Mplus Analysis Examples Replication Chapter 11

Mplus includes all input code and output in the *.out file. This document contains selected output from each analysis for Chapter 11, where possible in Mplus 7.4. All data preparation and management was done using SAS and then read into Mplus v7.4 using a text file format. Notes on the process used and other details are included in the Mplus syntax/outputs.

Mplus VERSION 7.4
MUTHEN & MUTHEN
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INPUT INSTRUCTIONS

```
  TITLE: ASDA 3 EXAMPLE 11.3.1 COMPLETE CASE ANALYSIS 1 WAVE OF DATA
   ! USE CHAPTER 11 WAVE 1 CC DATA SET PREPARED IN SAS
   DATA:
   FILE IS "P:\ASDA 2\Data sets\HRS 2012\HRS 2006_2012 Longitudinal File\cc_1wave_mplus.txt"
   VARIABLE:
   NAMES ARE kwgtr stratum numsecu ln_inc08 ;
   USEVARIABLES ARE kwgtr stratum numsecu ln_inc08 ;
   missing are . ;
   WEIGHT IS kwgtr ;
   stratification is stratum ;
   cluster is numsecu ;
   ANALYSIS:
   type is complex;
   estimator=mlr ;
   ! Obtain mean from linear regression model ;
   Model:
   ln_inc08 ;
   Output:
   cint ;
```

```
*** WARNING
  Input line exceeded 90 characters. Some input may be truncated.
   FILE IS "P:\ASDA 2\Data sets\HRS 2012\HRS 2006_2012 Longitudinal File\cc_1wave_mplus.txt";
*** WARNING in MODEL command
  All variables are uncorrelated with all other variables in the model.
  Check that this is what is intended.
*** WARNING
  Data set contains cases with missing on all variables.
  These cases were not included in the analysis.
  Number of cases with missing on all variables:  1215
   3 WARNING(S) FOUND IN THE INPUT INSTRUCTIONS
```

ASDA 3 EXAMPLE 11.3.1 COMPLETE CASE ANALYSIS 1 WAVE OF DATA

SUMMARY OF ANALYSIS

Number of groups	1
Number of observations	10574
Number of dependent variables	1
Number of independent variables	0
Number of continuous latent variables	0

Observed dependent variables

  Continuous
   LN_INC08

Variables with special functions

```
  Stratification        STRATUM
  Cluster variable      NUMSECU
  Weight variable       KWGTR

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)
  P:\ASDA 2\Data sets\HRS 2012\HRS 2006_2012 Longitudinal File\cc_1wave_mplus.tx

Input data format  FREE


SUMMARY OF DATA

     Number of missing data patterns             1
     Number of strata                       56
     Number of clusters                    112


COVARIANCE COVERAGE OF DATA

Minimum covariance coverage value   0.100


     PROPORTION OF DATA PRESENT


           Covariance Coverage
              LN_INCO8
              ________
 LN_INCO8       1.000



THE MODEL ESTIMATION TERMINATED NORMALLY



MODEL FIT INFORMATION

Number of Free Parameters                        2

Loglikelihood

          H0 Value                      -18958.863
          H0 Scaling Correction Factor     13.7981
            for MLR
          H1 Value                      -18958.863
          H1 Scaling Correction Factor     13.7981
            for MLR

Information Criteria
```

```
          Akaike (AIC)                    37921.726
          Bayesian (BIC)                  37936.259
          Sample-Size Adjusted BIC        37929.903
            (n* = (n + 2) / 24)

Chi-Square Test of Model Fit

          Value                              0.000*
          Degrees of Freedom                     0
          P-Value                           0.0000
          Scaling Correction Factor          1.0000
            for MLR

*   The chi-square value for MLM, MLMV, MLR, ULSMV, WLSM and WLSMV cannot be used
    for chi-square difference testing in the regular way.  MLM, MLR and WLSM
    chi-square difference testing is described on the Mplus website.  MLMV, WLSMV,
    and ULSMV difference testing is done using the DIFFTEST option.

RMSEA (Root Mean Square Error Of Approximation)

          Estimate                           0.000
          90 Percent C.I.                    0.000  0.000
          Probability RMSEA <= .05           0.000

CFI/TLI

          CFI                                0.000
          TLI                                1.000

Chi-Square Test of Model Fit for the Baseline Model

          Value                              0.000
          Degrees of Freedom                     0
          P-Value                           0.0000

SRMR (Standardized Root Mean Square Residual)

          Value                              0.000



MODEL RESULTS

                                                    Two-Tailed
                  Estimate       S.E.  Est./S.E.    P-Value

 Means
    LN_INC08        10.441      0.026    397.050      0.000

 Variances
    LN_INC08         2.113      0.143     14.800      0.000


QUALITY OF NUMERICAL RESULTS

     Condition Number for the Information Matrix              0.969E-02
       (ratio of smallest to largest eigenvalue)
```

CONFIDENCE INTERVALS OF MODEL RESULTS

	Lower .5%	Lower 2.5%	Lower 5%	Estimate	Upper 5%	Upper 2.5%	Upper .5%
Means							
LN_INC08	10.373	10.389	10.397	10.441	10.484	10.492	10.508
Variances							
LN_INC08	1.745	1.833	1.878	2.113	2.348	2.393	2.481

DIAGRAM INFORMATION

Use View Diagram under the Diagram menu in the Mplus Editor to view the diagram.
If running Mplus from the Mplus Diagrammer, the diagram opens automatically.

Diagram output
p:\asda3\replication mplus\chapter 11\c11 1 wave cc analysis.dgm

Beginning Time: 12:42:57
Ending Time: 12:42:59
Elapsed Time: 00:00:02

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INPUT INSTRUCTIONS

  TITLE: ASDA 3 EXAMPLE 11.3.1 ADJUSTED WEIGHT 1 WAVE OF DATA
   ! USE CHAPTER 11 WAVE 1 ADJUSTED WEIGHT DATA SET PREPARED IN SAS
   DATA:
   FILE IS "P:\ASDA 2\Data sets\HRS 2012\HRS 2006_2012 Longitudinal File\
   adj_wgt_1wave_mplus.txt";

   VARIABLE:
   NAMES ARE adj_kwgtr stratum numsecu ln_inc08 ;

   USEVARIABLES ARE adj_kwgtr stratum numsecu ln_inc08 ;
   missing are . ;
   WEIGHT IS adj_kwgtr ;
   stratification is stratum ;
   cluster is numsecu ;

