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2. Types of Research Design: Perspective and Methodological Approaches

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Abstract:

The goal of this paper is to develop the research methodology using a variety of research approaches. The research methodology aids the researcher in discovering the study findings. The overall structure of the study and the data gathering techniques are thoroughly detailed in this chapter. There are three primary sections to it. The dissertation design is highlighted in the first section. The second section talks about how to acquire data in both qualitative and quantitative ways. The overall research framework is illustrated in the final section. Types of Research Design: Perspective and Methodological Approaches will be covered in this essay.

Keywords:

Research Design, Perspective, Methodological, Approaches, Result Findings, Quantitative, Data Collection, Analyze, Experimental Research, Case Study Research, Design Process, Evaluation, Reporting, Mixed Methods

2.1 Introduction:

The methodical, scientific process used to gather, analyze, and evaluate data in order to find answers to research questions or validate hypotheses is referred to as research methodology. Depending on the nature of the research question, the resources at their disposal, and the objectives of the study, researchers may choose from a variety of research methodology types. Quantitative research, qualitative research technique, mixed-method research, experimental research, and case study research are a few examples of common research methodology kinds. [1]

The goal of the research design is to offer a suitable framework for a study. The decision to be made regarding the research approach is very important since it affects how pertinent data for a study will be acquired; yet, the research design process comprises several interrelated considerations.

Organizational research challenges frequently impact study designs rather than the other way around. The tools to be used and how they will be applied are both chosen while developing a research endeavor.

In research design, you specify how to combine every component of the study into a coherent, logical structure. By doing this, you may be sure that your research will properly address the intended issue.

In essence, it establishes the framework for data gathering, analysis, and reporting. Remember that the research problem will determine the design you select.

2.2 Research Methods:

The method chosen by the researcher to gather, examine, and interpret data is known as a research methodology. There are three types of research methods: mixed, qualitative, and quantitative.

In quantitative research, numerical data are gathered and analyzed to characterize, explain, forecast, or control relevant occurrences. Numerical data processing is a challenging task that requires a systematic approach. Deductive reasoning is used in quantitative research. [2]

The goal of qualitative research is to better understand a particular phenomenon of interest by gathering, analyzing, and interpreting extensive narrative and visual evidence. Qualitative research aims to understand phenomena as they naturally occur by simultaneously examining a variety of its facets. Utilizing inductive reasoning, this strategy.

Through the use of both quantitative and qualitative data in a single study, mixed methods research integrates these two methodologies.

Research Design

The relationship and strength between quantitative and qualitative research approaches can be strengthened through the use of mixed methods research by the researcher. This makes it possible to comprehend the topic under study better.

Plans and procedures for conducting research are known as research approaches, and they cover everything from general hypotheses to specific techniques for gathering, analyzing, and interpreting data. There are a number of choices in this approach, and they don't all have to be made in the sequence I think they make sense and in which they are presented here.

Which method should be employed to study a subject is the main decision. This choice should be based on the researcher's philosophical presuppositions, the research design, and the specific data collecting, analysis, and interpretation techniques used in the study.

The type of study topic or issue being addressed, the researchers' own experiences, and the intended audiences all play a role in the choice of a research approach study.

Advancements have been made in three research methodologies:

(a) qualitative; (b) quantitative; and (c) mixed methods. Without a doubt, the three methods are not as distinct as they first seem. It's important to remember that qualitative and quantitative techniques are not polar opposites, inflexible classifications, or dichotomies. Instead, they stand for various points along a continuum. [3]

A method for investigating and comprehending the meaning that individuals or groups assign to a social or human situation is qualitative research. Inductively growing from specifics to broad themes, data analysis, data interpretation, and emergent questions and processes are all part of the research process. Data are often acquired in participant settings. The final report's structure is adaptable.

A method for testing objective hypotheses by looking at the relationship between variables is quantitative research. To enable statistical analysis of numbered data, these variables can be measured, often using instruments. The introduction, literature and theory, methodology, results, and commentary make up the predetermined format of the final written report.

