

Full Structural Equation Model Example in Mplus

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title: Full Structural Model Example: gender, hostility, and negative affect;

data: file=full1.dat; format=free;
      listwise=on;

variable: names = sex neg6 neg26 neg30 neg35 panas6 panas7 panas8 panas9 panas10;
          missing=sex-panas10 (-99);

          ! usevariables = neg6 neg26 neg30 neg35 panas6 panas7 panas8 panas9 panas10;

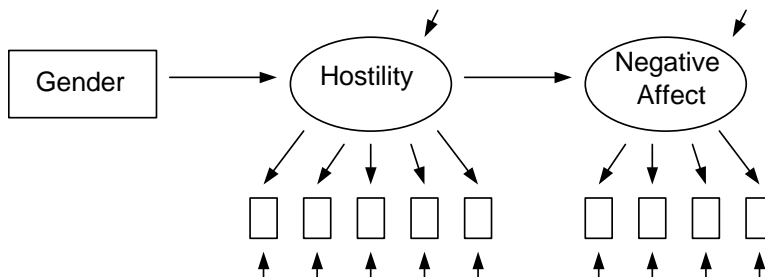
! For now, use the following analysis commands to estimate using ML, non-robust,
! with no missing data estimation and no meanstructure (the default in most packages);

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

model: hostile by neg6 neg26 neg30 neg35;
       negaff by panas6 panas7 panas8 panas9 panas10;
       negaff on hostile;
       hostile on sex;

output: stdyx ;
  
```

Picture of the Model



INPUT READING TERMINATED NORMALLY

Full Structural Model Example: gender, hostility, and negative affect;

SUMMARY OF ANALYSIS

Number of groups	1
Number of observations	257
Number of dependent variables	9
Number of independent variables	1
Number of continuous latent variables	2

Observed dependent variables

Continuous					
NEG6	NEG26	NEG30	NEG35	PANAS6	PANAS7
PANAS8	PANAS9	PANAS10			

Observed independent variables

SEX

Continuous latent variables

HOSTILE NEGAFF

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

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 Input data file(s)
 full11.dat

Input data format FREE

THE MODEL ESTIMATION TERMINATED NORMALLY

TESTS OF MODEL FIT

Chi-Square Test of Model Fit

Value	61.310
Degrees of Freedom	34
P-Value	0.0028

Chi-Square Test of Model Fit for the Baseline Model

Value	1058.049
Degrees of Freedom	45
P-Value	0.0000

CFI/TLI

CFI	0.973
TLI	0.964

Loglikelihood

H0 Value	-2605.316
H1 Value	-2574.660

Information Criteria

Number of Free Parameters	20
Akaike (AIC)	5250.631
Bayesian (BIC)	5321.613
Sample-Size Adjusted BIC	5258.207
(n* = (n + 2) / 24)	

RMSEA (Root Mean Square Error Of Approximation)

Estimate	0.056	
90 Percent C.I.	0.033	0.078
Probability RMSEA <= .05	0.311	

SRMR (Standardized Root Mean Square Residual)

Value	0.051
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MODEL RESULTS

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
HOSTILE BY				
NEG6	1.000	0.000	999.000	999.000
NEG26	1.328	0.123	10.821	0.000
NEG30	1.282	0.120	10.647	0.000
NEG35	1.116	0.115	9.678	0.000
NEGAFF BY				
PANAS6	1.000	0.000	999.000	999.000
PANAS7	0.849	0.070	12.110	0.000
PANAS8	0.958	0.060	16.070	0.000
PANAS9	0.482	0.057	8.457	0.000
PANAS10	0.969	0.086	11.239	0.000
NEGAFF ON				
HOSTILE	0.486	0.118	4.132	0.000
HOSTILE ON				
SEX	0.017	0.066	0.262	0.793

Residual Variances

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NEG6	0.342	0.034	10.153	0.000
NEG26	0.149	0.024	6.280	0.000
NEG30	0.178	0.024	7.290	0.000
NEG35	0.273	0.029	9.453	0.000
PANAS6	0.182	0.030	6.019	0.000
PANAS7	0.523	0.052	10.067	0.000
PANAS8	0.224	0.031	7.204	0.000
PANAS9	0.413	0.038	10.830	0.000
PANAS10	0.833	0.081	10.306	0.000
HOSTILE	0.243	0.044	5.467	0.000
NEGAFF	0.580	0.070	8.344	0.000

STANDARDIZED MODEL RESULTS

STDYX Standardization

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
HOSTILE BY				
NEG6	0.645	0.042	15.534	0.000
NEG26	0.862	0.026	33.755	0.000
NEG30	0.832	0.027	30.383	0.000
NEG35	0.725	0.035	20.622	0.000
NEGAFF BY				
PANAS6	0.882	0.023	39.156	0.000
PANAS7	0.684	0.038	18.170	0.000
PANAS8	0.850	0.025	34.585	0.000
PANAS9	0.514	0.050	10.299	0.000
PANAS10	0.647	0.041	15.926	0.000
NEGAFF ON				
HOSTILE	0.300	0.065	4.602	0.000
HOSTILE ON				
SEX	0.017	0.067	0.263	0.793

Residual Variances

NEG6	0.584	0.054	10.919	0.000
NEG26	0.258	0.044	5.860	0.000
NEG30	0.308	0.046	6.773	0.000
NEG35	0.474	0.051	9.286	0.000
PANAS6	0.222	0.040	5.596	0.000
PANAS7	0.532	0.052	10.332	0.000
PANAS8	0.277	0.042	6.632	0.000
PANAS9	0.736	0.051	14.353	0.000
PANAS10	0.582	0.052	11.085	0.000
HOSTILE	1.000	0.002	428.682	0.000
NEGAFF	0.910	0.039	23.258	0.000

R-SQUARE

Observed Variable	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
NEG6	0.416	0.054	7.767	0.000
NEG26	0.742	0.044	16.877	0.000
NEG30	0.692	0.046	15.191	0.000
NEG35	0.526	0.051	10.311	0.000
PANAS6	0.778	0.040	19.578	0.000
PANAS7	0.468	0.052	9.085	0.000
PANAS8	0.723	0.042	17.293	0.000
PANAS9	0.264	0.051	5.149	0.000
PANAS10	0.418	0.052	7.963	0.000

Latent Variable	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
HOSTILE	0.000	0.002	0.131	0.896
NEGAFF	0.090	0.039	2.301	0.021