of identifying patterns, themes, biases etc. It is a technique used to analyze existing sources and the process often involved counting the number of times a particular word, phrase, idea, event, symbol etc appears in a given context. These are performed on forms of human communication such as books, films, newspaper, art, music etc. For instance a researcher might undertake a content analysis on the film to be aired, to determine the contents whether they are fit for public eye, for children etc.

### Method of Data Collection

The data is collected from identification of materials to be analyzed, coding of the materials in terms of predetermined and defined characteristics.

# QUANTITATIVE APPROACH RESEARCH DESIGNS

In quantitative there are two major types: Descriptive and Experimental research

## DESCRIPTIVE RESEARCH

Sometimes known as descriptive quantitative research, it involves identifying the characteristic of an observed phenomenon or explaining possible correlations among two or more variables.

It examines the situation as it is and does not change or modify the situation under investigation.

## TYPES OF QUANTITATIVE RESEARCH DESIGNS UNDER DESCRIPTIVE

### Correlation Research:

This study examines the extent to which differences in one variable are related to differences in one or more other variables/characteristics. A correlation exists when one variable increase another variable either increases or decreases. One can find substantial correlation if both variable have reasonable degree of validity and reliability.

### Developmental Designs:

This is a research study that focuses on the unfolding or changing of some events in an individual such as growth process. And this is done over an extended period of time. Developmental designs have other sub studies:

* **Cross Sectional study:** This is where people from various different ages get sampled and compared. It assesses a small group of different ages at the same time than using them over an extended period of time.
* **Longitudinal study:** This is where a singe group of people are followed over the course of several month or years and data is collected relating to specific characteristics at various times. It assesses changes over time by looking at the same groups or subjects for months or years EG Assessing academic performance of students/pupils every 3 months for a period of 2 years etc. The major concern is that it takes too long to complete a study.
* Cross sequential studies: These combine both longitudinal and cross sectional methods in an attempt to shorten the length of research.

### Observation Studies

This study focuses on a particular aspect of behavior. The behavior is somewhat quantified and counted to determine its overall frequency. Sometimes it is rated for accuracy, intensity, maturity etc. Observations are recorded in great detail with field notes, videotapes etc, to capture a wide variety of ways in which people act and interact. From there a researcher constructs a complex yet integrated picture of how people spend their time. The researcher ought to remain as objective as possible in this study. Observation study requires an advance planning, attention to detail and great deal of time and help from other research assistants. Suffice to mention that data can be collected through either detached observation or participant observation.

### Survey Research

These may be used to descriptive, explanatory, explorative purposes. Surveys can be used to collect data on attitudes and opinions from large numbers of people. They are used in studies involving individual people as units of analysis. Although it may target groups or interactions, some individuals ought to serve as respondents or key informants.

A survey is also seen as any observation or in investigation of facts about a situation. It is also a method of gathering information from a number of individuals in order to learn something about a population from which a sample has been drawn. Survey research uses a combination of face to face interviews, telephone interviews, questionnaire administration etc.

CHARACTERISTICS OF A SURVEY

* They gather information from only a small sample of people
* Information is collected by means of standardized questions so that every individual surveyed responds exactly to the same questions
* Individual respondents are never identified but rather survey results are presented in the form of statistical charts and tables

# B. EXPERIMENTAL STUDIES

The basic purpose of experiment studies is to examine the possible influences that one factor or condition may have on another factor. It examines the cause and effect relationships. It does so by controlling all factors except those whose possible effects are the focus of the investigation.

There are various experimental designs that a researcher can undertake. It must also be noted that in Experimental designs, **Internal Validity** is essential, without it any results that the researcher obtains are UN interpretable.

Internal Validity is the extent to which a design and the data it yields allow a researcher to draw accurate conclusions about a cause and effect and other relationships within the data.

In Experimental studies, it is always important to introduce **Control groups**. In fact in order to maximize the **internal validity** the researcher needs to Control confounding variables so that they are not the ones to be ruled out as explanations for any effects observed. However, a researcher undertaking experimental studies ought to be aware of **Hawthorne Effect**. This is a psychological response in which subjects or participants alter their behavior because they are aware of the participation in a study. An experimental can have two factors: **Stimuli and Control group**. A stimulus is a variable or condition that you manipulate as a researcher while the control group is one with no manipulation.

## EXPERIMENTAL DESIGNS

### True Experimental Design

This is where a researcher manipulates the independent variable and examines its effects on another dependent variable. For instance undertaking a Malaria control intervention in Linda Township while Kanyama Township has none. Later, an assessment is done to ascertain the levels of malaria infections in both townships. The results may show that Linda has lower rates compared to Kanyama due to the intervention. In other words, Malaria control program will be attributed to the positive results.

### Quasi Experimental Design:

Quasi means almost. This design has no control group as a factor, but rather only stimuli and can be appropriate for evaluating social programs. In other words, a quasi-experimental design is one that looks a bit like an experimental design but lacks the key ingredient -- random assignment or randomization. The **design of a quasi-experiment** relates to the setting up a particular type of an [experiment](http://en.wikipedia.org/wiki/Experiment) or other study in which one has little or no control over the allocation of the treatments or other factors being studied. The first part of creating a quasi-experimental design is to identify the variables. The [quasi-independent variable](http://en.wikipedia.org/w/index.php?title=Quasi-independent_variable&action=edit&redlink=1) will be the x-variable, the variable that is manipulated in order to affect a dependent variable. “X” is generally a [grouping variable](http://en.wikipedia.org/w/index.php?title=Grouping_variable&action=edit&redlink=1) with different levels. The predicted outcome is the [dependent variable](http://en.wikipedia.org/wiki/Dependent_variable) which is the y-variable. In a time series analysis, the dependent variable is observed over time for any changes that may take place.

Quasi-experimental designs are commonly employed in the evaluation of educational programs when random assignment is not possible or practical. Although quasi-experimental designs need to be used commonly, they are subject to numerous interpretation problems.

### Pre-Experimental Design

These are designs not possible to show cause and affect relationships because the independent variable does not vary.Pre-experimental designs are so named because they follow basic experimental steps but fail to include a control group. In other words, a single group is often studied but no comparison between an equivalent non-treatment group is made. Examples include a situation where subjects or participants are presented by the same type of treatment, such as college students being given a test, and measure the outcome.

# Other Forms of Research Designs:

# EVALUATION RESEARCH

This is the use of scientific methods to measure the implementation and outcomes of the programs for decision making purposes.

It is also a systematic application of social research procedures for assessing conceptualization, design, implementation and utility of social intervention programs.

Evaluation research is in the field of applied science which utilizes the whole range of social methods in the evaluating social intervention programs.

It can also be seen as a systematic acquisition and assessment of information to provide useful feedback about some object. It looks at what is working and what is not working.

**Program:** This is any intervention or set of activities mounted to achieve external objectives of some recognized social need or solve an identified problem.

Evaluation research is also known to be a fast growing field in applied social research.

BACKGROUND

Some social scientists such as Herbert Spencer, argue that the world is filled with social ills such as poverty, crime, sickness etc that in order to address such ills, human beings devised various interventions such as SAP, poverty alleviation campaigns etc. The aim then is basically to improve the status quo of the human conditions.

However, social scientists over the past years advanced their efforts in understanding whether the effort or program on interventions do in fact meet the intended goals and objectives. What is the impact of such programs is the question. This justifies the existent of Monitoring and Evaluation units in most organizations, meant to monitor, assess accountability, efficiency, implementation and impact of program interventions.

### PURPOSES OF EVALUATION

* For program mgt, improvement, refinement and financial accountability
* For quality assurance and control
* To make judgment of merit or worth
* To improve programs and generate knowledge
* To provide useful feedback to a variety of audiences, including sponsors, donors staff etc.

