

AMOS-Style Maximum-Likelihood SEM Diagnostics

Standalone verified Python analysis

Test: AMOS-Style Maximum-Likelihood SEM Diagnostics

Design: Covariance-ML fit with standardized residual and modification-priority diagnostics.

Variables: G1, G2, G3, famrel, freetime, goout

Null hypothesis: The AMOS-style covariance model has exact fit and no large localized residuals.

Formula: ML fit plus standardized residual covariance diagnostics; largest residual flags
respecification priority.

Source rows: 649

Calculated metrics:

chi_square: 13.76397207713822

cfi: 0.9973982062491278

rmsea: 0.03334482463134081

maximum_standardized_residual: 0.11318873562601585

largest_residual_item_1: famrel

largest_residual_item_2: G2

Independent reference values:

chi_square: 13.76397207713822

cfi: 0.9973982062491278

rmsea: 0.03334482463134081

maximum_standardized_residual: 0.11318873562601585

largest_residual_item_1: famrel

largest_residual_item_2: G2

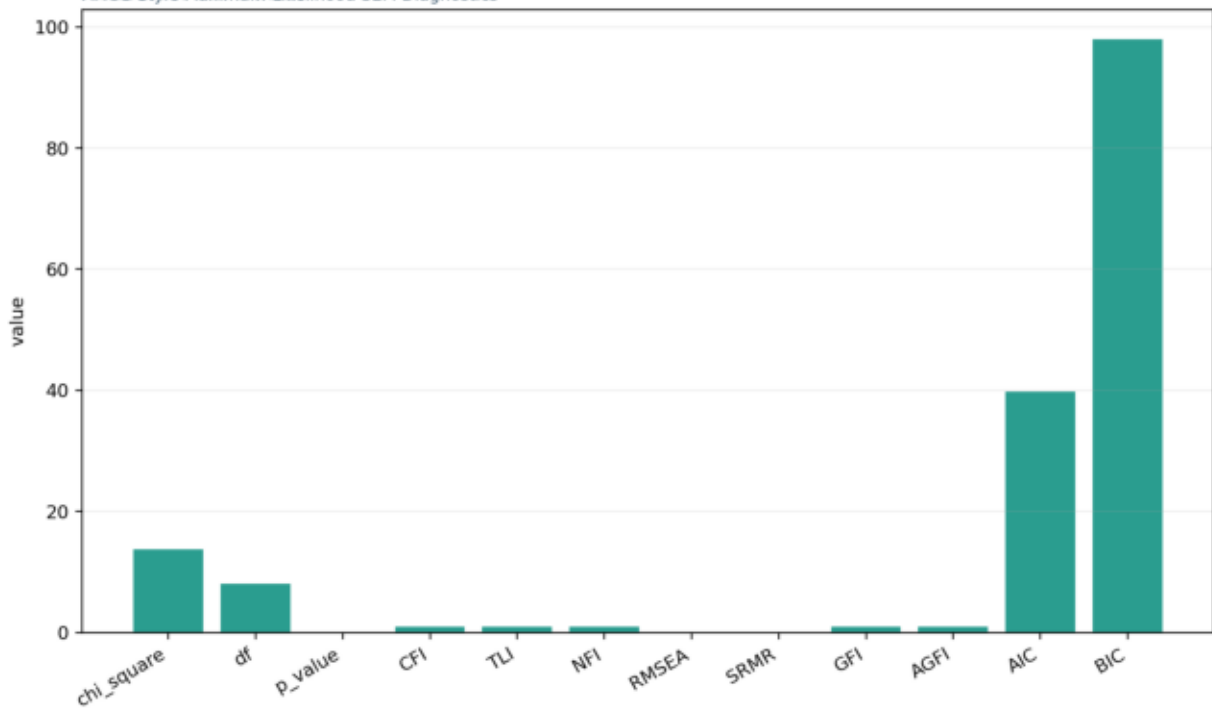
Interpretation:

The AMOS-style package emphasizes ML fit and localized standardized residual diagnostics.

