Reader of Research Methodology

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Chapter One

What is Research

Research is the Study of the Universe

Research is an exploration of the occurrence of Phenomenon again and again to find a better balance of Physical (Matter) and Metaphysical (Intellectual and Spiritual) aspects world. The aim of the research is to explore and attain the "**TRUTH"** (which is the kernel of all this creation) of the phenomenon (that is the existence of the world). Research is an attempt based on certain rules to understand the phenomenon. This phenomenon is based on an idea and its physical reality or matter. Those who study physical sciences search in the material aspect of world, and those who study ideas and concepts deal with the metaphysical or intellectual aspect of phenomenon.

The two approaches to understand the happenings of the world:

- Physical (Material, matter,)
- Metaphysical (intellectual, ideas, conceptual)

To know and unveil the reality of the Universe, there are certain inter- related concepts or ideas, of the scholars, upon which proposition can be deductively drawn which are known as theories. In broader term, this conceptualization of the idea is theory. It helps in to explain, understand and predict about the reality.

1. Definition

Research is the systematic effort to gain new knowledge. According to **Burns,** "Research is a systematic investigation to find answers to solve a problem". Research is an organized inquiry (collect, analyses and interpret) especially through search for new facts in any branch of knowledge that is carried out to provide answers for a problem. It is not a rummaging of information. It aims at collecting data in a systematic way to explore certain answers.

Gratton and **Jones explain that,** "Research is the systematic process of discovery and advancement of human knowledge" . Research is the systematic investigation and study of resources and materials to establish facts and reach to the new conclusions.

According to **Payton, "Research is the process of looking for a specific question in an organized, objective and reliable way."**

Research in academia is done under the guidance of supervisors and it leads to award of research degree. A good research is the one which sets realistic objectives and is reproducible and replicable. It is not just sharing of information. It must prove something and give in-depth insight to a selected problem or question.

2. Functions of Research

Four main functions of research are:

1. Research Initiates Theory

2. Research Helps Recasting of Theory

3. Research Refocuses Theory

4. Research Helps in Clarifying Theory.

Research methodology has two primary functions:

- To dictate and control the acquisition of data.
- To correlate the data after their acquisition and extract meaning from them.

3. Characteristics of Research

Although research projects vary in complexity and duration, research typically has seven distinct characteristics:

1.**Research originates with a question or problem:**

Research means searching for something, some information that was not present before. We identify a problem that may include social issues, economic issues or any effect that an issue is causing on the environment, relations, society etc.

2.Research requires clear articulation of a goal:

Research can never be pursued if the goal or destiny we want to reach is not articulated properly. Knowing the goal makes the research journey targeted and focused. For instance, a researcher may articulate the goal of his research to find the effect of media on youth.

3.Research requires a specific plan for proceeding:

Research cannot be done if a proper framework or structure is not developed.

Following a proper method makes our research systematic, logical and even easy to follow. Proposing a proper method even makes our topic and research understandable for the reader. It follows an introduction, literary review, body, significance of study and conclusion.

4.Research usually divides the principal problem into more manageable subproblems:

Writing research means to tackle a list of issues under one main issue. Tackling the main problem becomes easy when we divide into manageable sub-issues. For instance, if domestic violence is the main issue, we may divide it into sub-problems such as causes, origin etc.

5.Research is guided by the specific research problem, question or hypothesis:

In research when we identify a problem, we form some hypothesis. After deriving hypothesis, we follow the steps either to prove or disapprove our hypothesis.

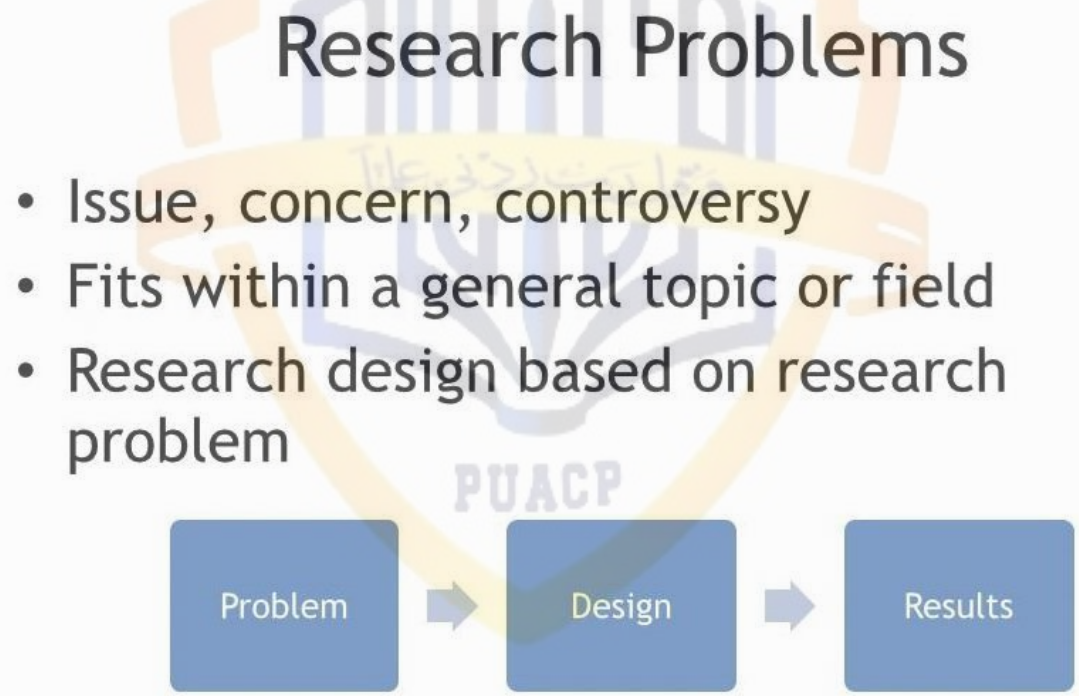
6.Research accepts certain critical assumptions:

In research work, critical evaluations and viewpoints must be accepted. Our research may contain some mistakes, it either lacks cohesion in content or contains grammatical issues. After evaluating from the supervisor, we should recheck and correct the mistakes.

Research also requires the collection and interpretation of data in an attempt to resolve the problem that initiated the research.

7.Research is, by its nature, cyclical or, more exactly, helical:

Research is a cyclical process rather than a linear one. It includes identifying a problem, articulating goal, forming a framework and consulting both primary and secondary sources. Whatever we are discussing, our discussion is open-ended, but we have to work in a compose manner. One may follow deductive or inductive methods while beginning his research.



What Research is NOT?

Research is not merely information gathering.
Research is not mere transportation of facts from one location to another.
Research is not merely rummaging (search)for information.
Research is not catch (snobbish/embellish) word use to get attention.

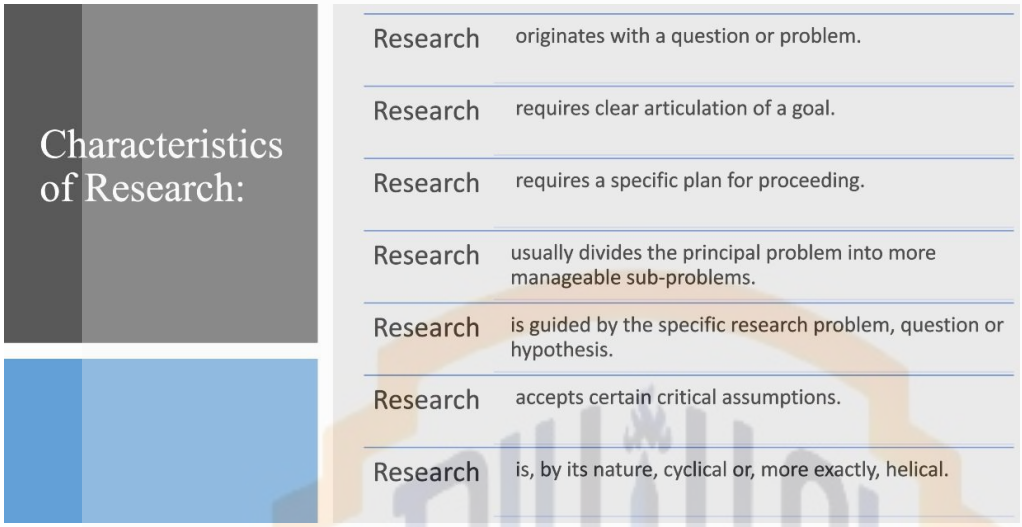
What Research is?

Research is a systematic process of collecting, planning, analyzing and interpreting information.

. Collection of information
. Planning
. Analyzing

. Interpretation

Hence, research is an avenue which opens gates and serves as a doorway to more knowledge. Therefore, it is crucial in every field of study.



Types of Research:

There are many types of research on the basis of Application, Objectives and Enquiry mode. These are called the paradigms of research.

- **On the basis of Application there are two types of Research 1-**

Applied Research:

Applied research refers to scientific study and research that seeks to solve practical problems. This type of research plays an important role in solving everyday problems that often have an impact on life, work, health, and overall well-being. This type of research can be used in a variety of ways. For example, it is used to find solutions to everyday problems, cure illness, and develop innovative technologies.

2- Pure Research:

Pure basic research is research carried out for the advancement of knowledge without working for long term economic or social benefits and with no positive efforts being made to apply the results to practical problems. Pure research focuses on answering basic questions such as "How do gases behave? "As an example, a neurologist studying the brain to contribute to a broader knowledge of how the brain functions, would be conducting basic or pure research.

- **On the basis of Objectives there are four types of research 1- Descriptive Research:**

It is used to describe characteristics of a population or phenomenon being studied. It does not answer questions about how/when/why the characteristics occurred. Rather it addresses the "what" question (what are the characteristics of the population or situation being studied?). For example, the periodic table categorizes the elements. Scientists use knowledge about the nature of electrons, protons and neutrons to devise this categorical scheme. We now take for granted the periodic table, yet it took descriptive research to devise it. Descriptive research generally precedes explanatory research. For example, over time the periodic table's description of the elements allowed scientists to explain chemical reactions and make sound predictions when elements were combined.

2- Exploratory Research:

It is a methodological approach that investigates research questions that have not previously been studied in depth. Exploratory research is often qualitative in nature. However, a study with a large sample conducted in an exploratory manner can be quantitative as well. It is also often referred to as interpretive research or a grounded theory approach due to its flexible and open-ended nature. Exploratory research typically seeks to create hypotheses rather than test them. Data from exploratory studies tends to be qualitative. Examples include brain-storming sessions, interviews with experts, and posting a short survey to a social networking website.

3- Explanatory Research:

The primary purpose of explanatory research is to explain why phenomena occur and to predict future occurrences. Explanatory studies are characterized by research hypotheses that specify the nature and direction of the relationships between or among variables being studied. Probability sampling is normally a requirement in explanatory research because the goal is often to generalize the results to the population from which the sample is selected. The data are quantitative and almost always require the use of a statistical test to establish the validity of the relationships. For example, explanatory survey research may investigate the factors that contribute to customer satisfaction and determine the relative weight of each factor or seek to model the variables that lead to shopping cart abandonment.

4- Co - Relational Research:

A correlational research design investigates relationships between variables without the researcher controlling or manipulating any of them. A correlation reflects the strength and/or direction of the relationship between two (or more) variables. The direction of a correlation can be either positive or negative. For example, as coffee consumption increases, tiredness decreases.
As height increases, weight is also increases.

- **On the basis of Inquiry mode there are three types of research:**

1- Quantitative Research:

It is the process of collecting and analyzing numerical data. It can be used to find patterns and averages, make predictions, test causal relationships, and generalize results to wider populations. Quantitative research is widely used in the natural and social sciences: biology, chemistry, psychology, economics, sociology, marketing, etc. Quantitative research deals with questions such as, what is the demographic makeup of Singapore in 2020? How has the average temperature changed globally over the last century? Does environmental pollution affect the prevalence of honeybees? Does working from home increase productivity for people with long commutes?

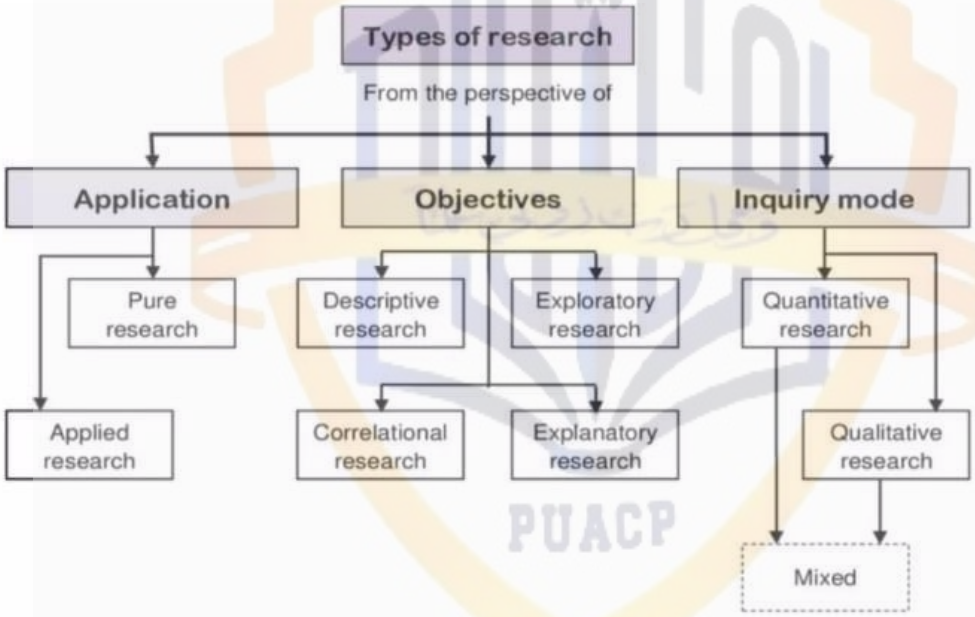
2- Qualitative Research:

Qualitative Research is primarily exploratory research. It is used to gain an understanding of underlying reasons, opinions, and motivations. It provides insights into the problem or helps to develop ideas or hypotheses for potential8 quantitative research. Qualitative Research is also used to uncover trends in thought and opinions, and dive deeper into the problem. Qualitative data collection methods vary using unstructured or semi-structured techniques. Some common methods include focus groups (group discussions), individual interviews, and participation/observations.