Based on the purposes, evaluation can be:

1. **Judgment oriented-**aimed at establishing value, merit or worth of a program with questions such as, was it worth it, was it successful, was it effective, did it attain its intended goal etc.
2. **Improvement oriented evaluation**; this focuses on quality enhancement for the sake of program improvement with questions such as, what are the program’s strengths and weaknesses? Has program been properly implemented, what have been the constraints, is the response to the intervention positive? It involves collection of data for a period of time in order to make suggestions about improvement, solve unanticipated problems and ensure beneficiaries make required progress towards the desired outcomes.
3. **Knowledge oriented evaluations**: Meant to improve our understanding of how programs work and how people change their attitudes and behaviors because of successful interventions. To generate new knowledge aimed at reducing uncertainty, risk of failure, enlighten funders and other stakeholders.

### TYPES OF EVALUATIONS

### FORMATIVE

Formative evaluation is a type of [evaluation](http://en.wikipedia.org/wiki/Evaluation) which has the purpose of improving programs. It goes under other names such as developmental evaluation and implementation evaluation. It can be contrasted with other types of evaluation which have other purposes, in particular process evaluation and outcome evaluation.

Formative evaluation is typically conducted during the development or improvement of a program or product (or person, and so on) and it is conducted, often more than once, for in-house staff of the program with the intent to improve. The reports normally remain in-house; but serious formative evaluation may be done by an internal or an external evaluator or preferably, a combination; of course, many program staff is, in an informal sense, constantly doing formative evaluation.

It is seen as evaluation done to provide feedback to people who are trying to improve a program. It is done with small group of people to test run something/materials.

## KEY ROLES FOR FORMATIVE EVALUATION

Formative evaluation encourages a process of reflective practice. More specifically, formative evaluation can strengthen conflict management systems in many ways. These include:

1. **Rapid feedback.** Primarily, formative evaluation provides *rapid feedback* on the efficacy of conflict management and resolution work. While a project in is progress, a formative evaluation process provides feedback on how the work is going.
2. **Documentation.** A formative evaluation process can *document* how conflict management and resolution work is proceeding, what techniques are used, what problems encountered, and what impacts are made in early and middle stages of work. Such documentation may be useful
3. **Planning.** Formative evaluations assist with *planning* and allows for revision of or recommitment to plans. Formative evaluation involves a comparison of program implementation with program plans. It also allows for a reconsideration of program goals and plans. When a formative evaluation reveals that a program has diverged from previous plans, those involved in the work can choose to revise plans to take advantage of new opportunities or return to previous plans in order to respond to current realities. Information from formative evaluation can provide input to future planning and implementation, thus forming the project's future.

The rapid feedback, documentation, and planning roles of formative evaluation make formative evaluation a useful component of reflective conflict resolution practice.

### Types of Formative Evaluation

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| --- |
|  |

There are many evaluation tools -- observation, in-depth interviews, surveys, focus groups, analysis, reports, and dialogue with participants, each of which can be part of formative evaluation. Depending on the goals of the formative evaluation, it may emphasize one or more of these tools.

Within the range of formative evaluation approaches, there are four main goals for formative evaluation, each of which may be more or less emphasized depending on the program needs

1. **Planning evaluation**. Planning evaluation clarifies and assesses a project's plans. Are the goals and timelines appropriate? Are the methods utilized to reach the goals appropriate? In addition, a planning evaluation can lay the groundwork for future formative and summative evaluations by developing indicators and benchmarks. In conflict resolution work, it is often useful to include a planning evaluation component in order to ensure that all stakeholders share common enough visions of the project plans. A planning evaluation can be a form of [consensus building](http://www.beyondintractability.org/essay/consensus_building/) amongst those involved in conflict resolution.
2. **Implementation evaluation**. An implementation evaluation focuses on the extent to which a program is proceeding according to plan. Information about ways in which a program is not proceeding according to plan can be used to either revise plans or to revise programming. In conflict resolution assessment, implementation evaluation can be a useful component to feed into a planning-focused evaluation. (Implementation evaluations can also be part of [Summative Evaluations](http://www.beyondintractability.org/essay/sum_eval/).) Where work is not proceeding according to plan, participants and facilitators can use an implementation evaluation with a planning focus to ask themselves why things are not going according to plan, and adjust plans or strategies accordingly.
3. **Monitoring evaluation**. A monitoring evaluation is usually conducted by an outside evaluator during the course of a program. A funder may choose to monitor implementation of a conflict resolution project by visiting a workshop, checking in with participants, or talking with project personnel. For long-term conflict resolution work, a monitoring evaluation can provide a funder useful reassurance that money is being well spent.
4. **Progress evaluation**. A progress evaluation assesses a program's progress. The project's unique goals should serve as a benchmark for measuring progress. Information from a progress evaluation can later be used in a summative evaluation. In conflict resolution work, a progress evaluation might assess attitude change part-way through a multi-year program, providing both feedback on what's working, and evidence of impact early on in a program
5. **SUMMATIVE EVALUATION**

Summative evaluations assess program outcomes or impacts. Summative [evaluation](http://www.sil.org/lingualinks/literacy/ReferenceMaterials/glossaryofliteracyterms/WhatIsEvaluation.htm) is a method of judging the worth of a program at the end of the program activities. The focus is on the *outcome. They can be used for c*ollecting data on the impact of a program operating in a community for a period of time

In terms of evaluating educational technology, a summative evaluation might ask if teacher technology skills improved as a result of a professional development activity, if teachers are using technology to a greater extent in their instruction, or if technology improved student motivation or performance.

Some advantages of summative evaluations include:

* They can, if designed correctly, provide evidence for a cause-and-effect relationship.
* They assess long-term effects
* They provide data on impacts.
* They can provide data on change across time.
* This looks at final program outcomes meant to provide information to decision makers who have to decide whether to continue funding or terminate a program.
* It is typically quantitative using numeric scores to assess impact or outcomes
* It is a method of judging the worth of a program at the end of the program activities

# UNOBSTRUSIVE RESEARCH

Devised by Eugene Webb (1966), these are ways of collecting data in which subjects or participants are not aware of their being studied. The researcher does not intrude but rather looks for clues.

This is opposite of participant observation and other participatory research approaches.

In an Obtrusive research, data is collected via observation and there is often no contact with subjects. It is a type of research approach that believes that one can study human behavior simply by observing what human beings leave behind them. Unobtrusive measures then refer to data gathered by means that do not involve direct acquisition of information from research subjects. The UM measures include two types of Trace Data:

1. **Accretion:** This is stuff left behind as a result of human activity, such as going through garbage used by someone (Garbology), to try and trace any clues to a particular area of investigation.
2. **Erosion:** This is stuff worn own as a result of human activity, EG Examining wear and tear of floor tiles in order to estimate the flow of customers or those using a rest room etc. This is commonly used in Criminology.

This approach is also useful when subjects to be studied are suspicious or distrustful.

Unobtrusive research is also known as non reactive research. One simply looks out for clues and that everything you see as a researcher represents the answer to some important social scientific question. For instance it will take a researcher to observe some tiles in order to have some clues on how busy a restraint is, or what room in a school is the most famous. If it is a kindergarten, the researcher might observe stuff such as mucus and hand finger prints on window panes in order to have an idea which room is most famous and most visited by the children etc.

# CLASSIFICATION OF DATA IN AN OBSTRUSIVE MEASURE

1. **Found Data**

These are physical traces produced by erosion of an environment or accretion to it. In other words, found data are in the form of accretion or erosion. It is of the view that what people leave behind, tell you much about their material culture.