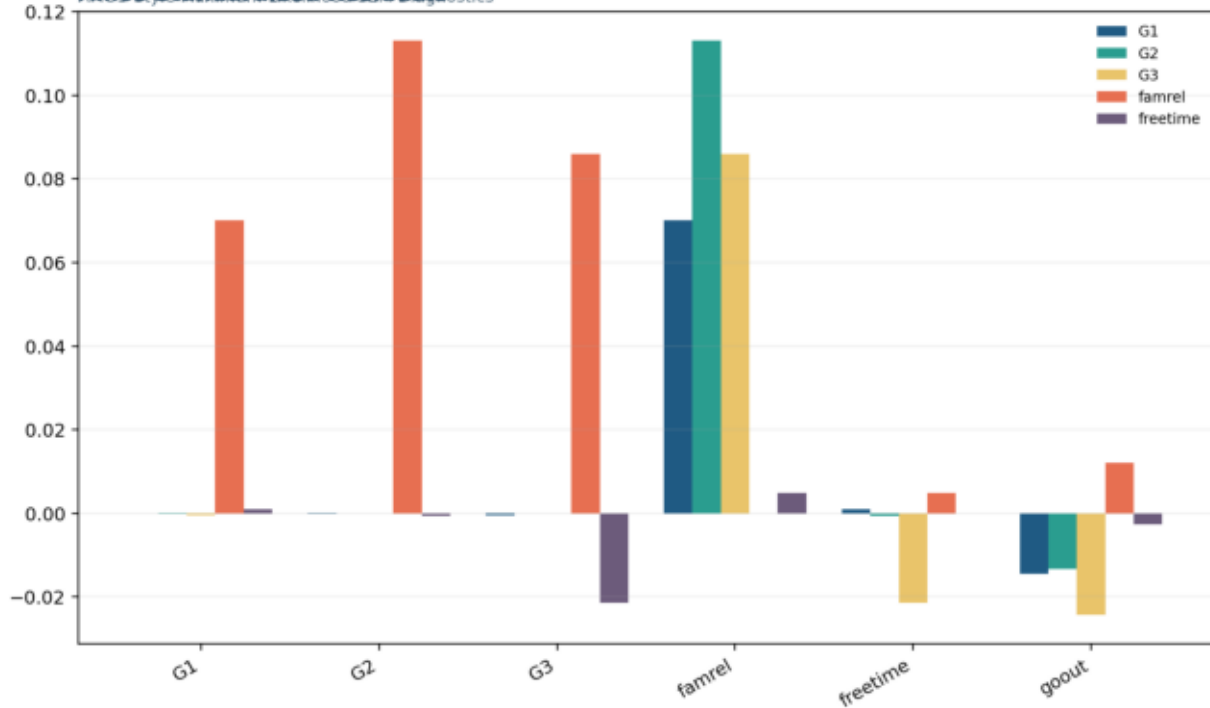
Largest residual is famrel with G2.