This method is about "what" people think and "why" they think so. For example, consider a convenience store looking to improve its patronage. A systematic observation concludes that the number of men visiting this store are more. One good method to determine why women were not visiting the store is conducting an in-depth interview of potential customers.

3- Mixed Method:

Mixed methods research combines elements of quantitative research and qualitative research in order to answer your research question. Mixed methods can help you gain a more complete picture than a standalone quantitative or qualitative study, as it integrates benefits of both methods. Mixed methods research is often used in the behavioral, health, and social sciences, especially in multidisciplinary settings and complex situational or societal research. It deals with questions such as To what extent does the frequency of traffic accidents (quantitative) reflect cyclist perceptions of road safety (qualitative) in Amsterdam? How do student perceptions of their school environment (qualitative) relate to differences in test scores (quantitative).



Research is a disciplined procedure or method to evaluating theories and phenomena. It examines explicitly and closely and try or to gather through a careful systematic investigation in some field of knowledge undertaken to establish facts and principles. Research is an objective study and it varies from field to field.

Chapter Two

Research Process

Research is a process of systematic inquiry that entails collection of data, analysis and interpretation of that data. Each particular research study will be unique in some ways because of the particular time, setting, environment and place in which it is being undertaken.

Following are the eight stages of research process:

1. Identifying the problem
2. Reviewing the literature
3. Setting research questions, objectives and hypothesis
4. Choosing the study design
5. Deciding on the sample design
6. Collecting data
7. Processing and analyzing data
8. Writing the report

Step – 1: Identifying the Problem

The first and foremost task in the entire process of scientific research is to identify a research problem. A well-identified problem will lead the researcher to accomplish all-important phases of the research process, starting from setting objectives to the selection of the research methodology.

Step – 2: Reviewing of Literature

A review of relevant literature is an integral part of the research process. It enables the researcher to formulate his problem in terms of the specific aspects of the general area of his interest that has not been so far researched. Such a review not only provides him exposure to a larger body of knowledge but also equips him with enhanced knowledge to efficiently follow the research process.

Step – 3: Setting research questions, objectives, and hypotheses

After discovering and defining the research problem, researchers should make a formal statement of the problem leading to research objectives. An objective will precisely say what should be researched, to delineate the type of information that should be collected and provide a framework for the scope of the study. The best expression of a research objective is a well-formulated, testable research hypothesis.

Step -4: Choosing the study design

The research design is the blueprint or framework for fulfilling objectives and answering research questions. It is a master plan specifying the methods and procedures for collecting, processing, and analyzing the collected data. There are four basic research designs that a researcher can use to conduct his or her study;

Survey
Experiment
Secondary data study
Observational study

Step – 5: Deciding on the sample design

Sampling is an important and separate step in the research process. The basic idea of sampling is that it involves any procedure that uses a relatively small number of items or portions (called a sample) of a universe (called population) to conclude the whole population. It contrasts with the process of complete enumeration, in which every member of the population is included.

Step – 6: Collecting data

The gathering of data may range from simple observation to a large-scale survey in any defined population. There are many ways to collect data. The approach selected depends on the objectives of the study, the research design, and the availability of time, money, and personnel. With the variation in the type of data (qualitative or quantitative) to be collected, the method of data collection also varies.

Step-7: Processing and Analyzing Data

Data processing generally begins with the editing and coding of data. Data are edited to ensure consistency across respondents and to locate omissions, if any. In survey data, editing reduces errors in the recording, improves legibility, and clarifies unclear and inappropriate responses. In addition to editing, the data also need coding. Because it is impractical to place raw data into a report, alphanumeric codes are used to reduce the responses to a more manageable form for storage and future processing.

Step-8: Writing the report – Developing Research Proposal, Writing Report, Disseminating and Utilizing Results

The entire task of a research study is accumulated in a document called a proposal. A research proposal is a work plan, prospectus, outline, an offer, a statement of intent or commitment from an individual researcher or an organization to produce a product or render a service to a potential client or sponsor. The proposal will be prepared to keep in view the sequence presented in the research process. The proposal tells us what, how, where, and to whom it will be done.

Method of Search:

1. The Scientific Method

This method involves technique for

- Investigating phenomenon
- Acquiring knowledge
- Correcting and integrating previous knowledge

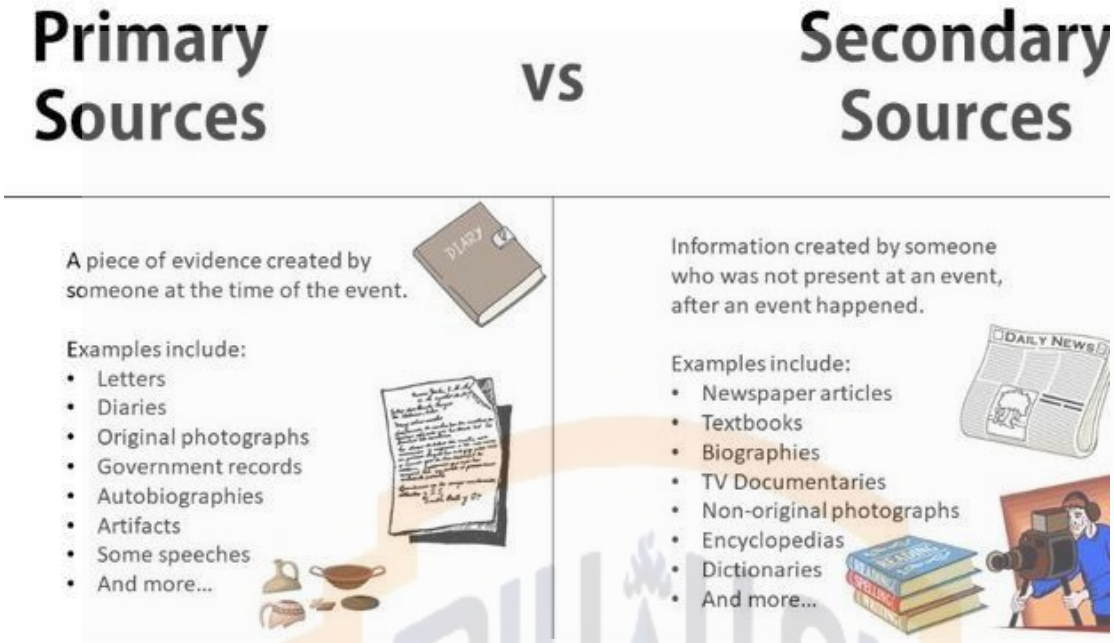
There are practical steps through which you must pass in your research journey to find answer to your research questions.

The path to find answers to your research questions constitutes "research methodology".

Search Sources:

Primary Source: Information that needs to be found by conducting survey, Observation or experimentation.

Secondary Source: information that is readily available, internet, books, magazines etc.



Research design:

Research design steps involve the development of a research plan for carrying out the study.

There are several alternative research designs. The choice will largely depend on the research purpose.

The **function of research design** is to provide for collection of relevant evidence with minimal expenditure of effort, time and money.

Research purpose may be grouped into four categories viz,

1. Exploration 2. Description
3.Diagnosis. 4.Experimentation

Ten steps of a research process:

There are ten steps involved in writing a research process. Step 1: Select a subject Step 2: Narrow the topic Step 3: State the tentative objective (or research) Step 4: Form a preliminary bibliography Step 5: Prepare a working outline Step 6: Start taking notes Step 7: Outline the paper Step 8: Write a rough draft Step 9: Edit your paper Step 10: Write the final draft Step

1: Select a subject:

Choose your subject carefully, keeping in mind the amount of time you have to write the resources Check in the library to make sure a reasonable amount of information is available on the subject you choose. Writing the paper will be much easier if you select a subject that interests you and that you can form an opinion or viewpoint about. In fact, it will be easier later on to narrow the topic if you choose a subject you already know something about. However, avoid controversial and Sensational subjects that are not scholarly, or too technical, or will only restate the research material.

Step 2: Narrow the topic:

The topic of the paper is what you want to say about the subject. To narrow the topic, you need to read background articles about your subject in encyclopedias and other general references. Do not take notes at this time other than to jot down possible main ideas. As you read, ask questions like the following:

• Who are the important people involved?

• What are the major issues?

• What are my opinions regarding the topic?

• Why is this an important (controversial, interesting) subject?

• How has the problem (or issue) developed? When? Where?

The answers will help you narrow your topic. Remember to keep in mind the length of your paper.

Example of a topic for a five-page paper

Too broad: Sports are enjoyable.

Better, but still too broad: Swimming is enjoyable. (Answers the question, what sport is enjoyable?)

Step 2: Narrow the topic: Swimming is enjoyable because the question, why is swimming enjoyable?) Answers Narrowing the topic is a more complicated process for extensive research General encyclopedias (like World Book) do not give enough information to get a broad overview of a subject, so instead you need to read specialized encyclopedias, abstracts, etc. At the reference desk in the Bender Library, there are reference guides in business and economics, humanities, history, politics and area studies, and language and literature. Ask the librarian about these and other sources that might be useful to you. When you find the reference books that are available, read only to get an overview of the subject.

Step 3: State your objective or process

Before you begin your research for your paper, you need to compose a research statement that describes the viewpoint you are going to express and support in your paper Since your purpose in the rest of the paper is to prove the validity of your research. Your research statement provides a controlling idea which will help you choose the resource materials you will use and will limit your note taking. **Example:**

Research statement: Ancient Greek culture is reflected in the lives of present-day Greeks. **Controlling idea:** "reflected in." The writer will look for materials that describe characteristics of ancient Grecian culture and characteristics of modern Grecian culture, and for any similarities between the two.

Formulating hypothesis is 'tentative assumption made in order to draw out and test its logical or empirical consequences.

Hypothesis should be very specific and limited to the piece of research in hand because it has to be tested

The role of hypothesis is to guide the researcher by delimiting the area of research and to keep him on the right track.

The research problem is a question that a researcher wants to answer or a problem that a researcher wants to solve.

Selection of good research problem is a discovery.

Defining the research problem is the first step of the research process.

A research statement must not be an indisputable fact or an opinion that cannot be proven. **For example,** it would be difficult to write a research paper to prove the following research statements:

- The United States was the first nation to land on the moon. [indisputable fact]

- J.D. Salinger's Catcher in the Rye is the most fascinating novel ever written.

[insupportable opinion]

Compose your research statement carefully, for it is the key to a good paper. As a matter of fact, a good research statement can outline your paper for you. For example, the following research can be divided into three parts that, in effect providing a rough outline.

Much of Martin Luther King ‘s success resulted from the passive resistance techniques proposed by Mahatma Gandhi.

1: Martin Luther King’s success

2:The passive resistance techniques of Gandhi.

3: The role of Gandhi passive resistance techniques in Martin Luther King ‘ s success. There are several common errors that students make when composing research statements. Some of them are listed below, with examples.

1. Research cannot be fragmented: it must be expressed in a sentence.

Poor: How life is in a racial ghetto.

Better: Residents of a racial ghetto tend to have a higher death rate, higher disease rates, and higher psychosis rates than do any other residents of American cities in general.

2. A research must not be in the form of question:

Poor: should eighteen-year-old males have the right to vote?

Better: Anyone who is old enough to fight in a war is old enough to vote.

3. A research must not contain phrases such as "I think." (They merely weaken the statement.)

Poor: In my opinion most, men wear beards because they are trying to find themselves.

Better: The current beard fad may be an attempt on the part of men to emphasize their male identity.

4. A research must not contain elements that are not clearly related.

Poor: All novelists seek the truth; therefore, some novelists are good psychologists.

Better: In their attempt to probe human nature, many novelists appear to be good psychologists.

5. A search must not be expressed in vague language.

Poor: Bad things have resulted from religion being taught in the classroom.

Better: Religion as part of the school curriculum should be avoided because it is a highly personal and individual commitment.

6. A research must not be expressed in muddled or incoherent language.

Poor: In Act One of Othello, to cause them to feel fury against Othello, Lago fuels Brabantio, Othello, Roderigo, and Cassio with deceit by telling them lies.

Better: In Act One of Othello, Lago deceives several characters in order to further his plot to destroy Othello's life.

7. Research should not be written in figurative language.

Poor: Religion is the phoenix bird of civilization.

Better: As long as man can conceive the idea of a god, religion will rise to give man a spiritual reason for existence.

