

□ Philosophy of Research

A research philosophy is a belief about the way in which data about a phenomenon should be gathered, analysed and used. The term epistemology (what is known to be true) as opposed to doxology (what is believed to be true) encompasses the various philosophies of research approach. The purpose of science, then, is the process of transforming things believed into things known doxa to episteme (Galliers, 1991).

The Branch of philosophy that deals with nature and scope of knowledge is called epistemology. Philosophy is the study of general and fundamental problems connected with existence that can enhance our knowledge. Two major research philosophies have been identified in the western tradition of science namely positivist (sometimes called scientific) and interpretivist (also known as anti-positivist).

Epistemology is the philosophy of Nature. Epistemology is recognized as four types of knowledge.

① Intuitive knowledge : Intuitive knowledge takes form as beliefs, fake and feelings, so that we can earn or know the knowledge from people.

Intuitive research or intuitive inquiry typically refers to a hermeneutic interpretive mode of inquiry that balances objectives and subjective perspectives to ensure consideration of multiple ways of knowing.

Example : If one person saw an incident, he/she can explain the incident. If a people live in a coastal area, she/he can explain or believe false and so many things.

Before going to a large scale survey researcher should have Intuitive knowledge.

⑩ Authoritative knowledge : Organized knowledge based on organization, books, information or any type of documentation. This is the information of secondary source of Data.

In this process we can review the literature, we can prepare our study based on the secondary data (collection of data from literature review to the research).

Authoritative knowledge is knowledge that is given more weight than other type of knowledge, or ways of knowing , by collective assessment in a local setting and is displayed in every practices (Jordan 1990, Davis-Floyd & Sargent 1997, Irvin 2010).

According to JSP Glasscock, 2020, like perceptual knowledge, authoritative knowledge is non inferential.

⑪ Logical knowledge : Logical knowledge can be accepted to knew knowledge , this can be devide into two parts.

- * Inductive
- * Deductive

Logical knowledge is roughly speaking, knowledge about logic - such as knowledge that a certain principle of inference necessarily preserves truth, or that every proposition of a certain form must be true - and so is not the same thing as knowledge that is gained by using logic, i.e., inferential knowledge.

Logical knowledge can analyse from findings to conclusion. Also, accepted to new knowledge then the research can be turn as logical research.

(IV) Empirical Knowledge : Empirical knowledge is derived from direct experience, observation and experimentation, while theoretical knowledge is based on abstract concepts, principles and ideas. However, many other insights have emerged through observation or perception and trial and error. This is called empirical knowledge. It is a knowledge that is acquired with experience. For instance, home remedies, mother tongue learning, Sociology.

Empirical knowledge determine through observation & experimentation, then the research can turn as an Empirical research (from observation to conclusion).

Finally said that, Epistemology is a way of understanding and explaining how we know, what we know (crotty, 2003). Epistemology is also concerned with providing a philosophical grounding for deciding what kinds of knowledge are possible and how we can ensure that they are both adequate and legitimate.

□ Research Method & Methodology

According to Rajasekar et. al. (2006), research is a logical and systematic search for new and useful information on a particular topic. It is an investigation of findings solutions to scientific and social problems through objective and systematic analysis.

A framework of selective research problem, asking the research Question, adopting the fieldwork and collection of data , presentation of data and concluding the research is called Research methodology .

Methods are the specific approach to collecting your data . This could be include -

- ① Interviews
- ② Surveys
- ③ focus group
- ④ Experiments
- ⑤ Case studies
- ⑥ Observational Studies
- ⑦ Online data collection.

Every methods vary in style, so it is important that you research these before applying them.

