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## **VARIOUS RESEARCH METHODS AND APPLICATIONS**

Research can be classified in many different ways on the basis of the methodology of research, the knowledge it creates, the user group, the research problem it investigates etc.

### Basic research

This research is conducted largely for the enhancement of knowledge and is research which does not have immediate commercial potential. The research is done for human welfare, animal welfare, and plant kingdom welfare. It is called basic, pure, fundamental research. The main motivation here is to expand man's knowledge, not to create or invent something. According to Travers, "Basic Research is designed to add to an organized body of scientific knowledge and does not necessarily produce results of immediate practical value." Such research is time and cost intensive (Example: An experimental research that may not be or will be helpful in human progress). It is used to solve a problem by adding to the field of application of discipline.

### Applied Research

Applied research is designed to solve practical problems of the modern world, rather than to acquire knowledge for knowledge's sake. The goal of applied research is to improve the human condition. It focuses on analysis and solving social and real-life problems. This research is generally conducted on a large scale basis and is expensive. As such, it is often conducted with the support of some financing agency like the national government, public corporation, world bank, UNICEF, UGC, Etc. According to Hunt, "applied research is an investigation for ways of using scientific knowledge to solve practical problems" for example:- improve agriculture crop production, treat or cure a specific disease, improve the energy efficiency of homes, offices, how can communication among workers in large companies be improved. This type of research can also be called Action Research.

### Problem oriented research

Research is done by industry apex body for sorting out problems faced by all the companies. Eg:- WTO does problem oriented research for developing countries, in India agriculture and processed food export development authority (APEDA) conduct regular research for the benefit of agri-industry.

- As the name indicates, Problem identifying researches are undertaken to know the exact nature of problem that is required to be solved.
- Here, one clarification is needed when we use the term 'Problem', it is not a problem in true sense. It is usually a decision making dilemma or it is a need to tackle a particular business situation.
- It could be a difficulty or an opportunity.

For e.g.:-Revenue of Mobile company has decreased by 25% in the last year. The cause of the problem can be any one of the following:

- Poor quality of the product.
- Lack of continuous availability.
- Not so effective advertising campaign.
- High price.
- Poor calibre / lack of motivation in sales people/marketing team.
- Tough competition from imported brands.
- Depressed economic conditions

- In the same case, suppose the prime cause of the problem is poor advertising campaign & secondary cause is higher pricing. • To tackle the problem of poor advertising, we have to answer questions like, what can be the new advertising campaign, who can be the brand ambassador, which media, which channel, at what time & during which programme advertisements will be broadcast.

### Problem solving

This type of research is done by an individual company for the problem faced by it. Marketing research and market research are the applied research. For eg:- Videocon International conducts research to study customer satisfaction level, it will be problem solving research. In short, the main aim of problem solving research is to discover some solution for some pressing practical problem.

### Quantitative Research

This research is based on numeric figures or numbers. Quantitative research aim to measure the quantity or amount and compares it with past records and tries to project for future period. In social sciences, “quantitative research refers to the systematic empirical investigation of quantitative properties and phenomena and their relationships”. The objective of quantitative research is to develop and employ mathematical models, theories or hypothesis pertaining to phenomena.

The process of measurement is central to quantitative research because it provides fundamental connection between empirical observation and mathematical expression of quantitative relationships. Statistics is the most widely used branch of mathematics in quantitative research. Statistical methods are used extensively with in fields such as economics and commerce.

In sum, the research using the normative approach conducts why may be called quantitative research as the inferences from it are largely based on quantitative data. Moreover, objectivity is the primary guard so that the research may be replicated by others, if necessary. Quantitative can also be called Analytical Research.

### Qualitative Research

Qualitative research presents a non-quantitative type of analysis. Qualitative research is collecting, analyzing and interpreting data by observing what people do and say. Qualitative research refers to the meanings, definitions, characteristics, symbols, metaphors, and description of things. Qualitative research is much more subjective and uses very different methods of collecting information, mainly individual, in-depth interviews and focus groups.

The nature of this type of research is exploratory and open ended. Small number of people are interviewed in depth and or a relatively small number of focus groups are conducted. Qualitative research can be further classified in the following type.

I. Phenomenology:-a form of research in which the researcher attempts to understand how one or more individuals experience a phenomenon. Eg:-we might interview 20 victims of bhopal tragedy.

II. Ethnography:- this type of research focuses on describing the culture of a group of people. A culture is the shared attributes, values, norms, practices, language, and material things of a group of people. Eg:-the researcher might decide to go and live with the tribal in Andaman island and study the culture and the educational practices.

III. Case study:-is a form of qualitative research that is focused on providing a detailed account of one or more cases. Eg:-we may study a classroom that was given a new curriculum for technology use.

IV. Grounded theory:- it is an inductive type of research, based or grounded in the observations of data from which it was developed; it uses a variety of data sources, including quantitative data, review of records, interviews, observation and surveys

V. Historical research:-it allows one to discuss past and present events in the context of the present condition, and allows one to reflect and provide possible answers to current issues and problems. Eg:-the lending pattern of business in the 19th century.

In addition to the above, we also have the descriptive research. Fundamental research, of which this is based on establishing various theories

Also the research is classified into:

Descriptive research

Analytical research

Fundamental research

Conceptual research

Empirical research

One time research or longitudinal research

Field-setting research or laboratory research or simulation research

Clinical or diagnostic research

Exploratory research

Historical research

Conclusion oriented research

Case study research

Short term research