

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

RESEARCH METHODS

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Research concepts & classifications

- **What is research?**

- Research is the formal, systematic application of the scientific method to the study of the problems.

Research can be understood as a careful investigation or inquiry in the search for new facts in any branch of knowledge.

- According to Bruce W. Tuckman, research is a systematic attempt to provide answers to questions. Such questions may be abstract and general, as is often the case in basic research.

CONT

□ According to Mouly, research is simply the process of arriving at dependable solutions to problems through the planned and systematic collection, analysis, and interpretation of data.

CONT

- ❑ In a broader sense, research means the process of collecting information about a problem. It is a systematic application of a family of methods that are employed to provide trustworthy information about a problem

Historical Development of Research

- **Research began simply as an outcome of the curious mind of humans to deal with the problems they experienced and explore phenomena seemed to be beyond their understanding.**

CONT

- In the age of scientific and industrial revolution in the 18th century Europe, research had greatly advanced leading to exceptional inventions. However, we realize that the inventions were uncoordinated and the requisite research did not reflect scholarly and systematic character. As a matter of fact, it remained in the realm of natural science research. It is in this period that the positivist movement in natural science began to describe quantitative research the only academic activity that could accurately be certified as research

CONT

- The positivists justified their assertions on the basis that advances in quantitative research were repeatable and verifiable, hence resonating with the principles of objective science.
- During all this period, research, as we have observed, continued to be regarded as an appendage or a tool used to search for knowledge to other disciplines

CONT

- We note, therefore that until the 1970s, characterization of research as 'qualitative research' was used only in respect to anthropological or sociological disciplines. Nevertheless, the new changes in research as pioneered by post-positivist thinkers like Denzin and Lincoln (1995), and Stake (1990), among other has seen the overwhelming appeal of research as a paradigmatic endeavor in which both the qualitative and quantitative research paradigms are given prominence.

Purpose of Research

- Discover new knowledge in form of new facts, their correct interpretation and practical application.
- Describe phenomenon, including age, size, weight, color, and change over time, among other things
- Enable prediction, for instance, of drought, excessive rainfall, environmental changes
- Enable control, ensuring that it is possible to establish the effects of treatment given to a set of subjects, whether they are human beings or animals.

CONT

- Enable explanation of phenomenon through observation and measurement of a given subject
- Enable theory development through the formulation of concepts, theories and laws
- Search for solutions to persistent societal concerns
- Fulfil academic requirements for award of various academic degrees

Characteristics of Scientific Research

- ***It is systematic:*** It has rules for carrying it out-procedural specification for identifying and defining variables and processes of arriving at conclusions.
- ***Research is logical:*** This means that a researcher can check the validity of the conclusions drawn and generalizations made.
- ***Research is empirical:*** research has a reality reference, hence data is generated to support or disapprove positions. The research is based on accurate observation or empirical data or experience.

CONT

- ***Research is reductive:*** a researcher applies analytic procedures for data collection to reduce confusion-general relationships are identified and conceptualization done.
- ***Objective:*** as much as it is practically possible, the research attempts to arrive at unbiased solutions to existing social challenges
- ***Research is applicable and transmittable:*** it should have the qualities that make it applicable and its validity assessable.
- It employs **carefully designed procedures** and rigorous analysis It is cumulative in nature, implying that current research builds on previous research outcomes.

INDUCTIVE & DEDUCTIVE

- **Inductive** reasoning is often referred to as a *bottom-up* approach to knowing in which the researcher uses particular observations to build an abstraction or to describe a picture of the phenomenon that is being studied

CONT

- **Deductive** reasoning uses a top-down approach to knowing. The researchers use one aspect of deductive reasoning by first making a general statement and then seeking specific evidence that would support or disconfirm that statement

Quantitative Research

- Quantitative research places the emphasis on measurement when collecting and analyzing data. So it can be measured or quantified accurately using structured instruments such as questionnaires, psychometric tests or tools like the lie detector. Quantitative research is positivist and the researchers develop knowledge by collecting numerical data on observable behaviors of samples and then subjecting these data to numerical analysis.

Qualitative Research

- It deals with aspects of phenomena that are difficult to quantify (Stake 1990). On the other hand, qualitative research is most suited to study predominantly intangible phenomena. There are multiple realities which are socially constructed through individuals explore collective perceptions and beliefs

	Quantitative Research	Qualitative Research
Data generated	Numerical (quantitative) data	Verbal, text and pictorial (qualitative) data
Type of reasoning	Inductive. Uses, preconceived concepts and theories to determine what data will be collected	Deductive Discovers concepts and theories after data has been collected
Purpose	Discovery	Confirmatory
Subjects studied	Representative sample	In informative cases
Data analysis Method	Statistical methods (Descriptive or inferential).	Analytic induction. Narrative, Inquiry.
Stance of research	Objective and detached	Personally involved
Research report	Impersonal and objective	Interpretive and subjective

Classification on the Basis of Methods of Investigation

- *Historical research* generates descriptions, and sometimes attempted explanations, of conditions, situations, and events that have occurred in the past
- Descriptive research attempts to describe systematically a situation, problem, phenomenon, service or program, or provides information about, say, living conditions of a community, or describes attitudes towards an issue.

CONT

- *Correlation research* involves the search for relationships between variables through the use of various measures of statistical association. It attempts to establish the existence of a relationship or interdependence between two or more aspects of a situation.
- *Experimental research* is used in settings where variables defining one or more 'causes' can be manipulated in a systematic fashion in order to discern 'effects' on other variables.

CONT

- *Ex post facto research* is used when the investigator is unable to manipulate or control the variables involved in a causal relationship. In real life, it is not possible to control the amount of independent variables. *Ex post facto* research is suitable in this respect. For example, if a researcher wants to explore the experience of failing project, The only viable alternative is to study respondents who have failed the project

CONT

- *Case study, research* generally refers to two distinct research approaches. The first consists of an in-depth study of a particular issue.
- *Ethnographic research, usually* consists of a description of events that occur within the life of a group – with particular reference to the interaction of individuals in the context of the socio-cultural norms, rituals, and beliefs shared by the group.

CONT

- *Research and development* research differs from the above types of research in that, rather than bringing new information to light; it focuses on the interaction between research and the production and evaluation of a new product

Fundamentals of Scientific Research

- **Learning objectives**
 - By the end of this unit, you should be able to:
 - Identify and formulate a research problem
 - Identify research variables
 - Identify the research significance
 - Construct research objectives
 - Construct research hypotheses
 - Formulate research questions
 - Formulate research limitations
 - Formulate research delimitations

THE PROPOSAL/THESIS FORMAT

PRELIMINARIES		
a.	Title page	Compulsory
a.	Declaration	Compulsory
a.	Dedication	Compulsory
a.	Acknowledgement	Compulsory
a.	Table of Contents	Compulsory
a.	List of Tables	If applicable
a.	List of Figures	If applicable
a.	List of acronyms and abbreviations	If applicable
a.	Abstract	Compulsory

MAIN TEXT (in chapters)

Introduction	Compulsory
Literature Review	Compulsory
Methodology	Compulsory
Data presentation, analysis and discussion of findings	Compulsory
Conclusions and recommendations	Compulsory

2. REFERENCE SECTION

a.

References

Compulsory

2. APPENDICES

a.

**Questionnaires and other
relevant materials referred to
in the main text**

If applicable

Variables

- A variable is a concept that can assume any one of a range of values. It is at times called a *factor* or *feature*, or *outcome*. For instance, take the statements below:
- The parents in the school system are aware that HIV/AIDS is a factor (variable) that is a serious health risk for their children.

