Missing Data Example in Mplus

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Mplus VERSION 5
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  title:  CFA of three negative exchanges factors;

  data:  file=missing.dat; format=free;

  variable:  names = neg6 neg26 neg30 neg35
      neg11 neg12 neg13 neg14
      neg16 neg17 neg19 neg20;

      missing=neg6-neg20 (-99);

  usevariables=neg6 neg26 neg30 neg35
      neg11 neg12 neg13 neg14
      neg16 neg17 neg19 neg20;

 !Note: with missing data estimator=mlr is used to obtain robust estimates (Yuan &
     !Bentler, 2000), if non-robust estimates are desired use estimator=ml;
     ! Missing data estimation is now the default in Version 5;

 analysis: type= missing h1; estimator=mlr;

 model: hostile by neg6-neg35;
       badadv by neg11-neg14;
      demands by neg16-neg20;

 output: stdyx;
```

Output (excerpts)

```
CFA of three negative exchanges factors;

SUMMARY OF ANALYSIS

Number of groups                                                 1
Number of observations                                         275


Estimator                                                      MLR
Information matrix                                        OBSERVED
Maximum number of iterations                                  1000
Convergence criterion                                    0.500D-04
Maximum number of steepest descent iterations                   20
Maximum number of iterations for H1                           2000
Convergence criterion for H1                             0.100D-03

Input data file(s)
  missing.dat

Input data format  FREE


SUMMARY OF DATA

     Number of missing data patterns            7


COVARIANCE COVERAGE OF DATA

Minimum covariance coverage value   0.100


     PROPORTION OF DATA PRESENT


           Covariance Coverage
              NEG6          NEG26         NEG30         NEG35         NEG11
              ________      ________      ________      ________      ________
 NEG6           0.971
 NEG26          0.967         0.996
 NEG30          0.967         0.993         0.996
 NEG35          0.971         0.996         0.996         1.000
 NEG11          0.967         0.964         0.964         0.967         0.967
 NEG12          0.971         0.967         0.967         0.971         0.967
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NEG13	0.967	0.964	0.964	0.967	0.964
NEG14	0.971	0.967	0.967	0.971	0.967
NEG16	0.971	0.967	0.967	0.971	0.967
NEG17	0.716	0.716	0.713	0.716	0.713
NEG19	0.971	0.996	0.996	1.000	0.967
NEG20	0.971	0.996	0.996	1.000	0.967

Covariance Coverage

	NEG12	NEG13	NEG14	NEG16	NEG17
NEG12	0.971				
NEG13	0.967	0.967			
NEG14	0.971	0.967	0.971		
NEG16	0.971	0.967	0.971	0.971	
NEG17	0.716	0.713	0.716	0.716	0.716
NEG19	0.971	0.967	0.971	0.971	0.716
NEG20	0.971	0.967	0.971	0.971	0.716

Covariance Coverage

	NEG19	NEG20
NEG19	1.000	
NEG20	1.000	1.000

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TESTS OF MODEL FIT

Chi-Square Test of Model Fit

          Value                              106.973*
          Degrees of Freedom                      51
          P-Value                             0.0000
          Scaling Correction Factor            1.450
            for MLR

*   The chi-square value for MLM, MLMV, MLR, ULSMV, WLSM and WLSMV cannot be used
    for chi-square difference tests.  MLM, MLR and WLSM chi-square difference
    testing is described in the Mplus Technical Appendices at www.statmodel.com.
    See chi-square difference testing in the index of the Mplus User's Guide.

Chi-Square Test of Model Fit for the Baseline Model

          Value                             1137.407
          Degrees of Freedom                      66
          P-Value                             0.0000

CFI/TLI

          CFI                                  0.948
          TLI                                  0.932

Loglikelihood

          H0 Value                         -2884.221
          H0 Scaling Correction Factor         1.583
            for MLR
          H1 Value                         -2806.647
          H1 Scaling Correction Factor         1.508
            for MLR

Information Criteria

          Number of Free Parameters               39
          Akaike (AIC)                      5846.443
          Bayesian (BIC)                    5987.497
          Sample-Size Adjusted BIC          5863.835
            (n* = (n + 2) / 24)

RMSEA (Root Mean Square Error Of Approximation)

          Estimate                             0.063

SRMR (Standardized Root Mean Square Residual)

          Value                                0.049
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STANDARDIZED MODEL RESULTS

STDYX Standardization

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
HOSTILE BY				
NEG6	0.695	0.053	13.177	0.000
NEG26	0.858	0.030	28.153	0.000
NEG30	0.826	0.031	26.765	0.000
NEG35	0.720	0.052	13.744	0.000
BADADV BY				
NEG11	0.716	0.042	16.853	0.000
NEG12	0.763	0.047	16.230	0.000
NEG13	0.813	0.033	24.748	0.000
NEG14	0.820	0.034	24.213	0.000
DEMANDS BY				
NEG16	0.719	0.057	12.549	0.000
NEG17	0.815	0.043	18.848	0.000
NEG19	0.616	0.059	10.504	0.000
NEG20	0.698	0.053	13.111	0.000
BADADV WITH				
HOSTILE	0.745	0.049	15.335	0.000
DEMANDS WITH				
HOSTILE	0.863	0.052	16.624	0.000
BADADV	0.758	0.055	13.833	0.000
Intercepts				
NEG6	0.814	0.048	16.878	0.000
NEG26	0.767	0.044	17.428	0.000
NEG30	0.860	0.048	17.879	0.000
NEG35	0.616	0.039	15.857	0.000
NEG11	0.691	0.041	16.670	0.000
NEG12	0.664	0.041	16.360	0.000
NEG13	1.016	0.055	18.586	0.000
NEG14	0.957	0.051	18.913	0.000
NEG16	0.709	0.043	16.352	0.000
NEG17	0.562	0.043	13.205	0.000
NEG19	1.062	0.054	19.685	0.000
NEG20	0.838	0.046	18.401	0.000
Variances				
HOSTILE	1.000	0.000	999.000	999.000
BADADV	1.000	0.000	999.000	999.000
DEMANDS	1.000	0.000	999.000	999.000
Residual Variances				
NEG6	0.517	0.073	7.046	0.000
NEG26	0.263	0.052	5.027	0.000
NEG30	0.318	0.051	6.238	0.000
NEG35	0.482	0.075	6.398	0.000
NEG11	0.487	0.061	8.012	0.000
NEG12	0.418	0.072	5.829	0.000
NEG13	0.339	0.053	6.342	0.000
NEG14	0.328	0.056	5.908	0.000
NEG16	0.483	0.082	5.858	0.000
NEG17	0.335	0.071	4.747	0.000
NEG19	0.621	0.072	8.593	0.000
NEG20	0.513	0.074	6.898	0.000