An approach to study known as mixed methods research involves gathering both quantitative and qualitative data, integrating the two types of data, and employing unique designs that may include philosophical presumptions and theoretical frameworks. [4]

This type of study is predicated on the fundamental premise that combining qualitative and quantitative methods yields a better knowledge of a research problem than each method by itself.

Table 2.1: Research Approaches

Quantitative	Qualitative	Mixed Methods
• Experimental designs • Nonexperimental designs, such as surveys	• Narrative research • Phenomenology • Grounded theory • Ethnographies • Case study	• Convergent • Explanatory sequential • Exploratory sequential • Transformative, embedded, or multiphase

Table 2.2: Quantitative, Mixed, and Qualitative Methods:

Quantitative Methods	Mixed Methods	Qualitative Methods
Pre-determined	Both predetermined and emerging methods	Emerging methods
Instrument based questions	Both open- and closed-ended questions	Open-ended questions
Performance data, attitude data, observational data, and census data	Multiple forms of data drawing on all possibilities	Interview data, observation data, document data, and audiovisual data
Statistical analysis	Statistical and text analysis	Text and image analysis
Statistical interpretation	Across databases interpretation	Themes, patterns interpretation

A. Quantitative Approach:

Experimental strategy, pretest and posttest attitude measurements, and a postpositivist worldview In this case, the researcher verifies a theory by defining specific hypotheses and gathering information to confirm or deny the assumptions.

Research Design

Attitudes are evaluated both before and after an experimental treatment using an experimental methodology. The information is examined using statistical techniques and hypothesis testing after being collected on an attitude-measuring equipment. [5]

For most introductory-level research students, a quantitative method to research is likely the one they are most familiar with. The quantitative approach, which emerged from the natural sciences (such as chemistry and biology), is framed by the idea of realism, which holds that there is only one reality or truth that needs to be discovered. As a result, it's important to ask the "right" questions.

Furthermore, this viewpoint is outcome-oriented because it promotes observable causes and effects. Aggregate data is frequently utilized to uncover patterns and the "truth" about the topic being researched. The capacity to forecast the phenomenon determines true comprehension.

B. Qualitative Approach:

Constructivist worldview, ethnographic design, and behavior observation are used by the researcher to ascertain a phenomenon's meaning through the perspectives of participants in this setting. This entails locating a community that shares a culture and investigating how it evolves over time into a shared set of behavioral patterns (ethnography). The observation of participant behavior while they are participating in activities is one of the crucial components of data collection in this manner. The qualitative approach is the opposite of quantitative research methods. [6] The common consensus is that this is the quantitative approach's polar opposite. Phenomenologists, or researchers who focus on people, include qualitative researchers. Any study must take into account the participants' humanness, which includes their ideas, feelings, and experiences. The constructionist perspective holds that knowledge is made, not discovered, and that there are numerous realities based on one's perspective, as opposed to a realist perspective which suggests one reality or truth.

A researcher specifically wants to comprehend why, how, and who a phenomena relates to. Since these characteristics involve a person's thoughts, feelings, and experiences, they are typically impossible to observe.

Most crucially, they are determined by how they see those things, not by how an outside researcher sees them. As a result, unlike with the quantitative approach, there is no such thing as a neutral or impartial outsider.

C. Mixed Methods Approach:

Using a pragmatic worldview, the researcher bases the design of the study on the presumption that collecting a variety of data types is the most effective way to provide a more comprehensive understanding of a research problem than either quantitative or qualitative data alone.

Table 2.3: Types of Approaches

Tend to or Typically	Qualitative Approaches	Quantitative Approaches	Mixed Methods Approaches	
Use these philosophical assumptions	Constructivist/ transformative knowledge claims	Post-positivist knowledge claims	Pragmatic knowledge claims	
Employ these strategies of inquiry	Phenomenology, grounded theory, ethnography, case study, and narrative	Surveys and experiments	Sequential, concurrent, and transformative	
Employ these methods	Open-ended questions, emerging approaches, text or image data	Closed-ended questions, predetermined approaches, numeric data	Both open- and closed-ended questions, both emerging and predetermined approaches, and both quantitative and qualitative data and analysis	*Use these practices of research as the researcher*

The research methodology is a strategy and process that progresses from general hypotheses to specific techniques for gathering, analyzing, and interpreting data. Therefore, it is determined by the type of research problem being addressed.