EXAMPLES OF TOPICS

EFFECTS OF EMPLOYEES' COMMITMENT ON ORGANIZATIONAL PERFORMANCE

MANPOWER PLANNING AND DEVELOPMENT AS AN EFFECTIVE TOOL FOR ACHIEVING ORGANIZATIONAL GOALS

IMPACT OF REWARD SYSTEM, EMPLOYEE TURNOVER AND PRODUCTIVITY IN NIGERIA

ROLE OF MANAGEMENT IN MOTIVATING WORKERS IN THE BANKING SECTOR (A CASE STUDY OF FIRST BANK NIG. PLC. ENUGU)

SALARIES AND WAGES ADMINISTRATION AS A TOOL FOR IMPROVING EMPLOYEE'S PERFORMANCE IN AN ORGANISATION. (A CASE STUDY OF OLAMABORO LOCAL GOVERNMENT AREA OF KOGI STATE)

EXAMPLES OF TOPICS

THE IMPACT OF MOTIVATION ON EMPLOYEE'S JOB PERFORMANCE IN AN ORGANISATION

IMPACT OF INDUSTRIAL ACTION ON THE ACHIEVEMENT OF TRADE UNION OBJECTIVE

THE INFLUENCE OF STRIKE ACTION ON EMPLOYEES PERFORMANCE AND PRODUCTIVITY

THE EFFECT OF MATERIAL MANAGEMENT TECHNIQUE ON PRODUCTION PLANNING PROCESSES

EFFECT OF MATERIALS MANAGEMENT ON RESOURCE UTILIZATION IN ORGANIZATION

The Relationship between Independent and Dependent Variables

Independent
variable(s)

(presumed or
possible cause)

Affects



Dependent
variable(s)

(presumed
results)

Research Problem

- **A research problem is a difficulty or occurrence that puzzles you. It is an issue of concern for which you want to seek a solution**

Components of A Good Research Problem

- There must be an individual or a group which has some difficulty or the problem.
- There must be some objectives to be attained.
- There must be alternative means or course of action for achieving the objectives or wishes to attain. This means that there must be at least two means available to a researcher for if he has no choice of means, he cannot have a problem.
- There must remain some doubt in the mind of a researcher with regard to the selection of alternatives. This means that research must answer the question concerning the relative efficiency of the possible alternatives.
- There must be some environment or context to which the difficulty pertains

Considerations In Selecting A Research Problem

- **Interest:** a research endeavor is usually time consuming, and involves hard work and possibly unforeseen problems. One should, thus, select topic of great interest to sustain the required motivation.
- **Magnitude:** 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.
- **Measurement of concepts:** Make sure that you are clear about the variables, their indicators and their measurement (if used) in your study

CONT

- **Level of expertise:** Make sure that you have an adequate level of expertise for the task you are proposing since you need to do the work yourself.
- **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.
- **Availability of data:** Before finalizing the topic, make sure that data are available.
- **Ethical issues:** How ethical issues can affect the student population and how ethical problems can be overcome should be thoroughly examined at the problem formulating stage.

Key Steps in Formulation of A Research Problem

- **Step 1:** Identify a broad field or subject area of *interest* to you;
- **Step 2:** *Dissect* the broad area into sub areas;
- **Step 3:** *Select* what is of most interest to you;
- **Step 4:** Raise research questions;
- **Step 5:** Formulate objectives;
- **Step 6:** Assess your objectives;
- **Step 7:** Double check

THE PROCESS OF SELECTING A RESEARCH TOPIC

- **Step 1: Brainstorm for ideas.**
- **Step 2: Read General Background Information.**
- **Step 3: Focus on Your Topic.**
- **Step 4: Make a List of Useful Keywords.**
- **Step 5: Be Flexible.**
- **Step 6: Define Your Topic as a Focused Research Question**

HOW TO SELECT A RESEARCH TOPIC

- MOTAVATION
- TRAINING
- DECENTERLIZATION



JOB
PERFORMANC
E

Study population & Subject area

- **Study population** or *People*: individuals, organizations, groups, communities (they provide you with the information or you collect information about them)
- **Subject area** or *Problems*: issues, situations, associations, needs, profiles; Program: content, structure, outcomes, attributes, satisfactions, consumers, Service providers, etc.; Phenomenon: cause-and-effect relationships, the study of a phenomenon itself

Problem Statement

- This is a statement that clearly defines the “problem” the intended study is going to answer. It has to be well framed - clear, precise, specific, measurable and attainable.
- *Try to limit the statement of the problem to one (1) paragraph and a maximum of another two (2) paragraphs if you need to elaborate or give further clarification*

IMPACT OF MACROECONOMICS VARIABLES ON FIRMS' PERFORMANCE IN NIGERIA

1.2. STATEMENT OF RESEARCH PROBLEM

Researches on the relationship between macro economic variables and firm's performance have been going in advanced countries of the world with little or no research in developing countries of the world such as Nigeria. It is this existing gap that informed the rationale behind this study. In the light of the above, the following research questions are raised:

What is the effect of inflation rate on corporate performance in Nigeria?

What is the relationship between exchange rate and corporate performance in Nigeria?

TOPICS: ACCOUNTING

- A CRITICAL ANALYSIS OF THE USE OF FINANCIAL STATEMENTS IN ASSESSING THE PERFORMANCE OF AN ORGANIZATION (A CASE STUDY OF _____)
- APPLICATION OF BUDGETS AND BUDGETARY CONTROL MEASURES IN A NON-PROFIT ORGANIZATION: A CASE STUDY OF _____
- ASSESSING BOOK-KEEPING PRACTICES OF SMALL AND MEDIUM SCALE ENTERPRISES IN _____

BANKING AND FINANCE

- A STUDY ON THE IMPACT OF BUDGETARY CONTROLS ON THE PERFORMANCE OF AN ORGANIZATION (A CASE STUDY OF
- ANALYZING PERFORMANCE APPRAISAL TECHNIQUES IN
- AUDIT INDEPENDENCE: ENHANCING ACCOUNTABILITY AND TRANSPARENCY IN CORPORATE ORGANIZATIONS
- CREDIT MANAGEMENT AND ISSUES OF BAD DEBTS IN COMMERCIAL BANKS IN

TOPICS: PUBLIC ADMINISTRATION

- CORPORATE GOVERNANCE AND ITS IMPACT ON THE MANAGEMENT OF AN ORGANIZATION
- EVALUATION OF FINANCIAL ABUSE IN THE PUBLIC SECTOR OF
- THE IMPACT OF HUMAN RESOURCE PLANNING ON ORGANIZATIONAL PERFORMANCE

Significance of the Study

- **The significance of the study states the relevance of a given study in terms of academic contribution and practical value that can be made of the findings of the study. This area articulates the possible beneficiaries if the study is successfully undertaken and how they are likely to benefit. Such beneficiaries could be policy makers, administrators or training institutions methodology.**

CONT

- This section requires you to justify why the research is necessary in the context of the *purpose and objectives you had stated above.*
- Justifications should be framed in such a way that the reader is convinced that your study will fill the gaps in knowledge you identified from the review of literature.

Research Objectives

- Objectives highlight the actions that you will perform to achieve the purpose of the study. Always use action words, such as; to identify, to measure, to verify etc. Your objectives should be specific, measurable and numbered. In this respect, objectives are the milestones set out to attain in your study goals. They inform a reader what you want to attain through the study. It is, therefore, extremely important to word the research objectives clearly and specifically

TYPES OF OBJECTIVES

- Objectives should be listed under two headings: **main or general objectives** and **specific or sub-objectives**
- The main objective sometimes called the purpose of the study is an overall statement of the thrust of your study that highlights the main associations and relationships that you seek to discover or establish in your study

TYPES OF OBJECTIVES

- The sub-objectives (specific objectives) are the specific aspects you want to investigate within the main framework of your study, and should be numerically listed. The wording should, clearly, completely, and specifically communicate to your readers your intention. Each objective should contain only one aspect of the study. You should use action verbs when writing objectives such as: determine, find out, ascertain, measure, explore it

Objectives for Descriptive Studies:

- To describe the types of incentives provided by Primary School to teachers in Mogadishu.
- To find out the opinion of the educational managers about the educational free primary education policy in Somalia

Objectives of Correlation Studies:

- To ascertain the relationship between staff development policy and teacher retention in Somalia.
- To establish the effectiveness of different teaching methods on student performance in Mogadishu.

