

TYPES OF RESEARCH

Types of research can be classified from three different perspectives:

1. Application of the findings of the research study
2. Objectives of the study
3. Mode of enquiry used in conducting the study

The classification of a study on the basis of these three perspectives is not mutually exclusive; that is, a research study classified from the viewpoint of application can be classified from the perspectives of objectives and enquiry mode.

1. Types of research: Application perspective

If you examine a research from the perspective of its application, you can have two broad categories:

- a. Pure research:** This kind of research is academic in nature and is undertaken in order to gain knowledge about phenomena that may or may not have applications in the near future, and to develop new techniques and procedures that form the body of research methodology.

Pure research, also referred to as theoretical or basic research, focuses on generating knowledge, regardless of its practical application. Here, data collection is used to generate new general concepts for a better understanding of a particular field or to answer a theoretical research question.

Results of this kind are usually oriented towards the formulation of theories and are usually based on documentary analysis, the development of mathematical formulas and the reflection of high-level researchers.

- b. Applied research:** Applied research is a type of examination looking to find practical solutions for existing problems. These can include challenges in the workplace, education and society. This research type uses empirical methodologies, such as experiments, to collect further data in an area of study. Findings are applicable and usually implemented upon completion of a study. Applied research focuses on

answering one specific question for a client or sponsor. It's a type of research method for applying natural sciences to real life to improve the human condition.

Applied research draws on theory to generate practical scientific knowledge, and its use is very common in engineering, computer science and medicine. Most of the research in social sciences is applied. In other words, the research techniques, procedures and methods that form the body of research methodology are applied.

Note: Applied research is usually based on knowledge or results obtained through theoretical research.

How is Basic Research Different from Applied Research?

- **Definition**

Applied research is a type of research that is concerned with solving practical problems using scientific methods while basic research is a type of research that is concerned with the expansion of knowledge.

- **Nature**

Basic research generates new theories or improves on existing theories hence, it is theoretical in nature. On the other hand, applied research creates practical solutions to specific problems hence, it is practical in nature.

- **Focus**

Basic research is knowledge-specific while applied research is solution-specific.

- **Research Purpose**

The purpose of basic research is to improve on existing knowledge or to discover new knowledge while the purpose of applied research is to solve specific problems.

- **Scope**

The scope of basic research is universal while applied research is limited in nature. This means that while applied research addresses a specific problem and is limited to the problem which it addresses, basic research explores multiple dimensions of various fields.

- Basic research is primarily explanatory while applied research is descriptive in nature.
- Basic research adopts an indirect approach to problem-solving while applied research adopts a direct approach to problem solving.
- In basic research, generalizations are common while in applied research, specific problems are investigated without the aim of generalizations.

2. Types of research: Objectives perspective

If you examine a research study from the perspective of its objectives, it can be classified as:

- a. Descriptive:** A research study classified as a descriptive study attempts to describe systematically a situation, problem, phenomenon, service or programme, or provide information about the living conditions of a community, or describe attitudes towards an issue.

The primary objective of descriptive research is to define the characteristics of a particular phenomenon without necessarily investigating the causes that produce it.

In this type of research, the researcher must take particular care not to intervene in the observed object or phenomenon, as its behaviour may change if an external factor is involved.

The methods that can be used in the descriptive research are:

- The case-study method: case study research involves an in-depth study of an individual or group of individuals;
- The survey method: in survey method research, participants answer questions administered through questionnaire or interviews. In order for the survey to be both valid and reliable, it is important that the questions are constructed properly;
- The observational method: it can be naturalistic observation or laboratory observation.

b. Correlational research: The main emphasis in a correlational study is to discover or establish the existence of a relationship/ association/ interdependence between two or more variables or more aspects of a situation. In other words, it determines whether and to what degree a relationship exists between two or more variables (quantifiable but nothing is manipulated). The degree of the relationship is expressed as a coefficient of correlation.

The methods that can be used in the correlational research are:

- The observational method
- The survey method
- The archival method

c. Explanatory research: is the most common type of research method and is responsible for establishing cause-and-effect relationships that allow generalisations to be extended to similar realities. It is closely related to descriptive research, although it provides additional information about the observed object and its interactions with the environment.

This type of research can be conducted using:

- The Case study method
- The survey method
- The observational method

d. Exploratory research: it is study which is undertaken to explore an area where little is known or to investigate the possibilities of undertaking a particular research study. It is flexible and can answer what, who and why questions. It is usually carried out when a researcher wants to explore an area about which s/he has little or no knowledge. A small scale study is undertaken to decide if it is worth carrying out a detailed study.