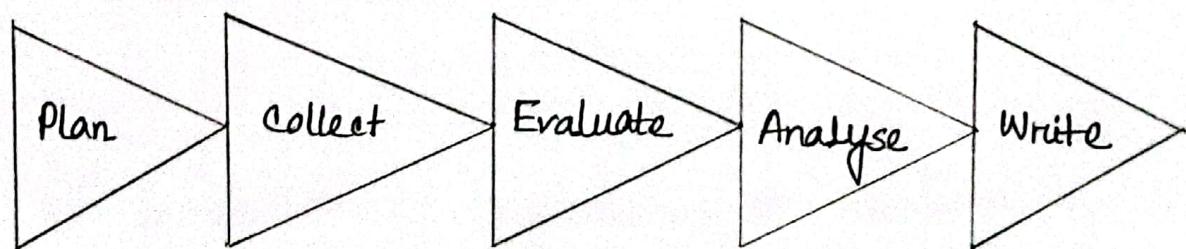
For example: an interview could be structured or semi-structured. A survey could be multiple choice or long answer questions.

Methodology is the theoretical framework to support the methods chosen. It is perspective taken on the research, which dictates how it is approached.

Examples of these are:

- phenomenology — phenomenology provides us with interpretations regarding the distinctions between the internal and external world as well as levels of objectivity and subjectivity.
- Critical Theory — strands of critical theory exist in terms of criticism of occidental complacency and that ruling elites and ideologies should be challenged as well as greater equality and liberty sought.
- Ethnography — Research is undertaken in the field and attempts to capture and understand social action and the meaning of this action.

Remember your methods are a part of your entire research project, so it is important that you plan them well from the start.



Scientific View of Research

Scientific Researches are studies that should be systematically planned before performing them. In this review, classification and description of scientific studies, planning stage randomisation and bias are explained.

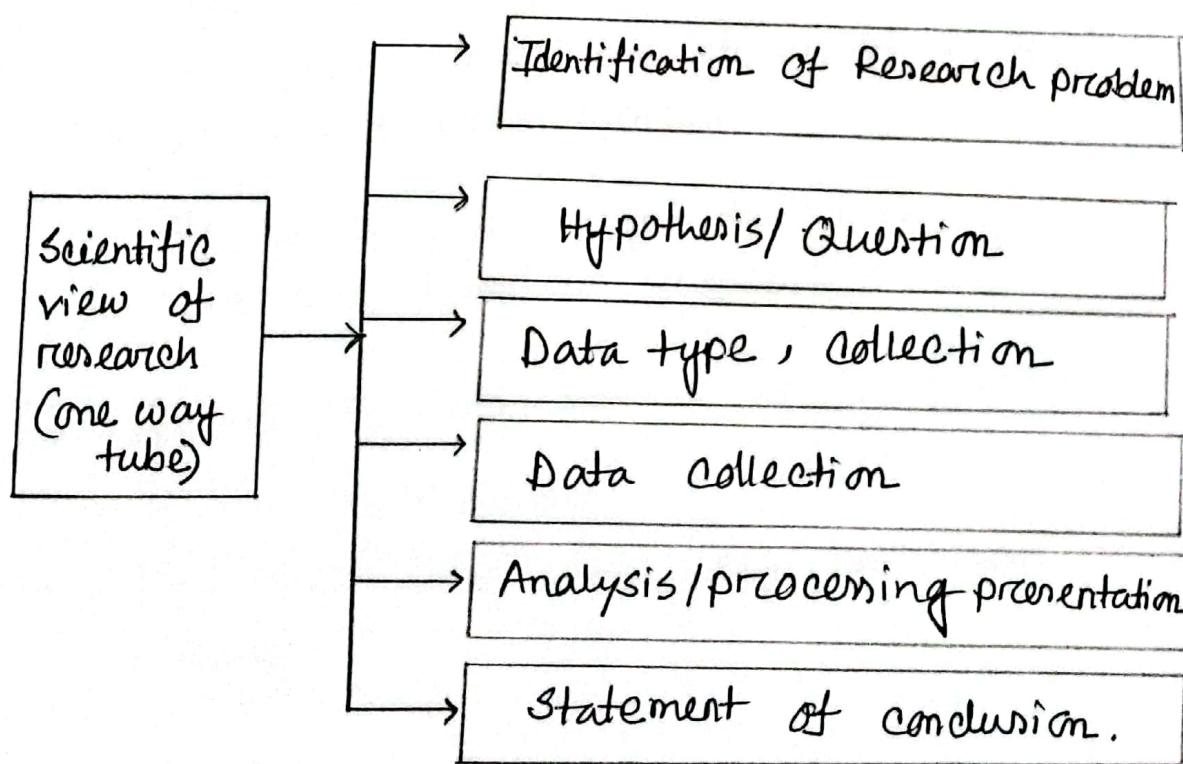
According to Geyda et.al.(2016), Research method conducted for the purpose of contributing towards science by the systematic collection, interpretation and evaluation of data and that, too, in a planned manner is called scientific research.

