

An Introduction to Research Methods



Research Defined

Systematic investigation into a problem or situation, where the intention is to identify facts and/or opinions that will assist in solving the problem or dealing with the situation.

Research increases the knowledge. Every research must contribute to the total quantum of knowledge in the world.

Research enhances the effectiveness of the decisions in context.



What is Scientific Research?

The observation, identification, investigation, and theoretical explanation of a natural phenomenon.

Usually the ultimate goal is theory generation and verification.

A set of inter-related constructs and propositions that specify relations among variables to explain and predict phenomena.

Should be simple, consistent with observed relationships, tentative and verifiable.



Involves the principles and processes regarded as characteristic of or necessary for scientific investigation.

Process or approach to generating valid and trustworthy knowledge.

Applied research is research that seeks to answer a question in the real world and to solve a problem.

Basic research is research that fills in the knowledge we don't have; it tries to learn things that aren't always directly applicable or useful immediately.



Difference between Basic Research and Applied Research

BASIC research

- Desire to **expand knowledge**.
- Curiosity driven.
- Intended to answer **why, what** or **how** questions.
- Increase understanding of fundamental principles.
- Does **not** have immediate **commercial** objectives.
- It may not necessarily result in an invention or a solution to a practical problem.

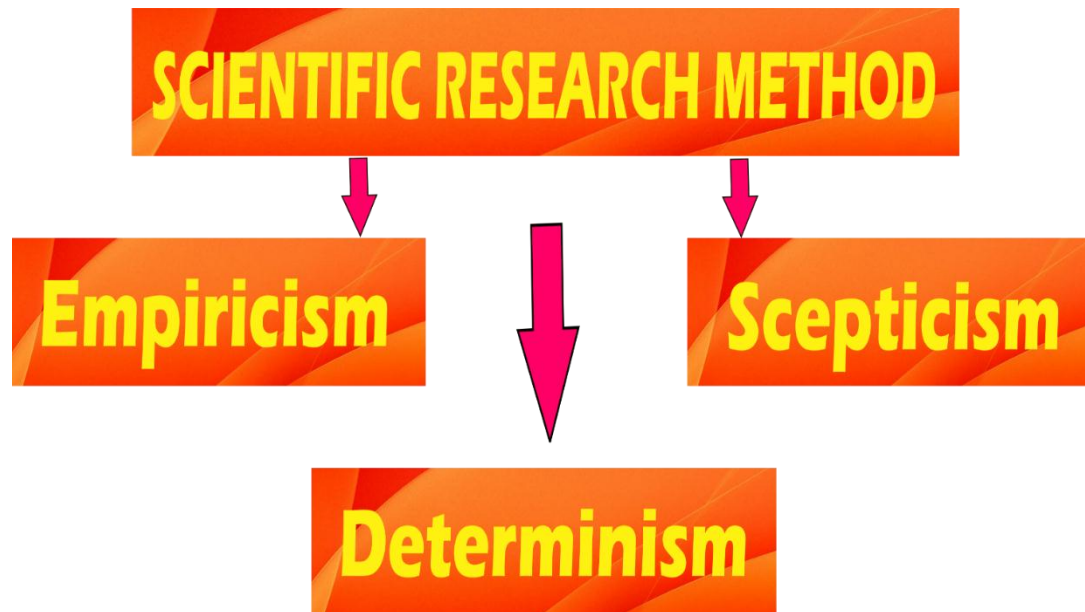
VS

APPLIED research

- New knowledge acquired has **specific commercial** objectives: products, procedures or services.
- Answer **specific questions** aimed at solving practical problems.



BASIC ELEMENTS



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BASIC ELEMENTS

Empiricism

The notion that enquiry is conducted through observation and knowledge verified through evidence.

Determinism

The notion that events occur according to regular laws and causes. The goal of research is to discover these.

Scepticism

The notion that any proposition is open to analysis and critique.



The Scientific Method - Pathway

- 1) Choose a problem(Question) to investigate.**
- 2) Identify a hypothesis related to the question.**
- 3) Make testable predictions in the hypothesis.**
- 4) Design an experiment to answer hypothesis.**
- 5) Collect data in experiment.**
- 6) Determine results and assess their validity.**
- 7) Determine if results support or refute your hypothesis.**

CHARACTERISTICS



APPROACHES

1. Deductive Research

2. Inductive Research





Thank you!