1. **Captured Data**

This includes simple observation in research. This is the observation that occurs when observer has no control over the behavior in question and plays an observed, passive and non intrusive role in the research situation. Captured data can also be seen through various categories:

1. Exterior Physical Signs: Such as body tattoos, body piercings. For in instance, a study undertaken in prison among hard core criminals revealed that the ones with most elaborate set of tattoos were hard core criminals thus sugge4tsing a relationship between the number of tattoos and severity of crime.
2. Expressive movement: This is another category of captured data and involves simple observation of human expressive movements, gestures of mental patients and other non verbal clues etc.
3. Physical Location: This entails how human beings organize and use space for purposes of social interaction EG, How do people seat in libraries, cafeterias etc.
4. In Situ Conversation: This deals with conversational studies such as studying cowboys and how they communicate etc.
5. **Retrieved Data**

These include data retrievable such as birth records, marriage records, death certificates, telephone directories etc.

# PARTICIPATORY RESEARCH APPROACHES

## WHAT IS PARTICIPATORY RESEARCH

***SOURCE: ARTICLE BY Ajit Krishnaswamy*** *1 Krishnaswamy, A. 2004. Participatory Research: Strategies and Tools. Practitioner: Newsletter of the National Network of Forest Practitioners 22: 17-22.*

*Participatory research or PR presents people as researchers in pursuit of answers to questions encountered in daily life.* PR is not a research method, but an approach that presents people as researchers. It builds the capacity of the researched in understanding their problems as well as finding tangible solutions to their own problems. It enhances the understanding of the researched or community of some of their own capacities and how they can utilize them to overcome some of their vulnerabilities.

Important to note is that PR uses both qualitative and quantitative approaches.

Strategies used in participatory research (PR) focus on process and capacity building. In PR, the process of conducting research is as important as the research outcome. The PR process is intended not only to produce useful and sound information, but also to build capacity among the research participants. Capacity building occurs as community members identify research questions, carry out research activities, and in the process develop research skills and techniques. Community members learn to analyze information they have collected and decide how to use this information.

**Strategies and Tools Used to Define a Research Question**

Strategies associated with the different stages of identifying a research question in PR, and examples of tools that can be used in each stage are described below. These strategies and tools can also be used to address the other elements of the PR process, such as selecting research methods, collection of data, and analysis of results, use and dissemination of research results.

The strategies and tools described here are not exhaustive, but indicate the type of group activities that are integral to PR. The heart of the strategies is the emphasis on people

*Stage 1: Clarify purpose of the research*

Before a PR project is started, the research partners (researchers and community members) must have a clear understanding of the broader goals of the research project. It is also important to clarify the goals of the researcher, and how these relate to the goals of potential partners from the community. Without a clear sense of what the research project is trying to accomplish, it will be difficult to design a practical and effective PR project. For instance, what is the research trying to accomplish? For example: the research intends to provide wild mushroom harvesters more information about the condition of the mushroom crop so as to help them have an informed dialogue with the Forest Service

### *Stage 2: Identifying and involving diverse stakeholders in the research*

The second stage in a PR project is to identify “stakeholders” and facilitate their participation in the research. Stakeholders are defined as any person, group, or institution that affects or is affected by the research. They are broadly representative of different interests.

Stakeholder participation means active involvement right from the conceptual stages of the research and includes identifying the research question, implementing and using the research. It goes far beyond just notifying or informing community members about the research.

### *Stage 3: Building Trust*

Unlike conventional research processes, developing the research question is not the starting point of the PR process. Building trust is a necessary stage prior to developing the research question. Building community member’s trust in the research process which is so crucial in PR takes a lot of time and patience.

### *Stage 4: Building Common Understanding*

Once stakeholders are identified, and a degree of trust exists amongst them, the next stage is to build a common understanding. This process, while time consuming, will ensure that all stakeholders have a set of agreed expectations from the research so that they can remain invested in the process.

It is critical to the PR process that all stakeholders are actively engaged in building a common understanding. They should be provided with the opportunity to fully participate, and have access to information in order to do so.

***Stage 5: Identify the Research Question or Questions***

The next stage after building a common understanding is to specifically identify a research question or questions. The list of issues or concerns developed during the stage of building a common understanding could be used at this stage. From that list, the research question would be chosen.

**DATA COLLECTION TOOLS**

PR uses a variety of data collection tools which may include the following:

* Participatory listening and observation
* Maps
* Daily activity diagrams
* Institutional and Venn diagrams
* Livelihood analysis
* Semi-structured interviews
* Focus group discussion etc

# TYPES OF PARTICIPATORY RESEARCH APPROACHES

### PARTICIPANT OBSERVER (PARTICIPANT OBSERVATION)

**Participant observation** is a type of [research](http://en.wikipedia.org/wiki/Research) strategy which is a widely used methodology in many disciplines, particularly, [cultural anthropology](http://en.wikipedia.org/wiki/Cultural_anthropology), [sociology](http://en.wikipedia.org/wiki/Sociology), [communication studies](http://en.wikipedia.org/wiki/Communication_studies), and [social psychology](http://en.wikipedia.org/wiki/Social_psychology). Its aim is to gain a close and intimate familiarity with a given group of individuals (such as a religious, occupational, or sub cultural group, or a particular community) and their practices through an intensive involvement with people in their natural environment, usually over an extended period of time. The approach is more of qualitative study.

In anthropology, participant-observation is organized so as to produce a kind of writing called [ethnography](http://en.wikipedia.org/wiki/Ethnography). It can be applied or academic in nature. A key principle of the method is that one may not merely observe, but must find a role within the group observed from which to participate in some manner, even if only as "outside observer

Such research usually involves a range of methods: informal [interviews](http://en.wikipedia.org/wiki/Interviews), direct [observation](http://en.wikipedia.org/wiki/Observation), [participation](http://en.wikipedia.org/wiki/Participation_%28decision_making%29) in the life of the group, [collective discussions](http://en.wikipedia.org/wiki/Focus_group), analyses of [personal documents](http://en.wikipedia.org/wiki/Primary_source) produced within the group, [self-analysis](http://en.wikipedia.org/wiki/Reflexivity_%28social_theory%29), results from activities undertaken off or online, and [life-histories](http://en.wikipedia.org/wiki/Life_history_%28sociology%29).

Although the method is generally characterized as [qualitative research](http://en.wikipedia.org/wiki/Qualitative_research), it can (and often does) include [quantitative dimensions](http://en.wikipedia.org/wiki/Quantitative_research). Participant observation is usually undertaken over an extended period of time, ranging from several months to many years. An extended research time period means that the researcher will be able to obtain more detailed and accurate information about the people he/she is studying.

There are two main types of participant observation; *covert* and *overt*:-

**Covert** observation involves:

* The social researcher participating fully without informing members of the social group of the reasons for her presence, thus the research is carried out secretly or covertly.
* Contact with a '*gatekeeper*', a member of the group under study who will introduce the researcher into the group.

**Problems** of covert observation include:

* The researcher having to become involved in criminal or dangerous activities, particularly where the research is studying a 'deviant' social group.
* Problems of negotiating and having to act out forms of behavior which the researcher may personally find unethical or distasteful.
* The researcher having to employ a level of deceit, since the researcher is essentially lies about the nature of their presence within the group.
* Close friendships often resulting from connections with members of the group under study and the covert nature of the research can put a tremendous strain on the researcher, both in and out of the fieldwork setting.
* The problem of '*going native*', which refers to the fact that a researcher will cease to be a researcher and will become a full-time group participant.

**Advantages** of this type of covert participant role are:

* The researcher may gain access to social groups who would otherwise not consent to being studied.
* The avoidance of problems of *observer effect*, the conception that individuals' behavior may change if they know they are being studied. However, there are problems of recording data.

**Overt** observation involves:

* The researcher being open about the reason for her presence in the field of study since the researcher is given permission by the group to conduct her research.
* The use of a 'sponsor', who is an individual likely to occupy a high status within the group, therefore lessening any potential hostility towards the researcher.