Scientific view of research is a one way tube, the features of this research are -

- ① Formulation of the Research problem : When anyone chooses or select the research topic, he/she asked for this question, also include which dimension should be she/he worked. It should would be precise & sequential Question. Besides there would be remarkable with time & space. For instance - If I work on migration, where location, place and space are present but it is significant to emphasise the man environmental movement & relation, otherwise it become a Social Science research.
- ② Definition of Hypothesis or Research Hypothesis Question : It could define the research hypothesis

Question relationship through the Quantitative Analysis.
For example: Decreasing the production, because of
the climate change, and increasing the precipitation.

- ⑩ Determination of the type of Data to be collected : The using method would depend on the type of data . Either the data ^{collection} would be Qualitative or Quantitative method.
- ⑪ Collection of Data : which source is very important primary / secondary data source depends on the research method & the research budget.
- ⑫ Analysis and processing of Data and presentation.
- ⑬ The statement of the conclusion.



□ Types of Research :

Research is a logical and systematic search for new and useful information on a particular topic. Research is important both in scientific and nonscientific fields. In our life, new problems, events, phenomena, and processes occur every day. Practically, implementable solutions and suggestions are required for tackling new problems that arise. Scientists have to undertake research on them and find their causes, solutions, explanations and applications.

The research is broadly classified into two main classes : 1. Fundamental or basic research, and 2. applied research. Basic and applied researches are generally of two kinds, normal research and revolutionary research.

In addition there are ten main types of Research, these are -

① Qualitative research :

- It is non-numerical, descriptive, applies to reason, and uses words.
- Its aims are to get the meaning, and feeling and describe the situation.
- Qualitative data cannot be graphed.
- It is exploratory.
- It investigates the why and how of decision making.

② Quantitative Research :

- It is numerical, non descriptive, applies statistics or mathematics and uses numbers.
- It is an iterative process whereby evidence is evaluated.
- The results are often presented in tables and graphs.
- It is conclusive
- It investigates the what, where and when of decision making.

③ Applied Research :

- Studies individuals without the objective to generalize.
- Aims at any variable which makes the desired difference.
- Tries to say how things can be changed.
- Tries to correct the facts which are problematic.
- Reports in common language.

④ Fundamental Research :

- Seeks generalization
- Aims at basic process
- Attempts to explain why things happen.

- Tries to get the facts.
- Reports in the technical language of the topic.

⑤ Descriptive Research :

Descriptive research aims to accurately and systematically describe a population, situation or phenomenon. It can answer what, where, when and how questions but not why question. A descriptive research design can use a wide variety of research methods to investigate one or more variable. For example: an organization may study how people with different income levels react to the launch of a new apple phone.

⑥ Analytical Research :

Analytical research is a specific type of research that involves critical thinking skill and the evaluation of facts and information relative to the research being conducted. For example: conservative society, Industrial society (would remain causal relationship and the view of gender Dimension).

⑦ Conceptual Research :

Conceptual research is defined as a methodology wherein research is conducted by observing and analyzing already present information on a given topic. Conceptual research does not involve conducting

any practical experiments. It is related to abstract concepts or ideas. The most famous example of a conceptual research is Sir Isaac Newton. He observed his surroundings to conceptualize and develop theories about gravitation and motion.