Exploratory research is used for the preliminary investigation of a subject that is not yet well understood or sufficiently researched. It serves to establish a frame of reference and a hypothesis from which an in-depth study can be developed that will enable conclusive results to be generated.

Because exploratory research is based on the study of little-studied phenomena, it relies less on theory and more on the collection of data to identify patterns that explain these phenomena.

This type of research can be conducted using:

- The observational method
- The survey method
- The case study method

3. Types of research: Mode of enquiry perspective: from the point of view of the mode of enquiry perspective, there are two types of research:

a. Quantitative research (structured research): The main objective of this research is to quantify the variation and diversity in a phenomenon, situation or attitude.

Quantitative research study delves into a phenomena through quantitative data collection and using mathematical, statistical and computer-aided tools to measure them. This allows generalised conclusions to be projected over time.

Quantitative research is characterised by:

- **Using numbers:** numbers are powerful as attested by the discipline of mathematics. Yet, they are also rather powerless in themselves because in research context they do not mean anything without 'backing'. They are faceless and meaningless unless we specify exactly the category we use specific number for, and also the different values within the variable.
- **A priori categorization.** Because the use of numbers already dominates the data collection phase, the work requires to specify the categories and values need to be done prior the actual study.
- **Variables rather than cases.** Quantitative research is less interested in the common features of groups of people. It is centred around the study of variables that capture these common features and which are quantified by counting, scaling or assigning values to categorical data. All the various quantitative methods are aimed at identifying the relationships between variables by measuring them and also manipulating them.

- **Statistics and the language of statistics.** Because of the close link of quantitative research and statistics, much terminology has become part of the quantitative vocabulary.

- **Quest for generalizability and universal laws.** Numbers, variables, standardized procedures, statistics and scientific reasoning are all part of the ultimate quantitative quest for facts that are generalizable beyond the particular and add up wide-ranging, ideally universal laws.

b. Qualitative research (unstructured): A qualitative study describes the variation and diversity in a phenomenon, situation or attitude with a flexible approach so as to identify as much variation and diversity as possible.

While Quantitative research is based on the measurement of quantity or amount, and being applicable to phenomena that can be expressed in terms of quantity, Qualitative research is concerned with qualitative phenomenon, i.e., phenomena relating to or involving quality or kind.

This type of research aims at discovering the underlying motives and desires, using in depth interviews for the purpose. Other techniques of such research are word association tests, sentence completion tests, story completion tests and similar other projective techniques. Attitude or opinion research i.e., research designed to find out how people feel or what they think about a particular subject or institution is also qualitative research. Qualitative research is specially important in the behavioural sciences where the aim is to discover the underlying motives of human behaviour. Through such research we can analyse the various factors which motivate people to behave in a particular manner or which make people like or dislike a particular thing.

Some Other Types of Research: All other types of research are variations of one or more of the above stated approaches, based on either the purpose of research, or the time required to accomplish research, on the environment in which research is done, or on the basis of some other similar factor. Form the point of view of time, we can think of research either as *one-time research or longitudinal research*. In the former case the research is confined to a single time-period, whereas in the latter case the research is carried on over several time-periods. Research can be *field-setting research or laboratory research or*

simulation research, depending upon the environment in which it is to be carried out. Research can as well be understood as *clinical or diagnostic research*. Such research follow case-study methods or indepth approaches to reach the basic causal relations. Such studies usually go deep into the causes of things or events that interest us, using very small samples and very deep probing data gathering devices. The research may be *exploratory* or it may be formalized. The objective of exploratory research is the development of hypotheses rather than their testing, whereas formalized research studies are those with substantial structure and with specific hypotheses to be tested. **Historical research** is that which utilizes historical sources like documents, remains, etc. to study events or ideas of the past, including the philosophy of persons and groups at any remote point of time.

Research can also be classified as **conclusion-oriented and decision-oriented**. While doing conclusion oriented research, a researcher is free to pick up a problem, redesign the enquiry as he proceeds and is prepared to conceptualize as he wishes. Decision-oriented research is always for the need of a decision maker and the researcher in this case is not free to embark upon research according to his own inclination. Operations research is an example of decision oriented research since it is a scientific method of providing executive departments with a quantitative basis for decisions regarding operations under their control.

RESEARCH APPROACHES

The above description of the types of research brings to light the fact that there are two basic approaches to research, **quantitative approach and the qualitative approach**. The former involves the generation of data in quantitative form which can be subjected to rigorous quantitative analysis in a formal and rigid fashion.. *Qualitative approach* to research is concerned with subjective assessment of attitudes, opinions and behaviour. Research in such a situation is a function of researcher's insights and impressions. Such an approach to research generates results either in non-quantitative form or in the form which are not subjected to rigorous quantitative analysis.