**Problems** with overt observation include:

* *Observer effect*, where the behavior of those under study may alter due to the presence of the researcher.

**Advantages** of the use of overt observation include:

* The avoidance of problems of ethics in that the group is aware of the researcher's role.
* The group is being observed in its 'natural setting'.
* Data may also be openly recorded.
* Problems of '*going native*' are avoided.

One famous example of covert participant observation is that undertaken by Erving Goffman in his study of mental hospitals, published as *Stigma* in 1968. Goffman worked in an asylum for the mentally ill as Assistant Athletic Director. His research was mainly covert, with only a couple of staff being privy to the knowledge of his research, and via this method he was able to uncover the 'unofficial reality' of life in a mental institution.

In a PO, as a researcher, you can make observations either as a relative outsider or participant observer.

* Participant Observation has an advantage of flexibility in terms of collection data. However, one of the major disadvantages is that of Hawthorne Effect. This is a condition that occurs when a researchers’ presence affects the quality of data as a result of participants being aware of the presence of the researcher.
* It is also limited in capturing richness of what is being observed.
* Video camera for instance can capture only one direction of events, there by missing part of important data. Thus one ought to be careful on how they interpret what is being observed.

# ROLES OF A RESEARCHER IN PARTICIPANT OBSERVATION

* **Complete participation**: This is where a researcher participates in a deviant or illegal activity and goes on to actively influence the direction of the group.
* **Participant as observer:** This is where the researcher participates in deviant or illegal activities but does not try to influence the direction of the group
* **Observer as participants:** This is where a researcher participates in a one-time deviant or illegal activity but then takes a back seat to any further activity.
* **Complete observation:** This is where a researcher is a member of the group but does not participate in any deviant or illegal activities.

### PARTICIPATORY ACTION RESEARCH (PAR)

**Participatory action research** – or [**action research**](http://en.wikipedia.org/wiki/Action_research) – is a recognized form of experimental research that focuses on the effects of the researcher's direct actions of practice within a participatory community with the goal of improving the performance quality of the community or an area of concern.

### COMMON FEATURES OF PAR

* This is one of the most widely used research approaches characterized by a participatory element.
* It is commonly used at grassroots level such as rural setting especially in the 3rd world countries.
* It has a bottom up nature and often considered as an alternative approach to development projects. PAR is one of the research approaches that can be implemented in various fields.
* It is also used to learn more about a community’s material conditions such as environment, housing, water reticulation concerns etc, when there is little or no information available reflecting their experiences.

The "research" aspects of PAR attempt to avoid the traditional “extractive” research carried out by universities and governments where “experts” go to a community, study their subjects, and take away their data to write their papers, reports and theses. Research in PAR is ideally BY the local people and FOR the local people. Research is designed to address specific issues identified by local people, and the results are directly applied to the problems at hand. The [case study](http://en.wikipedia.org/wiki/Case_study) is often used as a research method as part of PAR.

### KEY PRINCIPLES IN PAR

1. ***The role of the researcher as a change agent***: Often PAR is more appropriate to communities where:

* People are poor, underprivileged or socially and economically exploited and oppressed
* Community is culturally vulnerable in that it is not a dominant culture, thus a researcher in this approach is seen to be a change agent offering solutions or helping to bring about transformation and change and deal with those problems.

1. ***Importance of participation***: It involves participation and collaboration between

Participants and change agents. Particular communities are integrated in the research process for full participation from its onset to the end.

1. ***The democratic nature of the research relationship:*** The participants’ voices are counted and there is freedom of speech and suggestions of what can be done.
2. ***The incorporation of local knowledge:*** Often data is collected from within the locality thus incorporating local knowledge which often is helpful at a time of decision making.
3. ***The generation of knowledge for purpose of action***: The knowledge that gets generated is for the sole purpose of enhancing action such as developing a particular program that improves the living standards of a particular area.
4. ***The empowerment component of the approach:*** The participation of various local people in the research process contributes to their own empowerment in that the knowledge gained during research enriches them individually by gaining a better understanding of their own situation
5. ***The respect of participant’s interests and culture:***Normally the actions that follow after a research have to take care of participant’s interests and culture. In other words, whatever program is devised as a way of intervention, ought to be within the participant’s culture and interest being local people.

Some of the program stages participation takes place Include:

**Problem formulation**: Where they explore the need for some inquiry and decide the purpose or goal of the research. The community set the agenda for the research and this is collaboratively done.

**Project design:** This is where the researcher and participants decide on how to conduct the study, the techniques to use, time frame etc.

**Implementation stage:** This includes collection of data from the participant’s environment

Research conclusions: Participants then try to make sense of the data collected and communicate the results through a report.

**COMMON DATA COLLECTION TOOLS IN PAR**

Although it uses both qualitative and quantitative approaches, PAR has more preferences to qualitative analysis.

* In PAR, data can range from song, dance, theatre etc. It is an open minded approach.
* It uses also focus group discussions, interviews, observations, interviews and key informants interviews.
* It uses largely field notes and field diaries, etc.
* It uses poetry, music, photo and video documents, story telling, oral history etc.

Once a researcher has decided on the research design/method to pursue, the obvious stage would be sampling in preparation for data collection.

### PARTICIPATORY RURAL APPRAISAL (PRA)

**Participatory rural appraisal (PRA)** is an approach used by [non-governmental organizations](http://en.wikipedia.org/wiki/Non-governmental_organizations) (NGOs) and other agencies involved in [international development](http://en.wikipedia.org/wiki/International_development). The approach aims to incorporate the knowledge and opinions of rural people in the planning and management of development projects and programmes. It is a methodology for action research and utilizes a range of techniques. It involves local people and outsiders from different sectors and disciplines. Basically, outsiders facilitates local people in analyzing information, practicing critical self awareness, taking responsibility and sharing their knowledge of life and conditions to plan and to act.

Hundreds of participatory techniques and tools have been described in a variety of books and newsletters, or taught at training courses around the world. These techniques can be divided into four categories:

* Group dynamics, e.g. learning contracts, role reversals, feedback sessions
* Sampling, e.g. transect walks, wealth ranking, social mapping
* Interviewing, e.g. focus group discussions, semi-structured interviews, triangulation
* Visualization e.g. Venn diagrams, matrix scoring, timelines

To ensure that people are not excluded from participation, these techniques avoid [writing](http://en.wikipedia.org/wiki/Writing) wherever possible, relying instead on the tools of [oral communication](http://en.wikipedia.org/wiki/Orality) like pictures, symbols, physical objects and group memory. Efforts are made in many projects, however, to build a bridge to formal [literacy](http://en.wikipedia.org/wiki/Literacy); for example by teaching people how to sign their names or recognize their signatures.

### PRINCIPLES OF PRA

While different practitioners would find different principles, most would agree to include the following:

1. Using optimal ignorance: This refers to the importance of knowing what is not worth knowing. It avoids unnecessary details and irrelevant data, but also entails that a researcher ought to assume ignorance if they were to grasp as much data as possible.
2. Offsetting Biases: This is where it allows a researcher deal with own biases by seeking the concerns of the poor people.
3. Triangulation: This is where a researcher uses more than one source of information in order to cross check the responses and it is for the purpose of heightening accuracy.
4. Learning from and with Rural People: One tends to gain so much indigenous knowledge, social knowledge etc on site. In fact, during the process, the research learns or gains new knowledge and some of the subjects in the team such as focus group discussion tend to learn from others as well.
5. Learning rapidly and progressively: With conscious exploration, flexibility of methods, cross checking etc, one adapts through the learning process.

### GOOD FEATURES OF PRA

* **Iterative:** This involves a learning as you go principle
* **Innovative:** This is where techniques are developed for particular situations depending on the skills and knowledge available
* **Interactive:** There is some interaction with the participants and helps communication easy.
* **Informal**: This means focusing on partly structures and informal discussions or interviews
* **In the Community:** This entails that learning takes place largely in the field for maximum data capturing.