⑧ Empirical Research :

Empirical research is research that based on observation and measurement of phenomena, as directly experienced by the researcher. The data thus gathered may be compared against a theory & hypothesis, but the results are still based on real life experience. An example of empirical analysis would be If a researcher was interested in finding out whether listening to happy music promotes prosocial behaviour.

⑨ Inductive Research :

Inductive research begin with a research question and the collection of empirical data, which are used to generate hypothesis and theory.

⑩ Deductive Research :

Deductive Research approaches usually begin with a theory -driven hypothesis, which guide data collection and analysis.

Specific Observation
↓
pattern recognition
↓
General Conclusion

fig: Inductive Research

Existing theory
↓
Formulate hypothesis
↓
collect data
↓
Analyse data
↓
Donot reject
Hypothesis

fig: Deductive research

□ Research proposal & Research Synopsis:

A research proposal is a document proposing a research project, generally in sciences or academia, and generally continues a request for sponsorship of that research. proposals are evaluated on the cost the cost and potential impact on proposed research, and on the soundness of the proposed plan for carrying it out.

There is no difference between two, If anyone want to concise then he/she must submit synopsis.

When we submit research proposal it would be institutional or academic like MSc, MPhil & PhD. Besides, For MS research proposal will be called as synopsis but not for PhD program.

① Steps of the Research proposal:

1. Title
2. Background / Statement of the purpose / Introduction
3. Rational / Importance / Significance
4. Research Question / Hypothesis
5. Aims & Objectives
6. Literature review and conceptual Development
7. proposed Methodology .
8. Plan of Actions .
9. Time frame
10. Budget
11. probable limitation
12. Expected outcome
13. Conclusion
14. References / Key References .

In any research proposal all steps are needed but in these six major steps are much significant for a research proposal . without the six step no one could draw a research proposal. those are - Title, Background / Statement of the purpose/ Introduction , Rational / Importance / Significance , Aims and objectives, proposed methodology & References / Key References.

There is not mandatory for an MS thesis to analyse about Literature review and conceptual Development but If anyone include in their research proposal It would better. In addition a thesis writer write about proposed Methodology but as well as a project writer write down about "methodology" of the research.

Research process or procedure:

Aims to Identify a research problem, understand its concept through a literature review, set research questions and analyze objectives, design a research study, select a sample, collect data, analyse the data and present the data findings in a research report.

Research process consists of series of actions or steps necessary to effectively carry out research and the desired sequencing of these steps. Some researchers suggested that you need to follow seven steps but some are suggest you need to follow eight steps, but here I will discuss about the seven steps of the research process. These are -

Step 1 - Define Research problem.

Step 2 - Review of literature.

Step 3 - Formulation of Hypothesis / Draw Your research Question.

Step 4 - prepare the research Design.

Step 5 - Data collection / collecting Data.

Step 6 - Data Analysis

Step 7 - Interpretation / Report writing.

To identifying research problem, reviewing the literature is very important. When we search about causal / effective relationship that is called formulation of hypothesis. ^{1st} First of all one should identify the problem like "Urban environmental problem" then one should make the research Question. If one do hypothesis then one would make the test of hypothesis.

* Draw Hypothesis - for Quantitative research

* Do Research Question - for Qualitative Research.

Research Design: when we draw a research Question, what and which things could be include

there that is called Research Design. Like Research ethics.

In physical Geography there have different Research Ethics, But the basic Ethics are same for all for example - Access (we need to access for collection of Data or anything related to the research).

Data collection is more important in any kind of research.

Review Research is also significant for publishing like Biophilia, that means geographic traditional view like as - Urban context, Biophilic city / energy efficient city (because we said that 80% of the carbon emitted from city)

Biophilia refers a hypothetical human tendency to interact or be closely associated with other forms of life in nature.

Interpretation of writing one's own result where one writes down analytically and there one would show the cause and effect relation and cognitive factors.