   ANALYSIS:
   type is complex;
   estimator=mlr ;

   ! Obtain mean from linear regression model, then use exp function;
   Model:
   ln_inc08 ;

   Output:
   cint ;



*** WARNING in MODEL command
  All variables are uncorrelated with all other variables in the model.
  Check that this is what is intended.
*** WARNING
  Data set contains cases with missing on all variables.
  These cases were not included in the analysis.
  Number of cases with missing on all variables:  1215
   2 WARNING(S) FOUND IN THE INPUT INSTRUCTIONS



ASDA 3 EXAMPLE 11.3.1 ADJUSTED WEIGHT 1 WAVE OF DATA

SUMMARY OF ANALYSIS

Number of groups                                                 1
Number of observations                                       10574

Number of dependent variables                                    1
Number of independent variables                                  0
Number of continuous latent variables                            0

Observed dependent variables

  Continuous
```

```
   LN_INCO8

Variables with special functions

  Stratification        STRATUM
  Cluster variable      NUMSECU
  Weight variable       ADJ_KWGT

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)
  P:\ASDA 2\Data sets\HRS 2012\HRS 2006_2012 Longitudinal File\adj_wgt_1wave_mpl

Input data format  FREE


SUMMARY OF DATA

     Number of missing data patterns             1
     Number of strata                        56
     Number of clusters                     112


COVARIANCE COVERAGE OF DATA

Minimum covariance coverage value   0.100


     PROPORTION OF DATA PRESENT


           Covariance Coverage
              LN_INCO8
              ________
 LN_INCO8       1.000



THE MODEL ESTIMATION TERMINATED NORMALLY



MODEL FIT INFORMATION

Number of Free Parameters                       2

Loglikelihood

          H0 Value                      -18988.466
          H0 Scaling Correction Factor     13.8002
            for MLR
          H1 Value                      -18988.466
          H1 Scaling Correction Factor     13.8002
```

for MLR

Information Criteria

Akaike (AIC)	37980.932
Bayesian (BIC)	37995.464
Sample-Size Adjusted BIC (n* = (n + 2) / 24)	37989.108

Chi-Square Test of Model Fit

Value	0.000*
Degrees of Freedom	0
P-Value	0.0000
Scaling Correction Factor for MLR	1.0000

* The chi-square value for MLM, MLMV, MLR, ULSMV, WLSM and WLSMV cannot be used for chi-square difference testing in the regular way. MLM, MLR and WLSM chi-square difference testing is described on the Mplus website. MLMV, WLSMV, and ULSMV difference testing is done using the DIFFTEST option.

RMSEA (Root Mean Square Error Of Approximation)

Estimate	0.000	
90 Percent C.I.	0.000	0.000
Probability RMSEA <= .05	0.000	

CFI/TLI

CFI	0.000
TLI	1.000

Chi-Square Test of Model Fit for the Baseline Model

Value	0.000
Degrees of Freedom	0
P-Value	0.0000

SRMR (Standardized Root Mean Square Residual)

Value	0.000

MODEL RESULTS

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
Means				
LN_INC08	10.414	0.027	391.321	0.000
Variances				
LN_INC08	2.125	0.143	14.819	0.000

QUALITY OF NUMERICAL RESULTS

Condition Number for the Information Matrix 0.980E-02
(ratio of smallest to largest eigenvalue)

CONFIDENCE INTERVALS OF MODEL RESULTS

	Lower .5%	Lower 2.5%	Lower 5%	Estimate	Upper 5%	Upper 2.5%	Upper .5%
Means							
LN_INC08	10.345	10.361	10.370	10.414	10.457	10.466	10.482
Variances							
LN_INC08	1.755	1.844	1.889	2.125	2.361	2.406	2.494

DIAGRAM INFORMATION

Use View Diagram under the Diagram menu in the Mplus Editor to view the diagram.
If running Mplus from the Mplus Diagrammer, the diagram opens automatically.

Diagram output
p:\asda3\replication mplus\chapter 11\c11 1 wave adj wgt.dgm

Beginning Time: 12:46:33
Ending Time: 12:46:34
Elapsed Time: 00:00:01

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INPUT INSTRUCTIONS

```
  TITLE: ASDA 3 EXAMPLE 11.3.1 1 WAVE MULTIPLE IMPUTATION OF MISSING DATA
   DATA:
   FILE IS "P:\ASDA 2\Data sets\HRS 2012\HRS 2006_2012 Longitudinal File\
   mi_1wave_mplus.txt";

   VARIABLE:
   NAMES ARE
   STRATUM NUMSECU arthritis_06 diabetes_06 age_06 kwgtr_dec kwgtr ln_inc06 ln_inc08
   ed011 ed12 ed1315 ed16 married prevmar nevmar hisp white black other
   excellent verygood good fair poor ;

   ! order of variables in output data sets will match usevariables,auxiliary from impute
   USEVARIABLES ARE STRATUM NUMSECU arthritis_06 diabetes_06 age_06
   kwgtr_dec ln_inc06 ln_inc08
   ed12 ed1315 ed16
   prevmar nevmar
   white black other
   verygood good fair poor ;

   AUXILIARY IS kwgtr ;
   missing are . ;

   DATA IMPUTATION:
   IMPUTE=LN_INC08 ;
   NDATASETS=5 ;
   MODEL=SEQUENTIAL ;
   SAVE= IMP*.DAT ;



