



POWER UP YOUR SKILLS PRIOR TO RESEARCH: CONCEPTUALIZING RESEARCH METHODOLOGIES

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ABSTRACT

“Research is formalized curiosity,
it is poking and prying with a purpose.”

- Zora Neale Hurston

The right preparation and execution are essential for a successful research project. While there are many factors and explanations for why a research project is successful, choosing the proper research technique is one of the trickiest and most complicated choices. Choosing a research methodology to support your work and data collection techniques is essential since your study will determine the types of approaches you use. With reference to the details of how a research was carried out and how the data was processed, this section has to be begun in a logical sequence. It must be written such that it can be quickly accessed in the case. If you use the right research approach, you may gather the necessary data and achieve the study's objectives. In this paper, researchers go through the many research techniques that are out there and the criteria for choosing the best one.

INDEX TERMS: - Good Research, Research Methodologies, Quantitative, Qualitative.

INTRODUCTION

“What is research but
a blind date with knowledge?”

- Will Harvey

Methods are just procedures or instruments used to collect to decide on a study methodology. Analysis of all the investigation's techniques and methodologies is known as methodology. At the final stages of the research project, methods are used. At the early phase of the research process, methodologies are used. All research may be interpreted to have its heart in the methods area. In this part, queries like What have you done, What tools have you utilised in your research, etc., will be raised. You will be required to produce a research paper as part of your dissertation or thesis when you enrolled in college or university because it is an essential course of study. You will often need to do research on a wide range of technical, scientific, or social aspects of a phenomena when writing this academic paper, then summarize the findings. That is challenging. The work may be challenging or perhaps difficult if you have never written an academic paper before. The majority of individuals get stuck at the first step, choosing suitable research paper themes, because there are several issues that complicate the process. Some people can't finish the assignment by themselves. What poses challenges?

Research is a process that helps us learn new information, validate what we already know, and raises our awareness of concepts that are challenging to grasp in light of the material that is already available. A research paper is a comprehensive essay or piece of academic writing that includes the author's original study on any subject, together with an analysis and explanation of the findings. The research article needs to be organised, focused, clear, brief, and supported by evidence. There are several forms of research papers, therefore choosing the right one is an important responsibility. Always take into consideration your research paper themes, research methodologies, and data analysis techniques while selecting the best research paper format.

WHAT IS RESEARCH?

Research is an attitude of inquiry process that includes data gathering, analysis, and interpretation of that data. It is a technique for collecting information using research approaches. This is essentially scientific technique used in a systematic and scholarly way. Redman and Mory define research as a “systematized effort to gain new knowledge.

WHAT IS RESEARCH METHODOLOGY?

The basic steps or methods used to find, choose, process, and evaluate knowledge on a subject are known as research methodology. The methodology part of a research paper gives the reader the chance to assess the general validity and consistency of a study. The research method responds to two key inquiries: How were the data gathered or produced? How was it examined?

Regardless of the method of study (qualitative, quantitative, or mixed), each has a unique goal and strategy that aids in answering the research question. The nature of your research's goals, objectives, and research questions is therefore the crucial driver of the research approach you should choose.

The Research onion framework presented by Saunders et al. (2012)

The Layer of the Framework: -

- ❖ Research Philosophy
- ❖ Research Approach
- ❖ Methodology Choice
- ❖ Time Horizon
- ❖ Technique and Procedures.

CHARACTERISTICS OF RESEARCH

1. To obtain correct data, a systematic technique must be used. The process that establishes the target includes rules and procedures as a crucial component. In making observations or drawing conclusions, researchers must adhere to a code of ethics and behaviour.
2. Research employs both inductive and deductive techniques and is grounded on logical reasoning.
3. The information or knowledge obtained is based on current observations made in unaltered environments.
4. Every data is thoroughly analysed to ensure that there are no irregularities in the data.
5. Research paves the way for the development of fresh inquiries. Current data aids in expanding research prospects.
6. Analysis is a key component of research. It utilises all of the information available to ensure that the inference is accurate.
7. One of the most crucial components of research is accuracy. The information gathered must be correct and genuine to its intended purpose. For instance, laboratories offer a regulated setting for data collection. Accuracy is determined by the tools or equipment employed, their calibrations, and the experiment's end result.

RESEARCH PROCESS

1. Formulating the research problem
2. Literature review
3. Hypothesis
4. Research design
5. Collection of data
6. Analysis of data
7. Hypothesis testing
8. Report writing

METHODS OF RESEARCH BASED ON RESEARCH APPROACHES

1. **QUALITATIVE RESEARCH/ MOTIVATION RESEARCH:** - In most cases, it is effective for studying human behaviour. This does not guarantee a successful outcome in totality. This study is connected to the phrase "may be." This research focuses on concepts like ideas, meanings, qualities, and symbols that are challenging or impossible to scientifically measure.