Step 4: Form a Preliminary Bibliography

A preliminary bibliography is a list of potential sources of information. In addition to the card catalog and the guides to reference books already mentioned in Step 2, there are other sources which will help you locate articles and books relevant to your topic Some of these are listed below:

- Reference Guides to Indexes and Abstracts Indexes
- Reader's Guide to Periodical Literature, (1900-)
- Business Periodicals Index
- Social Sciences and Humanities Index, (1965-1974)
- Humanities Index, (1974-)
- Social Sciences Index, (1974-)
- Bibliographies (available on many subjects)
- Bibliographic Index: A Cumulative Bibliography of Bibliographies

Evaluate the potential sources as you go along, keeping in mind how well they relate to your topic, how up-to-date they are and how available they are. Watch for well-known authors and try to determine the point of view presented in the articles and whether they sound too technical or too simplistic. The following books can help you evaluate sources:

- Book Review Digest, (1905)
- Book Review Index, (1965-)
- Index to Book Reviews in the Humanities (1960-)

As you select articles and books, record information regarding them just as you want it to appear in your bibliography. Using 3x5 index cards is a good method. Later, when you complete your final bibliography, you will just arrange this information in alphabetical order. The form for bibliographic entries varies from school to school. If you are uncertain about which form to use, refer to a writer's handbook, such as A Manual for Writers of Term Papers. Theses and Dissertations by Kate Turabian, which is available in the university bookstore. Also include the call number for each book and a personal note with each entry. **An example of what a bibliographic note card might look like**: Tillich, Paul. Systematic Technology, 3 vols. Chicago: University of Chicago Press. 1951-63. (esp. vol. 1, chp. 2) bibliographic information; also see chapter 4 for dissenting opinions Next, gather your materials. Evaluate them again, using the criteria mentioned above. Do this by previewing each source, checking the table of contents and index. finding relevant chapters and skimming them.

Step 5: Prepare a Working Outline

A working outline is important because it gives order to your note taking. As you do your research, you may find that you need to review your plan if you lack information about a topic or

have conflicting information. Nevertheless, it provides a good starting point and is essential before you start to take notes. Begin by listing the topics you want to discuss in your paper. (You should have a general idea of these form the reading to have already done) then, divide the items on the list into major topics and subtopics .An example of a working outline is presented below:

Research statement: Ancient Grecian culture is reflected in the present day Greeks.

Working outline:

Ancient Greeks.	Modern Greeks
Religious beliefs.	Religious beliefs
Family structure	Family structure
Artistic pursuits	artistic pursuits

Step 6: Start Taking Notes.

After you have gathered your materials and prepared a working outline, you can start to take notes.

Write your notes on index cards (either 3×5 or 4×6) being sure to include only one note on each card. Each note should relate in some way to one of the topics on your working outline. Label each card with the appropriate topic; then you can easily organize your note cards later when you begin to prepare the final outline of your paper.

Each note card should also include the title of the source of information and the page number to use later for footing. This is very important because you must cite all material even if you have not used the exact words of the text. Be sure to write the note in your own words; use direct quotes only when the information is worded in a particularly unusual way. To avoid overlooking any material, write only on one side of each card, if the notes require more space, use another card and label it accordingly.

Read the passage below and the sample note card that follows it. Pay particular attention to the paraphrasing that summarizes the content of the passage and the other items included in the card.

Research: Man’s attempts to create a healthier and more prosperous life often have unforeseen detrimental effects upon the very environment he hopes to improve.

Ecology and Its Implications

In Malaysia recently, in an effort to kill off mosquitoes, American technologies sprayed woods and swamplands with DDT, Result? Cockroaches, which are poisoned mosquitoes were slowed in their reactions that they could be eaten by a variety of tree-climbing lizards, which in turn could be eaten by cats, which promptly died of insecticide poisoning. The cats having died, the rat population began to increase; as a rats multiplied, so did fleas: hence the rapid spread of bubonic plague in Malaysia. But that is not all. The tree-climbing lizards having died, could no longer eat an insect that consumed the straw thatching of the natives' huts. So, as Malaysians died of the plague, their roofs literally caved in above their heads.

(Peter A Gunter. The Long Wilderness Spring 1970)

Sample notecard:

title of reference note in your on words:
unforeseen detrimental effects

"Ecol, and Its Implication"
Living Wilderness. Spring 70, p. 33

Recently the use of DDT in Malaysia , originally intended to kill mosquitoes, started a chain reaction of events leading to bubonic plague and the actual collapse of Malaysian ‘s huts.

Step 7: Outline the Paper headings

The final outline is similar to the working outline, but is more complex, with each topic being further divided into several subtopics. To accomplish this, sort your note cards into separate piles according to the topics at the top of each them. Then, sort each pile into separate subtopics. For example, one of the topics from our sample working outline might be subdivided like this.

Religious beliefs of the ancient Greeks

- ceremonies
- feelings about death
- deities

Your final outline also should reflect the organizational format you have chosen for your paper. This will depend on the topic of your paper and your research statement. For example, if the topic of your paper is the artistic development of a famous painter, you would probably want to use a chronological organization. However, if your paper is a discussion of the family life of baboons and humans comparison-contrast format would be more appropriate

Step 8: Write the Rough Draft

After you have completed your final outline, you can begin to write your rough draft. It is important to remember that this rough draft will be revised, Therefore, at this time, you do not need to worry too much about spelling or punctuation Instead, you should concentrate on the content of the paper, following your outline and expanding the ideas in it with information from your notes. Your paper should consist of three parts: the introduction, the body of the paper and the conclusion. The introduction should state the research, summarize the main ideas of the paper and capture the reader's interest. The body of the paper should develop each section of the outline. This is not difficult to do if you follow your outline and work through your notecards (which should be arranged to correspond with your outline) using the information from them to support the points you are making. Whenever you use information from a note card, remember to put a number at the end of the sentence. At the same time, write the footnote as it should appear on the paper at the bottom of the page you are working on or in list form on a separate sheet of paper. Number your notes consecutively throughout the paper. The conclusion should summarize your findings and restate the research.

Step 9: Edit your paper:

When you have finished the rough draft, read through it again and revise it. Pay particular attention to the organization of the paper. Does each paragraph have a topic sentence that relates to the research? Is each idea supported by evidence? And their clear transition from one section to another, from your words to quotations? Are there clear transitions to indicate to the reader when one idea is ending and another one is beginning? Revision often requires many readings, each with its own purpose.

Step 10: Write the Final Draft.

The final draft of your paper should be typed and must include citations and a bibliography; some papers might require a title page, depending on the formatting style and or the professor. The title page should include the title of the paper, your name, the name of the course, the instructor's name, and the date the paper is due

Chapter Three

Identifying and Defining Research Problems

A research problem is a statement about an area of concern, a condition to be improved, a difficulty to be eliminated, or a troubling question that exists in scholarly literature, in theory, or in practice that points to the need for meaningful understanding and deliberate Investigation. In some social science disciplines, the research problem is typically posed in the Form of a question. A research problem does not state how to do something, offer a vague or broad proposition, or present a value question.

Purpose of the Research Problem

The purpose of a problem statement is to:

1. Introduce the reader to the importance of the topic being studied. The reader is oriented to the significance of the study and the research questions or hypotheses to follow.
2. Places the problem into a particular context that defines the parameters of what is to be investigated.
3. Provides the framework for reporting the results and indicates what is probably necessary to conduct the study and explain how the findings will present this information.

What is research problem?
It is a concise, precise declaration or expression of the problem that needs to be solves or the issue that need to be addressed in theory, literature, or practice in the chosen area of concern.

Types of research

- Descriptive research problem
- Relational research problem
- Casual research problem

TIPS ARE GIVEN TO IDENTIFY THE RESEARCH PROBLEMS WITHOUT ANY DIFFICULTIES.

- **Discover a significant issue:** Finding new topics issues, and themes to study is the most important phase in every particular research.
- **Set Research Objectives:** You must create a plan outlining the goals of the research you need to conduct.
- **Recognizing the Research Problems:** The next step is to determine what is already known about the issue and identify the precise area that your research will focus on.
- **Examine the Specifics of the Problem:** You can create workable solutions with the use of this information

What is the most essential part of your research project? It is obviously the formulating of a research problem or selecting your research topic. This is because the quality & relevancy of your research work completely depends on it. The process of formulating a research problem requires a series of steps.

First and foremost, it sets a destination before undertaking a journey.

If one wants to solve the problem one must know what the problem is (Identification).

If it is well formulated, you can expect a good study.

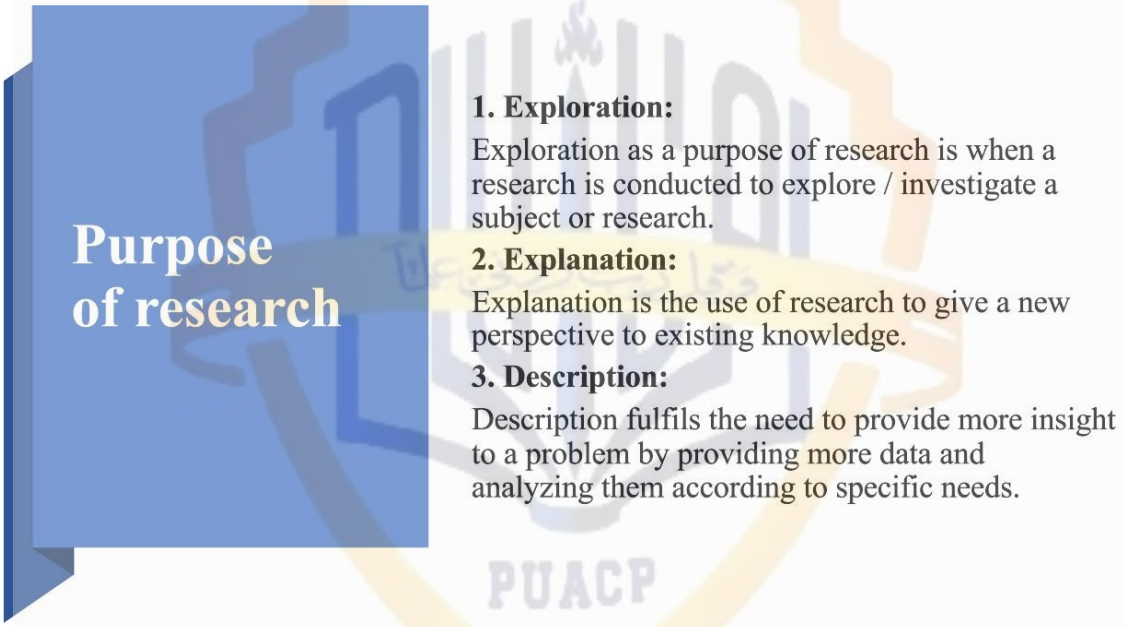
It gives basic knowledge about exploration of phenomenon.

You must study within the lines of basic research and theoretical issues.

Characteristics of a Research Problem

For your research problem to be effective, make sure that it has four basic characteristics:

- Reflecting on important issues and needs
- Based on factual evidence (it is non- hypothetical)
- Being manageable and relevant
- Suggesting a testable and meaningful hypothesis (avoiding useless answers)



Types of Research Problem

The identification of the research problem is the first step in the research process. It is similar to the identification of the destination before a journey. It works as the foundation for the whole research process. In the field of social sciences, a research problem is presented in the form of a question. It helps in narrowing down the issue to something reasonable for conducting a study.

Research problems are of three types:

- descriptive (pertains to issues that need studying),
- relational (research questions which focus on the relationship between two or more factors),
- causal (problems that look at cause and effect)

i-Descriptive research problem

Descriptive research problems focus on questions like ‘what is?’ with its main aim to describe the situation, state or the existence of certain specific phenomena. They seek to depict what already exists in a group or population. For such studies, surveys and opinion polls are best suitable because they require systematic observation of social issues. When a researcher is

dealing with a descriptive research problem, there can be no manipulation in the variables and hypotheses as they are usually non directional.