*** WARNING in VARIABLE command
  Note that only the first 8 characters of variable names are used in the output.
  Shorten variable names to avoid any confusion.
*** WARNING in MODEL command
  All variables are uncorrelated with all other variables in the model.
  Check that this is what is intended.
   2 WARNING(S) FOUND IN THE INPUT INSTRUCTIONS
```

ASDA 3 EXAMPLE 11.3.1 1 WAVE MULTIPLE IMPUTATION OF MISSING DATA

SUMMARY OF ANALYSIS

Number of groups	1
Average number of observations	11789
Number of replications	
Requested	5
Completed	5
Number of dependent variables	20
Number of independent variables	0
Number of continuous latent variables	0

Observed dependent variables

Continuous

STRATUM	NUMSECU	ARTHRITIS_	DIABETES_0	AGE_06	KWGTR_DEC
LN_INC06	LN_INC08	ED12	ED1315	ED16	PREVMAR
NEVMAR	WHITE	BLACK	OTHER	VERYGOOD	GOOD
FAIR	POOR				

Observed auxiliary variables

KWGTR

Variables used for imputation

Variables imputed as continuous

LN_INC08

Estimator	ML
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
Specifications for Bayesian Estimation	
Point estimate	MEDIAN
Number of Markov chain Monte Carlo (MCMC) chains	2
Random seed for the first chain	0
Starting value information	UNPERTURBED
Treatment of categorical mediator	LATENT
Algorithm used for Markov chain Monte Carlo	GIBBS(PX1)
Convergence criterion	0.500D-01
Maximum number of iterations	50000
K-th iteration used for thinning	1
Specifications for Data Imputation	
Number of imputed data sets	5
H1 imputation model type	SEQUENTIAL
Iteration intervals for thinning	100

Input data file(s)

P:\ASDA 2\Data sets\HRS 2012\HRS 2006_2012 Longitudinal File\mi_1wave_mplus.tx

Input data format FREE

SUMMARY OF DATA FOR THE FIRST DATA SET

Number of missing data patterns 1

SUMMARY OF MISSING DATA PATTERNS FOR THE FIRST DATA SET

MISSING DATA PATTERNS (x = not missing)

	1
STRATUM	x
NUMSECU	x
ARTHRITI	x
DIABETES	x
AGE_06	x
KWGTR_DE	x
LN_INC06	x
LN_INC08	x
ED12	x
ED1315	x
ED16	x
PREVMAR	x
NEVMAR	x
WHITE	x
BLACK	x
OTHER	x
VERYGOOD	x
GOOD	x
FAIR	x
POOR	x

MISSING DATA PATTERN FREQUENCIES

Pattern	Frequency
1	11789

COVARIANCE COVERAGE OF DATA FOR THE FIRST DATA SET

Minimum covariance coverage value 0.100

PROPORTION OF DATA PRESENT

Covariance Coverage

	STRATUM	NUMSECU	ARTHRITI	DIABETES	AGE_06
STRATUM	1.000				
NUMSECU	1.000	1.000			
ARTHRITI	1.000	1.000	1.000		
DIABETES	1.000	1.000	1.000	1.000	
AGE_06	1.000	1.000	1.000	1.000	1.000
KWGTR_DE	1.000	1.000	1.000	1.000	1.000
LN_INC06	1.000	1.000	1.000	1.000	1.000

LN_INC08	1.000	1.000	1.000	1.000	1.000
ED12	1.000	1.000	1.000	1.000	1.000
ED1315	1.000	1.000	1.000	1.000	1.000
ED16	1.000	1.000	1.000	1.000	1.000
PREVMAR	1.000	1.000	1.000	1.000	1.000
NEVMAR	1.000	1.000	1.000	1.000	1.000
WHITE	1.000	1.000	1.000	1.000	1.000
BLACK	1.000	1.000	1.000	1.000	1.000
OTHER	1.000	1.000	1.000	1.000	1.000
VERYGOOD	1.000	1.000	1.000	1.000	1.000
GOOD	1.000	1.000	1.000	1.000	1.000
FAIR	1.000	1.000	1.000	1.000	1.000
POOR	1.000	1.000	1.000	1.000	1.000

Covariance Coverage

	KWGTR_DE	LN_INC06	LN_INC08	ED12	ED1315
KWGTR_DE	1.000				
LN_INC06	1.000	1.000			
LN_INC08	1.000	1.000	1.000		
ED12	1.000	1.000	1.000	1.000	
ED1315	1.000	1.000	1.000	1.000	1.000
ED16	1.000	1.000	1.000	1.000	1.000
PREVMAR	1.000	1.000	1.000	1.000	1.000
NEVMAR	1.000	1.000	1.000	1.000	1.000
WHITE	1.000	1.000	1.000	1.000	1.000
BLACK	1.000	1.000	1.000	1.000	1.000
OTHER	1.000	1.000	1.000	1.000	1.000
VERYGOOD	1.000	1.000	1.000	1.000	1.000
GOOD	1.000	1.000	1.000	1.000	1.000
FAIR	1.000	1.000	1.000	1.000	1.000
POOR	1.000	1.000	1.000	1.000	1.000

Covariance Coverage

	ED16	PREVMAR	NEVMAR	WHITE	BLACK
ED16	1.000				
PREVMAR	1.000	1.000			
NEVMAR	1.000	1.000	1.000		
WHITE	1.000	1.000	1.000	1.000	
BLACK	1.000	1.000	1.000	1.000	1.000
OTHER	1.000	1.000	1.000	1.000	1.000
VERYGOOD	1.000	1.000	1.000	1.000	1.000
GOOD	1.000	1.000	1.000	1.000	1.000
FAIR	1.000	1.000	1.000	1.000	1.000
POOR	1.000	1.000	1.000	1.000	1.000

Covariance Coverage

	OTHER	VERYGOOD	GOOD	FAIR	POOR
OTHER	1.000				
VERYGOOD	1.000	1.000			
GOOD	1.000	1.000	1.000		
FAIR	1.000	1.000	1.000	1.000	
POOR	1.000	1.000	1.000	1.000	1.000

SAMPLE STATISTICS

NOTE: These are average results over 5 data sets.

SAMPLE STATISTICS

Means

	STRATUM	NUMSECU	ARTHRITI	DIABETES	AGE_06
1	30.634	60.772	0.625	0.213	69.519

Means

	KWGTR_DE	LN_INC06	LN_INC08	ED12	ED1315
1	4.485	10.291	10.198	0.245	0.331

Means

	ED16	PREVMAR	NEVMAR	WHITE	BLACK
1	0.207	0.467	0.492	0.088	0.732

Means

	OTHER	VERYGOOD	GOOD	FAIR	POOR
1	0.158	0.103	0.279	0.306	0.223

Covariances

	STRATUM	NUMSECU	ARTHRITI	DIABETES	AGE_06
STRATUM	224.135				
NUMSECU	448.369	897.186			
ARTHRITI	0.229	0.462	0.234		
DIABETES	-0.020	-0.038	0.020	0.168	
AGE_06	-2.700	-5.403	1.016	0.008	106.779
KWGTR_DE	1.248	2.486	-0.175	-0.097	-10.667
LN_INC06	-0.250	-0.496	-0.073	-0.048	-2.209
LN_INC08	-0.267	-0.532	-0.067	-0.049	-2.276
ED12	0.259	0.518	0.019	0.018	0.689
ED1315	0.095	0.193	0.007	-0.002	0.157
ED16	-0.023	-0.050	-0.002	-0.006	-0.374
PREVMAR	0.375	0.751	-0.023	-0.003	-1.004
NEVMAR	-0.240	-0.479	0.026	0.004	1.203
WHITE	-0.099	-0.205	-0.004	0.008	-0.175
BLACK	1.047	2.093	0.002	-0.025	0.497
OTHER	-0.925	-1.843	0.004	0.015	-0.255
VERYGOOD	-0.145	-0.289	-0.026	-0.017	-0.332
GOOD	0.078	0.155	-0.024	-0.027	-0.292
FAIR	-0.055	-0.108	0.007	0.003	0.164
POOR	0.003	0.003	0.028	0.027	0.360

Covariances

	KWGTR_DE	LN_INC06	LN_INC08	ED12	ED1315
KWGTR_DE	8.300				
LN_INC06	0.536	1.716			
LN_INC08	0.604	0.936	2.248		
ED12	-0.231	-0.174	-0.179	0.185	
ED1315	-0.024	-0.032	-0.023	-0.081	0.221
ED16	0.089	0.047	0.047	-0.051	-0.068