- Context- bound in nature.
- Subjective Assessment of attitude, behaviour and opinions.
- Its main purpose is to understand, feel and analysing the event.
- It cannot be graphed.
- It is exploratory in nature.
- The qualitative approach looks at the why and how of decision-making rather than just the what, where, and when.
- Non-numeral and non- descriptive in nature.
- Inductive in nature.
- Explain logic and words

2. QUANTITATIVE RESEARCH/STATISTICS RESEARCH

The evaluation of phenomena in terms of quantity is the key focus of this study. It uses statistical, mathematical, or computational methods to conduct a systematic empirical research into any phenomenon. Creating and using mathematical models, theories, and/or hypotheses relating to phenomena is the goal of quantitative research.

- It is numerical, descriptive, statistical in nature.
- It gives the result in surety- In repetition the evidence or result is examined.
- Table and graphs are used in research.
- Unmistaken results.
- Based on "Who What Where and When".
- Deductive in nature.

3. **MIXED METHOD RESEARCH:** - This type of approach is the combination of both qualitative and quantitative methods where the data is a mixture of variables, words and images.

METHODS OF RESEARCH BASED ON THE OUTCOME OR APPLICATION

1. **FUNDAMENTAL RESEARCH / PURE/BASIC / EXPRORATORY RESEARCH:** - Basic research is research conducted with the intention of advancing human understanding. The goal is to overwhelm the unknowable facts; therefore, this is done. It is focused with developing new theories rather than put into practice.

For eg. Rubbing of stones together produce fire is new fact which generates theory. It gives a theory where in different situations the test is yet to be done which means this does not give full surety. This is why the fundamental Research is not Generalized to all studies as it is qualitative in nature. To understand in depth, we can take another example of Newton's Law of Gravity which is not applied in helium balloons.

- Sake of gaining Knowledge.
 - Used for constructing Theories and principles.
 - Includes study of natural phenomenon, pure mathematics as well as study of human behaviour.
 - Methods used are sampling, hypothesis making, laboratory.
 - Goes from specific to general.
 - Manipulation is possible where it has control over variables.
 - Qualitative Research/ Inductive.
 - Intellectual Curiosity.
 - Based on phrase: "Is it true?"
- **GROUNDING THEORY:** - This is basically a method of conducting pure research which is developed from data analysis rather than the other ways. This theory was given by Glaser and Strauss. It is conducted from grass root level where researcher has no idea regarding that before.

Stages of analysis: -

Code---Concept---Category---Theory.

2. **APPLIED RESEARCH / DECISIONED / FORMAL / TECHONOLOGICAL RESEARCH:** - It is also known as "need-based" research or practical research. The fundamental goal is to resolve the immediate issues at large on society, an organisation, community, company, or government agency is facing issues with. One type of applied research is the study of social, political, and economic developments that have negative repercussions in various industries. Secondary data are typically used in this kind of study. It is based on phrase " does it works". Eg. Marketing Research.

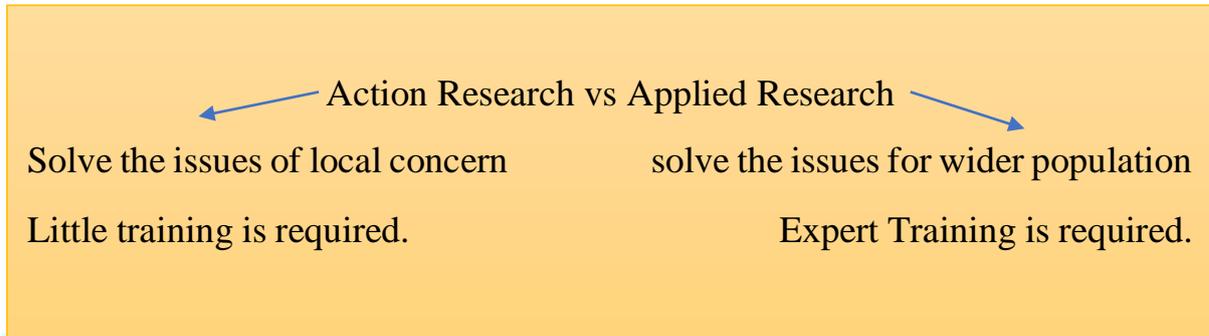
- Extension of fundamental research
- Deductive and quantitative in nature.
- Can be generalised to all context.

- Manipulation of variables

2.1 ACTION RESEARCH: - This is a type of applied research where research is done to improve the present situation. In 1944, Kurt Lewin created this research. Solve specific problems.

The cycle of action research:-

Plan----Act----Observe ----Reflect.



2.2 EVALUATION RESEARCH / EXPLANATORY: - This is a type of applied research where an assessment study is done to analyse the effectiveness of the social and economic programs.

For example: - GST, Pension schemes etc.

