



CDS AFRICA

CENTER FOR DEMOCRACY & SOCIO-ECONOMIC DEVELOPMENT



TRAINING IN RESEARCH TECHNIQUES

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Training Overview

- This short course is designed to provide students with a comprehensive understanding of research methodology.
- The course will cover different aspects of research methodology, including research design, data collection methods, and data analysis techniques in research.

Learning Objectives

By the end of this course, students will be able to:

- Develop a basic understanding of research and its methodologies
- Identify appropriate research topics
- Select and define appropriate research problem
- Prepare a project proposal
- Organise and conduct research
- Write a research report and thesis

Some Definitions of Research

- Search for Knowledge
- It is a Systematic and Scientific search for Pertinent/Relevant Information on a Specific Topic
- A Systematised Effort to Gain New Knowledge
- A Movement from the Known to the Unknown

Definition

- **The Word Research** is composed of two Syllables, **Re** and **Search**.
- The Dictionary Defines the former as a Prefix Meaning Again, A New, Or Over Again and the Latter as a Verb Meaning to examine closely and carefully, to Test and Try, or To Probe.
- Together they form a Noun describing a Careful, Systematic, Patient Study and Investigation in some Field Of Knowledge, Undertaken to establish Facts Or Principles.

Some Terminologies

- **Methodology** – *refers to the methods, techniques, and procedures that are employed in implementing your research plan (design)*

Research Methods or Techniques

- **Research methods or techniques** refer to all the methods the researchers use in performing research operations (see research instruments / research tools)

RESEARCH METHODOLOGY

- A science of studying how research is carried scientifically
- A way to systematically solve the research problem by logically adopting various steps

TYPES OF RESEARCH

- Research can be classified from three perspectives:
 - **I. Application** of the research study
 - **II. Objectives**
 - **III. Inquiry** mode employed

I. APPLICATION

- If you examine a research from the perspective of its **application**, there are two broad categories:
 - **A). Pure research**
 - **B). Applied research**

A) PURE RESEARCH

According to Bailey (1978):

- **Pure research** involves developing and testing theories and hypotheses that are intellectually challenging to the researcher but may or may not have practical application at the present time or in the future.
- Thus such work often involves the testing of hypotheses containing very abstract and specialised concepts.

B) APPLIED

- Most of the research undertaken in the social sciences is **applied**, the findings being designed either for use in understanding a phenomena/issue or to bring a change in a program/situation.

II. OBJECTIVES

A research study can be carried out with **four objectives**:

- 1. Descriptive
- 2. Correlational
- 3. Explanatory
- 4. Exploratory

1. Descriptive:

- The main purpose of such studies is to describe what is prevalent with respect to the issue/ problem under study.
- The main characteristic of descriptive research is that the researcher has no control over the variables; he can only report what has happened or what is happening.
- The goal of descriptive research is to provide a comprehensive and accurate picture of the population or phenomenon being studied and to describe the relationships, patterns, and trends that exist within the data.

Some examples of **Descriptive**:

- In a supermarket, a researcher can from afar monitor and track the customers' selection and purchasing trends.
- Attitudes of students towards quality teaching.
- Strategies put in place by a company to increase workers' productivity.
- Effects of living in a house with domestic violence.

2. Correlational

- Aims at discovering or establishing the existence of a relationship/ association/ interdependence between two or more aspects of a situation.
- For instance, the effect of the home environment on education.

3. Explanatory

- Attempts to clarify why and how there is a relationship between two aspects of a situation or phenomenon.
- This type of research will try to explain, for example, how the home environment affects children level of academic achievement.

Some examples of explanatory research:

- How does domestic violence impact adolescents learners ?
- Why do some schools adopt a program while others do not?
- How does technology facilitate learning?

Explanatory research data collection

- Literature reviews.
- Interviews and focus groups.
- Pilot studies.
- Observations.
- Experiments.

4. Exploratory

- This is when a study is undertaken with the objective either to explore an area where little is known or to investigate the possibilities of undertaking a particular research study.
- When a study is carried out to determine its feasibility it is also called a **feasibility** study or a **pilot** study.

III. INQUIRY MODE

- From the point of view of inquiry , there are two types of research:
 - **1. The structured approach**
 - **2. The unstructured approach**

1. The Structured Approach

- This is usually classified as **quantitative research**.
- Quantitative studies often use standardized measures, numerical values, have larger sample sizes, and analyze data using statistical programs.
- A study is classified as quantitative if the researcher seeks to quantify the variation in a phenomenon and if information is gathered using quantitative variables.
- Quantitative research is **expressed in numbers and graphs**. It is **used to test or confirm** theories and assumptions.
- This type of research can be used to establish generalizable **facts** about a topic.

Some methods of Quantitative Research

- Common quantitative methods include experiments, observations recorded as numbers, and surveys with closed-ended questions.

The Unstructured Approach

- The unstructured approach to inquiry is usually classified as qualitative.
- A study is classified as qualitative if the purpose is primarily to describe a situation, phenomenon, problem or event.
- The information is gathered through the use of variables or measured on qualitative measurement scales, and if analysis is done to establish the variation in the situation or problem without quantifying it.
- Qualitative research is expressed in words. It is used to understand concepts, thoughts or experiences.
- Qualitative studies tend to be more “in-depth”, focusing on a smaller population but probing deeper into a given problem.

