

Defining Hypotheses

5 Steps for Defining Hypotheses

1. Identify the Research Problem or Question

Overview

DESCRIPTION

Begin with a clear understanding of the research problem or question you aim to address.

EXAMPLE

If you want to study the relationship between sleep duration and cognitive performance, your research question might be, "Does sleep duration affect cognitive performance in adults?"

1. **Identify the Research Problem or Question**
2. **Conduct a Literature Review**
3. **Determine Variables**
4. **Formulate the Hypothesis**
5. **Refine and Specify the Hypothesis**

2. Conduct a Literature Review

DESCRIPTION

Review existing literature to understand what is already known about the topic and identify gaps or areas for further investigation.

EXAMPLE

Discover that previous studies suggest a correlation between sleep and cognitive performance, but results vary based on population and methodology.

3. Determine Variables

DESCRIPTION

Identify the independent and dependent variables for your study. The independent variable is what you manipulate, and the dependent variable is what you measure.

EXAMPLE

In the study on sleep and cognition, sleep duration is the independent variable, and cognitive performance is the dependent variable.

4. Formulate the Hypothesis

DESCRIPTION

Develop a clear and testable hypothesis that predicts the relationship between the variables.

EXAMPLE

"Increasing sleep duration will lead to improved cognitive performance in adults."



5. Refine and Specify the Hypothesis

DESCRIPTION

Ensure that the hypothesis is specific, measurable, and testable. Consider using null and alternative hypotheses.

EXAMPLE

Null hypothesis (H0): "Sleep duration has no effect on cognitive performance in adults." Alternative hypothesis (H1): "Sleep duration positively affects cognitive performance in adults."

5 Tips for Defining Hypotheses

Make It Clear and Concise

Ensure the hypothesis is straightforward and free of ambiguity

Ensure It Is Testable and Measurable

The hypothesis should be framed so that it can be tested through experimentation or observation.

Be Open to Revising the Hypothesis

Be flexible and willing to adjust your hypothesis based on preliminary findings or feedback.

Base It on Existing Theory and Research

Ground your hypothesis in established theories or empirical evidence to lend credibility.

Consider the Direction of the Hypothesis

Decide if your hypothesis is directional (predicting the direction of the effect) or non-directional (predicting an effect without specifying the direction).

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