

Sample Post Mock Defense Statistical Debrief Packet

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.

Case and priority actions

The synthetic sample includes 340 candidates. Before defense, explain the estimand, justify the estimator against the observed measurement scale, and distinguish association from causation. Rehearse uncertainty and limits before discussing model refinement.

Achieved model fit

Statistic	Value
chisq.scaled	55.083
df.scaled	60.000
pvalue.scaled	0.656
cfi.scaled	1.000
tli.scaled	1.003
rmsea.scaled	0.000
rmsea.ci.lower.scaled	0.000
rmsea.ci.upper.scaled	0.028
cfi.robust	1.000
tli.robust	1.006
rmsea.robust	0.000
srmr	0.028
df	60.000

Labels ending in scaled are scaled statistics. Labels ending in robust are robust statistics. They are distinct corrections and must not be substituted for each other. SRMR is reported separately. No ordinal WLSMV sensitivity model was fitted; its fit statistics are unavailable, rather than borrowed from this continuous MLR specification.

Factor specific reliability

factor	omega	alpha
A	0.841	0.841
B	0.867	0.866
P	0.904	0.884

Composite omega and Cronbach alpha are factor specific. Hierarchical omega is omitted because no general bifactor or second order factor is modeled. Alpha does not establish unidimensionality; missing item covariances also warrant sensitivity checks.

Structural estimates

Path	Beta	SE_std	B	SE	z	p
A ~ baseline	0.234	0.057	0.201	0.051	3.932	0.000
B ~ baseline	0.139	0.055	0.107	0.044	2.468	0.014
P ~ A	0.316	0.055	0.371	0.068	5.481	0.000
P ~ B	0.304	0.056	0.396	0.082	4.810	0.000
P ~ baseline	0.315	0.047	0.317	0.053	6.044	0.000

The standardized standard errors belong to the standardized estimates. Unstandardized B, SE, z and p appear in separate columns. This observational structural model does not identify causal effects.

Local strain screening

Indicator1	Indicator2	Residual	Residual_z
b1	a2	0.141	3.904

Factor	A	B	P
A	1.000	0.399	0.511
B	0.399	1.000	0.474
P	0.511	0.474	1.000

Absolute residual correlations above .10, absolute residual z above 2.58, and latent correlations above .85 are contextual screening guides, not rigid pass or fail rules. Revisit wording, theory, and measurement before freeing parameters. Modification indices alone are not a defensible model revision strategy.

Defending missing data assumptions

Committee: How can you defend FIML estimation if you have not proven your data are MAR?

Candidate: MAR cannot generally be distinguished from MNAR using observed data alone. Here the simulation deliberately conditions missingness on observed baseline. In my real study I would justify predictors of missingness, include defensible auxiliary variables, and assess MNAR sensitivity rather than claim MAR is proven. Little's MCAR test and descriptive comparisons cannot prove MAR. This example includes baseline in the joint model using lavaan FIML with `missing = fiml.x` and `fixed.x = FALSE`. Multiple imputation may be preferable when auxiliary structure or the downstream model requires it.

Coaching and boundaries

Prioritize estimator justification and missingness sensitivity, then residual interpretation. Continuous MLR is not automatically appropriate for sparse ordinal items; compare a justified ordinal model when relevant. Explain why a sample of this size does not itself demonstrate sufficient power. Plan model specific Monte Carlo power and precision scenarios. A debrief supports preparation; institutional committee decisions remain outside our control.