

TOPIC- SCIENTIFIC METHOD & NON-SCITIFIC METHOD

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.

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,
- committed to only objective considerations,
- presupposes ethical neutrality,
- results into probabilistic predictions,
- 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.

Characteristics of Scientific and Non-Scientific Method

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