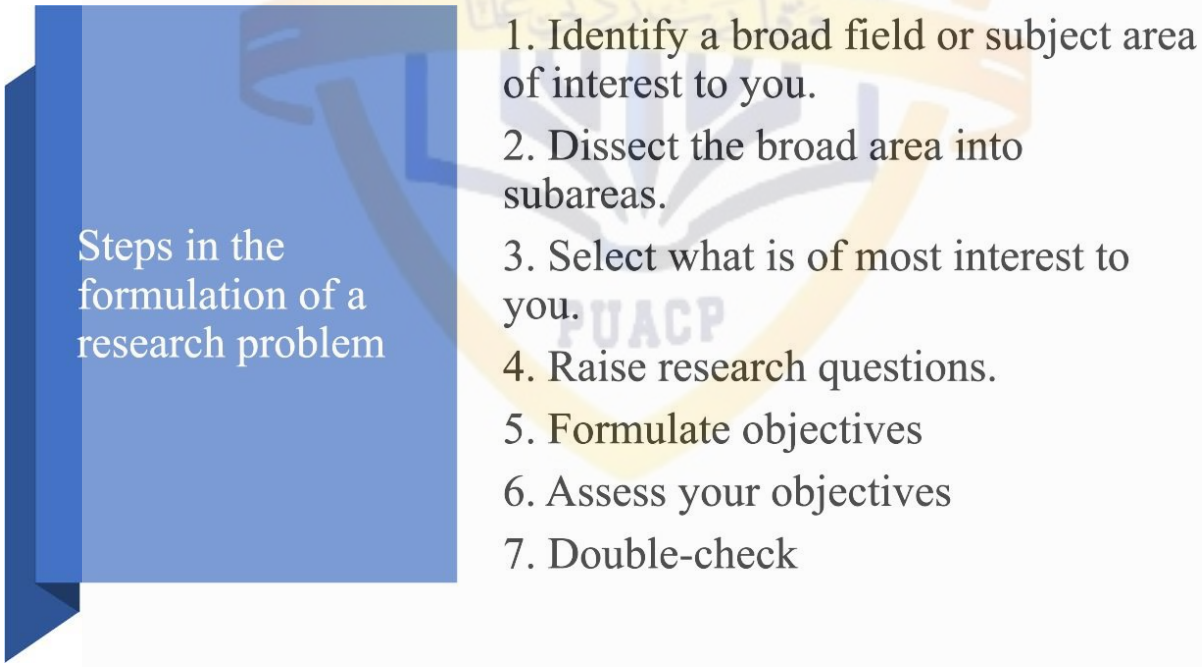
ii-Causal research problem

Causal research problems focus on identifying the extent and nature of cause and effect relationships. Such research problems help in assessing the impact of some changes on existing norms and processes. They thus identify patterns of relationships between different elements. For example, 'how does online education affect students' learning abilities?' Here, the hypothesis is usually directional, i.e. explaining how one factor affects the behavior of another one.

iii-Relational research problem

This research problem states that some sort of relationship between two variables needs to be investigated. The aim is to investigate the qualities or characteristics that are connected in some way. For example, how is the experience of teacher related to his/her teaching style? Thus this sort of research problem requires more than one variable that describes the relationship between them.

Seven Basic steps in formulating a Research Problem



What is the most essential part of your research project? It is obviously the formulating of a research problem or selecting your research topic. This is because of the quality & relevancy of your research work completely depends on it. The process of formulating a research problem requires a series of steps. Following are seven basic steps in formulating a research problem:

1. Identify the Broad Study Areas

This is a great idea to thinking about the subject area of your interest. You should identify the Field in which you would like to work a long time after your academic study or graduation. It will help you tremendously to get an interesting research topic.

2. Dissect the Broad Study Area into Subareas:

In this stage, you need to dissect and specify your research broad study area into some subareas. You would consult with your supervisor in this regard. Write down subareas. For example, if you select unemployment as your broad study area, then dissect it into unemployment & social stability, unemployment & crime, unemployment & individual Frustration, etc. In this case, your research title maybe how unemployment produces criminal activities or how it creates frustration in mind among unemployed people. For example, if you select Cyber security as your broad study area, then dissect it into Network security, web security, database security related with cyber-crime, etc.

3. Mark-up your Interest

It is almost impossible to study all subareas. That's why you must identify your area of interest. You should select issues in which you are passionate about. Your interest must be the most important determinant of your research study. Once you selected your research study of interest, you should delete other subareas in which you do not feel interested. Keep in mind that if you lose your interest in your research study it won't bring any results eventually.

4. Study Research Questions

In this step in formulating a research problem, you would point out your research questions under the area of interest as you decided in the previous stage. If you select unemployment as your study area, your questions might be "how unemployment impacts on individual social Status?" "How it affects social stability?" "How it creates frustration on individuals?" Define what research problem or question you are going to study? The more you study the research

Problem it will be just as relevant and fruitful to solve the problem indeed.

5. Set Out Objectives

Set out conspicuously your research root objectives and sub-objectives. Research objectives essentially come from research questions. If you do study "Impact of unemployment on individual social status" as your research problem or research question. Then, set out what would you like to explore to address. For example, your main objective might be to examine the unemployment status in a particular society or state. And sub-objectives would be its Effects on individuals' social life. Setting out specific main and sub-objectives are so crucial.

6. Assess your Objectives

Now, you should evaluate your objectives to make sure the possibility of attaining them through your research study. Assess your objectives in terms of time, budget, resources and technical expertise at your hand. You should also assess your research questions in light of reality. Determine what outcome will bring your study. If you can assess accurately the purpose of the research study it will bring significant results in the long run. In fact, research objectives determine the value of the study you are going to work out.

7. Check Back

Before you go on research work you should review all steps in formulating a research problem and all the things that you have done till now for the purpose of your research study. Then, ask yourself about your enthusiasm. Do you have enough resources to step up? If you are quite satisfied, then you forward to undertake your research work. You can change any of your plans in the light of reality if it requires.

Chapter Four

Literature Review

A literature review is a survey of scholarly sources on a specific topic. It provides an overview of current knowledge, allowing you to identify relevant theories, methods and gaps in existing research.

Literature review involves **researching, reading, analyzing, evaluating and summarizing scholarly literature** (typically journals and articles) about a specific topic. The results of a literature review may be an entire report or article or may be a part of an article, thesis, dissertation or grant proposal. A literature review helps the author to learn about the history and nature of their topic and to identify research gaps and problems.

It is the process of searching the existing literature relating to your research problem to develop theoretical and conceptually frameworks for your study and to integrate your research findings with what the literature says about them. Reading, reviewing or reading critically the literature of your interest.

- First step of your research.
- Time consuming and frustrating but rewarding.
- Begin with your thinking of doing research.
- Helps you to establish the links between what you are proposing and what is already being studied.
- It enables you to show how your findings will contribute to the existing body of knowledge in your profession.
- Provides theoretical background of your studies.
- It introduces you to certain new ideas, new perspectives and new approaches.
- It informs you about other researchers who conducted searches in that idea.
- It helps you to understand how others have handled methodological and design issues of a particular area.
- It reveals sources of data that you may not have known earlier.
- It introduced you to measurement tools.
- It reveals the dealing with the problem situation.
- It makes You interpret your knowledge and boost your confidence.
- It brings clarity to your research problem or statement of problem and help in writing your research problem and Identify the sub problems
- It helps in Constructing a set of paper note taking or an electronic database.
- It improves your research method, broadens your knowledge, contextualizes your findings, locates your research question and Synthesizes it.
- It gives Relevance to your hypothesis.

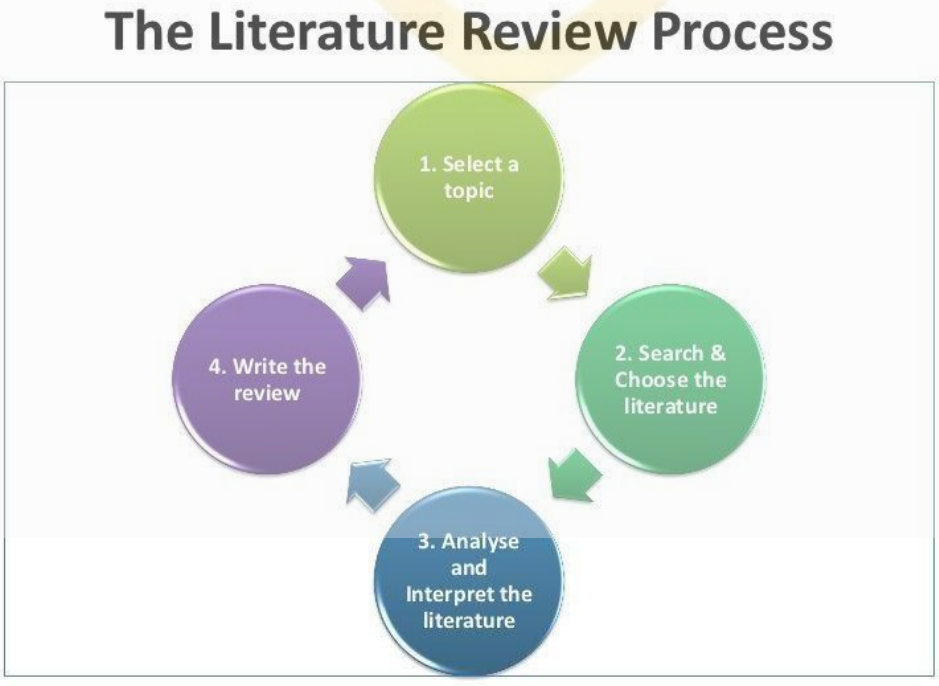
- It helps in the Organization and Conceptualization of your research.
- It keeps the track of your reference.

Difference between literature review and summary

- Summary is the description of findings.
- Summary is a different study in which the same themes are identified.
- Logical order
- Describes each theme.

How to review literature

- Select a broader area of interest.
- Refine it or narrow it down.
- Conceptualize
- It should concentrate around the main theme
- What is already known in the area
- what is unknown
- What question is unanswered.
- What duties can be put forward.
- What are the strategies employed



Types of literature review:

There are many types of literature review. The choice of a specific type depends on your research approach and design. The following types of literature review are the most popular:

- ✓ Narrative literature review
- ✓ Systematic literature review
- ✓ Scoping literature review
- ✓ Argumentative literature review
- ✓ Integrative literature review
- ✓ Theoretical literature review

1-Narrative literature review:

Narrative literature review, also referred to as traditional literature review critiques literature and summarizes the body of a literature. It also draws conclusions about the topic and identifies gaps or inconsistencies in a body of knowledge. You need to have a sufficiently focused research question to conduct a narrative literature review.

2-Systematic literature review:

Systematic literature review requires more rigorous and well-defined approach compared to other types of literature review. It is comprehensive and details the time frame within which the literature was selected. Systematic literature review can be divided into two categories:

1. Meta-analysis
2. Meta-synthesis

i-Meta-analysis:

When you conduct meta-analysis, you take findings from several studies on the same subject and analyze these, using standardized statistical procedures. In meta-analysis, patterns and relationships are detected and conclusions are drawn. Meta-analysis is associated with deductive research approach.

ii-Meta-synthesis:

Meta-synthesis, on the other hand, is based on non-statistical techniques. This technique integrates, evaluates and interprets findings of multiple qualitative research studies. Meta-synthesis literature review is conducted usually when following, inductive research approach.

3-Scoping literature review:

It is used to identify the scope or coverage of a body of literature on a given topic. It has been noted that 'scoping reviews are useful for examining emerging evidence when it is still unclear what other, more specific questions can be posed and valuably addressed by a

more precise systematic review'. The main difference between systematic and scoping types of literature review is that, systematic literature review is conducted to find answer to more specific research questions, whereas scoping literature review is conducted to explore more general research question.

4-Argumentative literature review:

It examines literature selectively in order to support or refute an argument, deeply embedded assumption, or philosophical problem already established in the literature. It should be noted that a potential for bias is a major shortcoming associated with argumentative literature review.

5-Integrative literature review:

It reviews, critiques and synthesizes secondary data about research topic in an integrated way, such that new frameworks and perspectives on the topic are generated. If your research does not involve primary data collection and data analysis, then using integrative literature review will be your only option.

6-Theoretical literature review:

Theoretical literature review focuses on a pool of theory that has accumulated in regard to an issue, concept, theory or phenomena. It plays an instrumental role in establishing what theories already exist, the relationships between them, to what degree existing theories have been investigated and to develop new hypotheses to be tested.

Process of literature review:

It provides an overview of current knowledge, allowing you to identify relevant theories, methods and gaps in the existing research. Writing a literature review involves **finding relevant publications (such as books and journal articles), critically analyzing them and explaining what you found.**

There are four steps involved in conducting a literature review:

1. Searching for the existing literature in your area of study.
2. Reviewing the selected literature.
3. Developing a theoretical framework.
4. Developing a conceptual framework.

1.Searching for the Existing Literature

To search effectively for the literature in your field of enquiry, it is imperative that you have at least some idea of the broad subject area and of the problem you wish to investigate in order to set parameters for your research. You should have some idea of the study population. You also need to have some idea as to what it is about your population that you want to study. For example, in case of immigrants, you should study their settlement process, reasons for immigration, etc. Next compile a bibliography for this broad subject area

2. Reviewing the Selected Literature:

After identifying several books and journals as useful, the next step is to start reading them critically to pull together themes and issues that are relevant to your study. Unless you have a theoretical framework of themes in mind to start with, use separate sheets for each theme or issue you identify as you go through selected books and articles. Through this review, many themes will emerge, which will become the basis for developing a theoretical framework for the research study. After developing a rough framework, slot the findings from the material so far reviewed in these themes. As you read further, continue slotting the information where it logically belongs under the developed themes. While going through the literature, it should be carefully and critically examined with respect to the following aspects:

• Note whether the knowledge relevant to your theoretical framework has been confirmed beyond doubt.

• Note the theories put forward, the criticism of these and their basis, the methodologies adopted and the criticism of them.

• Examine to what extent the findings can be generalized to other situations.

• Notice where there are significant differences of opinions among researchers and give your opinion about their validity in addition to putting forward your position with your reason.

• As certain the areas in which little or nothing is known; the gaps that exist in the body of knowledge.

3. Developing a Theoretical Framework:

It is important to set parameters by reviewing the literature in relation to some main themes pertinent to your research topic. The information obtained from books and journals now needs to be sorted under main themes and theories, highlighting the agreements and disagreements among the authors and identifying the gaps. Literature deals with number of aspects, use these aspects as basis for developing your theoretical framework. The review of literature should sort the information within this framework. Until you go through the kite, you cannot develop a theoretical framework, and until you developed a theoretical framework, you cannot effectively review the literature, the solution is to read some of the literature and develop a theoretical framework, even a loose one, within which you can organize rest of the literature you read. Literature pertinent to your study may deal with two types of information: universal or general and more specific. In wiring about such information you should start with the general information, gradually narrowing it down to specific.

