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Research Terms: Quick Reference

Plain-English definitions for every research terms term on Shrinktionary, in one printable sheet.

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Please read

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Bias

Also: Systematic error

In research, bias is a systematic error that pushes a study's results in a particular direction. It distorts findings in ways that random chance doesn't.

Confidence Interval

Also: CI

A confidence interval is a range of values that likely contains the true result. It shows how precise a study's estimate is.

Correlation and Causation

Also: Correlation versus causation

Correlation means two things tend to move together. Causation means one actually makes the other happen. A correlation alone doesn't prove cause.

Double-Blind

Also: Double-blinded, Double-masked

Double-blind means neither the participants nor the researchers know who is getting the real treatment versus the comparison during a study. Hiding this reduces bias and makes results more trustworthy.

Effect Size

Also: Magnitude of effect

Effect size is a number that describes how large an effect is, not just whether it exists. It tells you whether a result is big enough to matter in real life.

Meta-Analysis

Also: Pooled analysis

A meta-analysis is a study that statistically combines the results of many separate studies on the same question. Pooling the data gives a clearer, more reliable estimate than any single study can on its own.

P-Value

Also: Probability value

A p-value is a statistic that estimates how likely a result would be if there were no real effect. It's widely misunderstood and often mistaken for proof.

Peer Review

Also: Refereeing, Peer-reviewed

Peer review is the process where independent experts evaluate a study before it's published. It's a quality check that catches many problems, but it doesn't guarantee a study is correct.

Placebo

Also: Sugar pill, Dummy treatment

A placebo is an inactive treatment, like a sugar pill, used as a comparison in research. Comparing a real treatment against a placebo helps show whether the treatment itself is what's working.

Randomized Controlled Trial

Also: RCT, Randomized clinical trial

A randomized controlled trial is a study that randomly assigns participants to a treatment group or a comparison group. That random assignment is what makes it the strongest design for showing whether a treatment actually causes an effect.

Statistical Significance

Also: significant result

Statistical significance means a result is unlikely to be due to chance alone. It does not tell you whether the result is large or important.

Systematic Review

Also: Evidence synthesis

A systematic review is a structured summary that gathers and appraises all the studies on a specific question. It sits near the top of the evidence hierarchy.

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