### PARTICIPATORY TOOLS

1. TIMELINE: This is used to gather information about what happened in the past in order to understand present situation.
2. MAPPING:

This involved drawing ones’ main features and landmarks as a map, and may include such things as houses, community facilities, vulnerable to particular…

1. RANKING

This tool explores people’s perceptions of risks and helps them understand their priorities.

1. DRAMA

People could be asked to act out a situation who is most affect4ed and what is most damaged etc.

1. VENN DIAGRAM

This shows key organization and individuals in the local area and their relationship with one another

1. TRANSECT WALK

This is a planned walk through the local area to explore different land uses.

1. DIRECT OBSERVATION: This is where one observes people and relationships, objects, structures, events and processes in order to develop a picture of community issues.
2. SEASONAL CALENDAR

This shows when significant activities such as household chores are undertaken based on the seasons.

### IV. RAPID RURAL APPRAISAL

Rapid Rural Appraisal (RRA) is another research approach usually conducted by a multi-disciplinary team, and its chief techniques include:

* Review of secondary sources, including aerial photos, even brief aerial observation
* Direct observation, foot transects, familiarization, participation in activities
* Interviews with key informants, group interviews, workshops
* Mapping, diagramming
* Biographies, local histories, case studies
* Ranking and scoring
* Time lines
* Short simple questionnaires, towards end of process
* Rapid report writing in the field.

**Dangers and drawbacks**

The range of techniques can be effective, but it remains fundamentally an extractive, externally-driven process. Many researchers who use standard RRA methods claim that they are using PRA, when the "participation" is restricted to provision of information to the researcher by the community. The simple test is what is the value added and who owns the product. If the community draws a map because you ask them to, it's RRA. If they realize that the map belongs to them, and want to keep it for their own use, then it's PRA.

### DIFFERENCES BETWEEN RRA AND PRA

Some major differences would include the following:

|  |  |
| --- | --- |
| **RRA** | **PRA** |
| Information is collected by the Outsider | Information is collected both by outsider and rural participants |
| Information is owned outsider | Information is owned by the local people |
| Information is NOT shared with the local people | Information is shared with the Local people |
| Information is analyzed by the Outsider | Information is analyzed with the participation of the local people. |

# SAMPLING

Sampling is approached differently for both the qualitative and quantitative studies. A sample is a small collection of units from a much larger collection or population in order to provide for an accurate generalization about the larger group. Or can be seen as a set of cases a researcher selects from a larger pool and generalized to the population.

Sampling has two major categories; Probability and Non probability sampling techniques:

## PROBABILITY SAMPLING

In probability sampling, each segment of the population has a likelihood of being part of the sample size. The general process is that of random Selection-meaning choosing a sample in such a way that each member has an equal chance of being selected.

* **Simple Random Sampling:** This is the least sophisticated of all sampling and a sample is chosen by simple random selection where by every member of the population has an equal chance of being selected.
* **Stratified Random Sampling:** This is where a sample is equal from each other according to layers or strata in the overall population. EG. One who decides to collect data from grades 4, 5 an 6 in a public school.
* **Proportional Stratified Sampling:** This is where a sample is chosen in accordance with the proportion of the each group in a population being targeted.
* **Cluster Sampling:** this is done when the population targeted is widely spread. So in order to be feasible, clusters or grouping are formed to make sample size manageable. In other words, one can subdivide an area into manageable units.
* **Systematic Sampling:** This involves selecting individuals according to predetermined sequence. E.g. selection of every 5th person within a population in order to come up with a sample size.

## NON PROBABILITY SAMPLING

* **Convenience sampling:** Also known as accidental sampling makes no pretense of identifying a representative’s subset of a population. It simply takes people who are available for interviews etc. This form of sampling may be appropriate for some less demanding research problems.
* **Quota Sampling:** This is a variation of convenience sampling. It selects respondents in the same proportions that are found in general population, but not randomly. For instance, one may aim at interviewing 20 Backs and 20 Whites in a particular place on a particular topic.
* **Purposive Sampling:** This is done with the purpose, where particular individuals are sort after as research respondents depending on the research topic. Normally a researcher ought to justify why they selected a particular sample of research participants or respondents.

# JUSTIFICATION FOR SAMPLING

* When the population is very large, it can satisfactorily be covered using sampling
* It saves a lot of time, energy, and money
* When the units of an area are homogenous, sampling technique is really useful
* When data is unlimited, the use of sampling remain inevitable
* When 100% accuracy is not required, sampling is the only option
* When the number of people to be studied is manageable, intensive study becomes possible.

# IMPORTANCE/ADVANTAGES OF SAMPLING

* ***For Reduced cost*** during the entire process***.***
* ***For greater speed*** as it takes less time consumption in data collection, tabulation and analysis
* ***For greater scope*** in that a complete enumeration of all units of the population are not practical as it requires more personal and sophisticated equipment
* ***Greater accuracy:*** -As it ensures completeness and high degree of accuracy due to limited area of operation making execution rather possible.
* ***Organization of convenience*** in that even small organizations with few resources can manage.
* ***Intensive and Exhaustive data*** is possible to collect
* ***Suitable*** if one has limited resources
* Better rapport-in that it is virtually impossible for the researcher to establish better rapport if they are dealing with the large [population than a manageable sample size

# DISADVANTAGES OF SAMPLING

* Chances of bias
* Difficulties ins selecting a truly representative sample
* Need for specialized knowledge
* Changeability of units
* Impossibility of sampling

# CHARACTERISTICS OF A GOOD SAMPLE

* Should be one able to reproduce the characteristics of a population with the greatest possible accuracy
* Should be free from error due to bias or due to deliberate selection of the unit of sample
* Should be free from random sampling error as it should be selected by procedure
* There should not be any substitution of originally selected units by some other more convenient way
* It should not suffer from incomplete coverage of units selected for study
* Relatively small samples properly selected may be much more reliable than large samples poorly selected.

#### Identifying a sufficient sample size

* In determining the sample size, the basic rule is: the larger the sample the better….. Some researchers have suggested the following guidelines:
* For small populations (N, 100), there is little point to sample, Survey the entire population.
* If population is around 500, 50% of the population could be sampled
* If the population is around 1500, 20% could be sampled
* Beyond 5000, sample size is almost irrelevant, and could be around 8%.

When the researcher has laid out the research process based on a particular research design and method, it is time for Data Collection. What are data?

# THE ROLE OF DATA IN RESEARCH

It should be noted that research is a viable approach to a problem only when there are data to support it. The term data is plural (singular is datum) and derived from a Latin verb “dare”, which means to give. Data are those pieces of information that any particular situation gives to an observer**.**

Data can be **Primary and Secondary**: Primary data is one the researcher makes an effort to collect, while Secondary data is one collected from already existing documents and other materials etc.

In terms of role of data therefore, data and methodology are interdependent.

# DATA VALIDITY AND RELIABILITY

**Reliability**: The extent to which results are consistent over time and an accurate representation of the total population under study is referred to as reliability. If the results of a study can be reproduced under a similar methodology, then the research instrument is considered to be reliable. Reliability refers to the consistency of a measure. A test is considered reliable if we get the same result repeatedly.

Embodied in this citation is the idea of replicability or repeatability of results or observations.

**Validity**: This determines whether the research truly measures that which it was intended to measure or how truthful the research results are. In other words, does the research instrument allow you to hit "the bull’s eye" of your research object? It is about accuracy of the data collected.Researchers generally determine validity by asking a series of questions, and will often look for the answers in the research of others.