The research strategy is basically split into two types [7]:

- The approach of data collection and

- The approach of data analysis or reasoning.

Types of research approach for data collection:

- Focuses on a single concept or phenomenon
- Brings personal values into the study
- Studies the context or setting of participants
- Validates the accuracy of findings
- Makes interpretations of the data
- Collaborates with the participants
- Tests or verifies theories or explanations
- Identifies variables to study
- Relates variables in questions or hypotheses
- Uses standards of validity and reliability
- Observes and measure information numerically
- Uses unbiased approaches
- Employs statistical procedures
- Collects both quantitative and qualitative data
- Integrates the data at different stages of inquiry
- Presents visual pictures of the procedures in the study
- Employs the practices of both qualitative and quantitative research

2.3 Research Perspectives:

Data collection is necessary for social science research in order to comprehend a phenomenon. Depending on the level of prior knowledge in the field, this can be accomplished in a variety of methods. The researcher may.

- Look into a little-known problem. Exploratory research is conducted when a researcher has an idea or has noticed something and wants to learn more about it.
- Make connections between concepts to comprehend the connections between various parts of a problem, i.e., to explain what is happening (explanatory research).

- Provide a more thorough explanation of what is occurring and deepen the original comprehension (explanatory or descriptive research). [8]

Exploratory research is frequently conducted through observation as well as other techniques that allow the researcher to obtain initial data, such as interviews or questionnaires. Contrarily, explanatory research typically investigates theories regarding cause-and-effect connections. The statements that the researcher will test during the research are known as hypotheses.

The difference between inductive and deductive research is related to the difference between exploratory and explanatory research. Inductive methods are more common in exploratory research than deductive methods in explanation-based studies. Although this isn't usually the case, we won't discuss the exceptions here for the sake of simplicity.

A descriptive study could assist an explanatory or exploratory investigation. Descriptive research is insufficient for an academic project on its own. The goal of academic study is to advance our existing understanding. [9]

The researcher's point of view also depends on whether they think there is an objective universe that can be known objectively; for instance, profit can be seen as an objective indicator of how well a company is doing. Alternately, the researcher can think that terms like "culture," "motivation," "leadership," and "performance" are the products of human categorization of the universe and that their "meaning" varies according to the situation.

Performance, for instance, can have varied meanings to many individuals. One possibility is that it alludes to a concrete indicator like sales numbers.

For another, it can entail having positive interactions with customers. This latter perspective contends that a researcher may only adopt a subjective viewpoint because the nature of these notions is a product of human activities.

In general, the term "subjective research" refers to the subjective experiences of research subjects as well as the fact that the perspective of the researcher is integrated into the research process rather than being completely distinct from it. [10]

2.4 Research Methodology:

This study combined primary and secondary sources with quantitative and qualitative research approaches. The analysis and findings from the quantitative data are supported by the qualitative data. Since the researcher used both qualitative and quantitative data types in the data analysis, the outcome is triangulated.

This section covered the study area, data sources, and sample methods. In plain English, research technique is utilized to provide a precise understanding of the purpose of the researcher's investigation. Research methodology creates the ideal platform for the researcher to map out the research work in relevance to make sound plans at the correct moment and advance the research effort. [11]

Additionally, research technique encourages the researcher to get involved and take an active role in the area of investigation. Most of the time, the purpose of the research and the research topic will vary depending on the goals and direction of the study, however this may be accomplished by using an appropriate technique.