4.Developing a Conceptual Framework:

Conceptual framework is the basis if the research problem. It stems from the theoretical framework and usually focuses on the sections which become the basis if your study. Whereas theoretical framework consists of the theories or issues in which your study is embedded, the conceptual framework describes the aspects selected from the theoretical framework to become the basis of the enquiry. It relates only and specifically to your research problem and becomes the foundation of your study.

Sources of Literature Review:

When we talk about information sources for a literature review in education or nursing, we generally mean these five areas:

- The internet
- Reference material and other books
- Empirical or evidence-based articles in scholarly, peer-reviewed journals
- Conference proceedings and papers
- Dissertations and thesis

Qualities of a good literature review:

Following are the qualities of a good literature review:

1. A good literature review is not simply a list of describing or summarizing articles.
2. A good literature review is discursive-prose which proceeds to a conclusion by reason or argument.
3. A good literature review shows understanding of the topic and signs of synthesis.

Functions of Literature Review:

A literature review has the following functions:

- ✓ It provides a theoretical framework to your study.
- ✓ It helps you to establish the links between what you are proposing to examine and what has already been studied.
- ✓ It enables you to show how your findings have contributed to the existing body of knowledge in your profession.
- ✓ It helps you to integrate your research findings into the existing body of knowledge.
- ✓ It brings clarity and focus to your research problem.
- ✓ It improves your research methodology.
- ✓ It broadens your knowledge based on your research area.
- ✓ It contextualizes your findings.
- ✓ It helps you to justify the selection of your research question.
- ✓ It acquaints you with methods and procedures used in similar studies, helping you to select a robust methodology for your research.

Writing literature review:

Some people write up literature review the entire literature review in one section entitled “Review of the Literature”, “Summary of the Literature” or “The Literature Review”, but it is good to write the literature review under subheadings based upon main themes that have been discovered and which form the basis of theoretical framework. These subheadings should be precise, descriptive if the theme in question, and follow a logical progression. Under each subheading, record the main findings with respect to the main theme

in question, highlighting the reason for and against and argument if they exist, and identifying gaps and issues. Systematically compare your findings with the others, quote from these studies to show how your findings contradict, confirm or add to them. Be sure to provide a complete reference for your quoted material in an acceptable format. This fiction is undertaken, when writing about your findings, i.e. after the analysis of your data.

Chapter Five

Quantitative and Qualitative Research

Research Paradigm

Types of Research

1-Qualitative research:

Qualitative research design is limited and process oriented. It is to understand, explain, explore, discover or clarify situations, feelings perceptions, values, beliefs, attitudes and experiences of the people. It is non-structural and non-rigid. It is related to researcher's perception and conclusion. In this research, things cannot be quantified as emotions and perceptions cannot be counted.

Types of qualitative research includes:

- Case Study
- Oral history
- Group Interviews
- 1Participant Observation
- Holistic Research
- Reflective Journal Log
- Action Research
- Feminist Research.

Qualitative research is a method that collects data using conversational methods, usually open-ended questions. The responses collected are essentially non-numerical. This method helps a researcher to understand what participants think and why they think in a particular way. It analyzes different kinds of data, including texts, images, interview answers and observations.

Types of qualitative methods include:

- One-to-one interview
- Focus groups
- Ethnographic studies
- Text analysis
- Case study

2-Quantitative Research:

Quantitative method deals with numbers and measurable forms. It uses a systematic way of investigating events or data. It is generally used to find patterns, averages, predictions as well as cause-effect relationships between the variables being studied. The purpose of quantitative research is to attain greater knowledge and understanding of the social world.

It is a structured, rigid and fixed design. There is no important place of respondent. Things are quantified in it. It is a study of population. Its study is inductive. This study is based on numbers of contexts i.e., it is cross sectional (discuss different phenomenon), it is before and after study design and longitudinal study design.

Quantitative Study is based on reference period i.e., retrospective (events in past), prospective (may happen in the future) and retrospective- prospective (mix).

Quantitative study is based on nature of investigation for example, Experimental (control group design, double control group, comparative, mashed control group), Non-Experimental and semi experimental.

Types of quantitative methods include:

- Survey research
- Descriptive research
- Correlational research

Characteristics of Quantitative & Qualitative Research:

BASIS FOR COMPARISON	QUALITATIVE RESEARCH	QUANTITATIVE RESEARCH
Meaning	Qualitative research is a method of inquiry that develops understanding of human and social sciences, to find the way people think and feel.	Quantitative research is a research method that is used to generate numerical data and hard facts, by employing statistical, logical and mathematical techniques.
Nature	Holistic	Particularistic
Approach	Subjective	Objective

	Research type	Exploratory	Conclusive
	Reasoning	Inductive	Deductive
	Sampling	Purposive	Random
	Data	Verbal	Measurable
	Inquiry	Process-oriented	Result-oriented
	Hypothesis	Generated	Tested
	Elements of analysis	Words, pictures and objects	Numerical data
	Objective	To explore and discover ideas used in the ongoing processes.	To examine cause and effect relationship between variables.
	Methods	Non-structured techniques like In-depth interviews, group discussions etc.	Structured techniques such as surveys, questionnaires and observations.
	Result	Develops initial understanding	Recommends final course of action

Chapter Six
Sampling and its Techniques

Sampling

A sample is defined as a smaller set of data that a researcher chooses or selects from a larger population by using a pre-defined selection method. It is a process in which a predetermined number of observations are taken from a larger population.

In research terms a sample is a group of people, objects, or items that are taken from a larger population for measurement. The sample should be representative of the population to ensure that we can generalize the findings from the research sample to the population as a whole.

According to **Creswall**,

"A sample is a subgroup of the target population that the researcher plans to study for generalizing about the target population"

The selection of a sample in quantitative and qualitative research is guided by two opposing philosophies . In Quantitative research you attempt to select a sample in such a way that it is unbiased and represents the population from which it is selected .In Qualitative research , a number of considerations may influence the selection of sample such as the ease in assessing the potential respondents, your judgement that the person have extensive knowledge about an episode,event of situation of interest.

,Purpose of Sampling : The purpose of sampling in quantitative research is to draw interferences , with respect to focus on your enquiry ,about the group from which you have selected the sample whereas in qualitative research it is designed to gain in-depth knowledge either about a situation ,event or episode or about different aspects of individual.

By drawing valid conclusions from your results, you have to carefully decide how you will select a sample that is representative of the group as a whole. This is called a **sampling method**.

Types of sampling techniques:

There are two major types of sampling methods:

- Probability Sampling
- Non-probability Sampling

Probability sampling, also known as random sampling, is a kind of sample selection where randomization is used instead of deliberate choice. It involves random selection, allowing you to make strong statistical inferences about the whole group.

Non-probability sampling is a kind of sampling where the researcher deliberately picks items or individuals for the sample based on their research goals or knowledge. It involves non-random selection based on convenience or other criteria, allowing you to easily collect data.

1-Probability sampling techniques:

Following are four probability sampling techniques:

i-Simple random sampling:

With simple random sampling, every element in the population has an equal chance of being selected as part of the sample. Your sampling frame should include the whole population.Simple random sampling is easy to do and cheap, and it removes all risk of bias from the sampling process. However, it also offers no control for the researcher and may lead to unrepresentative groupings being picked by chance.To conduct this type of sampling, you can use tools like random number generators or other techniques that are based entirely on chance.

ii-Systematic sampling:

Systematic sampling is similar to simple random sampling, but it is usually slightly easier to conduct. Every member of the population is listed with a number, but instead of randomly generating numbers, individuals are chosen at regular intervals.

iii-Stratified sampling:

Stratified sampling involves dividing the population into subpopulations that may differ in important ways. It allows you draw more precise conclusions by ensuring that every subgroup is properly represented in the sample.

To use this sampling method, you divide the population into subgroups (called strata) based on the relevant characteristic (e.g., gender identity, age range, income bracket, job role).

. 4. Cluster sampling

Cluster sampling also involves dividing the population into subgroups, but each subgroup should have similar characteristics to the whole sample. Instead of sampling individuals from each subgroup, you randomly select entire subgroups.

With cluster sampling, groups rather than individual units of the target population are selected at random for the test. These might be pre-existing groups, such as people in certain zip codes or students belonging to an academic year.

If it is practically possible, you might include every individual from each sampled cluster. If the clusters themselves are large, you can also sample individuals from within each cluster using one of the techniques above. This is called multistage sampling.

This method is good for dealing with large and dispersed populations, but there is more risk of error in the sample, as there could be substantial differences between clusters. It's difficult to guarantee that the sampled clusters are really representative of the whole population.

2-Non-probability sampling:

Following are four non-probability techniques:

i-Convenience sampling:

People or elements in a sample are selected on the basis of their accessibility and availability. If you are doing a research survey and you work at a university, for example, a convenience sample might consist of students or co-workers who happen to be on campus with open schedules who are willing to take your questionnaire. This kind of sample can have value, especially if it's done as an early or preliminary step, but significant bias will be introduced.

ii-Quota sampling:

This approach aims to achieve a spread across the target population by specifying who should be recruited for a survey according to certain groups or criteria. For example, your quota might include a certain number of males and a certain number of females.

iii-Purposive sampling:

Participants for the sample are chosen consciously by researchers based on their knowledge and understanding of the research question at hand or their goals. Also known as judgment sampling, this technique is unlikely to result in a representative sample, but it is a quick and fairly easy way to get a range of results or responses.

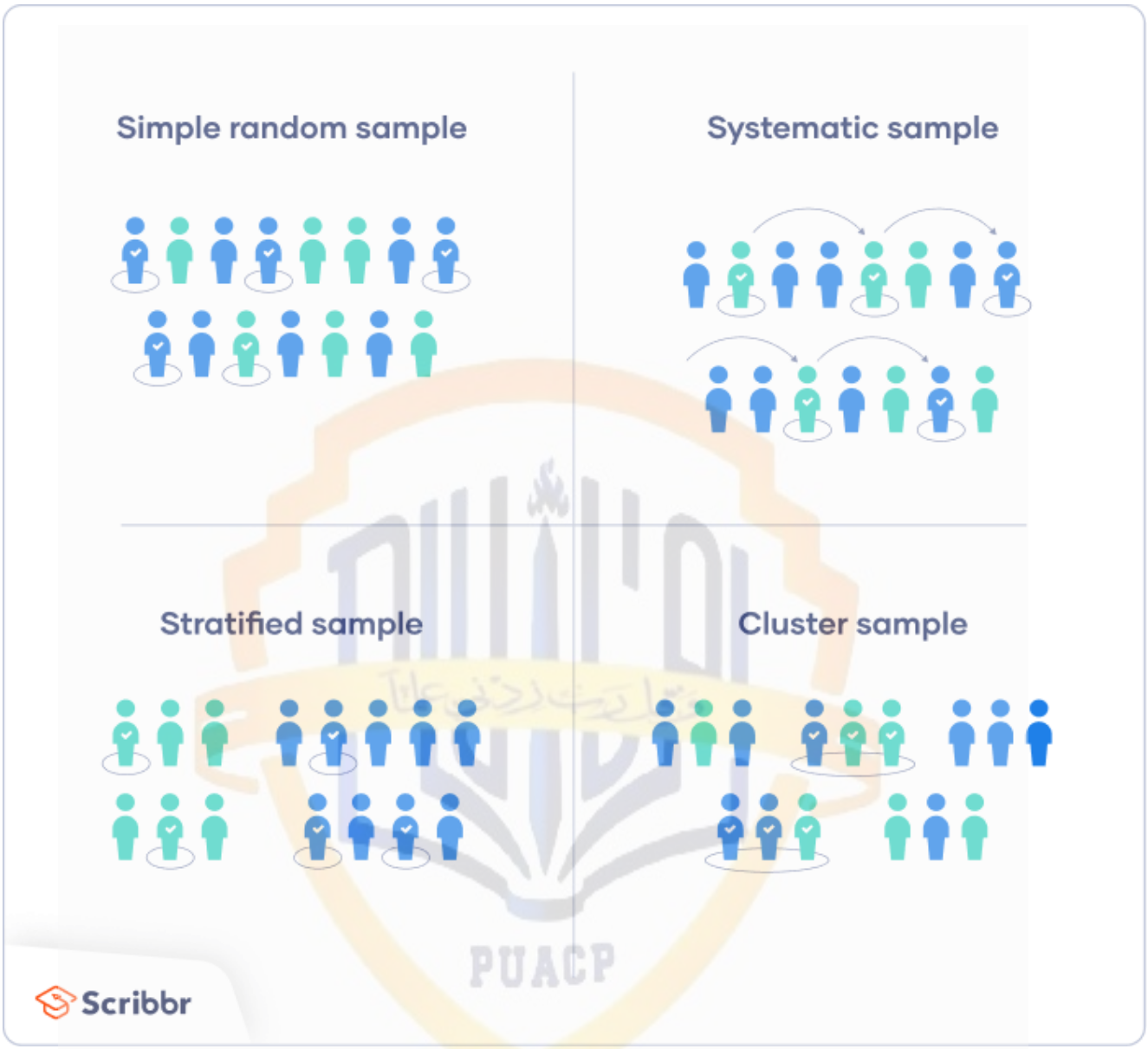
iv-Snowball or referral sampling:

With this approach, people recruited to be part of a sample are asked to invite those they know to take part, who are then asked to invite their friends and family and so on. The participation radiates through a community of connected individuals like a snowball rolling downhill. This method can be helpful when the researcher doesn't know very much about the target population and has no easy way to contact or access them.