Objectives for Experimental – Testing Studies:

- **To ascertain if a new curriculum is appropriate to the students in secondary schools in Somalia**
- **To determine whether or not the provision of accommodation for teachers will reduce staff turnover in Mogadishu.**

CONT

- The objectives detailed **the reasons why the research is being carried out. It also provides the scope and parameters within which the study will be conducted.** Objectives set must be **SMART (specific, measurable, attainable, realistic and time bound).**
- Try not to have too many objectives. 4 – 5 will be ideal. Objectives must be concise and straight to the point.

Research Questions


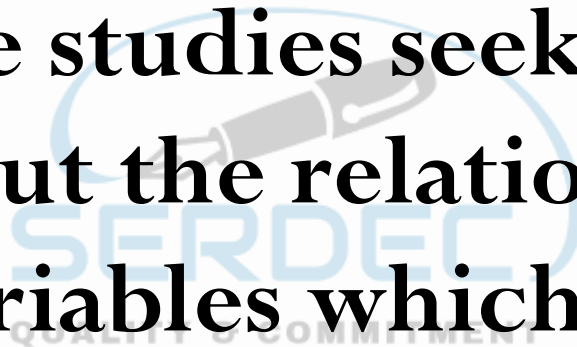




- **Research questions are, thus, issues of concern that you as a researcher might want to understand or interpret. The researcher states research questions which are consistent with the research methodology proposed for a particular study. Usually, the researcher asks one general question which is followed by specific questions based on a few variables.**

CONT

- When writing research questions, you should note the following:
 - Ask one or two central questions followed by not more than five to seven questions.
 - Use words such as what, how or to what extent at the beginning of a research question.
 - Relate the central question to the specific qualitative strategy of inquiry.
 - Focus on a single concept or phenomenon so as to explore it in great detail.
 - Use exploratory verbs which are non-directional, such as influence, impact, cause, effect, relate among others.
 - Make use of open-ended questions.



CONT

- **Research questions in quantitative studies seek to inquire about the relationships between variables which the researcher seeks to know; and are mostly used in survey studies.**
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A good Research Topic

- ❑ A good research topic should have the following characteristics:
 - It should be simple and clear
 - It should be suggestive of the scope of study
 - A good research is unambiguous
 - It should be short (it is suggested that a maximum of 18 words may be used in the research topic)
 - The statement of the research topic should clearly specify the study variables

CONT

- A good research topic is focused
- The researcher must demonstrate a high degree of originality in selecting and stating a research topic
- It should have some contemporary relevance i.e. it should be an issue of interest to different stakeholders of the time
- It should be suggestive of the research problem.

Hypotheses

- After you have specified the research objectives, it is essential that you state them in a way that makes it possible for you to investigate. You do this by forming hypotheses in case of quantitative research.

A hypothesis is a tentative explanation that can be tested by collecting data. It is an educated guess about the relationship between variables involved in your research problem. It is *a hunch, assumption, suspicion, assertion or an idea about a phenomenon, relationship or situation, the reality or the truth of which you do not know*

CONT

- The hypothesis shows the researcher's assumption of the relationship between the independent and dependent variables in quantitative research. After collecting and analyzing data, you can either reject or retain the hypothesis. However, you should note that hypotheses are only stated in quantitative research where we can use statistical methods to test them so as to establish a cause–effect or correlation between variables

Functions of hypotheses

- The formulation of hypothesis provides a study with focus. It tells you what specific aspects of a research problem to investigate.
- A hypothesis tell you what data to collect and what not to collect, thereby providing a focus for the study.
- As it provides a focus, the construction of a hypothesis enhances objectivity in a study.
- A hypothesis may enable you to add to the formulation of a theory. It enables you to specifically conclude what is true or what is false.

- The hypothesis assist in delimiting the direction of search for evidence. In other words, the researcher focuses on how to collect the necessary data to answer the question contained in the statement of hypothesis. Thus, only necessary evidence is collected.
- Hypothesis facilitates the extension of knowledge in one's area of study. They provide a tentative explanation of facts of phenomena and it can be tested and validated.
- They also provide the basis for stating conclusion of the research. After the hypothesis has been tested, it will be easier to interpret the findings relevant to the hypothesis. These conclusions are very vital for expansion of knowledge.
- A hypothesis seeks to verify knowledge which leads to the discovery of laws

Hypotheses Definitions

- Hypotheses are predictions about the relationship among two or more variables or groups based on a theory or previous research .
- Hypotheses are assumptions or theories that a researcher makes and tests.

Types of Hypothesis

- **Statistical hypotheses** consist of the *Null Hypothesis* (H_0), and the *Alternative Hypothesis* (H_1 or H_A)

Literature Review

- The literature review is an important part of any research. It provides an underpinning for the research by enlightening the researcher about the entire research process. You cannot undertake research until you have read and reviewed the literature. The reading of related literature helps you select a research problem. Besides, it can also help you formulate your research question/problem for building your logical framework.

Literature Search & Literature Review

- After you have identified your research problem, it is essential that you read about what other people have written about it. The knowledge you acquire helps you define and refine the problem. This process is called a literature search or survey. A critical analysis of literature is called a *literature review*. A literature survey is important because it sheds light on a variety of issues concerning your research problem

Functions of Literature survey

- The basic reason for literature review is to contextualize your research. Every academic research project is related to a particular area and is a link in a chain of similar research taking place in the area. This contextualization shows your awareness of the work going on in your field and also identifies the niche you wish to occupy.
- Literature review assists you to synthesize your ideas and gain perspectives to look at your research problem with different lenses. Other researchers may have looked at a similar issue, but from different angles. This knowledge can fortify you to find your own angle.

CONT

- **Improve your methodology:** A literature survey tells you if others have used procedures and methods similar to the ones that you are proposing, which procedures and methods have worked well for them, and what problems they have faced with them. Thus, you will be better positioned to select a methodology that is capable of providing valid answers to your research questions.
- **Broaden your knowledge:** It ensures you to read widely around the subject area in which you intend to conduct your research study. As you are expected to be an expert in your area of study, it helps fulfil this expectation. It also helps you to understand how the findings of your study fit into the existing body of knowledge.

CONT

- **Contextualise your findings:** How do answers to your research questions compare with what others have found? What contribution have you been able to make into the existing body of knowledge? How are your findings different from those of others? For you to be able to answer these questions, you need to go back to your literature review. It is important to place your findings in the context of what is already known in your field of enquiry.

CONT

- It gives you ideas about how to classify and present your data. When you read critically, you can see how writers explore the relationships between facts and how facts and relationships are explained. Methods used by other writers may not be suitable for your purposes, but they may give you ideas about how you might categorize your data.
- Literature review helps you to distinguish what has been done from what needs to be done and how it should be done. Readings in an area reveal gaps in the literature and this fine tunes your research question and subsequent research methods.

Managing the literature

- The references at the end of a recent article or book can provide you with an adequate reading list of most of the relevant material related to that topic. Once the relevant literature has been located and found through the sources suggested, the next step is to manage it. This requires efficient and selective reading. Once you try locating the relevant literature, you will discover that it is available in vast quantities. Now the primary task is to pick out the material that is actually related and relevant to your research area. This requires you to be a proficient reader who can get the gist of things quickly as you will have to go through a lot of reading

CONT

- For an article published in a journal, the first thing to do is look at the abstract or summary of the article. This will give you an idea whether it is relevant for you. In the case of a book you should look at the list of contents, the description, the summaries usually given at the end of the chapters and the introduction. This will tell you quickly if any part is pertinent for you.
- The next step is to follow a clear system of keeping track of your reading references. You need to create a management system that will incorporate your sources with all relevant details including a note about where you found that article or book. This means that you note down that the article/book was on the shelf of your supervisor or in the library of your Faculty. This will save you a lot of trouble at the end when you desperately need a title or author for a quote and cannot remember where you had found the material.

