

One-Factor CFA Example in Mplus

Mplus VERSION 6.12
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INPUT INSTRUCTIONS

```
title: Self-esteem CFA Example--One Factor;

! 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: se by rnotworr-rfelpos;

output: stdyx ;
```

INPUT READING TERMINATED NORMALLY

Self-esteem CFA Example--One Factor;

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	1

Observed dependent variables

Continuous					
RNOTWORR	RNUMQAL	RAMFAILR	RAMABLE	RNOTPRDR	RFELPOS

Continuous latent variables
SE

THE MODEL ESTIMATION TERMINATED NORMALLY

MODEL FIT INFORMATION

Number of Free Parameters	12
Loglikelihood	
H0 Value	-757.201
H1 Value	-747.474
Information Criteria	
Akaike (AIC)	1538.402
Bayesian (BIC)	1571.650
Sample-Size Adjusted BIC	1533.715
(n* = (n + 2) / 24)	
Chi-Square Test of Model Fit	
Value	19.454
Degrees of Freedom	9
P-Value	0.0216
RMSEA (Root Mean Square Error Of Approximation)	
Estimate	0.099
90 Percent C.I.	0.036 0.160
Probability RMSEA <= .05	0.086

CFI/TLI

CFI	0.910
TLI	0.850

Chi-Square Test of Model Fit for the Baseline Model

Value	131.265
Degrees of Freedom	15
P-Value	0.0000

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
SE BY				
RNOTWORR	1.000	0.000	999.000	999.000
RNUMQAL	0.637	0.159	4.012	0.000
RAMFAILR	0.969	0.220	4.405	0.000
RAMABLE	0.265	0.202	1.309	0.190
RNOTPRDR	1.262	0.279	4.522	0.000
RFELPOS	0.478	0.174	2.751	0.006
Variances				
SE	0.231	0.094	2.460	0.014
Residual Variances				
RNOTWORR	0.793	0.111	7.134	0.000
RNUMQAL	0.228	0.033	6.866	0.000
RAMFAILR	0.300	0.050	6.029	0.000
RAMABLE	0.860	0.112	7.650	0.000
RNOTPRDR	0.116	0.051	2.268	0.023
RFELPOS	0.488	0.065	7.496	0.000

STANDARDIZED MODEL RESULTS

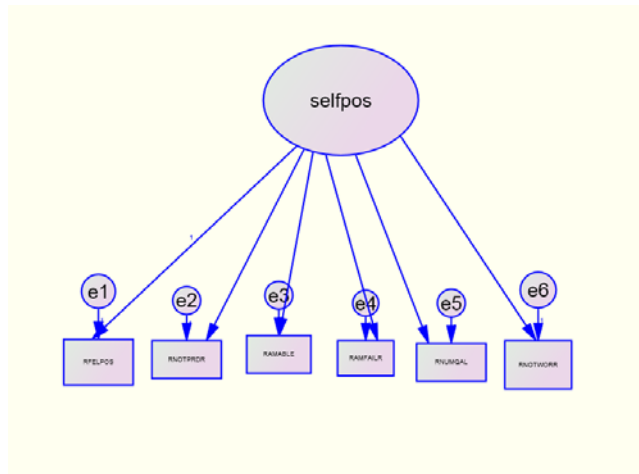
STDYX Standardization

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
SE BY				
RNOTWORR	0.475	0.083	5.725	0.000
RNUMQAL	0.539	0.078	6.899	0.000
RAMFAILR	0.647	0.071	9.173	0.000
RAMABLE	0.136	0.100	1.361	0.173
RNOTPRDR	0.872	0.062	14.069	0.000
RFELPOS	0.312	0.093	3.349	0.001
Variances				
SE	1.000	0.000	999.000	999.000
Residual Variances				
RNOTWORR	0.775	0.079	9.833	0.000
RNUMQAL	0.709	0.084	8.415	0.000
RAMFAILR	0.581	0.091	6.354	0.000
RAMABLE	0.982	0.027	36.219	0.000
RNOTPRDR	0.240	0.108	2.218	0.027
RFELPOS	0.903	0.058	15.525	0.000