Amos ML Fit Panel

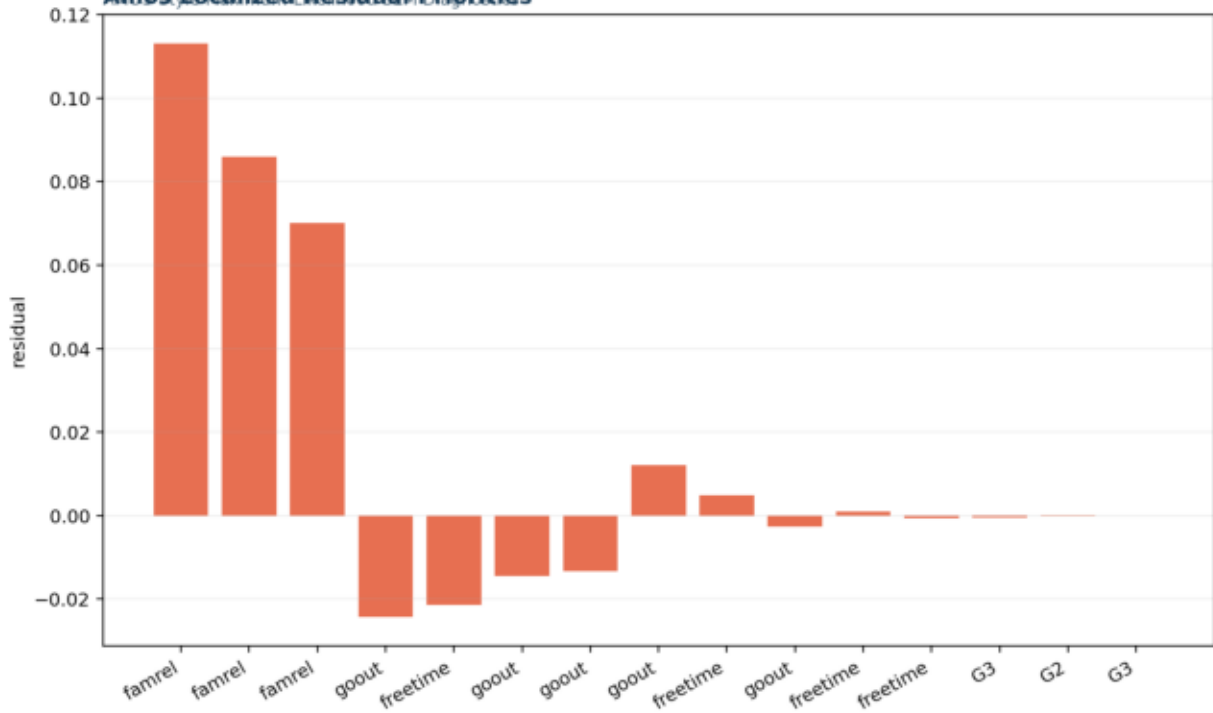
Maximum Likelihood SEM Diagnostics



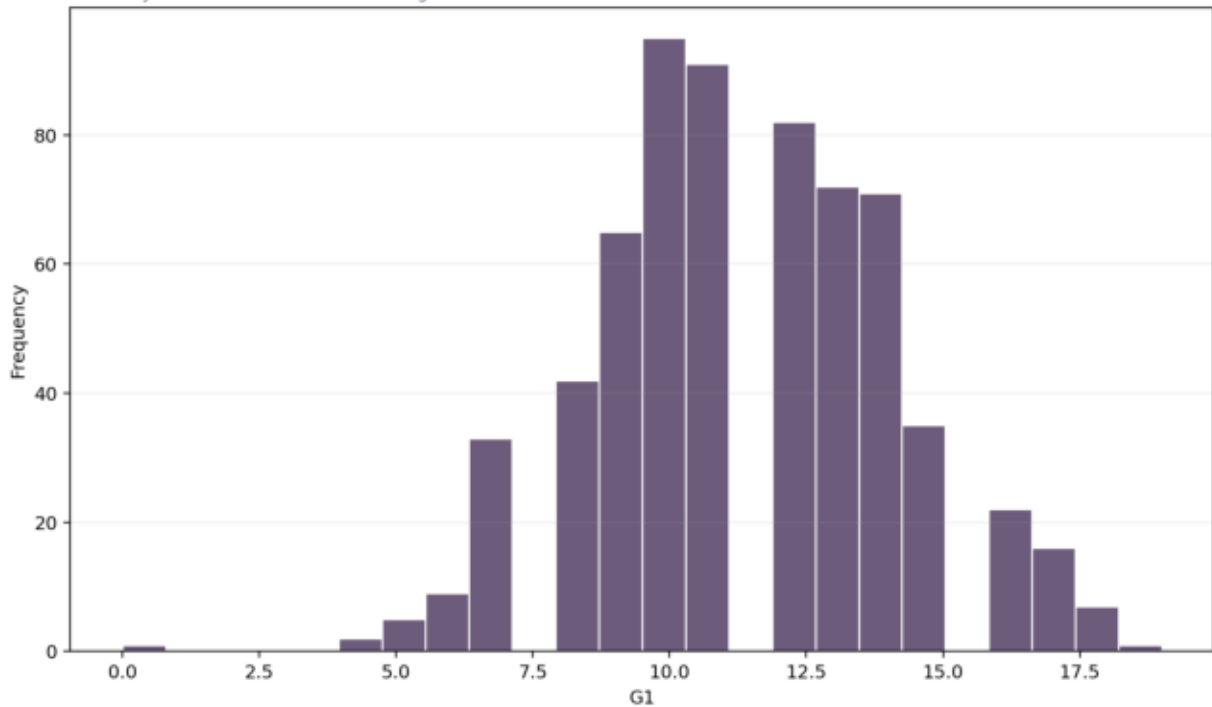
Amos Standardized Residuals



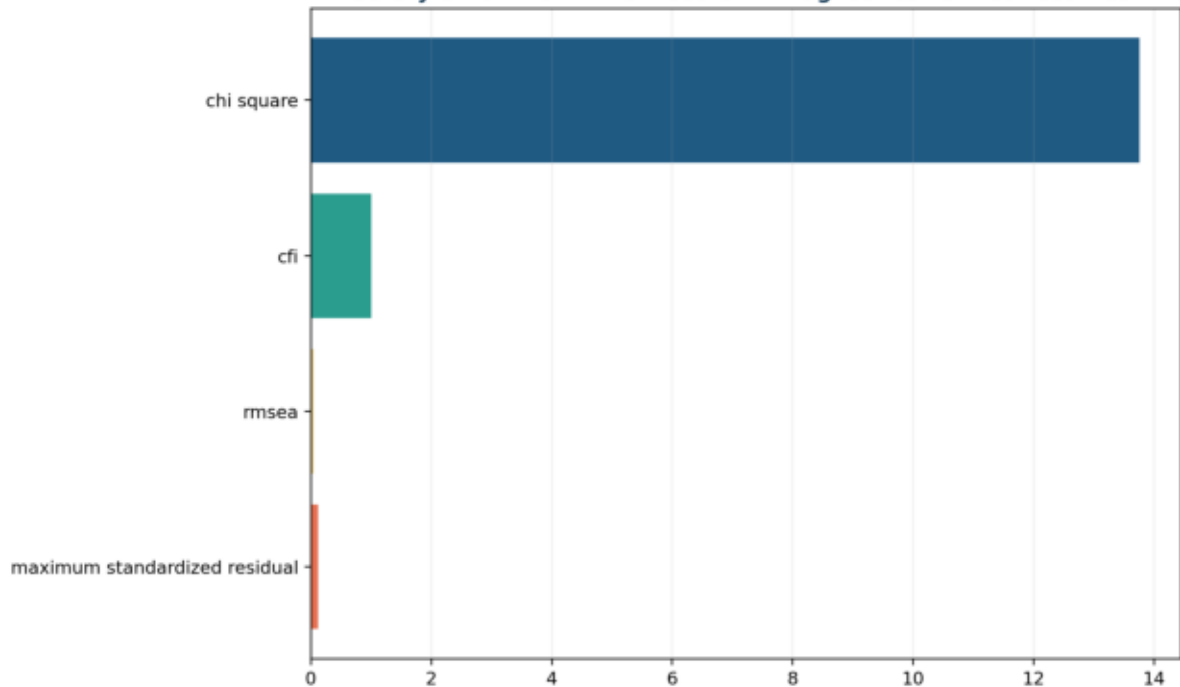
Amos Localized Residual Priorities



Source: G1 Distribution



AMOS-Style Maximum-Likelihood SEM Diagnostics verified result summary



Primary Metrics

metric	value
chi_square	13.764
cfi	0.997398
rmsea	0.0333448
maximum_standardized_residual	0.113189
largest_residual_item_1	famrel
largest_residual_item_2	G2

Amos MI Fit Panel

index	value
chi_square	13.764
df	8
p_value	0.0881286
CFI	0.997398
TLI	0.995122
NFI	0.993829
RMSEA	0.0333448
SRMR	0.0356632
GFI	0.992635
AGFI	0.980667
AIC	39.764
BIC	97.9446

Amos Standardized Residuals

item	G1	G2	G3	famrel	freetime	goout
G1	9.82827e-09	0.000158759	-0.000478078	0.0700397	0.000923277	-0.0144466
G2	0.000158759	6.59088e-08	-5.69385e-06	0.113189	-0.000677231	-0.0132537
G3	-0.000478078	-5.69385e-06	1.85794e-07	0.0859262	-0.0213567	-0.0243314
famrel	0.0700397	0.113189	0.0859262	9.66359e-09	0.00483956	0.0120124
freetime	0.000923277	-0.000677231	-0.0213567	0.00483956	6.20226e-08	-0.00260153
goout	-0.0144466	-0.0132537	-0.0243314	0.0120124	-0.00260153	8.58988e-08

Amos Localized Residual Priorities

item_1	item_2	residual
famrel	G2	0.113189
famrel	G3	0.0859262
famrel	G1	0.0700397
goout	G3	-0.0243314
freetime	G3	-0.0213567
goout	G1	-0.0144466
goout	G2	-0.0132537
goout	famrel	0.0120124
freetime	famrel	0.00483956
goout	freetime	-0.00260153
freetime	G1	0.000923277
freetime	G2	-0.000677231
G3	G1	-0.000478078
G2	G1	0.000158759
G3	G2	-5.69385e-06