CONT

- The convenient traditional way was to write down the complete bibliographical reference (based on the style you will follow) on a 6x4 inch Index Card

SAMPLE:

Note Topic

Definition of Heroine

*Oxford Companion to
African American
Literature (3)*

Source/Source
Number

**A Heroine is the female protagonist who draws
the most attention from the audience. She is
admired for her bravery and noble actions.**

Quote or
paraphrase

Brown 1567

Author and
page number

CONT

- ❑ When surveying literature, work from the general to the specific sources.
- Find background information first, and then use more specific and recent sources.
- Record what you find and where you found it.
- Record the complete citation for each source you find; you may need it again later.

CONT

- It is a good practice to mark a specific file where you keep all materials (plus some photocopies) related to your research project. In this file you can also keep analytical and interpretative notes about your research. This file is called a research journal. Journaling is one of the most effective ways of managing the writing process. It helps you to keep your related literature in one accessible place.

Types of Literature

- ❑ THE SUBJECT MATTER,
- ❑ THE THEORY OR THEORIES USED TO INFORM THE CONCEPT AND
- ❑ PAST RESEARCHS

PURPOSE OF REVIEW OF LITERATURE

- ✓ First is to put the research you want to do *in proper perspective – in the context of adding and extending existing knowledge*.
- ✓ Secondly, it is done to avoid duplication.
- Finally review will allow a researcher *to avoid past problems encountered by past researcher, provide clues as to how to capitalize on valid and reliable measurement instruments and to identify gaps that can be further researched.*

References

APA STYLE

- The Reference should give a clear, complete description of the sources that were used while preparing the report. It is an alphabetical list as per the author's surname. You will be required to write your literature review using a specific style. There are many styles of citing and referencing literature that have been adopted by research institutions. MU prefers APA style for writing references. you can choose from the WORD (references option) then select one of your purpose such as BOOK, JOURNAL, WEB, CONFERENCES etc.



CONT



The screenshot shows the 'Create Source' dialog box in Zotero. The 'Type of Source' is set to 'Book' and 'Language' is 'Default'. The 'Bibliography Fields for APA' section includes fields for Author, Title, Year, City, and Publisher. The 'Corporate Author' checkbox is checked. The 'Show All Bibliography Fields' checkbox is unchecked. The 'Tag name' field contains 'Placeholder1'. The 'OK' and 'Cancel' buttons are at the bottom right.

CONT

Create Source ? X

Type of Source: Language:

Bibliography Fields for APA

* Author

☐ Corporate Author

* Title

* Year

* City

State/Province

Country/Region

* Publisher

Editor

Volume

Number of Volumes

Translator

☒ Show All Bibliography Fields * Recommended Field

Tag name

Research Instruments

- The construction of a research instrument or tool for data collection is the most important aspect of a research project because anything you say by way of findings or conclusions is based upon the type of information you collect, and the data you collect is entirely dependent upon the questions that you ask of your respondents. The research tool provides the input into a study and therefore the quality and validity of the output (the findings), are solely dependent on it.

CONT

- All research studies, regardless whether they are quantitative or qualitative, require the collection of data through some type of instrument or tool. Data are any type of information collected for use in research

GENERAL GUIDELINES TO CONSTRUCTING A RESEARCH TOOL

- **Step I:** Clearly define and individually list all the specific objectives or research questions for your study.
- **Step II:** For each objective or research questions, list all the associated questions that you want to answer through your study.
- **Step III:** Take each research question listed in step II and list the information required to answer it.
- **Step IV:** Formulate question(s) to obtain this information.

Types of Instruments

- **Pre-established instruments**

Pre-established instruments refer to a category of measuring tools that have already been developed and piloted, usually by someone other than the researcher who is doing the current study.

A Standardized Instrument

A standardized instrument is defined as an instrument with the following characteristics:

- It includes a fixed set of questions or stimuli.
- It is given in a fixed time frame under similar conditions with a fixed set of instructions and identified responses.
- It is created to measure specific outcomes and is subjected to extensive research development and review.
- Performance on the instrument can be compared to a referent such as a norm group, a standard or criterion, or an individual's own performance

SELF-DEVELOPED INSTRUMENTS

- Although all research approaches can use **self-developed instruments**, descriptive research, single-subject research, and action research are the approaches with which researchers are most likely to develop their own instruments. Self-developed instruments are measures created by the researcher for a specific setting or group of participants. Descriptive-survey researchers design and develop their own surveys to gather the perceptions of their sample participants on current issues.

Questionnaire

Developing a survey questionnaire

- Descriptive-survey research has some of the most well developed procedures for creating instruments of any research area.

The structured questionnaire is the most prominent

LIKERT SCALE QUESTIONNAIRE

- Developed by Rensis Likert for his doctoral thesis, the Likert scale questionnaire is the most widely used scale in survey research. The classic use of the Likert scale was to pose questions or items to participants and have them respond using an agreement scale by selecting a number that best represented their response. Depending on the purpose of the study, the researcher may decide to use a 6- or a 5-point scale. The range for a 5-point scale would be *strongly disagrees, disagree, slightly agree, agree, and strongly agree*.

EXAMPLES

Circle the correct numeric response to each question

#	Question	Survey Scale: 1=Strongly Disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly Agree				
		1	2	3	4	5
1	I have easy access to the supplies and equipment I need to do my work on this unit.					
2	The support services to this unit respond in a timely way.					
3	I can discuss challenging issues with care team members on this unit.					

1 Access

How do you personally evaluate the importance of the following aspects of coordinated care?

How important is.....?	very important	important	so-so	less important	not important
The surgery hours of the doctor/service provider are flexible.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The doctor/service provider takes a proactive approach with me (far-sighted, preventative) and agrees check-up appointments or reminds me that an appointment is due.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

CONT

In the course of last week...		not at all	a little	rather	much	very strong
1	It was hard for me to concentrate	0	1	2	3	4
2	I felt helpless	0	1	2	3	4
3	I was absent-minded and unable to remember what I was actually doing	0	1	2	3	4
4	I felt disgust	0	1	2	3	4
5	I thought of hurting myself	0	1	2	3	4

Below are a number of statements regarding attitudes to shopping. Please read each one and indicate to what extent you agree or disagree with each statement

Strongly
Disagree Disagree No Opinion Agree Strongly Agree

It is worth while taking extra time to save money

Own brands are as good as market leading

business



QUA



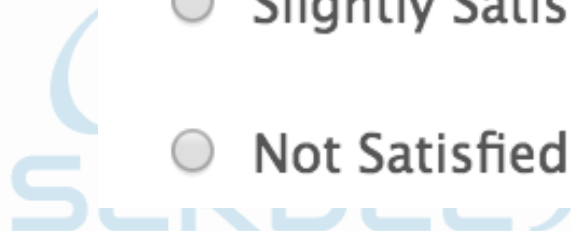
& COMM

How satisfied were you with your in-store experience?