PREVMAR	0.078	0.253	0.233	-0.029	-0.007
NEVMAR	-0.127	-0.235	-0.220	0.031	0.009
WHITE	-0.081	-0.073	-0.084	0.032	-0.014
BLACK	0.348	0.148	0.167	-0.054	0.022
OTHER	-0.283	-0.073	-0.082	0.022	-0.006
VERYGOOD	0.074	0.057	0.060	-0.013	-0.006
GOOD	0.082	0.091	0.087	-0.030	0.002
FAIR	-0.026	0.018	0.019	-0.010	0.008
POOR	-0.098	-0.102	-0.105	0.034	-0.002

Covariances

	ED16	PREVMAR	NEVMAR	WHITE	BLACK
ED16	0.164				
PREVMAR	0.005	0.249			
NEVMAR	-0.006	-0.230	0.250		
WHITE	-0.005	-0.001	0.002	0.080	
BLACK	0.007	0.029	-0.025	-0.064	0.196
OTHER	-0.003	-0.028	0.024	-0.014	-0.116
VERYGOOD	0.002	0.012	-0.011	-0.002	0.011
GOOD	0.006	0.016	-0.016	-0.014	0.026
FAIR	0.007	0.003	-0.001	-0.004	0.001
POOR	-0.008	-0.020	0.019	0.015	-0.027

Covariances

	OTHER	VERYGOOD	GOOD	FAIR	POOR
OTHER	0.133				
VERYGOOD	-0.008	0.092			
GOOD	-0.013	-0.029	0.201		
FAIR	0.004	-0.031	-0.085	0.212	
POOR	0.012	-0.023	-0.062	-0.068	0.173

Correlations

	STRATUM	NUMSECU	ARTHRITI	DIABETES	AGE_06
STRATUM	1.000				
NUMSECU	1.000	1.000			
ARTHRITI	0.032	0.032	1.000		
DIABETES	-0.003	-0.003	0.099	1.000	
AGE_06	-0.017	-0.017	0.203	0.002	1.000
KWGTR_DE	0.029	0.029	-0.125	-0.082	-0.358
LN_INC06	-0.013	-0.013	-0.115	-0.089	-0.163
LN_INC08	-0.012	-0.012	-0.092	-0.079	-0.147
ED12	0.040	0.040	0.092	0.102	0.155
ED1315	0.014	0.014	0.033	-0.009	0.032
ED16	-0.004	-0.004	-0.011	-0.034	-0.089

PREVMAR	0.050	0.050	-0.096	-0.015	-0.195
NEVMAR	-0.032	-0.032	0.108	0.018	0.233
WHITE	-0.023	-0.024	-0.033	0.071	-0.060
BLACK	0.158	0.158	0.010	-0.139	0.109
OTHER	-0.169	-0.169	0.023	0.102	-0.068
VERYGOOD	-0.032	-0.032	-0.180	-0.133	-0.106
GOOD	0.012	0.012	-0.111	-0.148	-0.063
FAIR	-0.008	-0.008	0.033	0.016	0.034
POOR	0.000	0.000	0.138	0.160	0.084

Correlations

	KWGTR_DE	LN_INC06	LN_INC08	ED12	ED1315
KWGTR_DE	1.000				
LN_INC06	0.142	1.000			
LN_INC08	0.140	0.476	1.000		
ED12	-0.186	-0.308	-0.277	1.000	
ED1315	-0.017	-0.051	-0.032	-0.401	1.000
ED16	0.076	0.089	0.077	-0.291	-0.359
PREVMAR	0.054	0.388	0.312	-0.134	-0.030
NEVMAR	-0.088	-0.358	-0.294	0.142	0.038
WHITE	-0.099	-0.197	-0.198	0.265	-0.102
BLACK	0.273	0.256	0.252	-0.284	0.107
OTHER	-0.269	-0.154	-0.150	0.142	-0.034
VERYGOOD	0.084	0.143	0.132	-0.102	-0.041
GOOD	0.063	0.154	0.130	-0.155	0.011
FAIR	-0.020	0.030	0.028	-0.049	0.036
POOR	-0.082	-0.187	-0.169	0.187	-0.010

Correlations

	ED16	PREVMAR	NEVMAR	WHITE	BLACK
ED16	1.000				
PREVMAR	0.025	1.000			
NEVMAR	-0.028	-0.921	1.000		
WHITE	-0.046	-0.008	0.014	1.000	
BLACK	0.042	0.131	-0.114	-0.514	1.000
OTHER	-0.019	-0.152	0.130	-0.135	-0.716
VERYGOOD	0.016	0.076	-0.074	-0.023	0.080
GOOD	0.032	0.070	-0.072	-0.106	0.131
FAIR	0.040	0.011	-0.005	-0.033	0.005
POOR	-0.047	-0.096	0.092	0.131	-0.147

Correlations

	OTHER	VERYGOOD	GOOD	FAIR	POOR
OTHER	1.000				
VERYGOOD	-0.072	1.000			
GOOD	-0.080	-0.210	1.000		
FAIR	0.022	-0.225	-0.413	1.000	
POOR	0.079	-0.181	-0.333	-0.356	1.000

MODEL FIT INFORMATION

Number of Free Parameters 40

Loglikelihood

H0 Value	-310235.341
H1 Value	-216122.829

* The loglikelihood cannot be used directly for chi-square testing with imputed data.

Information Criteria

Akaike (AIC)	620550.683
Bayesian (BIC)	620845.680
Sample-Size Adjusted BIC (n* = (n + 2) / 24)	620718.564

Chi-Square Test of Model Fit

Value	182197.720
Degrees of Freedom	190
P-Value	0.0000

RMSEA (Root Mean Square Error Of Approximation)

Estimate	0.285	
90 Percent C.I.	0.284	0.286
Probability RMSEA <= .05	0.000	

CFI/TLI

CFI	0.000
TLI	0.000

Chi-Square Test of Model Fit for the Baseline Model

Value	182197.721
Degrees of Freedom	190
P-Value	0.0000

SRMR (Standardized Root Mean Square Residual)

Value	0.167

MODEL RESULTS

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value	Rate of Missing
Means					
STRATUM	30.634	0.138	222.104	0.000	0.001
NUMSECU	60.772	0.276	220.198	0.000	0.001
ARTHRITIS_	0.625	0.004	140.324	0.000	-0.001
DIABETES_0	0.213	0.004	56.475	0.000	0.000
AGE_06	69.519	0.094	740.705	0.000	-0.028
KWGTR_DEC	4.485	0.027	169.027	0.000	0.000
LN_INC06	10.291	0.012	844.748	0.000	0.019
LN_INC08	10.198	0.015	702.248	0.000	0.100
ED12	0.245	0.004	61.856	0.000	0.000
ED1315	0.331	0.004	76.374	0.000	0.000
ED16	0.207	0.004	55.436	0.000	0.000
PREVMAR	0.467	0.005	101.596	0.000	0.000
NEVMAR	0.492	0.005	106.859	0.000	0.001
WHITE	0.088	0.003	33.756	0.000	0.000
BLACK	0.732	0.004	179.368	0.000	0.000
OTHER	0.158	0.003	47.039	0.000	0.000
VERYGOOD	0.103	0.003	36.738	0.000	0.000
GOOD	0.279	0.004	67.480	0.000	0.000
FAIR	0.306	0.004	72.140	0.000	0.000
POOR	0.223	0.004	58.123	0.000	0.000
Variances					
STRATUM	224.135	2.919	76.780	0.000	0.000
NUMSECU	897.185	11.686	76.777	0.000	0.000
ARTHRITIS_	0.234	0.003	76.774	0.000	0.000
DIABETES_0	0.168	0.002	76.772	0.000	0.000
AGE_06	106.779	1.391	76.780	0.000	0.000
KWGTR_DEC	8.300	0.108	76.774	0.000	0.000
LN_INC06	1.716	0.022	76.778	0.000	0.000
LN_INC08	2.248	0.035	63.336	0.000	0.352
ED12	0.185	0.002	76.780	0.000	0.000
ED1315	0.221	0.003	76.781	0.000	0.000
ED16	0.164	0.002	76.774	0.000	0.000
PREVMAR	0.249	0.003	76.772	0.000	0.000
NEVMAR	0.250	0.003	76.776	0.000	0.000
WHITE	0.080	0.001	76.771	0.000	0.000
BLACK	0.196	0.003	76.778	0.000	0.000
OTHER	0.133	0.002	76.772	0.000	0.000
VERYGOOD	0.092	0.001	76.778	0.000	0.000
GOOD	0.201	0.003	76.780	0.000	0.000
FAIR	0.212	0.003	76.770	0.000	0.000
POOR	0.173	0.002	76.778	0.000	0.000

QUALITY OF NUMERICAL RESULTS

Average Condition Number for the Information Matrix 0.161E-02
(ratio of smallest to largest eigenvalue)

...Some output omitted

MUTHEN & MUTHEN
04/09/2025   1:34 PM

INPUT INSTRUCTIONS

