The methodology is the approach a researcher adopts to achieve their intended goal. Its function in social sciences is to explore the principles that govern social, educational, and human phenomena in general, leading to their occurrence. This enables the interpretation of such phenomena and the control of their outcomes.

Scientific Methodological Steps:

The primary goal of scientific research goes beyond merely describing a problem or phenomenon—it aims to understand and interpret it within the broader framework of organized relationships. One of the main scientific objectives is formulating generalizations that explain various phenomena, especially those general enough to become scientific laws or theories.

Scientific interpretation becomes more valuable when it helps predict outcomes—not as a form of supernatural guessing, but as a probabilistic expectation based on consistent trends.

The ultimate aim of science is "control," although this isn't always feasible. For example, in studying lunar eclipses, we can describe and predict them based on known factors, but we cannot control or prevent them as doing so would require manipulating astronomical orbits—an impossible feat for any scientist.

However, some social phenomena can be reasonably controlled—like juvenile delinquency or social unrest—through the application of scientific knowledge.

To achieve the three goals of science—explanation, prediction, and control—research

relies on the scientific method, known for its objectivity, precision, and empirical testing. It's important to understand that scientific facts are not absolute but are considered

highly reliable truths.

Scientific Method vs. Research Methodology:

The "scientific method" is the mental framework within which a researcher operates, while "research methodology" refers to the practical steps taken within that framework. Though the terms are linguistically similar, this distinction is made to clarify that the scientific method refers to theoretical organization and research methodology to its application.

A person struggling randomly with a problem without a structured mental approach may find a solution but doesn't qualify as a scientific researcher. In contrast, a scientific researcher addresses a problem through structured cognitive steps known as scientific thinking, distinguishing them from laypersons.

Steps in the Scientific Method:

1. **Problem Recognition: The researcher feels intrigued by a problem or question.**
2. **Hypothesis Formation: Possible answers or solutions (hypotheses) are proposed.**
3. **Hypothesis Testing: Hypotheses are tested to arrive at valid conclusions.**

These core steps are supplemented by various execution phases like identifying the nature of the problem, collecting relevant data, testing hypotheses, and applying generalizations. The process is iterative and flexible—steps may overlap or require revisiting.

Different research problems may require different methodologies, such as historical, descriptive, or case study methods, depending on the nature of the subject and the resources available.

Classification of Research Methods:

The word "method" (Arabic: منهج) is derived from a term meaning "path" or "way." In English, it originates from Greek and denotes inquiry or the pursuit of knowledge. Based on research goals, methods fall into two primary categories:

1. **Analytical (or inventive): Aimed at discovering unknown truths.**
2. **Demonstrative (or classificatory): Aimed at organizing known facts logically.**

Among the most used methods is the descriptive method, which seeks to identify and interpret the characteristics of a phenomenon, often through quantitative or qualitative approaches.

Research methods are often classified based on the type of cognitive operations involved:

1. **Deductive Method: Starts from general premises to reach specific conclusions, based on logic and reasoning.**

2. Inductive Method: Moves from specific observations to general laws, based on observation and experimentation.

3. Historical Method: Attempts to reconstruct past events to understand current issues.

Other classifications include:

- **Experimental Method: Involves controlled experimentation.**
- **Survey Method: Involves field data collection through observation, description, and analysis.**
- **Case Study Method: Focuses on in-depth examination of a single unit.**
- **Historical Research: Uses documents and cultural remnants as sources.**

Inductive Method:

Induction is a reasoning process in which one generalizes from specific observations to broader laws. There are two forms:

- **Incomplete Induction: Generalizing from an incomplete set of cases (prone to error).**
- **Complete Induction: Based on all known instances of a phenomenon.**

Induction is commonly used in both natural and social sciences and involves three stages:

1. **Observation & Experimentation: Identify similarities and differences among phenomena.**
2. **Hypothesis Formation: Develop explanatory hypotheses.**
3. **Verification: Test hypotheses against reality.**

Muslim Scholars and Induction:

While often attributed to Western thinkers like Bacon and Mill, the inductive method was extensively employed by Muslim scholars such as Ibn al-Haytham (optics), Ibn Nafis (medicine), Al-Battani and Al-Tusi (astronomy), and Ibn Khaldun (sociology).

Ibn al-Haytham emphasized combining induction and deduction, highlighting that the pursuit of truth should be free from biases. Ibn Khaldun applied induction to historical and societal analysis with remarkable skill.

Deductive Method:

Deduction is a top-down logical process that derives specific outcomes from general premises. Its validity depends on the logical consistency between premises and conclusion.

While some treat deduction as a dry, theoretical process, others consider it essential to scientific inquiry. For instance, in political science, a researcher might begin with a theory about political stability and test it across various nations.

Deduction is especially suited for:

- **Islamic legal studies: Applying divine texts to derive specific rulings.**
- **Normative sciences: Where laws or principles govern decision-making.**