In general, **VALIDITY** is an indication of how sound your research is. More specifically, validity applies to both the design and the methods of your research. Validity in data collection means that your findings truly represent the phenomenon you are claiming to measure. Valid claims are solid claims.

|  |  |
| --- | --- |
| TYPES OF VALIDITY |  |

**INTERNAL VALIDITY** is affected by flaws within the study itself such as not controlling some of the major variables (a design problem), or problems with the research instrument (a data collection problem).

"Findings can be said to be internally invalid because they may have been affected by factors other than those thought to have caused them, or because the interpretation of the data by the researcher is not clearly supportable" (Seliger & Shohamy 1989, 95).

### Factors which affect internal validity:

* Subject variability
* Size of subject population
* Time given for the data collection or experimental treatment
* History
* Attrition
* Maturation
* Instrument/task sensitivity

**EXTERNAL VALIDITY** is the extent to which you can generalize your findings to a larger group or other contexts. If your research lacks external validity, the findings cannot be applied to contexts other than the one in which you carried out your research. For example, if the subjects are all males from one ethnic group, your findings might not apply to females or other ethnic groups. Or, if you conducted your research in a highly controlled laboratory environment, your findings may not faithfully represent what might happen in the real world.

### Important factors affecting external validity:

* Population characteristics (subjects)
* Interaction of subject selection and research
* Descriptive explicitness of the independent variable
* The effect of the research environment
* Researcher or experimenter effects
* Data collection methodology
* The effect of time

## DATA COLLECTION TOOLS

There are various data collection tools that a researcher ought to be aware of for triangulation in the research process. Triangulation is process of ensuring that as much as possible the required data is collected using a combination of two or more tools. Or a process of using more than one data source for the sake of cross checking the responses. Data can be collected using the following tools:

* Secondary data sources such as :Review of literature using existing documents, reports, etc
* Questionnaire administration
* Interviews( Face to face, telephone interview, Focus group Discussions etc)
* Participatory observations
* Use of unobtrusive measures etc

## QUESTIONAIRE ADMNISTRATION

A **questionnaire** is a [research](http://en.wikipedia.org/wiki/Research) instrument consisting of a series of [questions](http://en.wikipedia.org/wiki/Question) and other prompts for the purpose of gathering information from respondents. A questionnaire be structured or not structured.

A questionnaire ought to have opening questions, middle questions and concluding questions.

Questionnaires have advantages over some other types of [surveys](http://en.wikipedia.org/wiki/Statistical_survey) in that they are cheap, do not require as much effort from the questioner as verbal or telephone surveys, and often have standardized answers that make it simple to compile data. Questionnaires are also sharply limited by the fact that respondents must be able to read the questions and respond to them. Thus, for some demographic groups conducting a survey by questionnaire may not be practical, unless one chooses to administer the questions accordingly, and may be translating into a local language.

## GUIDELINES FOR A GOOD QUESTIONNAIRE

* Keep it short: One’s questionnaire ought to be as brief as possible soliciting only for required information essential for research project.
* Use simple, clear, unambiguous language: Write questions that communicate exactly what you want to know.
* Check for unwarranted assumptions : Avoid assumptions in your questionnaire
* Word your questions in ways that do not give clues: Ensure that you do not give any clues to any desired responses. Remain as objective as possible.
* Check for any inconsistency: Ensure the questions flow within the realm of the research topic
* Determine in advance how you code the responses: Consider how you will process the responses you get well in advance as you lay down the questions.
* Keep the respondent’s task simple: Make the instrument as simple to read and respond to as possible.
* Provide clear instructions: Communicate exactly how you want people to respond.
* Make the questionnaire attractive and professional looking: The instrument should have clear lines for easy readability.
* Conduct a pilot test: Give the questionnaire to at least half a dozen of your colleagues and friends to see whether they have difficulty understanding any items etc. It also gives you an opportunity type makes corrections, adjust and revise the instrument to an acceptable standard.

(Source: <http://en.wikipedia.org/wiki/Questionnaire> )

# INTERVIEW

An interview can either be open ended or structured. In a structured interview, the researcher asks standard set of questions, while in a semi-structured interview, the researcher may follow standard questions with one or more individually tailored questions to get clarification or probe the interviewee.

### FORMS OF AN INTERVIEW

**Face to face interview:** These have a distinct advantage of researcher establishing rapport with the interviewee and gain cooperation. In fact, these forms of interviews yield higher response rates.

**Telephone Interview:** These are less time –consuming and less expensive. The response rate is not as high as the face to face interview, it is definitely higher that the mailed questionnaire and there is not much rapport.

**Group Interview:** The focus group discussion (FGD) is a rapid assessment, semi‐structured data gathering method in which a purposively selected set of participants gather to discuss issues and concerns based on a list of key themes drawn up by the researcher/facilitator (Kumar 1987). The focus group discussion has become extremely popular because it provides a fast way to learn from the target audience.

A FOCUS GROUP DISCUSSION (FGD) is a group discussion of approximately 6 - 12 persons guided by a facilitator, during which group members talk freely and spontaneously about a certain topic.

A FGD is a qualitative method. Its purpose is to obtain in-depth information on concepts, perceptions and ideas of a group. A FGD aims to be more than a question-answer interaction. The idea is that group members discuss the topic among themselves, with guidance from the facilitator.

#### STRENGTHS

* Each focus group discussion builds on the previous one, with a slightly elaborated or better-focused set of themes for discussion.
* Provided the groups have been well chosen, in terms of composition and number (see below), FGDs can be a powerful research tool which provides valuable spontaneous information in a short period of time and at relatively low cost.
* FGD should *not* be used for quantitative purposes, such as the testing of hypotheses or the generalization of findings for larger areas, which would require more elaborate surveys. However, FGDs can profitably complement such surveys or other, qualitative techniques.

#### LIMITATIONS

Depending on the topic, it may be **risky** to use FGDs as a **single tool**. In group discussions, people tend to centre their opinions on the most common ones, on ‘social norms’. In reality, opinions and behavior may be more diverse. Therefore it is advisable to combine FGDs with at least some key informant and in-depth interviews. Explicitly soliciting other views during FGDs should be routine as well.

In case of very **sensitive topics**, such as sexual behavior or coping with HIV/AIDS, FGDs may also have their limitations, as group members may hesitate to air their feelings and experiences freely. One possible remedy is the selection of participants who do not know each other (e.g., selection of children from different schools in FGDs about adolescent sexual behavior), while assuring absolute confidentiality.

It may also help to alternate the FGD with other methods, for example, to precede it by a self-developed role play on sexual behavior, or to administer a written questionnaire immediately after the FGD with open questions on sexual behavior in which the participants can anonymously state all their questions and problems. .

Interviewing therefore, involves much more than just asking questions. Thus the questions for the interview ought to be carefully planned and precisely worded to yield the kind of data the researcher needs. Some guidelines to maximize an interview may include the following:

Interviewing therefore, involves much more than just asking questions. Thus the questions for the interview ought to be carefully planned and precisely worded to yield the kind of data the researcher needs. Some guidelines to maximize an interview may include the following:

# GUIDELINES ON MAXIMISING AN INTERVIEW

1. Ensure that you’re your interviewees are representative of the group: This means you endeavor choosing people you expect to give you typical perceptions and perspectives
2. Find a suitable location: Endeavour to find a conducive, quite place for the interview for maximum output.
3. Take a few minutes to establish rapport: Begin the conversation with small ice breaker-talk while you remain courteous and respectful at all times.
4. Get written permission: Explain the nature of your study to array any fears and doubts in the interviewee as well as making clear how you wish to use the results. It may be helpful to offer sharing the report once completed.
5. Focus on the actual rather than abstract: Stick to your topic of study and keep close track of the conversation.
6. Do not put words in people’s mouths: Allow the interviewee express themselves in their own way and remain a good listener who lets people say what they want to say.
7. Record responses verbatim: Capture every discussion using a combination of handwritten notes, tape recorder etc, especially if the interview is unstructured.
8. Keep your reactions to yourself: You are more likely to get more accurate information if you try not to show surprises or disapproval of what someone tells you.
9. Remember that you are not necessarily getting facts: Treat the response of the interviewee as perceptions rather than facts, as confident and convincing as they may be.