```
  TITLE: ASDA 3 EXAMPLE 11.3.1 ANALYSIS OF MI DATA SETS FROM MPLUS
   1 WAVE OF DATA
   ! USE IMPUTED DATA SETS FROM IMPUTE COMMAND OF MPLUS
   DATA:
   FILE IS "P:\asda3\replication mplus\Chapter 11\implist.dat" ;
   TYPE = IMPUTATION ;
   ! order must match that given in usevar and auxilliary list from imputation
   VARIABLE:
   NAMES ARE
   STRATUM NUMSECU arthritis_06 diabetes_06 age_06
   kwgtr_dec ln_inc06 ln_inc08
   ed12 ed1315 ed16
   prevmar nevmar
   white black other
   verygood good fair poor kwgtr ;
   USEVARIABLES ARE STRATUM numsecu KWGTR ln_inc08 ;
   WEIGHT = kwgtr ;
   missing are . ;
   STRATIFICATION IS STRATUM ;
   CLUSTER IS NUMSECU ;
   ANALYSIS:
   type is complex ;
   estimator = mlr ;
   MODEL:
   ln_inc08 ;
   output:
   cint ;
```

```
*** WARNING in MODEL command
  All variables are uncorrelated with all other variables in the model.
  Check that this is what is intended.
   1 WARNING(S) FOUND IN THE INPUT INSTRUCTIONS
```

ASDA 3 EXAMPLE 11.3.1 ANALYSIS OF MI DATA SETS FROM MPLUS
1 WAVE OF DATA

SUMMARY OF ANALYSIS

Number of groups	1
Average number of observations	11789
Number of replications	
Requested	5
Completed	5
Number of dependent variables	1
Number of independent variables	0
Number of continuous latent variables	0

Observed dependent variables

```
  Continuous
   LN_INC08

Variables with special functions

  Stratification        STRATUM
  Cluster variable      NUMSECU
  Weight variable       KWGTR

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)
  Multiple data files from
    P:\asda3\replication mplus\Chapter 11\implist.dat

Input data format  FREE


SUMMARY OF DATA FOR THE FIRST DATA SET

     Number of missing data patterns             1
     Number of strata                       56
     Number of clusters                    112


SUMMARY OF MISSING DATA PATTERNS FOR THE FIRST DATA SET


     MISSING DATA PATTERNS (x = not missing)