- ☐ Extremely Satisfied
- ☐ Very Satisfied
- ☐ Moderately Satisfied
- ☐ Slightly Satisfied
- ☐ Not Satisfied



QUA



QUALITY & COMMITMENT



QUALITY & COMMITMENT



QUALITY & COMMITMENT

Very Interested 5	Somewhat Interested 4	Neutral 3	Not Very Interested 2	Not at All Interested 1
Very Much 5	Somewhat 4	Undecided 3	Not Really 2	Not at All 1
Very Much Like Me 5	Somewhat Like Me 4	Neutral 3	Not Much Like Me 2	Not at All Like Me 1
Very Happy 5	Somewhat Happy 4	Neutral 3	Not Very Happy 2	Not at All Happy 1
Almost Always 5	Sometimes 4	Every Once In a While 3	Rarely 2	Never 1

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Question 3: Please indicate how important the following are in your life.

	extremely important	very important	quite important	somewhat important	Unimpor- tant	no opinion
be held in high regard	0	0	0	0	0	0
be ambitious	0	0	0	0	0	0
be independent	0	0	0	0	0	0
seeking thrills	0	0	0	0	0	0
having children	0	0	0	0	0	0

774 × 234 - Images may be subject to copyright Find out more

QUA

MM

S

QUA

MM

	Poor	Fair	Average	Good	Excellent
Customer Skills	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Focus	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Leadership	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Open to New Ideas	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Performance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Quality of Work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Technical Skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

SEMANTIC DIFFERENTIAL SCALES

- Another type of rating scale is the semantic differential scale. Unlike the Likert scale, which uses sentence statements, in a semantic differential scale, participants are asked to make judgments regarding words or phrases describing persons, events, activities, or materials. The ratings are made by checking a point along a line indicating a continuum between two polar opposites. The scale is usually set up so that positive and negative responses occur at each end of the scale with equal frequency. One advantage to using semantic differential scales is that responses can be made quickly because little reading is required. However, the information produced is superficial.

EXAMPLES

Semantic scale

Good

Bad

Extremely Quite Slightly Neither Slightly Quite Extremely

Semantic Differential Scale

important

unimportant

expensive

inexpensive

useful

useless

strong

weak

quick

slow

1. experienced	very <input type="radio"/>	somewhat <input type="radio"/>	neither/nor <input type="radio"/>	somewhat <input type="radio"/>	very <input type="radio"/>	inexperienced
2. effective	very <input type="radio"/>	somewhat <input type="radio"/>	neither/nor <input type="radio"/>	somewhat <input type="radio"/>	very <input type="radio"/>	ineffective
3. efficient	very <input type="radio"/>	somewhat <input type="radio"/>	neither/nor <input type="radio"/>	somewhat <input type="radio"/>	very <input type="radio"/>	inefficient
4. customer-focused	very <input type="radio"/>	somewhat <input type="radio"/>	neither/nor <input type="radio"/>	somewhat <input type="radio"/>	very <input type="radio"/>	organizationally-focused
5. service-oriented	very <input type="radio"/>	somewhat <input type="radio"/>	neither/nor <input type="radio"/>	somewhat <input type="radio"/>	very <input type="radio"/>	technology-oriented

ESTABLISHING RELIABILITY AND VALIDITY FOR SURVEYS

- After a survey has been developed, it should undergo a pilot test. The pilot group would need to be selected and pilot participants instructed as to what to do. It is through the use of a pilot test that the researcher is able to establish the reliability and validity for the self-developed questionnaire. If the instrument does not have sound reliability and validity, then it is no value. Therefore, it is important that beginning researchers in general have at least a basic understanding of issues surrounding reliability and validity to be able to select the most appropriate and accurate instruments for their study

CONT

- **Reliability** refers to the consistency of scores, that is, an instrument's ability to produce approximately the same score for an individual over repeated testing or across different raters.
- Reliability is called **stability** or **test-retest**. The purpose of stability is to show that an instrument can obtain the same score for an individual .
- **Test-retest** reliability test involves administering the same instrument to same group of individuals at two different points in time

Validity

- **Validity is the ability of an instrument to measure what it intends to measure. It focuses on ensuring that what the instrument claims to measure is truly what it is measuring. In other words, validity indicates the instrument's accuracy.**

CONT

- **Face validity:** The definition of face validity is that the instrument appears to be measuring what it intends to measure. This means that on the surface, the questions seem to fit whatever is the described purpose of the survey. Because the researcher is likely to tell participants the exact purpose of the study in descriptive survey studies, high face validity promotes trust and hopefully better response rate as well

CONT

- **Content Validity:** The purpose of establishing content validity for a survey is to ensure that the questionnaire is measuring the breadth and depth of the issue that it is intended to measure

CONT

- **Trustee Validity:** it is intended to evaluating questionnaire items by a number of specialists and experts in the field, if the experts said this questionnaire measures the intended issue, the researcher can rely on expert judgment.
- **Self-Validity:** Is the relationship between the validity and reliability with calculation of the square root according to the following equation:
 - *Coefficient of self- validity =*

Coefficient of self-validity=

$$\sqrt{\text{coefficient of reliability}}$$

Use of interviews

- Most qualitative research includes interviews. The interview might be the major data collection tool of the study (particularly when the behaviour of interest cannot be easily observed) or may be used to corroborate or verify observations. An interview is basically a purposive conversation with a person or a group of persons.
- *Group vs. individual interviews:* Many qualitative interviews are conducted one-on-one when the interviewer attempts to determine the participant's feelings, interpretation, or reaction to an event (often referred to as a critical-incident interview) or a set of circumstances or life experiences (also known as life histories).

CONT

- In one-on-one interviews, the researcher lets participants express their thoughts in their own words. For example, one-on-one interviews might be conducted with students, who lived through the civil war. In this same situation, the students could be interviewed as a group, also known as a focus group interview. With **focus group interviews**, the researcher is able to collect data from multiple participants and also to observe and record the interactions and group dynamics that unfold.

Interview Protocols

- An important component of conducting a good interview is the construction of the interview protocol. An interview protocol should include a brief script for explaining the purpose of the study to the interviewee, places to record the date and background information on the interviewee, and the preliminary questions to be used in the interview. Because the procedures for conducting qualitative interviews are flexible, the questions serve as a starting point. A good interviewer will use the questions to begin the discussion and will then ask additional questions based on the person's responses. The actual interview may look more like a conversation than an interview with set questions and responses.

TYPES OF INTERVIEW QUESTIONS

- **Structured interview** is one in which the researcher comes to the interview with a set of self-developed questions and then does not deviate from those questions, and asks the same questions of all the participants.
- In a **semi-structured interview** researchers usually prepare a list of the questions to be asked but allow themselves the opportunity to probe beyond the protocol.
- **Non-structured interviews** are more conversation like and allow for the greatest flexibility. The researchers may simply jot down a list of topics that they want to cover in the interview. Generally, in qualitative research, the researcher will conduct a semi-structured or non-structured interview.

CONDUCTING A GOOD INTERVIEW

As with observational research, conducting interview research requires certain skills and practice with those skills. Often, one of the most critical steps in the process of conducting an interview is determining the right person or people to interview. You will likely need to spend some time in the field observing the group you plan to study to determine which participants can contribute the most to your study.

- As noted previously, an important component of conducting a good interview is the construction and use of the interview protocol. Even when collecting semi-structured interviews, it is important to have a protocol that will help guide the collection of data in a systematic and focused manner. How would you remember all the questions? How could you be sure that you asked each person the same question in the same way?

GENERAL PROCEDURES

- After creating the protocol, you are ready to select and interview participants. However, it is important to note here that when you conduct an interview, there are certain general procedures you should follow.

GENERAL PROCEDURES

- **Begin the interview** by reintroducing yourself. Because you are doing qualitative research, you will likely have had some contact with the participant before the interviews. You may also want to introduce the general topic that you will be discussing.
- **Remind the participant of the confidentiality of his or her responses.** At this stage, the participant will have been told about confidentiality issues and will have agreed to participate in the study. However, it is important to review that information at the beginning of the actual interview.
- **Obtain general descriptive information.** This type of descriptive information could include information about the participant or the issue or phenomenon being studied.
- **Strive for neutrality.** to maximize what participants tell you, it is particularly important that you are a good listener and nonjudgmental in your reactions. Be sensitive, and never act shocked or upset by what you hear.

GENERAL PROCEDURES

- **Use effective probes.** If you are conducting a semi-structured or non-structured interviews, you will want to follow up on comments made by the participants with probes. A probe is a follow-up question that is asked to get clarification about a response. This will help the interviewer to get more detailed information and give the respondent a chance to clarify responses

GENERAL PROCEDURES

- **Record the interview data.** There are many ways to record the information given by respondents during an interview. Many qualitative researchers prefer to tape record their conversations to preserve the integrity of the data. This is particularly important because many qualitative studies include verbatim responses as part of the data analysis. In addition, some researchers take field notes or jot down some key
- responses. If you choose to do the latter, be sure to fill in additional information immediately after the interview.