Sample size

The number of individuals you should include in your sample depends on various factors, including the size and variability of the population and your research design. There are different sample size calculators and formulas depending on what you want to achieve with statistical analysis

. There are four main types of probability sample


Simple random sample
Systematic sample
Stratified sample
Cluster sample
Scribbr

Chapter Seven
Data Analysis

Data Analysis

Data analysis is a process of inspecting, cleansing, transforming, and modeling data with the goal of discovering useful information, informing conclusions, and supporting decision-making. Data analysis is the most crucial part of any research. Data analysis summarizes collected data. It involves the interpretation of data gathered through the use of analytical and logical reasoning to determine patterns, relationships or trends.
through focus groups, personal interviews, or using open-ended questions in surveys.

Types of Data:

There are two major types of data in research:

Qualitative data: When the data presented has words and descriptions, it is called qualitative data. It is subjective and harder to analyze data in research, especially for comparison. For example, quality data represents everything describing taste, experience, texture, or an opinion that is considered quality data. This type of data is usually collected through focus groups, personal interviews, or using open-ended questions in surveys.

Quantitative data: Any data expressed in numbers of numerical figures are called quantitative data. This type of data can be distinguished into categories, grouped, measured, calculated, or ranked. For example, questions such as age, rank, cost, length, weight, scores, etc. everything comes under this type of data. Such type of data is presented in graphical format,

Process of data analysis:

Data Analysis consists of the following phases:

- Data Requirement Gathering
- Data Collection
- Data Cleaning
- Data Analysis
- Data Interpretation
- Data Visualization

Data requirement gathering:

All you need to find out the purpose or aim of doing the Analysis of data. You have to decide which type of data analysis you wanted to do! In this phase, you have to decide what to analyze and how to measure it, you have to understand why you are investigating and what measures you have to use to do this Analysis.

Data Collection:

After requirement gathering, you will get a clear idea about what things you have to measure and what should be your findings. Now it's time to collect your data based on

requirements. Once you collect your data, the collected data must be processed or organized for Analysis.

Data cleaning:

Now whatever data is collected may not be useful or irrelevant to your aim of analysis, hence it should be cleaned. The data which is collected may contain duplicate records, white spaces or errors. The data should be cleaned and error free.

Data analysis:

Once the data is collected, cleaned, and processed, it is ready for analysis. As you manipulate data, you may find you have the exact information you need, or you might need to collect more data. During this phase, you use data analysis tools which will help to understand, interpret, and derive conclusions based on the requirements.

Data interpretation:

After analyzing your data, it's finally time to interpret your results. You can choose the way to express or communicate your data analysis either you can use simply in words or maybe a table or chart. Then use the results of your data analysis process to decide your best course of action.

Data visualization:

Data visualization is very common, it often appears in the form of charts and graphs. In other words, data is shown graphically so that it will be easier for the human brain to understand and process it. Data visualization often used to discover unknown facts and trends. By observing relationships and comparing datasets, you can find a way to find out meaningful information.

Approaches for data analysis:

There are two main approaches for data analysis:

- Deductive approach
- Inductive approach

Deductive approach:

A deductive approach is concerned with "developing a hypothesis (or hypotheses) based on existing theory, and then designing a research strategy to test the hypothesis". Deductive means

reasoning from the particular to the general. Deductive approach can be explained by the means of hypotheses, which can be derived from the propositions of the theory.

Advantages of deductive approach:

Deductive approach offers the following advantages:

- Possibility to explain causal relationships between concepts and variables
- Possibility to measure concepts quantitatively
- Possibility to generalize research findings to a certain extent.

Example:

For example, all dogs have ears; golden retrievers are dogs, therefore they have ears.

Inductive approach:

Inductive approach starts with the observations and theories are proposed towards the end of the research process as a result of observations. Inductive research involves the search for pattern from observation and the development of explanations – theories – for those patterns through series of hypotheses. This approach aims to generate meanings from the data set collected in order to identify patterns and relationships to build a theory.

Advantages of Inductive approach:

Inductive approach offers the following advantages:

- It allows flexibility.
- It provides first-hand knowledge and information by actual observation.
- It supports the generation of new theory.

Example:

For example, all brown dogs in the park today are small dogs. Therefore, all small dogs must be brown.

Chapter Eight
Variables

Variable:

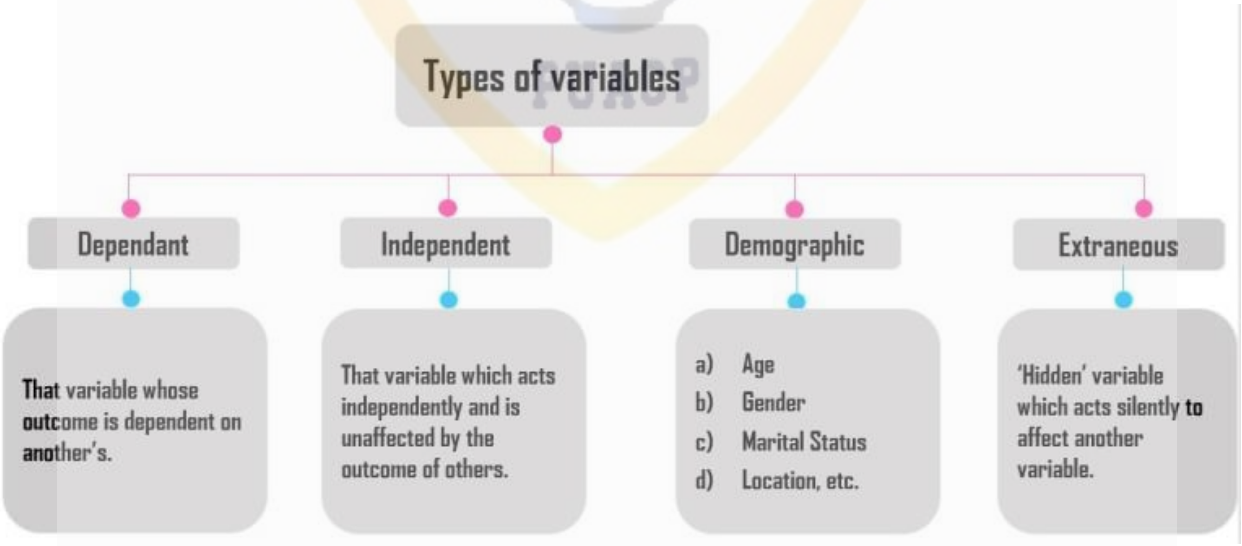
A variable in research simply refers to a person, place, thing, or phenomenon that you are trying to measure in some way. A variable is any characteristics, number, or quantity that can be measured or counted. A variable may also be called a data item. Age, sex, business income and expenses, country of birth, capital expenditure, class grades, eye color and vehicle type are examples of variables.

Types of variables:

Types of variables:

Following are the major types of variables:

- ✓ Independent variable
- ✓ Dependent variable
- ✓ Qualitative variable
- ✓ Quantitative variable
- ✓ Intervening variables
- ✓ Extraneous variable



Independent variable:

It is a variable that stands alone and isn't changed by the other variables you are trying to measure. Independent variables cause an effect on the dependent variable. For example, someone's age might be an independent variable.

Dependent variable:

The dependent variable is the variable that changes in response to the independent variable. It is a variable that doesn't stand alone.

Qualitative variable:

A qualitative variable, also called categorical, is one in which the variable categories are not described as numbers but instead by verbal groupings.

Quantitative variable:

It is a variable that consists of a count or numerical measurement of the characteristics of objects, people or events. Quantitative variables are any variables where the data represent amounts (e.g. height, weight, or age).

Extraneous variables.

An extraneous variable is any uncontrolled factor that can influence the results of an experiment.

Intervening variables:

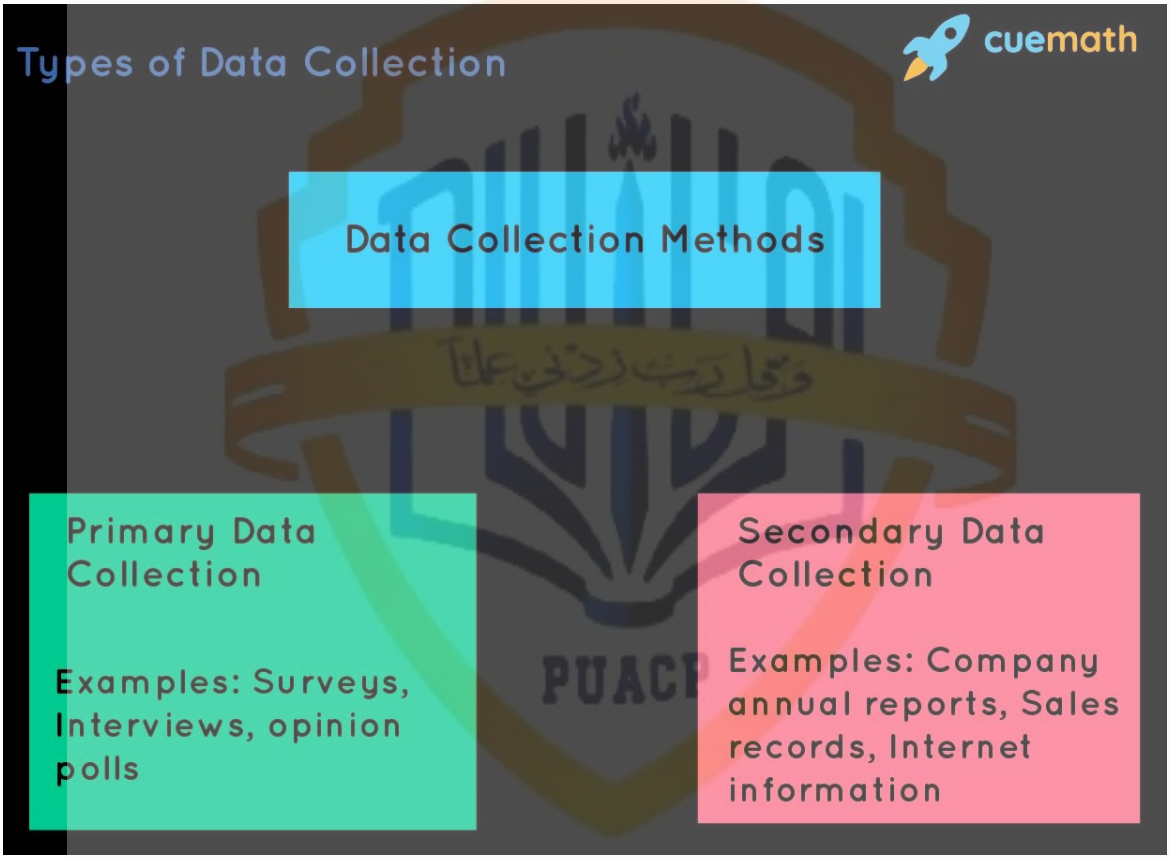
A theoretical variable used to explain the cause or connection between other study variables.

Chapter Nine

Tools for Data Collection

Data collection:

Data collection is a methodical process of gathering and analyzing specific information to find solutions to relevant questions and evaluate the results. It focuses on finding out all there is to a particular subject matter. Data is collected to be further subjected to hypothesis testing which seeks to explain a phenomenon.



Types of data collection

There are two types of data collection:

- Primary data collection
- Secondary data collection

i-Primary data collection:

Primary data collection by definition is the gathering of raw data collected at the source. It is a process of collecting the original data collected by a researcher for a specific research purpose.

ii-Secondary data collection:

Secondary data collection, on the other hand, is referred to as the gathering of second-hand data collected by an individual who is not the original user. It is the process of collecting data that already exists, be it already published books, journals, and/or online portals. In terms of ease, it is much less expensive and easier to collect.

Your choice between Primary data collection and secondary data collection depends on the nature, scope, and area of your research as well as its aims and objectives.

Importance of data collection:

- **Integrity of the Research**

A key reason for collecting data, be it through quantitative or qualitative methods is to ensure that the integrity of the research question is indeed maintained.

- **Reduce the likelihood of errors**

The correct use of appropriate data collection of methods reduces the likelihood of errors consistent with the results.

- **Decision Making**

To minimize the risk of errors in decision-making, it is important that accurate data is collected so that the researcher doesn't make uninformed decisions.

- **Save Cost and Time**

Data collection saves the researcher time and funds that would otherwise be misspent without a deeper understanding of the topic or subject matter.

- **To support a need for a new idea, change, and/or innovation**

To prove the need for a change in the norm or the introduction of new information that will be widely accepted, it is important to collect data as evidence to support these claims.

Data collection tools:

Data collection tools refer to the devices/instruments used to collect data, such as a paper questionnaire or computer-assisted interviewing system. Case Studies, Checklists, Interviews, Observation sometimes, and Surveys or Questionnaires are all tools used to collect data.

