

Measurement model

```
m <- '
# Measurement model
t =~ t1 + t2 + t3
attitude =~ att1 + att2 + att3
et =~ et1 + et2 + et3
'

cfa <- lavaan::cfa(m, data=data)
summary(cfa, fit.measures = T, standardized = T)

lavaan 0.6.18.1972 ended normally after 44 iterations
```

Estimator	ML
Optimization method	NLMINB
Number of model parameters	21
Number of observations	996

Model Test User Model:

Test statistic	73.354
Degrees of freedom	24
P-value (Chi-square)	0.000

Model Test Baseline Model:

Test statistic	5452.701
Degrees of freedom	36
P-value	0.000

User Model versus Baseline Model:

Comparative Fit Index (CFI)	0.991
Tucker-Lewis Index (TLI)	0.986

Loglikelihood and Information Criteria:

Loglikelihood user model (H0)	-13294.945
Loglikelihood unrestricted model (H1)	NA
Akaike (AIC)	26631.891
Bayesian (BIC)	26734.870
Sample-size adjusted Bayesian (SABIC)	26668.173

Root Mean Square Error of Approximation:

RMSEA	0.045
90 Percent confidence interval - lower	0.034
90 Percent confidence interval - upper	0.057
P-value H ₀ : RMSEA ≤ 0.050	0.719
P-value H ₀ : RMSEA ≥ 0.080	0.000

Standardized Root Mean Square Residual:

SRMR	0.024
------	-------

Parameter Estimates:

Standard errors	Standard
Information	Expected
Information saturated (h1) model	Structured

Latent Variables:

	Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
t =~						
t1	1.000				1.029	0.841
t2	1.090	0.030	36.459	0.000	1.122	0.941

t3	0.878	0.032	27.262	0.000	0.904	0.747
attitude =~						
att1	1.000				1.348	0.921
att2	0.885	0.024	36.384	0.000	1.192	0.831
att3	0.993	0.024	41.270	0.000	1.338	0.886
et =~						
et1	1.000				1.167	0.688
et2	1.011	0.054	18.777	0.000	1.179	0.744
et3	1.238	0.066	18.853	0.000	1.444	0.818
Covariances:						
	Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
t ~~						
attitude	1.045	0.063	16.550	0.000	0.753	0.753
et	0.346	0.048	7.235	0.000	0.288	0.288
attitude ~~						
et	0.256	0.059	4.320	0.000	0.163	0.163
Variances:						
	Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
.t1	0.439	0.026	16.711	0.000	0.439	0.293
.t2	0.162	0.021	7.740	0.000	0.162	0.114
.t3	0.648	0.033	19.753	0.000	0.648	0.442
.att1	0.323	0.028	11.513	0.000	0.323	0.151
.att2	0.639	0.035	18.092	0.000	0.639	0.310
.att3	0.488	0.033	14.929	0.000	0.488	0.214
.et1	1.516	0.089	17.072	0.000	1.516	0.527
.et2	1.118	0.076	14.630	0.000	1.118	0.446
.et3	1.028	0.097	10.559	0.000	1.028	0.330
t	1.060	0.067	15.923	0.000	1.000	1.000
attitude	1.817	0.098	18.578	0.000	1.000	1.000
et	1.361	0.124	11.011	0.000	1.000	1.000

Reliability

`semTools::reliability(cfa,return.total=TRUE)`

	t	attitude	et	total
alpha	0.8829051	0.9081355	0.7975309	0.8388271
omega	0.8888684	0.9100087	0.8009998	0.9173399
omega2	0.8888684	0.9100087	0.8009998	0.9173399
omega3	0.8924351	0.9103073	0.8016170	0.9137356
avevar	0.7287837	0.7718546	0.5747425	0.6763242

Discriminant validity

`discriminantValidity(cfa, cutoff = 0.9, merge = FALSE, level = 0.95)`

	lhs	op	rhs	est	ci.lower	ci.upper	Df	AIC	BIC	Chisq	Chisq
diff											
1	t	~~	attitude	0.7602859	0.72355364	0.7970181	25	20613.45	20706.15	155.3441	
98.28152											
2	t	~~	et	0.2951267	0.21922186	0.3710316	25	21092.74	21185.44	634.6342	
577.57163											
3	attitude	~~	et	0.1747337	0.09445467	0.2550127	25	21178.52	21271.21	720.4066	
663.34410											
	RMSEA	Df	diff	Pr(>Chisq)							
1	0.3575385		1	3.629366e-23							
2	0.8704309		1	1.265617e-127							
3	0.9329310		1	2.799472e-146							

