Causal Inference and Research Design

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For any study that makes — or critiques — a causal claim. Curated from the leadership-research methodology literature, where causal-identification standards are most fully developed. The principles transfer to HRD, teams, and organizational research broadly.

The core problem

Most organizational research is observational, so apparent effects may reflect **endogeneity** — omitted variables, selection bias, or reverse causality — rather than true cause and effect. These methods address that.

Causal identification strategies

- **Natural experiments** — Sieweke (2020); systematic review + quality criteria for leadership settings.
- **Difference-in-differences (DiD)** — Lee et al. (2025); DiD with matching; four validity conditions + decision tree.
- **Instrumental variables (IV)** — Bastardoz et al. (2023); 77-study review; three instrument conditions; common pitfalls.
- **Regression discontinuity, exogenous shocks** — Jacquart et al. (2024); three-dimensional shock taxonomy.
- **Propensity score methods** — Narita, Tena, & Detotto (2023); weighting tutorial.
- **Directed acyclic graphs (DAGs)** — Hünermund et al. (2025); choosing good vs. bad vs. unnecessary controls.

Measurement validity (where causal claims quietly fail)

- **Banks, Woznyj, & Mansfield (2023)** — only ~3% of leadership variables measure actual behavior.
- **Fischer, Dietz, & Antonakis (2024)** — positive-leadership constructs as "causal illusions."
- **Fischer et al. (2023)** — the ABC Framework; behavioral counterfactuals as a validity criterion.

Open science, rigor & replication

- **Antonakis (2017)** — the landmark reform editorial (the "five diseases"); registered reports + null results.
- **Wulff et al. (2023)** — catalog of 20+ common methodological mistakes.
- **Aguinis, Li, & Foo (2024)** — Research Transparency Index (RTI).
- **Gerpott, Briker, & Banks (2024)** — registered-report formats.

Theory that supports causal work

- **Dietz (2026)** — actionable-theory typology (Manipulate / Select / Observe); building manipulable causes.
- **Kuljanin et al. (2024)** — computational process theories (formalizing mechanisms as code).

Effect sizes & benchmarks

- **Amari et al. (2025)** — correlational benchmarks are invalid for causal effects; a benchmarking blueprint.

How to use this page

Use it as a **design-stage checklist** before collecting data, and as a **critique lens** when reviewing others' causal claims in your literature review.

Source: Leadership-WIKI "Causal Inference & Methodology" cluster (66 pages).

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