

Two-Factor CFA Example in Mplus

Mplus VERSION 5
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INPUT INSTRUCTIONS

```
title: Self-esteem CFA Example--Two Factor Model;

! below I use a fixed format for the data file.
! I recommend using free format with tab-delimited data, however;
data: file=c:\jason\spsswin\arc\sel.dat; format=6f2.0;
      listwise=on;

variable: names = rnotworr rnumqal ramfailr ramable rnotprdr rfelpos;

! For now, use the following analysis commands to estimate using ML, non-robust,
! with no missing data estimation and no meanstructure (the default in most packages);

analysis: type=general; estimator=ml;
          model=nomeanstructure; information=expected;

model: selfneg by rnotworr ramfailr rnotprdr;
       selfpos by rnumqal ramable rfelpos;

output: stdyx ;
```

INPUT READING TERMINATED NORMALLY

Self-esteem CFA Example--Two Factor Model;

SUMMARY OF ANALYSIS

Number of groups	1
Number of observations	118
Number of dependent variables	6
Number of independent variables	0
Number of continuous latent variables	2

Observed dependent variables

Continuous					
RNOTWORR	RNUMQAL	RAMFAILR	RAMABLE	RNOTPRDR	RFELPOS

Continuous latent variables

SELFNEG	SELFPOS
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Estimator	ML
Information matrix	EXPECTED
Maximum number of iterations	1000
Convergence criterion	0.500D-04
Maximum number of steepest descent iterations	20

Input data file(s)

c:\jason\spsswin\arc\sel.dat

Input data format

(6F2.0)

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 THE MODEL ESTIMATION TERMINATED NORMALLY

TESTS OF MODEL FIT

Chi-Square Test of Model Fit

Value	19.393
Degrees of Freedom	8
P-Value	0.0129

Chi-Square Test of Model Fit for the Baseline Model

Value	131.265
Degrees of Freedom	15
P-Value	0.0000

CFI/TLI

CFI	0.902
TLI	0.816

Loglikelihood

H0 Value	-757.171
H1 Value	-747.474

Information Criteria

Number of Free Parameters	13
Akaike (AIC)	1540.341
Bayesian (BIC)	1576.360
Sample-Size Adjusted BIC	1535.264
(n* = (n + 2) / 24)	

RMSEA (Root Mean Square Error Of Approximation)

Estimate	0.110	
90 Percent C.I.	0.048	0.173
Probability RMSEA <= .05	0.056	

SRMR (Standardized Root Mean Square Residual)

Value	0.061
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MODEL RESULTS

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
SELFNEG BY				
RNOTWORR	1.000	0.000	999.000	999.000
RAMFAILR	0.967	0.220	4.403	0.000
RNOTPRDR	1.266	0.282	4.495	0.000
SELFPOS BY				
RNUMQAL	1.000	0.000	999.000	999.000
RAMABLE	0.417	0.311	1.341	0.180
RFELPOS	0.740	0.260	2.849	0.004
SELFPOS WITH				
SELFNEG	0.146	0.042	3.450	0.001

Variances

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SELFNEG	0.230	0.094	2.457	0.014
SELFPOS	0.103	0.051	2.017	0.044

Residual Variances

RNOTWORR	0.793	0.111	7.134	0.000
RNUMQAL	0.219	0.050	4.390	0.000
RAMFAILR	0.301	0.050	6.025	0.000
RAMABLE	0.859	0.113	7.626	0.000
RNOTPRDR	0.114	0.053	2.162	0.031
RFELPOS	0.484	0.067	7.207	0.000

STANDARDIZED MODEL RESULTS

STDYX Standardization

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
SELFNEG BY				
RNOTWORR	0.474	0.083	5.717	0.000
RAMFAILR	0.646	0.071	9.094	0.000
RNOTPRDR	0.875	0.063	13.783	0.000
SELFPOS BY				
RNUMQAL	0.566	0.128	4.408	0.000
RAMABLE	0.143	0.105	1.365	0.172
RFELPOS	0.323	0.106	3.053	0.002
SELFPOS WITH				
SELFNEG	0.950	0.193	4.926	0.000
Variances				
SELFNEG	1.000	0.000	999.000	999.000
SELFPOS	1.000	0.000	999.000	999.000
Residual Variances				
RNOTWORR	0.775	0.079	9.839	0.000
RNUMQAL	0.679	0.145	4.672	0.000
RAMFAILR	0.583	0.092	6.359	0.000
RAMABLE	0.980	0.030	32.628	0.000
RNOTPRDR	0.235	0.111	2.118	0.034
RFELPOS	0.895	0.068	13.077	0.000

R-SQUARE

Observed Variable	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
RNOTWORR	0.225	0.079	2.858	0.004
RNUMQAL	0.321	0.145	2.204	0.028
RAMFAILR	0.417	0.092	4.547	0.000
RAMABLE	0.020	0.030	0.682	0.495
RNOTPRDR	0.765	0.111	6.891	0.000
RFELPOS	0.105	0.068	1.526	0.127

QUALITY OF NUMERICAL RESULTS

Condition Number for the Information Matrix 0.150E-02
 (ratio of smallest to largest eigenvalue)