Commented Example of an interview protocol

(!!! to be filled in after the interview !!!)

Interview code number or name:

Interviewer:

Location:

Date: Length in min:

Age: (if not known, make a good guess)

Educational level: (if it did not come up in the interview, make a good guess)

Profession:

Family status:

1. How did the interviewee appear to me?

(Leave more space than shown here for writing notes in response to each question)

2. Atmosphere / Location

3. Disposition to talk / Motivation to take part on the interview

4. Gestures, eye contact, non-verbal signals

5. Interaction during the interview / difficult passages

6. The (three) main points that the interviewee made

USE OF OBSERVATIONS

- **Use of observations**

- Observation as a tool of research requires systematic and careful examination of the phenomena being studied. Specifically, researchers who choose to use observation must conduct their observations in a way that results in accurate, unbiased, and richly detailed information. We casually observe people's fashions, the way they wear, and how they act, but this does not constitute observation as a research tool. **Observation as a research tool requires training in both what to observe and how to record the observations.**

DEGREES OF RESEARCHER PARTICIPATION

- According to Gold (1958), whose classification of observation is often used to describe the degree of participation of the observer, you could be one of the following:

DEGREES OF RESEARCHER PARTICIPATION

- ***Complete participant.*** This means that you are a member of the group, and no one in the group is aware of the fact that you are also an observer. While this might allow a true “insider’s” view, it raises ethical concerns because, in essence, you are deceiving the participants.
- ***Participant as observer.*** In this situation, you are an active member of the group and actively participate in the group’s activities and interactions, but each member of the group knows that you are also serving a research role..
- ***Observer as participant.*** Choosing to be an observer as participant removes you a bit from group membership. Although you certainly still have a connection to the group, you will not likely participate in the group’s activities.
- ***Complete observer.*** Here you might conduct your observations from behind a one-way mirror or in a public setting. You are not a member of the group and do not participate in the group’s activities

CONT

- When selecting a role as an observer, you must decide the extent to which you want your activities as a researcher to be overt or covert. This decision may influence how the participants behave, respond, and react

KEY FEATURES OF CAREFUL OBSERVATION

- ***An explanation of the physical setting.*** This would include an overall physical description of the space
- ***A description of the participants in the setting.*** Careful explanation of the participants would include not only who is in the setting but also why they might be there and a description of their roles. In addition, any relevant demographic information should be included.
- ***Individual and group activities and group interactions.*** The researcher should observe the activities the participants are engaging in. In other words, what is going on in the setting? Are there rules that are being followed? Special note should be made of the particular activities that will help to answer the foreshadowed questions.
- ***Participant conversation and nonverbal communication.*** Because qualitative data often include direct quotes, conversations should be observed in such a way as to note not only what is being said but also how it is being said.
- ***Researcher behaviour.*** Because the researcher is part of the setting, careful attention must be paid to the influence the observer has on the behaviour of the participants. Does the researcher's presence in any way influence what is occurring in the setting?

OBSERVATIONAL PROTOCOLS

- **Conducting and recording observations**
- **Keep your observations short.** As your skills improve, you can increase the length of time that you are observing.
- **Be alert to the behaviour,** conversations, and activities of the participants. You will want to remember as much from your observations as possible. Making a mental note or jotting down actual notes will be helpful.
- **Concentrate on specifics.** Avoid being global in your observations. Look for examples of specific behaviours.

DESCRIPTIVE FIELD NOTES

❑ **Descriptive field notes** include the following information:

- Time, date, location, and length of observations
- List of participants
- Detailed descriptions of persons, interactions, activities, and settings observed
- Verbatim conversations and direct quotes

Observations were recorded every 15 seconds
and placed into behavioural categories

Intensity	Proximity and contact seeking	Contact maintaining	Proximity and interaction avoiding	Proximity and interaction resisting	Searching
1					
2		✓			
3					✓
4	✓ ✓				
5					✓
6	✓				
7		✓			12

Outcome Group Skills	Date	Observed Behavior
Model Listening Skills		
Employ Questioning Techniques		
Incorporate Constructive Criticism		
Utilize Peer Tutoring		
Utilize Peer Assessment		
Utilize Self-Assessment		

Event Recording (Frequency / Behavior Count) Form

Target Person's Name: _____

Person completing this form: _____

Location: _____ **Date(s):** _____

Procedures:

- Write down the behavior that you will be looking for and its definition
- Every time that you are "on the look out" for the behavior:
 - Write down the date
 - Write down the time
 - Make a tally mark every time that the behavior occurs (if the behavior does not occur, make sure to enter "0" - zero)
 - At the end of your observation period, total the number of tally marks for that day (if using a different method to keep track of behavior, enter the total in the Total column) **(This is what you graph)**

Behavior Definition (in specific, observable, measurable terms):

[illegible]

REFLECTIVE FIELD NOTES

- Reflective field notes include descriptions of the observers' feelings and thoughts about what he or she is observing. These are often recorded as observer comments at the bottom of the recording sheet or as separate entries in a field notes log after the observations. Reflective field notes allow the researcher to reflect on their own feelings, values, and thoughts in order to increase their awareness of how these might be influencing their observations.

USE OF DOCUMENTS AND ARTEFACTS

- Documents and artefacts are another form of qualitative data collection tool. These may include documents or objects that existed before the start of the study or those documents, Documents and artefacts produced before the study by the participants generally include things like public records, personal writings, or instructional materials.

SELECTING PARTICIPANTS & DATA COLLECTION

- **Learning objectives**
 - At the end of this unit you should be able to:
 - Distinguish between a sample and population
 - Explain the characteristics of a good quantitative & qualitative sample
 - Explain the difference between random & non-random sample
 - Highlight the data collection process

POPULATION & SAMPLE

- Researchers are interested in generalizing from their group of participants, the *sample*, to the larger population from which the sample was drawn. Various decisions regarding the participants must be made by the researcher in order to maximize the generalizability of the study. A population is the wider group of individuals about which the researcher wants to make statements.

cont

- Assuming you are planning to conduct a survey study. Ideally, you would want to send questionnaires to every member or individual within these populations. Although these large populations are referred to as **ideal populations**, sampling every person in these populations is not possible or realistic. Time, money, and other resources such as staffing typically make it impossible for you to reach all members of an ideal population. Therefore, you have to forgo these grand expectations and select a smaller or **realistic population**.

A sample

- After you have identified a list of possible participants, the next step is to select a sample. A sample is a smaller group selected from a larger population, in this case, a realistic population, that is representative of the larger population. Samples allow researchers to work with a smaller, more manageable subgroup of the realistic population

IMPORTANCE OF SAMPLING

- **Sampling** is the process of selecting a number of individuals or items for a study in such a way that the individuals selected represent the larger group from which they were selected.
- It saves time, energy and money.
- A large population can satisfactorily be covered through sampling.
- It ensures completeness and a high degree of accuracy.
- Sampling does not require vast facilities and thus it's economical in respect of resources.
- It enables the researcher to establish good rapport with the respondents.

CHARACTERISTICS OF A GOOD SAMPLE

- It produces the characteristics of the population with the greatest possible accuracy
- It should be free from error due to bias.
- It should not suffer from incomplete coverage of the units selected for the study.
- Small samples properly selected are more reliable than large samples poorly selected.
- Uses known probability sample techniques.