           1
 LN_INC08  x


     MISSING DATA PATTERN FREQUENCIES

    Pattern   Frequency
          1       11789


COVARIANCE COVERAGE OF DATA FOR THE FIRST DATA SET

Minimum covariance coverage value   0.100


     PROPORTION OF DATA PRESENT


           Covariance Coverage
              LN_INC08
              ________
 LN_INC08       1.000
```

SAMPLE STATISTICS

NOTE: These are average results over 5 data sets.

ESTIMATED SAMPLE STATISTICS

Means

	LN_INC08
1	10.329

Covariances

	LN_INC08
LN_INC08	2.370

Correlations

	LN_INC08
LN_INC08	1.000

MODEL FIT INFORMATION

Number of Free Parameters 2

Loglikelihood

H0 Value

Mean	-21814.135
Std Dev	36.357
Number of successful computations	5

Proportions		Percentiles	
Expected	Observed	Expected	Observed
0.990	1.000	-21898.712	-21877.145
0.980	1.000	-21888.802	-21877.145
0.950	0.800	-21873.939	-21877.145
0.900	0.800	-21860.730	-21877.145
0.800	0.800	-21844.733	-21877.145
0.700	0.800	-21833.201	-21877.145
0.500	0.600	-21814.135	-21826.480
0.300	0.400	-21795.069	-21806.283
0.200	0.200	-21783.537	-21788.941
0.100	0.000	-21767.540	-21788.941
0.050	0.000	-21754.331	-21788.941
0.020	0.000	-21739.469	-21788.941
0.010	0.000	-21729.558	-21788.941

H1 Value

Mean	-21814.135

Std Dev 36.357
Number of successful computations 5

Proportions		Percentiles	
Expected	Observed	Expected	Observed
0.990	1.000	-21898.712	-21877.145
0.980	1.000	-21888.802	-21877.145
0.950	0.800	-21873.939	-21877.145
0.900	0.800	-21860.730	-21877.145
0.800	0.800	-21844.733	-21877.145
0.700	0.800	-21833.201	-21877.145
0.500	0.600	-21814.135	-21826.480
0.300	0.400	-21795.069	-21806.283
0.200	0.200	-21783.537	-21788.941
0.100	0.000	-21767.540	-21788.941
0.050	0.000	-21754.331	-21788.941
0.020	0.000	-21739.469	-21788.941
0.010	0.000	-21729.558	-21788.941

Information Criteria

Akaike (AIC)

Mean 43632.270
Std Dev 72.714
Number of successful computations 5

Proportions		Percentiles	
Expected	Observed	Expected	Observed
0.990	1.000	43463.115	43547.652
0.980	1.000	43482.937	43547.652
0.950	1.000	43512.663	43547.652
0.900	1.000	43539.080	43547.652
0.800	0.800	43571.074	43547.652
0.700	0.600	43594.139	43547.652
0.500	0.400	43632.270	43581.882
0.300	0.200	43670.401	43616.566
0.200	0.200	43693.466	43656.961
0.100	0.200	43725.461	43656.961
0.050	0.200	43751.878	43656.961
0.020	0.000	43781.603	43656.961
0.010	0.000	43801.425	43656.961

Bayesian (BIC)

Mean 43647.020
Std Dev 72.714
Number of successful computations 5

Proportions		Percentiles	
Expected	Observed	Expected	Observed
0.990	1.000	43477.865	43562.402
0.980	1.000	43497.687	43562.402
0.950	1.000	43527.413	43562.402
0.900	1.000	43553.830	43562.402
0.800	0.800	43585.824	43562.402
0.700	0.600	43608.889	43562.402
0.500	0.400	43647.020	43596.632
0.300	0.200	43685.151	43631.316

0.200	0.200	43708.216	43671.711
0.100	0.200	43740.210	43671.711
0.050	0.200	43766.627	43671.711
0.020	0.000	43796.353	43671.711
0.010	0.000	43816.175	43671.711

Sample-Size Adjusted BIC (n* = (n + 2) / 24)

Mean	43640.664
Std Dev	72.714
Number of successful computations	5

Proportions		Percentiles	
Expected	Observed	Expected	Observed
0.990	1.000	43471.509	43556.046
0.980	1.000	43491.331	43556.046
0.950	1.000	43521.057	43556.046
0.900	1.000	43547.474	43556.046
0.800	0.800	43579.468	43556.046
0.700	0.600	43602.533	43556.046
0.500	0.400	43640.664	43590.276
0.300	0.200	43678.796	43624.960
0.200	0.200	43701.860	43665.355
0.100	0.200	43733.855	43665.355
0.050	0.200	43760.272	43665.355
0.020	0.000	43789.997	43665.355
0.010	0.000	43809.819	43665.355

Chi-Square Test of Model Fit

Degrees of freedom	0
Mean	0.000
Std Dev	0.000
Number of successful computations	5

Proportions		Percentiles	
Expected	Observed	Expected	Observed
0.990	1.000	0.000	0.000
0.980	1.000	0.000	0.000
0.950	1.000	0.000	0.000
0.900	1.000	0.000	0.000
0.800	1.000	0.000	0.000
0.700	1.000	0.000	0.000
0.500	1.000	0.000	0.000
0.300	1.000	0.000	0.000
0.200	1.000	0.000	0.000
0.100	1.000	0.000	0.000
0.050	1.000	0.000	0.000
0.020	1.000	0.000	0.000
0.010	1.000	0.000	0.000

RMSEA (Root Mean Square Error Of Approximation)

Mean	0.000
Std Dev	0.000
Number of successful computations	5

Proportions	Percentiles

Expected	Observed	Expected	Observed
0.990	0.000	0.000	0.000
0.980	0.000	0.000	0.000
0.950	0.000	0.000	0.000
0.900	0.000	0.000	0.000
0.800	0.000	0.000	0.000
0.700	0.000	0.000	0.000
0.500	0.000	0.000	0.000
0.300	0.000	0.000	0.000
0.200	0.000	0.000	0.000
0.100	0.000	0.000	0.000
0.050	0.000	0.000	0.000
0.020	0.000	0.000	0.000
0.010	0.000	0.000	0.000

CFI/TLI

CFI

Mean	0.000
Std Dev	0.000
Number of successful computations	5

Proportions		Percentiles	
Expected	Observed	Expected	Observed
0.990	0.000	0.000	0.000
0.980	0.000	0.000	0.000
0.950	0.000	0.000	0.000
0.900	0.000	0.000	0.000
0.800	0.000	0.000	0.000
0.700	0.000	0.000	0.000
0.500	0.000	0.000	0.000
0.300	0.000	0.000	0.000
0.200	0.000	0.000	0.000
0.100	0.000	0.000	0.000
0.050	0.000	0.000	0.000
0.020	0.000	0.000	0.000
0.010	0.000	0.000	0.000

TLI

Mean	1.000
Std Dev	0.000
Number of successful computations	5

Proportions		Percentiles	
Expected	Observed	Expected	Observed
0.990	0.000	1.000	1.000
0.980	0.000	1.000	1.000
0.950	0.000	1.000	1.000
0.900	0.000	1.000	1.000
0.800	0.000	1.000	1.000
0.700	0.000	1.000	1.000
0.500	0.000	1.000	1.000
0.300	0.000	1.000	1.000
0.200	0.000	1.000	1.000
0.100	0.000	1.000	1.000
0.050	0.000	1.000	1.000
0.020	0.000	1.000	1.000

0.010	0.000	1.000	1.000

SRMR (Standardized Root Mean Square Residual)

Mean	0.000
Std Dev	0.000
Number of successful computations	5

Proportions		Percentiles	
Expected	Observed	Expected	Observed
0.990	1.000	0.000	0.000
0.980	1.000	0.000	0.000
0.950	1.000	0.000	0.000
0.900	1.000	0.000	0.000
0.800	1.000	0.000	0.000
0.700	0.600	0.000	0.000
0.500	0.200	0.000	0.000
0.300	0.200	0.000	0.000
0.200	0.200	0.000	0.000
0.100	0.200	0.000	0.000
0.050	0.200	0.000	0.000
0.020	0.000	0.000	0.000
0.010	0.000	0.000	0.000

MODEL RESULTS

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value	Rate of Missing
Means					
LN_INC08	**10.329**	**0.026**	**391.904**	**0.000**	**0.023**
Variances					
LN_INC08	**2.370**	**0.125**	**18.980**	**0.000**	**0.021**

QUALITY OF NUMERICAL RESULTS

Average Condition Number for the Information Matrix 0.110E-01
(ratio of smallest to largest eigenvalue)

CONFIDENCE INTERVALS OF MODEL RESULTS

	Lower .5%	Lower 2.5%	Lower 5%	Estimate	Upper 5%	Upper 2.5%	Upper .5%
Means							
LN_INC08	**10.261**	**10.277**	**10.285**	**10.329**	**10.372**	**10.380**	**10.397**
Variances							
LN_INC08	**2.048**	**2.125**	**2.165**	**2.370**	**2.575**	**2.615**	**2.692**

TECHNICAL 1 OUTPUT

PARAMETER SPECIFICATION

