

STEPS OF THE SCIENTIFIC METHOD

Step 1: Formulate a Hypothesis

The hypothesis is an educated guess about the phenomenon being studied. These are derived from theory, other research, and casual observation. To be testable, they need to be formulated precisely and the variables need to be clearly defined.

Step 2: Choose a Method and Design

The method determines HOW the data will be collected (e.g., surveys, interviews, observations). The design is the STRUCTURE of the study (e.g., WHO will be studied, how many participants are needed, and WHEN the data will be collected).

Step 3: Collect the Data

This is the actual EXECUTION of the study. It is important that the data be collected according to the design of the study. However, with some methods (e.g., observations), the design may need to be adjusted as the study unfolds.

Step 4: Analyze the Data and Draw Conclusions

At this step, the researcher takes the data he/she collected and converts the information into numbers so statistical analyses can be conducted and conclusions can be made. In general, there are two types of statistical analyses: descriptive statistics and inferential statistics. Both are needed for the 5th step.

Step 5: Report the Findings

For this step, the researchers write a concise summary of their study, the findings, and their conclusions to share with others. This can be done through submission to journals, conference presentations, and/or book chapters. It is at this step where scientific progress is achieved.