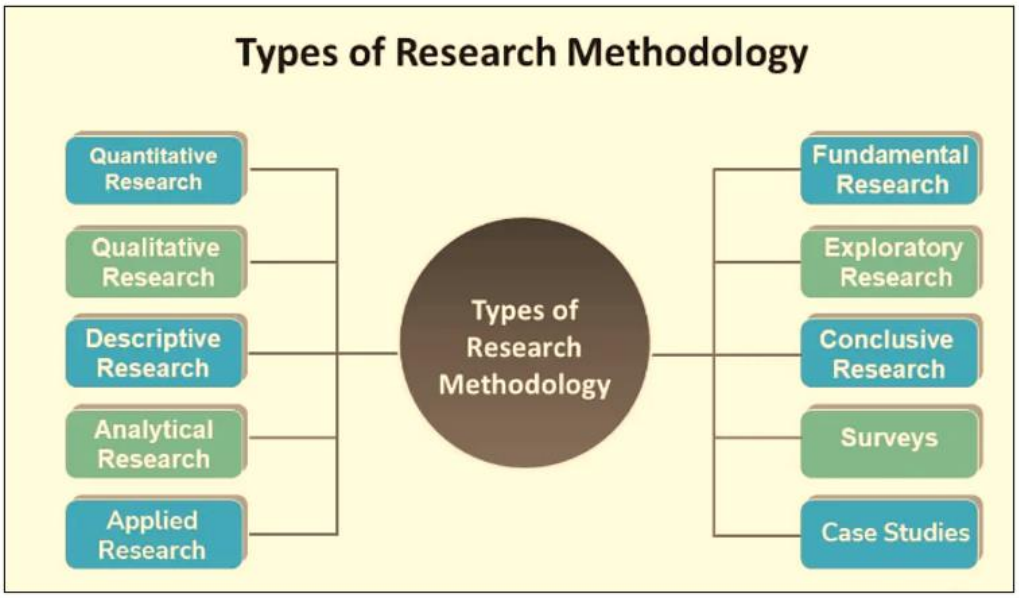

Figure 2.1: Types of Research Methodology

Characteristics of Good Research Design:

As a result, be certain that the study strategy you choose is extremely appropriate because the perfect decision will lead to outcomes that are pertinent.

The research design itself is made up of a number of sections, albeit its length and complexity might vary. Keep in mind that the research challenge will determine the type and components of the research strategy. These parts are:

- Purpose statement (the central research problem)
- Data collection and analysis
- Statistical method to analyze data
- Settings for the study
- Timeline
- Probable objections
- Validating the data [12]

2.5 Types of Research Design:

- **Collecting Descriptive Information:**

With care taken not to in any way affect people or events, descriptive research comprises qualitative research techniques that describe things as they actually occur. Social scientists utilize descriptive and open-ended survey research designs to examine human behavior, market analysts to examine consumer perceptions, and companies looking for information on consumer perceptions of specific brands. It is possible to determine which variables would benefit from quantitative testing using descriptive research.

- **Conducting Experimental Studies:**

From a scientific perspective, experimental research procedures are thought to be the most accurate type of research. It uses statistical analysis to try to numerically support or refute a theory, and is typically used in the physical sciences.

Due to the rigorous structure of this design, objections against the correctness of the results are significantly diminished because results can be statistically examined, repeated, and validated by other researchers.

- **Incorporating Quasi-Experimental Design:**

Quasi-experimental research methods, which are popular in the social sciences and psychology, lack a control group, which makes accurate statistical analysis challenging. However, the data produced by these experiments may be helpful in identifying broad trends. They are useful for gaining an overall picture that can be followed by a quantitative analysis or a case study that focuses on the underlying causes of the produced outcomes.

Undertaking Historical Research:

Since a historical research plan takes into account elements like origins, growth, theories, and important figures, it can be used in any subject of study. It can gather historical data that is both quantitative and qualitative. Primary sources, or first-person accounts, are the ones that historians regard the most. These include eyewitness stories, personal diaries, and oral history interviews and recordings.

- **Making Field Observations:**

For ethical reasons, observational research compares people in circumstances where the researcher has minimal direct control over the experiment. For instance, it would be unethical to ask a group of otherwise healthy individuals to smoke for 20 years in order to compare them with the control group of non-smokers when comparing the life expectancy of smokers and non-smokers.