# STATISTICS

Statistics is a science of collection, analysis and interpretation or explanation and presentation of data. It is often used to make predictions based on the data and is widely applicable in various social and natural sciences.

### IMPORTANCE OF STATISTICS

1. It can be used for counting attributes or things
2. It is useful for easy data compilation
3. It helps in record keeping of an organization or research
4. It is used in analyzing data and drawing conclusions from it. It is a backbone of any research
5. It is used in the characterization, summarization, presentation and interpretation of result for proper action
6. It helps in the presentation of data in the form of graphs, charts etc.
7. It is relevant in checking accuracy, consistency or degree of usage of the results obtained by the researcher.
8. It helps communicate the results of an experiment or research

### STATISTICAL ANALYSIS

This is an analysis where a chosen subset of the population called a sample is studied by the collection of data from a sampled individuals and subjecting to serve 2 purposes:

Descriptive and Inference Statistics:

**Descriptive Statistics:** Summarizes the population data by describing what was observed in the sample numerically or graphically.

**Inferential Statistics:** These are patterns in the sample data to draw inferences or conclusions about a population represented.

**AVERAGES IN STATISTICS**

In statistics, one often deals with estimates or averages. In statistics, there are many kinds of averages, but most common are the measures of central tendency being: Mean, Mode, Median and Range.

**Mean:** This is average one arrives at after adding all the numbers in a set and dividing by using the number of the numbers in the set. It is generally understood as standard average.

EG: 10, 10, 15, 20, 30, 50, and 10.

Mean= 10+10+15+20+30+50+10=145/7=20.71

**Median:** This is a middle value in a list of numbers ordered from smallest to largest number.

EG: 10, 10, 10, 15, 20, 30, and 50=15

**Mode:** This is the value that occurs most often. If there is no number repeated, it simply means that there is no mode.

EG: from the set of numbers= 10 is most repeated.

**Range:** The difference between largest and smallest values.

EG: 50-10=40.

### ORGANISING STATISTICAL DATA

The process of organizing large amounts of data used to be cumbersome, but now made simple by existence of electronic spreadsheet. This is a software program that allows the user to manipulate data displayed in a table. Electronic spreadsheets may be Excel, Statistical Package for Social Sciences (SPSS), Epi-info, Microsoft access etc.

## IMPORTANCE OF SPREADSHEET TO A RESEARCHER

1. **Sorting:** This is the organization of data into rows and columns according to attributes such as sex, age etc.
2. **Searching:** Spreadsheets do search for desired pieces of information in a quicker way
3. **Recoding:** Spreadsheet is used to record data according to categories.
4. **Graphing:** Most spreadsheets programs have graphing capabilities. This is where one produces data in the form of graphs, such as line charts, pie charts, bar charts, scatter grams etc.
5. Formulas: Spreadsheets also can be used to carry out simple calculations using statistical formulas.

# DATA CODING

In a research report, normally you will find charts, graphs, tables etc full of numbers that give you a reader a condensed picture of the data. There is a way one organizes, manipulates the quantitative data in order for it to give you a clear picture about a social world. The beginning point is data coding. This is when one has collected all the data, for instance in a questionnaire with structured questions.

Codes represent attributes composing variables, which in turn are assigned within a data file. The end product of the coding process is the conversion of data items into numerical codes.

If one is using SPSS (Statistical package for Social Sciences), Ensure that each variable is abbreviated in the Data view window, while the details of the variables will be in the Variable view window, under the column indicating Label.

What is Data Coding then? This means systematically reorganizing raw data into a form that is machine readable or easy to analyze using computers.

Data coding is done before you input or enter data on a spreadsheets. Normally, before testing hypotheses, a researcher puts the data in a different form.

Coding can be simple when data are recorded as numbers on well organized recording sheets. But it is rather difficult to code responses of open-ended questions.

A researcher ought to come up with a Code Book, where all variables are coded. A code book is a document describing the coding procedure and location of data for variables in a format computers can use.

**WHY DO DATA CODING?**

* It lets you make sense of and analyze your data
* For qualitative studies, it can help you generate a general theory.
* The type of statistical analysis you can use depends on the type of data you collect, how you collect it, *and* how it’s coded.
* Coding facilitates the organization, retrieval, and interpretation of data and leads to conclusions on the basis of that interpretation.”

A **code book** remains key before data analysis.

### EXAMPLE OF CODE BOOK

|  |  |  |
| --- | --- | --- |
| **COLUMN** | **VARIABLE** | **DESCRIPTION** |
| 1 | SEX | GENDER OF RESPONDENT  1=FEMALE  2=MALE  3=TRANSEXUAL |
| 2 | MARITAL STATUS | MARITAL STATUS OF RESPONDENT  1=SINGLE  2=MARRIED  3=DIVORCED/DIVORCEE  4=WIDOWED |
| 3 | LOCATION | LOCATION FOR A RESPONDENT  1=KAMWALA  2=CHILENJE  3=AVONDALE  4=WOODLANDS |

# DATA ANALYSIS

**Analysis of data** is a process of inspecting, cleaning, transforming, and modeling [**data**](http://en.wikipedia.org/wiki/Data) with the goal of highlighting useful [information](http://en.wikipedia.org/wiki/Information), suggesting conclusions, and supporting decision making.

Data analysis has multiple facets and approaches, encompassing diverse techniques under a variety of names, in different business, science, and social science domains.

## BENEFITS OF DATA ANALYSIS

Data analysis can offer the following benefits:  
http://www.migindia.biz/i/r2.gifStructuring of the findings from survey research or other means of data collection  
http://www.migindia.biz/i/r2.gifBreak a macro picture into a micro one  
http://www.migindia.biz/i/r2.gifAcquiring meaningful insights from the dataset  
http://www.migindia.biz/i/r2.gifBasing critical decisions from the findings  
http://www.migindia.biz/i/r2.gifRuling out human bias through proper statistical treatment

Data analysis in Qualitative and quantitative approach is somewhat different but also there are similarities. Qualitative data are in the form of text, written words, phrases or symbols describing actions and vents in social life and researchers rarely use statistical analysis.

### SIMILARITIES BETWEEN QUALITATIVE AND QUANTITATIVE ANALYSIS

* In both styles researchers carefully examines empirical information to reach some conclusion based on evidence.
* Both approaches emphasize on triangulation in order to attain adequacy where sufficient data has been collected.
* Both analysis involve a public method or process so that data can easily be accessible by others
* Both types also collect large amounts of data and there is some description on how it was collected and examined.
* In both qualitative and quantitative approaches, both researchers strive to avoid errors, false conclusions and misleading inferences.

### DIFFERENCES

* Quantitative researchers choose from a specialized, standardized set of data analysis techniques while in qualitative research data analysis is less standardized, and it has wide variety of approaches.
* Quantitative researchers do not begin data analysis until they have collected all the data and condensed them into numbers, while a qualitative researcher will undertake data analysis during the data collection.
* Quantitative researchers manipulate numbers in order to test hypotheses while qualitative research illustrates a theory, generalization or interpretation of some phenomenon.
* Quantitative research draws on a large body of data using numbers and statistics while qualitative analysis does not draw on a large body of formal knowledge from statistics and numbers.

# RESEARCH PROJECT PROPOSAL

Before the actual research work is undertaken by anyone, the first thing to do is to write a research project proposal. The research proposal slowly develops into a Research Report over the months that follow. While there are several research formats one can adopt, standard items in any research proposal would include the following:

Title, purpose/ goal of research, Hypotheses, Literature Review, Research Methodology, Bibliography.

