

Estimator and Missingness Decision Tree

Synthetic educational example | Mock defense preparation

This fictional doctoral persistence case demonstrates methodological coaching. It is synthetic evidence, not a client result or validation of the service. Simulation parameters are design targets; every table below uses achieved fitted results.

Start with measurement and the estimand

- Continuous indicators with justified measurement assumptions → consider ML or MLR; evaluate distribution, convergence, uncertainty and local fit.
- Ordered categories with sparse or skewed responses → consider ordinal CFA with WLSMV; inspect thresholds and category counts. Do not reuse ML missingness settings without checking estimator support.
- Nested or repeated observations → account for dependence with multilevel or appropriately justified cluster methods.

Then assess missingness

- Describe missingness and plausible observed predictors → include justified auxiliary variables or an imputation model compatible with the analysis.
- MAR plausible conditional on observed information → consider supported FIML or MI; observed data cannot prove MAR.
- MNAR plausible → conduct explicit sensitivity scenarios and state which conclusions change.

Finally defend uncertainty

Check convergence, identification, residual strain, precision, and model specific power. Avoid treating global fit thresholds as automatic approval. This synthetic example is continuous MLR; no ordinal comparison has been run.

Explore power planning at StatPower and DASS methodology resources.