DESIGNING THE SAMPLE

- Designing the sample calls for three decisions:
- *Who* will be surveyed? (*The Sample*). The researcher must determine what type of information is needed and who is most likely to have it.
- *How many people* will be surveyed? (*Sample Size*). Large samples give more reliable results than small samples. However, it is not necessary to sample the entire target population.
- *How* should the sample be chosen? (*Sampling method*). Sample members may be chosen *at random* from the entire population (*probability sample*)



CONT

- **Selected sample** represents those elements of the population from whom the researcher seeks to collect data. **Data-producing sample** refers to the portion of the selected sample which actually does participate in the study and produce data for the researcher. The researcher should offer an explanation of how the sample was selected and why it can be considered representative of the population in terms of those characteristics the researcher has deemed relevant to the research problem

TYPES OF SAMPLING

- Random sampling
- Non-random samples

RANDOM SAMPLING& ITS TYPES

- **Random sampling** is a technique or tool that produces essentially a mini-version of the initial population. Random sampling is conducted in such a way that every person in the population has an equal and independent chance of being selected. This means that when a person is selected, it does not affect the chances of anyone else being selected.
- ***Simple random sampling*** involves the random selection of individuals from the realistic population as a whole. First, the researcher must obtain a complete list of names for all individuals who make up the realistic population. Ideally, this would require each population member to be assigned a number, and then the sample would be selected from a table of random numbers or some other random selection.



CONT

- ***Stratified random sample:*** *Population* is divided into mutually exclusive groups such as age groups or sex or religion or clan and random samples are drawn from each group. The population is divided into smaller homogenous groups or strata by some characteristic and from each of these homogenous groups draw at random a predetermined number of units. So whenever subgroups are critical to creating a sample that represents the entire population, stratified random sampling is the most precise sampling technique. Variables that are used to stratify a sample in social sciences might include, race, tribe/clan, socioeconomic statusurban, suburban, and rural.

CONT

- *Cluster (area) sample*: In the field of education, simple random selection is often not possible. For example, if you are surveying teachers in a Mogadishu, you might not be able to obtain a list of individual teacher names, but you can get a list of school to which the teachers belong. In this case, **cluster random selection** may be useful. Instead of assigning numbers to individual teachers, in cluster random selection, numbers are assigned to the schools within the realistic population. The schools would be assigned a number, and would be randomly selected using the random number table.

NON-RANDOM SAMPLES & ITS TYPES

- Random selection of the sample allows a researcher to generalize the results of the study back to the entire population from which the sample was drawn. Because of limited time, resources, or purpose (or all of these). This type of non-random sampling is referred to as convenience sampling. Although a sample of convenience requires fewer resources, it severely limits a study's generalizability.

CONT

- **Census sampling** is one the researcher surveys the entire realistic population without drawing a random sample from the population. This technique may be used when the study has unlimited resources or the realistic population is not too large. Census sampling is frequently used by educators/managers who are only trying to obtain data on their own schools/firms. Such data can be useful in learning about that particular school/firms; however, remember that the results cannot be generalized to other schools because the sample was not chosen randomly

DATA ANALYSIS AND REPORT WRITING

- By the end of this topic, you should be able to:
- Explain the meaning and purpose of data analysis in research
- Explain how different data analysis techniques are used to analyse research data.
- Describe the steps followed in writing research reports.
- Clarify the referencing and bibliographic styles used in educational research.

MEANING AND PURPOSE OF DATA ANALYSIS IN RESEARCH

- According to the Organisation for Economic Co-operation and Development (OECD, 2004)

Glossary of statistical terms, the process of data analysis can be defined as the transformation of raw data into usable information, often presented in the form of a published analytical article. Thus data analysis is the process breaking down and summarizing, classifying interpreting, and reporting about the different aspects of investigated phenomena.

DATA ANALYSIS TECHNIQUES

- Qualitative data analysis
- Quantitative data analysis

QUALITATIVE DATA ANALYSIS

- Qualitative data refers to all forms of information the researcher gathers which is non-numeric in nature. It is gathered through interviews, observation, experience, and audio/video appliances, review of documents (e.g. meeting minutes, memos, etc.), among others. According to Mertens (1998, p.348), “...data analysis in qualitative studies is an ongoing process. It does not occur only at the end of the study as is typical in most quantitative studies.”

The content analysis technique

- **Content analysis is the oldest and most commonly used analysis technique for qualitative data. This technique is the systematic description of phenomena unravelling the questions of who, what, when, where, and how following well-established guidelines. By the 1940's content analysis technique was already in wide use in Western Europe and America.**

STEPS OF CONTENT ANALYSIS

- Processing the field data through preparation of transcripts
- Identifying major themes and theme categories for deeper analysis
- Coding the transcripts or field notes preferably using numerical values.
- Assigning the data and data sets to theme categories to which they belong.
- Summarizing and interpreting and discussing data captured under each theme.

QUANTITATIVE DATA ANALYSIS

- In quantitative research, data analysis techniques are generally divided into two: Descriptive analysis and inferential analysis. The common characteristic between descriptive and inferential data analysis is that they both rely heavily on the use of statistics to summarise data

STEPS OF QUANTITATIVE DATA ANALYSIS

- Coding the data based on the questionnaire items
- Tallying (if manually analysed) or inputting into computer software in what is normally referred to as identifying and coding variables
- Running the analysis to obtain output
- Further analysis and presentation of the output to facilitate interpretation.

DESCRIPTIVE ANALYSIS

- Measures of central tendency which include mean, median, and mode
- Measures of spread or dispersion which include range, variance, and standard deviation
- Measures of relative position which include percentile rank, percentile scores and standard scores

Cont

- The most commonly used inferential statistics in the research include the chi-square, t-test, ANOVA, MANOVA, and factor analysis, among others.

COMPUTER ASSISTED DATA ANALYSIS

- *Software For Quantitative Data Analy*

Include The Statistical Package For The Social Sciences (SPSS).

- *Software For Qualitative Data Analysis*

Includes Computer Assisted Qualitative Data Analysis Software (Caqdas),

KoBo DETA COLLECTION

- **What is KoBo Toolbox?** KoBo Toolbox is a free open-source tool for mobile data collection, available to all. It allows you to collect data in the field using mobile devices such as mobile phones or tablets, as well as with paper or computers. It is being continuously improved and optimised particularly for the use of humanitarian actors in emergencies and difficult field environments, in support of needs assessments, monitoring and other data collection activities



STEPS

S1.CLICK

- :[https:// www.kobotoolbox.org/](https://www.kobotoolbox.org/)

GET STARTED

Get started with KoBoToolbox now, it's free and it takes under a minute. We have two publicly-available instances of KoBoToolbox you can choose from:

Unlimited Use for Humanitarian Organizations

Provided by UN OCHA

CREATE AN ACCOUNT

or [login](#)

Researchers, Aid Workers & Everyone Else

Provided by KoBoToolbox

CREATE AN ACCOUNT

or [login](#)

Advanced users can also install KoBoToolbox on their own server (or on a local machine) using Docker. See our [kobo-docker](#) repository on GitHub for details.

STEPS

- S2.SELECT ONE OF THE TWO OPTIONS(CREATE AN ACCOUNT)BELOW AND FILL THE FORM:

GET STARTED

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Researchers, Aid Workers & Everyone Else

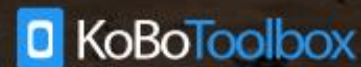
Provided by KoBoToolbox

CREATE AN ACCOUNT

or [login](#)

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Create an account



Name

Organization name

Username *

E-mail *

Sector

Country

Gender

☐ Male ☐ Female ☐ Other

Password *

Password confirmation *

Enter the same password as above, for verification.

Create Account

or login

KoBoToolbox is an integrated set of tools for building forms and collecting interview responses. It is built by the Harvard Humanitarian Initiative for easy and reliable use in difficult field settings, such as humanitarian emergencies or post-conflict environments.

This installation of KoBoToolbox may only be used for small survey deployments, which means less than 10,000 submissions as well as 5GB file uploads per user per month. If you require more, please [contact us](#).

If you are a organization providing humanitarian assistance, please [use OCHA's KoBoToolbox installation instead](#), which provides an unlimited number of submissions.

[Terms of Service](#) | [Privacy Policy](#)

THEN YOU'LL GET



Account created!