```
           NU
              LN_INCO8
              ________
      1            1


           THETA
              LN_INCO8
              ________
 LN_INCO8           2


     STARTING VALUES


           NU
              LN_INCO8
              ________
      1         0.000


           THETA
              LN_INCO8
              ________
 LN_INCO8       1.183


DIAGRAM INFORMATION

  Use View Diagram under the Diagram menu in the Mplus Editor to view the diagram.
  If running Mplus from the Mplus Diagrammer, the diagram opens automatically.

  Diagram output
    p:\asda3\replication mplus\chapter 11\c11 1 wave analyze imputed data.dgm

     Beginning Time:  13:34:12
        Ending Time:  13:34:21
       Elapsed Time:  00:00:09



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```

Mplus VERSION 7.4
MUTHEN & MUTHEN
04/09/2025 1:36 PM

INPUT INSTRUCTIONS

```
   TITLE: ASDA 3 EXAMPLE 11.3.1 COMPLETE CASE ANALYSIS 2 WAVES OF DATA
   ! USE CHAPTER 11 2 WAVES OF DATA,CC DATA SET PREPARED IN SAS
   DATA:
   FILE IS "P:\ASDA 2\Data sets\HRS 2012\HRS 2006_2012 Longitudinal File\
   cc_2waves_mplus.txt";

   VARIABLE:
   NAMES ARE kwgtr stratum numsecu incdiff_06_10 ;
   USEVARIABLES ARE kwgtr stratum numsecu n_incdiff_06_10 ;
   missing are . ;
   WEIGHT IS kwgtr ;
   stratification is stratum ;
   cluster is numsecu ;

  ! rescale income difference to meet variance restrictions of Mplus, in thousands
   DEFINE:
   n_incdiff_06_10 = incdiff_06_10/1000 ;

   ANALYSIS:
   type is complex;
   estimator=mlr ;

   ! Obtain mean from linear regression model ;
   Model:
   n_incdiff_06_10 ;

   Output:
   cint ;
```

```
*** WARNING in VARIABLE command
  Note that only the first 8 characters of variable names are used in the output.
  Shorten variable names to avoid any confusion.
*** WARNING in MODEL command
  All variables are uncorrelated with all other variables in the model.
  Check that this is what is intended.
*** WARNING
  Data set contains cases with missing on all variables.
  These cases were not included in the analysis.
  Number of cases with missing on all variables:  2387
   3 WARNING(S) FOUND IN THE INPUT INSTRUCTIONS
```