METHODS OF RESEARCH BASED ON ITS OBJECTIVES (GENERAL CLASSIFICATION)

1. **EXPLORATORY / PILOT STUDY:** - This is the method of research where the researcher has little knowledge or no previous knowledge. It is done to know the feasibility of any project. It is subjective in nature. The main aim of this research is to develop research questions. This creates only hints and does not give any result.

- It is qualitative in nature.
- The objective of this research is to develop the hypothesis rather than testing.
- No Generalization.
- Manipulation is possible.
- Discovery of ideas.
- Qualitative in nature.

2. **DESCRIPTIVE:** - This research is objective in nature which includes surveys and fact-findings. This does not create any theory but describes current state of affairs. This is quantitative in nature where variables are not meant to be manipulation.
- Based on phrase: - What is / what was.
 - Develop hypothesis
 - Deductive in nature.
 - It creates Generalization.

TYPES OF DESCRIPTIVE RESEARCH: -

- 2.1 **QUASI-EXPERIMENTAL RESEARCH:** - This type of research is done where experiment is done in scientific way where it is not possible to reach or do random experiment. This is not a pure experiment and comes under Descriptive research. The prefix "Quasi" denotes resemblance. Although a quasi-experimental design is distinct from an experimental one, they are comparable. The selection of a control group distinguishes the two. In this study, an independent variable is changed, but the participants are not chosen at random for each group. In situations where, random assignment is either unnecessary or irrelevant, quasi-research is applied.
- 2.2 **EX-POST-FACTO RESEARCH:** - In this research independent variable cannot be modified but it does not meet the conditions of experiments. This is quantitative in nature where there is no manipulation of variables. Eg. Mid-day meal.
3. **EXPERIMENTAL / CAUSAL:** - It is an inquiry into the problem which examines the impact of one variable on other. Students have been conducting scientific experiments since their school days, and the outcomes of these experiments establish and support the scientific laws and theorems. These tests are built on a solid base of experimental research methodologies. This method is quantitative in nature. Researchers can more clearly and transparently carry out their study aims with the use of an experimental research design.
4. **ANALYTICAL / HISTORICAL:** - This is the research where researcher has to use the facts or information which is already available and does critical evaluation. It explains why and how this event in past where control over variables and can be manipulated. It conveys context-bound generalisation because it is qualitative here hypothesis is optional. Eg. Postpartum of dead bodies.
5. **ETHNOGRAPHY:** - This research is beneficial in social research where researcher concentrates on the community and gaining knowledge from activities, habits, culture and customs. This is first hand or personal experience. It is interactive and culture based. Hypothesis is not mandatory. This is qualitative in nature where manipulation is possible.

6. **CASE STUDY:** - This type of research is more creative in nature which demonstrate the study in-depth. Under descriptive analysis this is quantitative in nature where under historical this is qualitative in nature. This is mainly inductive in nature.

METHODS OF RESEARCH BASED ON NUMBER OF CONTACTS

1. **CROSS-SECTIONAL:** - This looks at sample who differ on one important feature at a certain point.
2. **LONGITUDINAL:** - This is observational research in which data for the same people is collected repeatedly through time.

WHAT IS GOOD QUALITY RESEARCH?

1. The purpose must have been made clear.
2. Everyone should be able to understand the common ideas that are employed.
3. Detailed explanations of the research techniques are required.
4. Careful planning should go into the research design.
5. The researcher must disclose any potential flaws and their potential effects on the results.
6. Data analysis must be thorough enough to show significance.
7. The analysis techniques used should be appropriate.
8. Carefully examine the data's authenticity and dependability.
9. The researcher should be knowledgeable about research procedures, as well as smart and skilled.
10. A rule of conduct for behaviour while performing research is referred to as ethics in research. The organisation and its members, the researchers conducting the research, and the responders providing the essential data are all subject to ethical behaviour.

CONCLUSION

Research is a journey of discovery, a journey, an attitude, an experience, a way of critical thinking, and an activity motivated by an innate desire to learn, obtain new information, or find answers to a topic. If you need assistance, there are many resources available, even if you are not a student looking for information for a class or an academic assignment. In truth, a lot of university and high school libraries provide materials not only for the research of professors and students, but also for the general public. For access to specific databases or research guides, be sure to visit the library's website. If you want your knowledge to be shared, take the effort to create your story in a way that makes it interesting and straightforward for readers to comprehend the facts. Present your concept; spell out what it is, what it comprises, how it works, and how it addresses the problem, along with why it's exciting. Several writing styles could be employed in various research paper areas. Choose the alternative that most closely resembles your discipline. In order to acquire information and develop an outline for any writing assignment, whether it be for academic or artistic purposes, writers need to have strong research

skills. You may become competent in any subject area you need to write about by learning how to do structured and efficient research. For Ph.D students it is recommended to research based upon deductive nature.

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