It is important to decide the tools for data collection because research is carried out in different ways and for different purposes. The objective behind data collection is to capture quality evidence that allows analysis to lead to the formulation of convincing and credible answers to the posed questions.

Following are the main tools of data collection:

1-Interview:

An interview is a face-to-face conversation between two individuals with the sole purpose of collecting relevant information to satisfy a research purpose. Interviews are of different types namely; **Structured, Semi-structured and Unstructured** with each having a slight variation from other.

Structured interviews: It is a verbally administered questionnaire. In terms of depth, it is surface level and is usually completed within a short period. For speed and efficiency, it is highly recommendable, but it lacks depth.

Semi-structured interviews: In this method, there subsist several key questions which cover the scope of the areas to be explored. It allows a little more leeway for the researcher to explore the subject matter.

Unstructured interviews: It is an in-depth interview that allows the researcher to collect a wide range of information with a purpose. An advantage of this method is the freedom it gives a researcher to combine structure with flexibility even though it is more time-consuming.

Advantages:

In-depth information

- Freedom of flexibility
- Accurate data.

Disadvantages:

- Time-consuming
- Expensive to collect.

2-Questionaires:

This is the process of collecting data through an instrument consisting of a series of questions and prompts to receive a response from individuals it is administered to. Questionnaires are designed to collect data from a group.

On a questionnaire, there are three kinds of questions used. They are; fixed-alternative, scale, and open-ended. With each of the questions tailored to the nature and scope of the research.

Advantages:

- It can be administered in large numbers and is cost-effective.
- It can be used to compare and contrast previous research to measure change.
- Easy to visualize and analyze.
- Questionnaires offer actionable data.
- Respondent identity is protected.
- Questionnaires can cover all areas of a topic.
- Relatively inexpensive.

Disadvantages:

- Answers may be dishonest or the respondents lose interest midway.
- Questionnaires can't produce qualitative data.
- Questions might be left unanswered.
- Respondents may have a hidden agenda.
- Not all questions can be analyzed easily.

3-Observation:

This is a data collection method by which information on a phenomenon is gathered through observation. The nature of the observation could be accomplished either as a complete observer, an observer as a participant, a participant as an observer, or as a complete participant. This method is a key base for formulating a hypothesis.

Advantages:

- Easy to administer.
- There subsists a greater accuracy with results.
- It is a universally accepted practice.
- It diffuses the situation of an unwillingness of respondents to administer a report.
- It is appropriate for certain situations.

Disadvantages:

- Some phenomena aren't open to observation.
- It cannot be relied upon.
- Bias may arise.
- It is expensive to administer.
- Its validity cannot be predicted accurately.

4-Focus groups:

The opposite of quantitative research which involves numerical-based data, this data collection method focuses more on qualitative research. It falls under the primary category for data based on the feelings and opinions of the respondents. This research involves asking open-ended questions to a group of individuals usually ranging from 6-10 people, to provide feedback.

Advantages:

- Information obtained is usually very detailed.
- Cost-effective when compared to one-on-one interviews.
- It reflects speed and efficiency in the supply of results.

Disadvantages:

- Lacking depth in covering the nitty-gritty of a subject matter.
- Bias might still be evident.
- Requires interviewer training
- The researcher has very little control over the outcome.
- A few vocal voices can drown out the rest.
- Difficulty in assembling an all-inclusive group.

5-Surveys:

Survey is defined as the act of examining a process or questioning a selected sample of individuals to obtain data about a service, product, or process. Data collection surveys collect information from a targeted group of people about their opinions, behavior, or knowledge. By using surveys, we can collect information about the behaviors, needs, and opinions. Surveys can be used to find out attitudes and reactions, to measure client satisfaction, to gauge opinions about various issues, and to add credibility to your research. Surveys are great for conducting qualitative research because they are able to pull in such profound and diverse feedback from respondents. They can even make researchers aware of insights they had not previously considered as a possibility.

Advantages:

- High representativeness
- Low-cost
- Convenient data gathering
- Good statistical significance
- Little or no observer subjectivity
- Precise results

Disadvantages:

- Inflexible design
- Not ideal for controversial issues
- Possible inappropriateness of questions

Chapter Ten
Transliteration and Transcription

Transcription

Transcription is the process of converting speech from an audio or video recording into text. Transcription is a document crafted by typing everything uttered either in an audio or video. Transcription for academic research is the process of converting research findings recorded through audio or visual means into text format for the purposes of further analysis. Transcription removes the personal ticks or audible distractions that might muddle the verbal elements of a presentation. Transcription is the action of providing a written account of spoken words. Transcription takes place in three steps: **Initiation, elongation and termination.**

Transcription and the Types of Documents:

The transcription process can be embedded into a variety of texts, such as an audio file or a video.

Audio files – Audio files like recordings and podcasts are commonly transcribed into readable, written texts. In addition, recorded legal proceedings are routinely transcribed to be easily accessible to lawyers, judges, and juries.

Video files – Video transcription involves converting a video or a film's audio track into a written document. A typical example is the transcription of video interviews into blogs and news articles. Also, documentary films are often transcribed into eBooks.

Written materials – Written PDFs and hand-written matters like notes, letters, manuscripts, etc., are a regular part of the transcription process. Transcribing hand-written materials entails converting multiple messages into a single, readable text for the reader's convenience.

Types of Transcription:

Following are the main types of transcription:

- Verbatim
- Semi-verbatim
- Intelligent verbatim

Verbatim:

Verbatim transcription records everything as it was on the audio file. In other words, every cough, shuffle in a chair, and inaudible utterance are transcribed as heard in the original recording. That includes grammatical errors, slang, and pauses such as errs and umms.

Semi-verbatim:

This service is similar to the verbatim service. However, the pauses in between words such as errs and umms are omitted for the sake of clarity. All filler words, broken sentences, and repetitions remain in place so that the dialogue recorded stays true to the original recording(s).

Intelligent verbatim:

Intelligent verbatim transcription requires a skilled and experienced transcriber to edit the overall transcript to eliminate superfluous words, correct grammatical errors, and tie sentences together. However, they do so in a manner that ensures the final transcript remains an accurate reflection of the intents and purposes present in the original recording(s).

Edited Transcription:

In this transcription style, certain parts of the audio or video file that are unimportant or non-essential can be excluded. But it is noteworthy that in edited transcriptions, the document's original message, essence, and intent must remain intact. Edited transcription is commonly used in publishing houses, academia, speeches, and conferences. These are the domains that have the luxury to omit unnecessary parts of the source file. Clarity, conciseness, and readability are the crucial aspects of edited transcription.

Strict Verbatim Transcription:

This transcription style encapsulates all spoken words that the transcriber can hear from an audio file or video file. The filler words like 'ah,' 'ahm,' 'oh,' etc., are included in the transcript document. Stutters, repetitions, interjections are all a lively part of the transcription. The exponential details are what make verbatim transcription unique. Selective hearing and omissions are absolutely frowned upon in this type of transcription. It can be witnessed in Police and Legal Enforcement, Market Research, Films, Advertising, Human Resources, Recruitment, and so on.

Intelligent Verbatim Transcription:

Alternately known as non-verbatim transcription, intelligent verbatim transcription is a style of transcription that involves omissions. The transcriber has some degree of independence to omit laughter, utterances, and filler words. Non-verbatim transcription is most utilized in businesses and medical spheres. In such fields, the utterances, pauses, and filler words do not have much significance, and they are easily ignored. Moreover, non-verbatim transcription is also used in podcasts, speeches, meetings, and conferences.

Phonetic Transcription:

This type of transcription notes the way spoken words are pronounced using phonetic symbols. The phonetic transcription is used when the aim is to retain the dialect in which the original words were spoken.

Importance of transcription:

- Puts qualitative data and information into a text-based format
- Makes data easier to analyze and share
- Allows researchers to become more immersed into the data they collect
- Helps researchers create a narrative with their data
- Makes patterns easier to find
- Helps preserve the accuracy and integrity of the data
- Let researchers focus on their observations instead of worrying about notetaking

Transliteration:

Transliteration is the process of transferring a word from the alphabet of one language to another. Transliteration is the process of converting texts from one script to another based on phonetic similarity. The dictionary meaning says that it is 'writing words or letters in the characters of another alphabet.' This process is only concerned with the pronunciation of the text rather than going into its meaning.

Transliteration means representation of words and phrases of one language by the alphabets of another keeping their pronunciation intact. Transliteration is required in documentation when the documents being processed and listed are in different languages. The primary aim of transliteration is to provide an alternate means of reading text using a different script. Transliteration is intended to broadly preserve the sounds of the original script, but the focus is not on providing an accurate phonemic representation as it is in the case of transcription.

Chapter Eleven

Citation and References

Citation

A citation is a formal reference to a published or unpublished source that you consulted and obtained information from while writing your research paper. Citations document for your readers where you obtained your material, provide a means of critiquing your study based on the sources you used, and create an opportunity to obtain information about prior studies of the research problem under investigation. The act of citing sources is also your best defense against allegations of plagiarism.

Importance of citation:

Citing the works of others is important because:

- **Proper citation allows readers to locate the materials you used**. Citations to sources helps readers expand their knowledge on a topic. One of the most effective strategies for locating authoritative, relevant sources about a topic is to review footnotes or references from known sources ["citation tracking"].
- **Citing other people's words and ideas demonstrates that you have conducted a thorough review of the literature on your topic** and, therefore, you are reporting your research from an informed and critically engaged perspective. The list of sources used increases your credibility as the author of the work.
- **Other researcher's ideas can be used to reinforce your arguments**. In many cases, another researcher's arguments can act as the primary context from which you can emphasize the significance of your study and to provide supporting evidence about how you addressed the "So What?" question.
- **The ideas of other researchers can be used to explain reasons for alternative approaches**. If you disagree with a researcher's ideas or you believe there is a gap in understanding the research problem, your citations can serve as sources from which to argue an alternative viewpoint or the need to pursue a different course of action.
- **Just as the ideas of other researchers can bolster your arguments, they can also detract from your credibility if their research is challenged**. Properly citing sources prevents your reputation from being tarnished if the facts or ideas of those cited are proven to be inaccurate or off-base. It prevents readers from concluding that you ignored or dismissed the findings of others, even if they are disputed.

- **Ideas are considered intellectual property and there can be serious repercussions if you fail to cite where you got an idea from**. In academe, failure to cite other people's intellectual property could lead to receiving a failing grade for the assignment or the course. In the professional world, failure to cite other people's intellectual property ruins careers and reputations and can result in legal action. Citing sources as a student in college will help you get in the habit of acknowledging and properly citing the work of others.

Types of citation:

There are two types of citation:

- **In-text citation** appears throughout your paper at the end of a sentence you are citing. They tell your reader where you found the information used to come up with a particular idea.
- **Reference list citation** gives all of the information your reader would need to find your source. They appear at the end of your paper as a separate page listing all of the sources you used.

References:

Reference is standardized way of acknowledging the source of information and ideas that we have used in our work which allows the sources to be identified. Reference can be described as giving credit with citation, to the source of information used in one's work. Research is build up on what other people have previously done, thus referencing helps to relate your own work to previous works.

It is important for a number of reasons, some of which includes that:

- ✓ It allows for the acknowledgment of the use of other people's opinions, ideas and theories.
- ✓ It helps readers to understand what influenced the writer's thinking and how their ideas are formulated.
- ✓ It enables readers to visit source materials for them and verify the information.

Bibliography:

Bibliography is the detailed listing of the books, journals, magazines or online sources that an author has used in researching and writing their work. It is important to note that it must be a complete list of every source used during the research phase.

Bibliography must include:

- The names of the author or authors
- The full title of the source material
- The name of the publisher
- The date of publication
- And the page number of the source material

The main difference between **references and bibliography** is that **references** contain the sources that you have cited in your paper, whereas a **bibliography** includes all the sources that you have used for your paper, whether they are cited or not. Both references and bibliographies appear at the end of a scholarly work and share the same information regarding a source of work. They help writers to avoid plagiarism and allow the readers to refer to the original sources and learn more information.

Citation : **MLA Citation Guidelines**

A citation is a reference to a source. A **citation** tells the readers from where the information has come. In your writing, you cite or refer to the source of information.

A **reference** gives the readers the details about the source, so that they have a good understanding of what kind of source it is and could find the source themselves if necessary. The references are typically listed at the end of document.

More precisely, a citation is an abbreviated alphanumeric expression embedded in the body of an intellectual work that denotes an entry in the bibliographic references section of the work for the purpose of acknowledging the relevance of the works of others to the topic of discussion at the spot where the citation appears.

Generally, the combination of both the in-body citation and the bibliographic entry constitutes what is commonly thought of as a citation (whereas bibliographic entries by themselves are not).

Citations have several important purposes: to uphold intellectual honesty (or avoiding plagiarism), to attribute prior or unoriginal work and ideas to the correct sources, to allow the reader to determine independently whether the referenced material supports the author's argument in the claimed way, and to help the reader gauge the strength and validity of the material the author has used.

The forms of citations generally subscribe to one of the generally accepted citations systems, such as the Oxford, Harvard, Modern Language Association (MLA), American Sociological Association (ASA), American Psychological Association (APA), and other citations systems, because their syntactic conventions are widely known and easily interpreted by readers. Each of these citation systems has its advantages and disadvantages. Editors often specify the citation system to use.

A Bibliography lists all the material you have consulted, whether you have actually referred to and cited the work or not.