Some methods of Qualitative Research

- Common qualitative methods include interviews with open-ended questions, observations described in words, and literature reviews that explore concepts and theories.

Types of research

From the viewpoint of

Application

Objectives

Type of information sought

Pure
research

Descriptive
research

Exploratory
research

Quantitative
research

Applied
research

Correlational
research

Explanatory
research

Qualitative
research

QUALITIES OF A GOOD RESEARCH

- Research must address an important and relevant issue. This means that:
 - it is undertaken to increase knowledge and have some beneficial implications
 - it will also have relevance to the time, place, and population of the study.

Qualities of a Good Research

◦ Research is a process of **collecting, analyzing** and **interpreting** information to answer questions. But to qualify as research, the process must have certain characteristics: it must, as far as possible, be:

- Logical
- Rigorous
- Systematic
- Valid and verifiable
- Empirical
- Critical

Logical

- Good research is **logical**: this implies that research is guided by the rules of logical reasoning ,and the logical process of induction and deduction is essential in carrying out research.

Rigorous

- **Rigorous**-you must be scrupulous (careful) in ensuring that the procedures followed to find answers to questions are relevant, appropriate and justified.

Systematic

- Good research is **systematic**: this implies that the procedure adopted to undertake an investigation follow a certain logical sequence.
- The different steps cannot be taken in a haphazard way.
- Some procedures must follow others.
- The systematic characteristic of research rejects the use of guessing and intuition in arriving at conclusions.

Systematicness

- Good research is systematic as it follows certain steps.
These steps are:
 - Problem identification
 - Reviewing the literature
 - Collecting data
 - Analysing data
 - Drawing conclusions and making generalisations

Valid and Verifiable

- This concept implies that whatever you conclude on the basis of your findings is correct and can be verified by you and others.

Empirical

- This means that any conclusion drawn are based upon hard evidence gathered from information collected from real life experiences or observations.

Critical

- critical scrutiny (examination) of the procedures used and the methods employed is crucial to a research enquiry.
- The process of investigation must be foolproof and free from drawbacks.
- The process adopted and the procedures used must be able to withstand critical scrutiny.

THE RESEARCH PROCESS: AN EIGHT – STEP Approach

A) 5 STEPS IN PLANNING A RESEARCH STUDY

Step 1: Formulating a research problem

Step 2: Conceptualising a research design

Step 3: Constructing an instrument for data collection

Step 4: Selecting a sample

Step 5: Writing a research proposal

THE RESEARCH PROCESS:

B) 3 STEPS IN CONDUCTING A STUDY

Step 6: Collecting data

Step 7: Processing data

Step 8: Writing a research report

How To Select A Research Problem

An 'angle' for your research can come from insights stemming from:

- personal experience
- theory
- observations
- contemporary issues
- engagement with the literature

What is a research problem?!

- A research problem, in general, refers to some difficulty which a researcher experiences in the context of either a **theoretical** or **practical** situation and wants to obtain a solution for the same.
- The research problem undertaken for study must be carefully selected.
- The task is a difficult one, although it may not appear to be so.
- Help may be taken from a research guide in this connection.
- Nevertheless, every researcher must find out his own salvation for research problems cannot be borrowed.

Why are research questions important?

“Well-crafted questions guide the systematic planning of research. Formulating your questions precisely enables you to design a study with a good chance of answering them.”

-- Light, Singer, Willett, By Design (1990)

Statement of Problem

- After selecting a problem, it should be stated carefully by the researcher to delimit his task and isolate a specific problem before he can proceed with active planning of the study.
- This type of decision is culminated in the problem statement.
- Kerlinger (1964) has identified three criteria of good Problem Statements.
 1. A problem should be concerned with relation between two or more variables. (eg, age, sexetc)
 2. It should be stated “clearly and unambiguously in question form.
 3. It should be amenable (liable to answer) to empirical testing.

Considerations in selecting a good research problem

- **1. Interest:** a research endeavour (*attempt*) is usually time consuming, and involves hard work and possibly unforeseen problems. One should select topic of great interest to sustain the required motivation.
- **2. Magnitude (manageability):** It is extremely important to select a topic that you can manage within the time and resources at your disposal. Narrow the topic down to something manageable, specific and clear.
- **3. Measurement of concepts:** Make sure that you are clear about the indicators and measurement of concepts (if used) in your study. Do not use in your research problem concepts that you are not sure how to measure.

- **4. Level of expertise:** Make sure that you have adequate level of expertise (*know how / knowledge*) for the task you are proposing since you need to do the work yourself.
- **5.Relevance:** Ensure that your study adds to the existing body of knowledge, bridges current gaps and is useful in policy formulation. This will help you to sustain interest in the study.
- **6. Availability of data:** Before finalizing the topic, make sure that data is available.
- **7. Ethical issues:** How ethical issues can affect the study population and how ethical problems can be overcome should be thoroughly examined at the problem formulating stage.

Thank you for your time!