Research is never a solo flight, never an individual excursion. It simply begins by research communicating their plans, thoughts, and methods, objectives for others to read, discuss and act upon.

The mechanism that begins such a research dialogue is the research Project Proposal. It must be clearly planned, laid out and inspected. A student will have to get it approved by an academic faculty.

A research proposal is a document that explains, describes exactly how the research will be conducted. In other words, a proposal is important and essential to successful research, just as architect plans are to the construction of a building.

In the research proposal, the problem and its sub problems are clearly stated; Hypotheses or questions are well articulated, all necessary terms operationally defined, delimitations carefully spelt out, justification of the study well stipulated etc.

## ADVANTAGES OF A RESEARCH PROPOSAL (by Students)

1. It helps students organize research activity
2. It communicates to the student’s advisor what they intend to do thereby enabling them with counsel and guidance in areas needing attention or areas that may pose some difficulty
3. It defines the researcher’s ability to think critically and express one’s thoughts clearly
4. It is also a practical application of one’s educational competence.

### A PROPOSAL FORMAT

CHAPTER 1: INTRODUCTION

This includes the following components:

* **Background to the study:** provide a historical overview of what you are focusing on and where it stemmed from. What has happened around it , how was the situation before etc.
* **The statement of the problem :** Sometimes referred to as Problem Statement: This part one highlights what the problem is, how serious the problem, how widespread is the issue of concern. If possible cite some statistics to indicate seriousness. Mind you, as you state how serious the issue is, you need to be backed up. Meaning there is still reasonable amount of citation from other sources that you consider. Explain what other problems or gaps or needs the issue at hand has created. Then indicate what the gap is( Create a gap), eg….in spite of having various policies and institutions that combat issues of corruption in Zambia, factors contributing to its continued increase in the civil service remains unknown”…etc Then the statement of the problem lands on an intention…what is your intention as a researcher. Eg you may state: It is against this background that the researcher intends or study intends to assess factors contributing to an increase in corruption cases in the civil service in Zambia.
* **Sub-problems** sometimes referred to as Objectives. These are normally divided into two segments of General Objective and Specific objectives. These are milestone or activities the researcher wishes to undertake in their research endeavor.
* **Research Questions:** These are questions posed to direct the research work and normally stem from the set objectives.
* **The Hypotheses:** This is where some Hypotheses are stated according to the stated sub problems
* **Significance of Study:** This is where one states to what extent the study shall contribute to the body of knowledge, who is likely to benefit etc.This is where a researcher states some reasons for undertaking the study as well as indicating practical value the study has.
* **Delimitations ( Scope of study):** This is where one indicates what they intend to do and Not do. Simply indicate some of the limitation of the study from the perspective of location, target sample, areas of research problem etc.
* **Limitations:** In a proposal these are anticipated challenges or bottle necks to the study that one anticipates to face during their research endeavor.
* **Definition of terms:** This is where one identifies some terms in relation to the research problem and tries to define them operationally, i.e. define them within the context of the research problem and not necessarily dictionary based.
* **Assumptions:** This section, the researcher indicates what they must have taken for granted with respect to the research problem.

**CHAPTER 2: *REVIEW OF LITERATURE***

Under this section, a researcher ensures that they have a plan, emphasize on relatedness and summarize the contents. Adequate and proper citations are required on this section, highlighting and bringing out intelligent arguments of what findings by others were, in relation to the study topic.

It is generally made of **empirical review** (meaning other similar studies related to your topic); **Theoretical framework** ( Meaning a few theories that forms a foundation to your study and explain how the assumptions of these theories relate to your study. You should indicate also which theory or Model you subscribe to more and why, from among the stated theories or models. Then **conceptual framework** is stated last indicating how the researcher perceives or conceives how the variables are interlinked or inter-related. Most commonly it comes in the form of a diagram with arrows showing the relationship between variables. Literature review section ends with summary or at least gaps in literature highlighting justification why you propose to do that research.

**SECTION C: *RESEARCH METHODOLOGY***

**Research Design: This** stage includes an indication of what kind of study: Is it a quantitative or qualitative approach to be used, and if so what specific research design to be adopted and justification of the choice of the design.

**Sampling**: The researcher indicates the sample size, location or site of study and sampling techniques to be used with a justification of the choice.

**Data Collection:** This involves indicating the kind of data to be collected, data collection tools or techniques to be used and justification, as well as how that data shall be organized and managed. It is often encouraged to indicate also some of the research ethics to be adhered to during the data collection.

**Data Analysis:** This entails an indication of how one intends to analyze the collected data, the kind of software or tools they envisage using for analysis as well as data presentation.

**SECTION D.** Qualifications of the Researcher

**SECTION E.** Outline of the proposed study: This entails a schedule of research activities with tentative timings when they could be completed. This helps one to remain in track as research is indeed a planned attack.

**SECTION F.** Bibliography

**SECTION G.** Appendices

# DATA ANALYSIS SOFTWARE PACKAGE-SPSS

### STATISTICAL PACKAGE FOR SOCIAL SCIENCES

Being one of the major data analysis tools used by most students undertaking a quantitative research, STATISTICAL PACKAGE FOR SOCIAL SCIENCES (SPSS), has various usages that help one to analyze and present data in the most professional way possible.

When one opens SPSS, the first thing that can be seen as is the Data Editor Window which has File, Edit, View, Data, Transform, Analyze, Graphs Utilities, Add-ons, Window and help.

Beneath it is the Data view and Variable View.

**Variable View:**

To open the file, simply go to file and open data. The best part of SPSS to commence with in an attempt of data inputting from the Code Book is the Variable view. Variable view under “name” takes in a max of 8 letters. However, full description of the variable is indicated under “Label”. The section on “type” has various options such as numeric, string, dollar etc.

One critical aspect is the “Value” section within Data Editor where one transfers codes from the Code Book.

**Data View:** This section only require inputting the codes according to the numbers assigned to specific variables.

Once data has been inputted, the obvious step is to analyze by going to “analyze” section, then descriptive Statistics which leads to various options such as Frequencies, Descriptive, Explore, Crosstabs, and Ratio etc...

# ORGANISING A RESEARCH REPORT

Once a researcher has undertaken the data analysis and stored the information accordingly, it is time to prepare a Research report. Research reports for most quantitative studies are similar in the format.

Basic aspects contained in a report include the following:

* Title Page: This includes the details of the name of the researcher, course being studied, computer number, title of the research etc.
* Preliminaries: These include:
* Copyright Notice: This is where a researcher gives some kind of warning and prohibition that actually the information contained in the report is not so open for duplication, redistribution etc otherwise one will have to acquire some permission from the one who undertook the research work.
* Abstract: This is basically a summary of all that has been studied
* Dedication: this is a part one would opt to mention special individuals to whom the work is dedicated to.
* Acknowledgements: This is where one shows some courtesy to all those they felt contributed in one way or the way to the success of the research work.
* Table of Contents:
* List of tables and figures
* Chapter 1: Introduction
* Statement of the problem( sub problems/hypotheses)
* Purpose of the study
* Limitations of the study
* Assumptions
* Chapter 2: Literature Review and summary of Lit Review
* Chapter 3; Methodology
* Research design
* Sample/size/techniques and justifications
* Data collection (tools and ethics to be considered).
* Analysis-tools and approach/techniques
* Chapter 4: Presentation, analysis and interpretation of data
  + This is the heart of any research work, with depictions in the form of tables, figures such as pie charts, bar charts, graphs etc. The section includes findings and interpretations.
* Chapter 5: Conclusions and Recommendations
  + A brief restatement of the problem and procedures, summary of findings, conclusions and recommendations including the areas that may require further study.
* Bibliography.

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