The purpose of a **citation is to point** to additional information whereas the purpose of a **reference is to supply that additional information**. Location: Citations appear within the main text whereas references are added towards the end of the main text as a list.

- **Formatting Guidelines**
  - Writing style Times New Roman
  - Font Size -12
  - Whole text should be **Double-spaced**
  - Left-justified text for MLA header
  - Right-justified text for page number header
  - Set 1 inch page margins.
  - Indent every new paragraph ½ inch.

- **Create a right-justified text header one-half inch from the top of your paper that includes your last name and the page number**.

All pages of your paper should be numbered with your last name and the numerical page number.

- **Formatting Quotations according to the MLA guidelines**

A citation is the **way you tell your readers that certain material in your work has come from another source and gives your readers the information necessary to find that source again**. Citations may include: Information about the Author(s) or Editor(s).

Citing books, articles, and other sources parenthetically ( ) in your paper

In conjunction with the explanations about structuring and formatting in–text citations is detailed here, this provides example citations for how a range of different source types are correctly referenced according to MLA's citation guidelines.

- **Author's name in text**

  Magny develops this argument (67-69).

- **Author's name in reference**

  This argument has been developed elsewhere (Magny 67-69).

- **Quotation found in indirect or "secondhand" source**

The philosopher Alain states that "admiration is not pleasure but a kind of attention. . ." (qtd. in Magny 66).

- **Material found in indirect source**

  Alain's words seem to dissociate admiration from pleasure (in Magny 66).

- **Two authors' names in reference**

The most notorious foreign lobby in Washington is the "Sugar Mafia" (Howe and Trott 134).

- **Reference to volume and page in multivolume work**

  As a painter Andrea was "faultless" (Freedberg 1: 98).

- **Reference to whole volume**

  In his second volume, Freedberg gives an account of Andrea's whole painting career.

- **Two works by same author on list of works cited**

Frye connects Burgess' A Clockwork Orange to romance tradition (Secular Scripture 110). And while this connection may be surprising given A Clockwork Orange's themes and content, Frye's unique perspective on the nature of genres sheds light on this unusual combination ("Rhetorical Criticism: Theory of Genres").

- **Two locations in same source**

  Dabundo deals with this problem (22, 31).

- **Two sources cited**

This controversy has been addressed more than once (Dabundo 27; Magny 69).

- **Personal interview; name given in text**

Parsons addresses the need for physical education teachers to understand the relationship between physical activity and fitness.

- **Corporate author**

Many different types of organizations in the United States are involved in mediation and dispute resolution (Natl. Inst. for Dispute Resolution).

- **Quotation from a play with page numbers**

In A Raisin in the Sun, Walter doesn't hide his disdain for his sister's attitude towards his mother's money: "the line between asking and just accepting when the time comes is big and wide—ain't it!" he levels at Beneatha (Hansberry 37; act 1, scene 1).

- **Quotation from a play with division and line numbers**

This is made clear by the Duke's recommendation that the best response to grief is to move on (Othello 1.3.208–209).

- **Quotation from a poem**

Amy Quan Barry asks piercingly, "What is it to know the absolute value / of negative grace . . .?"

- **Quotation from a multi–page poem with line numbers**

It is at this point that Eliot first introduces the women in the room "talking of Michelangelo" (line 14).

- **Electronic source that uses paragraph numbers**

The semiconductor workplace is highly toxic (Ross par. 35).

- **Electronic source that uses chapter and section numbers**

"Once we start using a tool extensively, it also starts using us" (Rawlins ch. 1, sec. 1).

- Parenthetical citations appear at the end of the sentence in which the direct reference, summary, paraphrase, or quote appears.
- **For quotations that are shorter than four lines**, include the citation after the final quotation marks and **before** the sentence's concluding punctuation.
- **For quotations that are more than four lines of prose** or three lines of verse, **place quotations in a free-standing block of text and omit quotation marks**. Start the quotation on a new line, with the entire quote indented 1/2 inch from the left margin while maintaining double-spacing.

Use the **block quotation** format for quotations more than four lines long:

- In most cases, use a colon to introduce the quotation.
- Start a new line
- Indent the quotation one half inch from the left margin.
- Double space the quotation.
- Do **not** use quotation marks.
- Parenthetical (in-text) citation (author's last name and page number) is placed **after** the period (or other mark of punctuation) that closes the block quotation.

Like a semicolon, a colon can connect two independent clauses, but it has several other uses as well. Colons, like semicolons, should be used sparingly. For Example

> I have tried often to search behind the sophistication of years for the enchantment I so easily found in those gifts. The essence escapes but its aura remains. To be allowed, no, invited, into the private lives of strangers, and to share their joys and fears, was a chance to exchange the Southern bitter wormwood for a cup of mead with Beowulf or a hot cup of tea and milk with Oliver Twist. When I said aloud, "It is a far far better thing that I do, than I have ever done …" tears of love filled my eyes at my selflessness. (Angelou 196)

- **Joining Independent Clauses**

A semicolon or colon joining two independent clauses signals a connection between them. **When a semicolon** is used, the nature of that connection is variable: the connection may be causal, sequential, oppositional, and so on.

A colon, however, connects two clauses in a specific way, indicating that the **second clause expands on the first.** It alerts the reader to read on for an explanation or expansion of the first clause:

In that instant Brandon made a decision: he would fly to Toronto and propose to Sean.

Silvia slumped in her chair and closed her eyes: she had never felt so dejected.

- **Introducing a Series or List**

Use a colon with the phrases as follows and the following.

To make a cake you need the following ingredients: butter, sugar, eggs, milk, flour, leavener, and salt.

Combine the ingredients as follows: first, cream the butter with the sugar; second, add the eggs and milk; third, add the flour, leavener, and salt.

Use a colon before a series or list only if the words that introduce the list make up a complete sentence:

To make a cake you need a few basic ingredients: butter, sugar, eggs, milk, flour, leavener, and salt.

If the words before the colon do not constitute a sentence, do not use a colon:

To make a cake you need butter, sugar, eggs, milk, flour, leavener, and salt.

- **Introducing Related Sentences**

A colon may be used to introduce a series of related sentences:

Karen had the plan all worked out: She would take Dawn out to dinner for her birthday. While Karen and Dawn had dinner, Teresa would meet the guests at Karen's house. Then Karen would bring Dawn to the house after dinner. Surprise!

A series of related questions is likewise introduced by a colon:

Karen started to worry: Would Teresa remember to pick up the cake? Would the guests arrive on time? And what would Karen do if Dawn wanted to go home after dinner?

- **Introducing Quotations**

Use colons to introduce a quotation when it is not integrated into the syntax of your sentence or otherwise requires a formal introduction:

Nabokov opens his autobiography with a statement on mortality: “The cradle rocks above an abyss, and common sense tells us that our existence is but a brief crack of light between two eternities of darkness.”

- **But use a comma after a verb of saying** (e.g., says, exclaims, notes, writes):

As Nabokov writes, “The cradle rocks above an abyss, and common sense tells us that our existence is but a brief crack of light between two eternities of darkness.”

- **No punctuation is needed** when the quotation is integrated into the syntax of your prose:

Nabokov writes that life is “a brief crack of light between two eternities of darkness.”

See the MLA Handbook 1.3.2 on using a colon to introduce block quotations.

Introducing a Rule or Principle

Use a colon to introduce the formal expression of a rule or principle:

Many books would be briefer if their authors followed the logical principle known as Occam’s razor: Explanations should not be multiplied unnecessarily.

- **Lowercase or Capital Letter after a Colon**

Use a lowercase letter when the word that follows the colon is normally lowercased:

Bonnie had to admit what was already obvious to her roommates: she was allergic to the cat.

Use a capital letter when the colon introduces

- a rule or principle
- several related sentences
- a capitalized word such as a proper noun

- **A Common Mistake**

Do not use a colon after for example, that is, and namely. Use a comma instead:

There are many ways to flavor a cake—for example, with vanilla, with lemon or orange zest, or with cinnamon.

Olive or coconut oil can be substituted for butter in a vegan cake (that is, one made without animal products).

Cakes made with grated vegetables—namely, carrot cakes and zucchini cakes—stay moist for days.

- **MLA Format Heading**

First page in MLA format has a heading (it has no title page unless is required by the instructor). To create an MLA format heading, list the following on separate lines, left-aligned at the top of the page you start your research paper with:

- In the top left corner of the first page of your essay, type your first and last name.
- In the next line,Your co-authors' names, each on its own line, if it's a group project
- On the following line, type your instructor's name
- The course name and number
- The submission dates
- On the following line, type the due date of your paper in "day month year" format.On the following line, switch from left-justified text to centered text and type the title (and the subtitle on the same line, if you have one) of your paper in title case. Do not italicize, underline, or place your essay title in quotation marks. Do not use quotation marks unless you are referring to other works in your title and need to enclose the referenced works in quotation marks.
- For Example:

Mahnoor Amjad
Hafiza sarwat Fatima
Twentieth Century British Literature ENG-401
12th January, 2023
Existentialism in Samuel Becket's Waiting for Godot

It is a wider topic and needs explanation. "Existentialism" is the most important theme of Waiting for Godot (Becket). In order to understand "Existentialism", we must have knowledge about theory of Existentialism. However, in simple words it means that every person is responsible for his actions and no second person is pulling his strings or controlling his fate. In other words (from oxford), existentialism emphasizes the existence of the individual person as a free and responsible agent. The play begins with, "Nothing to be done" (Backet 1).

Chapter Twelve

Ethical Considerations

Definition

Code of conduct that governs the way you carry out the research. The meaning of ethical consideration in research is that in the process of research, there should be the cognition and consideration of moral principles, right behavior and ethical code for both researcher and participants. Ethical considerations in research are a set of principles that guide your research designs and practices. These considerations work to protect the rights of research participants, enhance research validity, and maintain scientific or academic integrity.

These are the principles of conduct which are considered correct in their particular field. These principles include voluntary participation, informed consent, anonymity, confidentiality, potential for harm, and results communication. These are the ethical codes that govern the manner in which a service is delivered and they also change in different times depending on the research. **At the core**, these **ethical principles** stress the need to

(a) Do good (known as beneficence) and

(b) Do not harm (known as non-malfeasance).

Unethical practices in research:

Following are the unethical practices that one should avoid when conducting research:

- ✓ Duplicate publication.
- ✓ Research data falsification.
- ✓ Plagiarism.
- ✓ Authorship Conflict.
- ✓ Conflict of interest.
- ✓ Management responsibility.
- ✓ Code of ethics.
- ✓ Personnel policies and procedures.

Research Ethical principles

- **Honesty:** researchers should honestly report data and result of the study, including the methods and procedures employed in data gathering as well as publication status. Do not falsify, fabricate and misrepresent data and results.

- **Objectivity:** researchers should strive to avoid bias in experimental design, data analysis and interpretation, peer-review and other aspects of research.
- **Integrity:** researcher should act with sincerity. Researchers ought to keep their promises and honor agreements with donors and research participants.
- **Confidentiality:** researchers should protect confidential communications, such as papers or grant submitted for publications, participant records, military secrets etc.
- **Legality:** researchers should know and obey relevant laws and institutional and governmental policies.
- **Competence:** researchers are supposed to be knowledgeable and expert in their own discipline or field of specification. Researchers should maintain and improve their professional competence and expertise through lifelong education and learning.
- **Openness:** researcher must willingly share data, result, ideas and resources. researchers must be open to constructive criticism and new ideas.
- **Respect intellectual property:** researchers should honor patents, copyrights and other forms of intellectual property. Do not use methods, data and results owned by other researchers or scholars without permission. Researcher should avoid plagiarism

These considerations work to

- protect the rights of research participants
- enhance research validity
- maintain scientific or academic integrity

- **In practice**, these **ethical principles** mean that as a researcher, you need to:

- (a) Obtain informed consent from potential research participants;

- (b) Minimize the risk of harm to participants;

- (c) Protect their anonymity and confidentiality

- (d) Avoid using deceptive practices and

- (e) Give participants the right to withdraw from your research.

Three elements to consider in ethical consideration:

1. **Research participants:** research participants should give correct information, consent, providing incentive sensitive information, privacy in data and maintaining confidentiality.

2. **Researcher:** researchers should avoid biasness, provision of deprivation of a treatment, avoid using inappropriate methodology and incorrect reporting.
3. **Funding:** restriction imposed by sponsor, misuse of information.

Ethical issues:

If data is particularly sensitive, or it is required by the data source, researchers may wish to complete the Data Management section of the ethical review application form (Word) or a separate data management plan.

When making an application for ethical approval of research using secondary data, researchers should consider:

Is the proposed research in line with the participants original consent? Can the data source provide assurances on participants original consent?

How will the data be managed? If there is identifiable, personal or sensitive data how will confidentiality be maintained, and data kept secure?

Will the proposed research and use, management and storage of the data meet with the data sources requirements? Have all the appropriate documents been completed and permissions granted?

Will the data source be acknowledged and referenced?

Are there any copyright issues around the data?

By pulling together several data sources is there any risk of de-anonymizing participants?

Will using this data or combining it with other data risk bias or 'profiling' of a particular group?

How will you present the data or analysis? Will this ensure the confidentiality and anonymity of participants?

Will the data identify individuals as being at risk of a condition or disease where they may have otherwise been unaware?