Thanks for creating a KoBoToolbox account.

Please click the activation link in the email just sent to you.

S3.THEN GO TO YOUR EMAIL ANG YOU'LLSEE AS THE
FOLLOWING ADND CLICK IT TO ACTIVATE KoBO TOOL
BOX ACCOUNT



Activate your KoBoToolbox Account - Thanks for signing up with KoBoToolbox! Confirming your account will give you full access to KoBoToolbox applications. Please visit the f.



Activate your KoBoToolbox Account - Thanks for signing up with KoBoToolbox! Confirming your account will give you full access to KoBoToolbox applications. Please visit the f.



Activate your KoBoToolbox Account - Thanks for signing up with KoBoToolbox! Confirming your account will give you full access to KoBoToolbox applications. Please visit the f.

S4.CLICK THE LINK BELOW YOU'LL FIND INFORMATION ON HAW TO GET STARTED

QUAL Activate your KoBoToolbox Account Inbox x

support@kobotoolbox.org

to me ▾

Thanks for signing up with KoBoToolbox!

Confirming your account will give you full access to KoBoToolbox applications. Please visit the following url to finish activation of your new account.

baashaa2018

<https://kf.kobotoolbox.org/accounts/activate/bb56da09cb163f699ad297a0445a40c1020b8ce2/>

Please visit <http://help.kobotoolbox.org> to find information on how to get started. There you can also post questions to the community (recommended) or to t

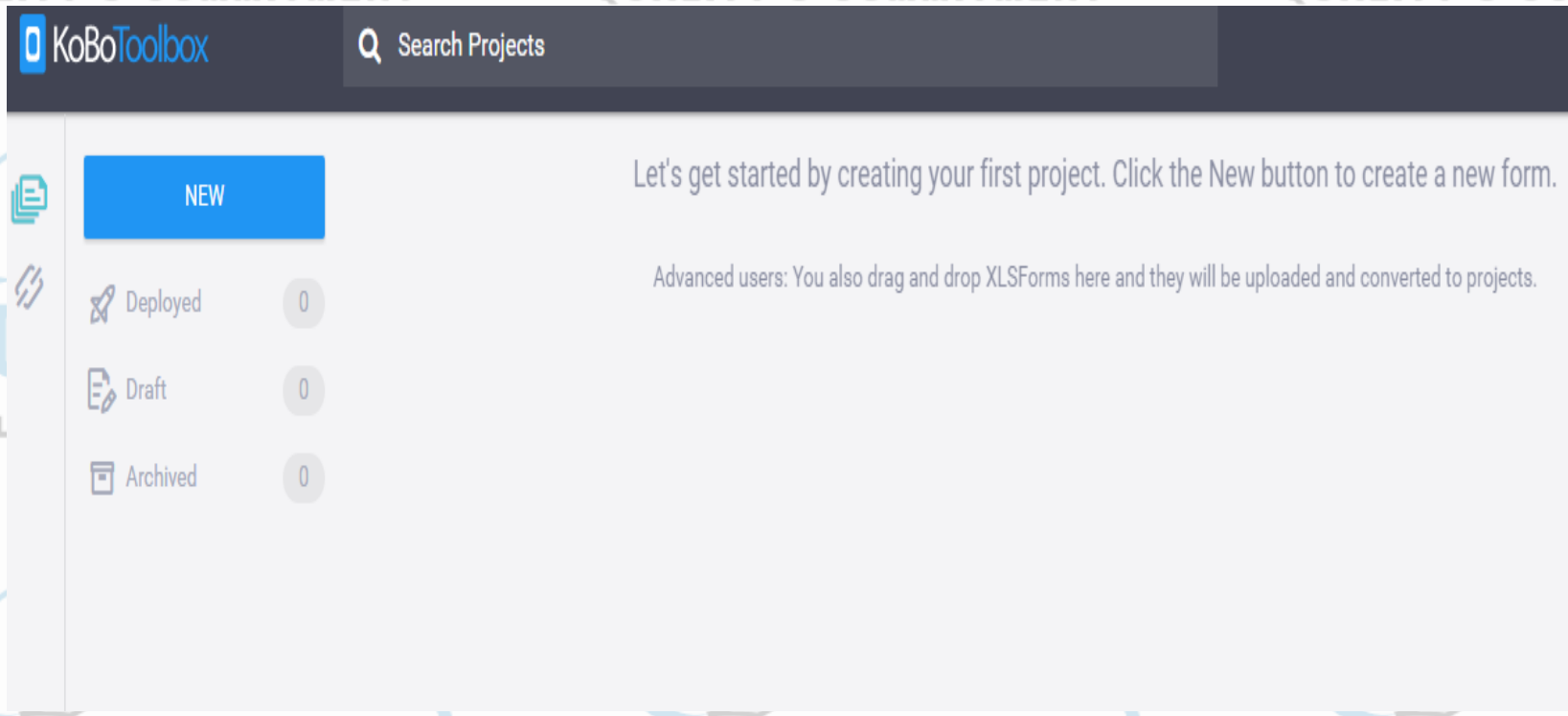
Best,
KoBoToolbox

SERDEC
QUALITY & COMMITMENT

SERDEC
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S5.CLICK THE OPTION (NEW) TO CREATE PROJECT



The screenshot displays the KoBoToolbox web application interface. At the top, there is a dark navigation bar with the 'KoBoToolbox' logo on the left and a search bar labeled 'Search Projects' on the right. Below the navigation bar, the main content area is divided into two sections. On the left, there is a sidebar with a vertical list of icons and a large blue button labeled 'NEW'. Below the 'NEW' button, there are three filter options: 'Deployed' with a rocket icon and a count of '0', 'Draft' with a document icon and a count of '0', and 'Archived' with a folder icon and a count of '0'. On the right, there is a large white box containing instructional text. The text reads: 'Let's get started by creating your first project. Click the New button to create a new form.' followed by 'Advanced users: You also drag and drop XLSForms here and they will be uploaded and converted to projects.'

KoBoToolbox

Search Projects

NEW

Deployed 0

Draft 0

Archived 0


Let's get started by creating your first project. Click the New button to create a new form.


Advanced users: You also drag and drop XLSForms here and they will be uploaded and converted to projects.


S6.SELECT/CLICK THE OPTION(BUILD FROM SEARCH THEN YOU'LL GET PROJECT DETAILS


Create project: Choose a source

Choose one of the options below to continue. You will be prompted to enter name and other details in further steps.


Build from scratch


Use a template


Upload an XLSForm


Import an XLSForm via URL

S.7 FILL THE REQUIRED INFORMATION IN THE BLANK SPACES THEN
CLICK THE OPTION(CREATE PROJECT

Create project: Project details



Project Name

Enter title of project here

Description

Enter short description here

Please specify the country and the sector where this project will be deployed.

Sector

Select...



Country

Select...

☐

Help KoboToolbox improve this product by sharing the sector and country where this project will be deployed. All the information is submitted anonymously, and will not include the project name or description listed above.

BACK

CREATE PROJECT

DMMI

This form is currently empty.

You can add questions, notes, prompts, or other fields by clicking on the '+' sign below.





S8.WRIRE YOU QUESTIONS

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 ▼ New Question

 Option 1

 Option 2

+ Click to add another response...

Value: AUTOMATIC

Value: AUTOMATIC

Value: AUTOMATIC

QUALITY & COMMITMENT

QUALITY & COMMITMENT

QUALITY & COMMITMENT

S9

- **S9.DOWNLOAD Kobo COLLECT TOOL TO YOUR MOBILE AND SELECT FROM TOP OPTION (GENERAL SETTINGS) THEN SELECT THE OPTION(SERVER) AND FILL THE REQUIRED INFORMATION(YOUR USER NAME IN THE LAST OF THE URL OPTION)AND WRITE AGAIN YOUR USER NAME IN (USER NAME OPTION)AS WELL AS YOUR PASSWORD IN(PASSWORD OPTION)**