Introducing the Concept of Research

1. What is Research

The word “research” originated from the old French word “rechercher” meaning to search and search again. It literally implies repeating a search for something and implicitly assumes that the earlier search was not exhaustive and complete in the sense that there is still scope for improvement. Research in common parlance refers to a search for knowledge. It may be defined as a scientific and systematic search for pertinent information on a specific topic/area. In fact, research is an art of scientific investigation. The Advanced Learner’s Dictionary of Current English lays down the meaning of research as “a careful investigation or inquiry especially through search for new facts in any branch of knowledge”. Redman and Mory define research as “a systematized effort to gain new knowledge”. Some people consider research as a movement from known to unknown. It is actually a voyage of discovery.

Research is a scientific approach of answering a research question, solving a problem or generating new knowledge through a systematic and orderly collection, organization, and analysis of information with an ultimate goal of making the research useful in decision-making. Systematic research in any field of inquiry involves three basic operations:

1. Data collection: It refers to observing, measuring, and recording information.

2. Data analysis: It refers to arranging and organizing the collected data so that we may be able to

find out what their significance is and generalize about them.

3. Report writing: It is an inseparable part and a final outcome of a research study. Its purpose is to convey information contained in it to the readers or audience

A research becomes systematic when a researcher follows the scientific method. Research is systematic because it follows certain steps that are logical in order. These steps are:

 Understanding the nature of problem to be studied and identifying the related area of

knowledge.

 Reviewing literature to understand how others have approached or dealt with the problem.

 Collecting data in an organized and controlled manner so as to arrive at valid decisions.

 Analyzing data appropriate to the problem.

 Drawing conclusions and making generalizations.

2. Characteristics of Research

Research is a process through which we attempt to achieve, systematically and with the support of data, the answer to a question, the resolution of a problem, or a greater understanding of a phenomenon.

This process has eight distinct characteristics.

1. Originates with a question or problem.

2. Requires a clear articulation of a goal.

3. Follows a specific plan of procedure.

4. Usually divides the principal problem into more manageable sub-problems.

5. Is guided by the specific research problem, question, or hypothesis.

6. Accepts certain critical assumptions.

7. Requires the collection and interpretation of data in attempting to resolve the problem that

initiated the research.

8. Is by its nature, cyclical; or more exactly, helical.

3. What is a Scientific Method

For clear perception about research one should know the meaning of scientific method. Scientific method is the pursuit of truth as determined by logical considerations. The ideal of science is to achieve a systematic interrelation of facts. Scientific method attempts to achieve this ideal by experimentation, observation, logical arguments from accepted postulates and a combination of these

three in varying proportions. The scientific method is based on certain basic postulates which can be stated as follows. It…

- relies on empirical evidence,
- utilizes relevant concepts,
- is committed to only objective considerations,
- presupposes ethical neutrality,
- results into probabilistic predictions,
- is made known to all concerned through replication, and
- aims at formulating most general axioms.

Thus, scientific method implies an objective, logical and systematic method, i.e., a method free from personal bias or prejudice, a method to ascertain demonstrable qualities of a phenomenon capable of being verified, a method wherein the researcher is guided by the rules of logical reasoning, a method wherein the investigation proceeds in an orderly manner and a method that implies internal consistency.

1.2. Characteristics of Scientific and Nonscientific Method to Knowledge

Research	Non-scientific Method	Scientific Method
General Approach	Intuitive	Empirical
Observation	Casual, uncontrolled	Systematic, controlled
Reporting	Biased, subjective	Unbiased, objective
Concepts	Ambiguous, with surplus meanings	Clear definitions, operational specificity
Instruments	Inaccurate, imprecise	Accurate, precise
Measurement	Not valid or reliable	Valid and reliable
Hypotheses	Un-testable	Testable
Attitude	Uncritical, accepting	Critical, skeptical

4. CRITERIA OF A GOOD RESEARCH

Whatever the types of research works have been done, they all meet on the common ground of scientific method. Scientific research to satisfy the following criteria:

 The Purpose of the research should be clearly defined and common concepts be used.

 The Research procedure used should be described in sufficient detail to permit another researcher to repeat the research for further advancement.

 The Procedural design of the research should be carefully planned to yield results that are as objective as possible.

 Researchers should report with complete frankness, flaws in procedural design and estimate their effects upon the findings.

 The Analysis of data should be sufficiently adequate to reveal its significance and the methods of analysis used should be appropriate. The validity and reliability of the data should be checked carefully.

 Conclusions should be confined to those justified by the data of the research.

A good research has also the following qualities:

1. It is systematic: Research is structured with specified steps to be taken in a specified sequence in accordance with the well-defined set of rules. Systematic characteristic of the research does not rule out creative thinking but it certainly does reject the use of guessing and intuition in arriving at conclusions.

2. It is logical: Research is guided by the rules of logical reasoning and the logical process of induction and deduction are of great value in carrying out research. Induction is the process of reasoning from a part to the whole whereas deduction is the process of reasoning from some premise to a conclusion which follows from that very premise. In fact, logical reasoning makes research more meaningful in the context of decision making.

3. Good research is empirical: Research is related basically to one or more aspects of a real situation and deals with concrete data that provides a basis for external validity to research results.

4. Good research is replicable: Research results to be verified by replicating the study and thereby building a sound basis for decisions