2.6 Examining a Case Study:

A case study is a type of qualitative research that focuses on a specific issue rather than conducting a general statistical survey. It concentrates a wide field of inquiry into a single instance. Scientific investigations constantly rely on factual facts to strengthen the body of evidence.

However, there are occasions when it may be necessary for researchers to gather subjective data because of limitations in obtaining objective data from study participants as well as the nature of the study's objectives. In these circumstances, qualitative and mixed method designs are important; the field is similar in the medical and related sciences. In medical and nursing research, the use of qualitative research designs and mixed-method techniques is on the rise. Contribution to the evidence-based pyramid is a crucial question when these study approaches are preferred. However, mixed techniques are used in a specific circumstance where researchers need to evaluate study participants' perspectives, opinions, and outlooks on particular occurrences. Since the process of gathering data on subjective views, opinions, and beliefs is so complicated, potential information may be overlooked during the study.

Approaches to Research:

The area of social work, which focuses on families and individuals, will benefit more from qualitative study than it will from quantitative research into the processes of an organic chemical reaction. While some research benefits from one of the two ways, some research benefits more from a mixed strategy since it produces deeper insight. In actuality, there are some significant similarities between qualitative and quantitative research methods. The steps of the scientific process are generally followed by every sort of research, specifically:

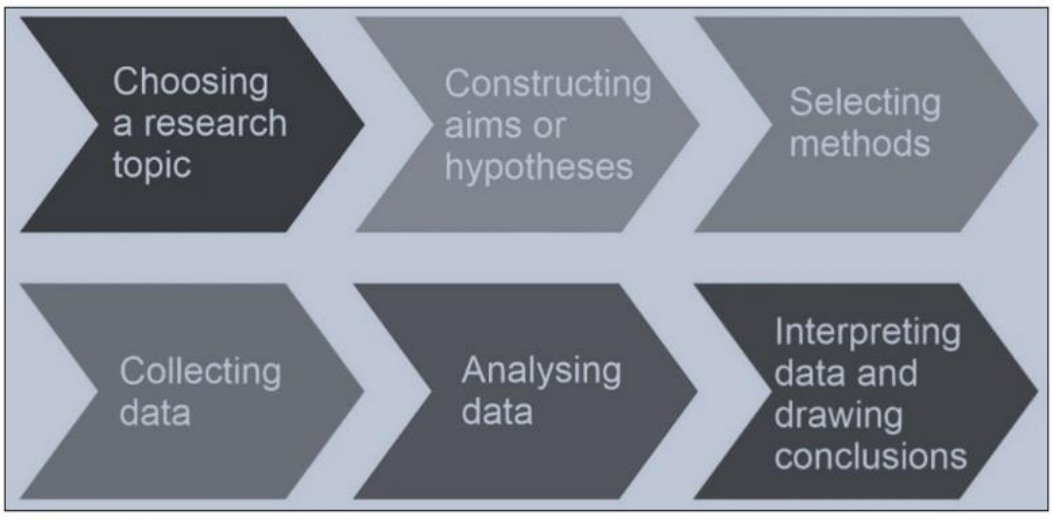

Figure 2.2: Types of Research

Research Design

Each strategy starts with a hypothesis based on a value judgment or on qualitative reasoning. Both inductive and deductive reasoning skills can be used to apply or translate these judgments into quantitative terms. Both can be extremely extensive, but qualitative research has more latitude in terms of how much detail it provides. [13]

2.7 Conclusion:

It's crucial to keep in mind that your study's design is outlined in the research design. This plan will lay all the required groundwork for the study and produce more fruitful findings. Write down all the discussion topics, goals, and participants in the audience. Understanding various research perspectives, the topics that need to be taken into account when planning the project (ethics, research design, research strategy, and research methodology) have been discussed, as well as the various perspectives (subjective/objective and interpretivist/ positivist) that a researcher can take in investigating a problem.

The procedures and data sources for data collecting were employed. The whole research methodologies and framework, including all the parameters, are specified throughout the study process, from problem creation to problem validation. For researchers, it has laid some groundwork for how study technique is designed and structured.

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