

SPSS AMOS: Measurements of Goodness of fit

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The following table recapitulates the measures you can use to assess if your structural equation model fits well your data.

Kline (2005) suggests the most important measures to report are the following:

- 1) The model chi-square
- 2) RMSEA
- 3) CFI
- 4) SRMR

Measure	Name	Description	Good fit if:
X ²	Model Chi Square	Assess overall fit and the discrepancy between the sample and fitted covariance matrices. Sensitive to sample size. H0: The model fits perfectly.	p-value > 0.05
(A)GFI	(Adjusted) Goodness of Fit	GFI is the proportion of variance accounted for by the estimated population covariance. Analogous to R ² . AGFI favors parsimony.	GFI ≥ 0.95 AGFI ≥ 0.90
(N)NFI TLI	(Non)Normed Fit Index Tucker Lewis index	An NFI of .95, indicates the model of interest improves the fit by 95% relative to the null model. NNFI is preferable for smaller samples. Sometimes the NNFI is called the Tucker Lewis index (TLI)	NFI ≥ 0.95 NNFI ≥ 0.95
CFI	Comparative Fit Index	A revised form of NFI. Not very sensitive to sample size. Compares the fit of a target model to the fit of an independent, or null, model.	CFI ≥ .90
RMSEA	Root Mean Square Error of Approximation	A parsimony-adjusted index. Values closer to 0 represent a good fit.	RMSEA < 0.08
(S)RMR	(Standardized) Root Mean Square Residual	The square-root of the difference between the residuals of the sample covariance matrix and the hypothesized model. If items vary in range (i.e. some items are 1-5, others 1-7) then RMR is hard to interpret, better to use SRMR.	SRMR < 0.08
AVE (CFA only)	Average Value Explained	The average of the R ² s for items within a factor	AVE > .5

References:

Cornell University, Cornell Statistical Consultancy Unit, Stephen Parry.
Principles and Practice of Structural Equation Modeling. Rex B. Kline. 2005.