R-SQUARE

Observed Variable	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
RNOTWORR	0.225	0.079	2.862	0.004
RNUMQAL	0.291	0.084	3.449	0.001
RAMFAILR	0.419	0.091	4.586	0.000
RAMABLE	0.018	0.027	0.681	0.496
RNOTPRDR	0.760	0.108	7.035	0.000
RFELPOS	0.097	0.058	1.675	0.094

One-factor CFA Example in Amos



C:\jason\amos\semclass\se1.amw

Analysis Summary

Date and Time

Date: Thursday, January 28, 2010
Time: 10:19:52 AM

Title

se1: Thursday, January 28, 2010 10:19 AM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.
Sample size = 118

Variable Summary (Group number 1)

Your model contains the following variables (Group number 1)

Observed, endogenous variables

RFELPOS
RNOTPRDR
RAMABLE
RAMFAILR
RNUMQAL
RNOTWORR

Unobserved, exogenous variables

e1
e2
e3
e4
e5
e6
selfpos

Variable counts (Group number 1)

Number of variables in your model:	13
Number of observed variables:	6
Number of unobserved variables:	7
Number of exogenous variables:	7
Number of endogenous variables:	6

Parameter summary (Group number 1)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	7	0	0	0	0	7
Labeled	0	0	0	0	0	0
Unlabeled	5	0	7	0	0	12
Total	12	0	7	0	0	19

Models

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 21
 Number of distinct parameters to be estimated: 12
 Degrees of freedom (21 - 12): 9

Result (Default model)

Minimum was achieved
 Chi-square = 19.289
 Degrees of freedom = 9
 Probability level = .023

Group number 1 (Group number 1 - Default model)

Estimates (Group number 1 - Default model)

Scalar Estimates (Group number 1 - Default model)

Maximum Likelihood Estimates

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
RAMABLE	<---	selfpos	.554	.446	1.242	.214	
RFELPOS	<---	selfpos	1.000				
RNOTPRDR	<---	selfpos	2.642	.873	3.027	.002	
RAMFAILR	<---	selfpos	2.029	.680	2.983	.003	
RNUMQAL	<---	selfpos	1.334	.468	2.851	.004	
RNOTWORR	<---	selfpos	2.094	.764	2.739	.006	

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
selfpos	.053	.034	1.566	.117	
e1	.488	.065	7.464	***	
e2	.116	.051	2.259	.024	
e3	.860	.113	7.618	***	
e4	.300	.050	6.003	***	
e5	.228	.033	6.836	***	
e6	.793	.112	7.104	***	

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
RAMABLE	<---	selfpos	.136
RFELPOS	<---	selfpos	.312
RNOTPRDR	<---	selfpos	.872
RAMFAILR	<---	selfpos	.647
RNUMQAL	<---	selfpos	.539
RNOTWORR	<---	selfpos	.475

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	12	19.289	9	.023	2.143
Saturated model	21	.000	0		

Model	NPAR	CMIN	DF	P	CMIN/DF
Independence model	6	130.153	15	.000	8.677

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.039	.948	.878	.406
Saturated model	.000	1.000		
Independence model	.138	.704	.586	.503

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.852	.753	.915	.851	.911
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.600	.511	.546
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	10.289	1.306	26.978
Saturated model	.000	.000	.000
Independence model	115.153	82.384	155.396

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	.165	.088	.011	.231
Saturated model	.000	.000	.000	.000
Independence model	1.112	.984	.704	1.328

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.099	.035	.160	.089
Independence model	.256	.217	.298	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	43.289	44.816	76.537	88.537
Saturated model	42.000	44.673	100.184	121.184
Independence model	142.153	142.917	158.777	164.777

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	.370	.293	.513	.383
Saturated model	.359	.359	.359	.382
Independence model	1.215	.935	1.559	1.222

HOELTER

Model	HOELTER	HOELTER
	.05	.01
Default model	103	132
Independence model	23	28