ASDA 3 EXAMPLE 11.3.1 COMPLETE CASE ANALYSIS 2 WAVES OF DATA

SUMMARY OF ANALYSIS

Number of groups	1
Number of observations	9402
Number of dependent variables	1

```
Number of independent variables                                   0
Number of continuous latent variables                             0

Observed dependent variables

  Continuous
   N_INCDIFF_

Variables with special functions

  Stratification        STRATUM
  Cluster variable      NUMSECU
  Weight variable       KWGTR

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)
  P:\ASDA 2\Data sets\HRS 2012\HRS 2006_2012 Longitudinal File\cc_2waves_mplus.t

Input data format  FREE


SUMMARY OF DATA

     Number of missing data patterns             1
     Number of strata                        56
     Number of clusters                     112


COVARIANCE COVERAGE OF DATA

Minimum covariance coverage value   0.100


     PROPORTION OF DATA PRESENT


           Covariance Coverage
              N_INCDIF
              ________
 N_INCDIF       1.000



THE MODEL ESTIMATION TERMINATED NORMALLY



MODEL FIT INFORMATION

Number of Free Parameters                       2

Loglikelihood
```

```
          H0 Value                       -61848.676
          H0 Scaling Correction Factor     759.7914
            for MLR
          H1 Value                       -61848.676
          H1 Scaling Correction Factor     759.7914
            for MLR

Information Criteria

          Akaike (AIC)                   123701.353
          Bayesian (BIC)                 123715.650
          Sample-Size Adjusted BIC       123709.295
            (n* = (n + 2) / 24)

Chi-Square Test of Model Fit

          Value                              0.000*
          Degrees of Freedom                     0
          P-Value                           0.0000
          Scaling Correction Factor         1.0000
            for MLR

*   The chi-square value for MLM, MLMV, MLR, ULSMV, WLSM and WLSMV cannot be used
    for chi-square difference testing in the regular way.  MLM, MLR and WLSM
    chi-square difference testing is described on the Mplus website.  MLMV, WLSMV,
    and ULSMV difference testing is done using the DIFFTEST option.

RMSEA (Root Mean Square Error Of Approximation)

          Estimate                           0.000
          90 Percent C.I.                    0.000  0.000
          Probability RMSEA <= .05           0.000

CFI/TLI

          CFI                                0.000
          TLI                                1.000

Chi-Square Test of Model Fit for the Baseline Model

          Value                              0.000
          Degrees of Freedom                     0
          P-Value                           0.0000

SRMR (Standardized Root Mean Square Residual)

          Value                              0.000



MODEL RESULTS

                                                    Two-Tailed
                    Estimate       S.E.  Est./S.E.    P-Value

 Means
    N_INCDIFF_        -6.554      1.867     -3.510      0.000
```

```
 Variances
    N_INCDIFF_     30290.658  17215.186      1.760      0.078


QUALITY OF NUMERICAL RESULTS

     Condition Number for the Information Matrix              0.284E-02
       (ratio of smallest to largest eigenvalue)


CONFIDENCE INTERVALS OF MODEL RESULTS

                  Lower .5%  Lower 2.5%    Lower 5%    Estimate    Upper 5%  Upper 2.5%   Upper .5%

 Means
    N_INCDIF       -11.364     -10.214      -9.626      -6.554      -3.482      -2.894      -1.744

 Variances
    N_INCDIF     *********   -3451.107    1971.678   30290.658   58609.641   64032.422   74633.531


DIAGRAM INFORMATION

  Use View Diagram under the Diagram menu in the Mplus Editor to view the diagram.
  If running Mplus from the Mplus Diagrammer, the diagram opens automatically.

  Diagram output
    p:\asda3\replication mplus\chapter 11\c11 2 waves cc analysis.dgm

     Beginning Time:  13:36:59
        Ending Time:  13:37:00
       Elapsed Time:  00:00:01



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```

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INPUT INSTRUCTIONS

```
   TITLE: ASDA 3 EXAMPLE 11.3.2 ADJUSTED WEIGHT 2 WAVES OF DATA
   ! USE CHAPTER 11 2 WAVES OF DATA, ADJUSTED WGT DATA SET PREPARED IN SAS
   DATA:
   FILE IS "P:\ASDA 2\Data sets\HRS 2012\HRS 2006_2012 Longitudinal File\
   adj_wgt_2waves_mplus.txt";

   VARIABLE:
   NAMES ARE adj_kwgtr stratum numsecu incdiff_06_10 ;
   USEVARIABLES ARE adj_kwgtr stratum numsecu n_incdiff_06_10 ;
   missing are . ;
   WEIGHT IS adj_kwgtr ;
   stratification is stratum ;
   cluster is numsecu ;

  ! DIVIDE BY 1000 TO AVOID VARIANCE > 100000
   DEFINE:
   n_incdiff_06_10 = incdiff_06_10/1000 ;
   ANALYSIS:
   type is complex;
   estimator=mlr ;
   ! Obtain mean from linear regression model ;
   Model:
   n_incdiff_06_10 ;
   Output:
   cint ;
```

```
*** WARNING in VARIABLE command
  Note that only the first 8 characters of variable names are used in the output.
  Shorten variable names to avoid any confusion.
*** WARNING in MODEL command
  All variables are uncorrelated with all other variables in the model.
  Check that this is what is intended.
*** WARNING
  Data set contains cases with missing on all variables.
  These cases were not included in the analysis.
  Number of cases with missing on all variables:  2387
   3 WARNING(S) FOUND IN THE INPUT INSTRUCTIONS
```

ASDA 3 EXAMPLE 11.3.2 ADJUSTED WEIGHT 2 WAVES OF DATA

SUMMARY OF ANALYSIS

Number of groups	1
Number of observations	9402
Number of dependent variables	1
Number of independent variables	0
Number of continuous latent variables	0

Observed dependent variables

  Continuous
   N_INCDIFF_

Variables with special functions

  Stratification   STRATUM
  Cluster variable   NUMSECU
  Weight variable   ADJ_KWGT

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)
  P:\ASDA 2\Data sets\HRS 2012\HRS 2006_2012 Longitudinal File\adj_wgt_2waves_mp

Input data format FREE

SUMMARY OF DATA

     Number of missing data patterns   1
     Number of strata   56
     Number of clusters   112

COVARIANCE COVERAGE OF DATA

Minimum covariance coverage value   0.100

     PROPORTION OF DATA PRESENT

           Covariance Coverage
              N_INCDIF
              ____
 N_INCDIF   1.000

THE MODEL ESTIMATION TERMINATED NORMALLY

MODEL FIT INFORMATION

Number of Free Parameters   2

Loglikelihood

          H0 Value   -61431.350
          H0 Scaling Correction Factor   728.9374

```
            for MLR
          H1 Value                        -61431.350
          H1 Scaling Correction Factor       728.9374
            for MLR

Information Criteria

          Akaike (AIC)                    122866.701
          Bayesian (BIC)                  122880.998
          Sample-Size Adjusted BIC        122874.642
            (n* = (n + 2) / 24)

Chi-Square Test of Model Fit

          Value                               0.000*
          Degrees of Freedom                      0
          P-Value                           0.0000
          Scaling Correction Factor         1.0000
            for MLR

*   The chi-square value for MLM, MLMV, MLR, ULSMV, WLSM and WLSMV cannot be used
    for chi-square difference testing in the regular way.  MLM, MLR and WLSM
    chi-square difference testing is described on the Mplus website.  MLMV, WLSMV,
    and ULSMV difference testing is done using the DIFFTEST option.

RMSEA (Root Mean Square Error Of Approximation)

          Estimate                            0.000
          90 Percent C.I.                     0.000  0.000
          Probability RMSEA <= .05            0.000

CFI/TLI

          CFI                                 0.000
          TLI                                 1.000

Chi-Square Test of Model Fit for the Baseline Model

          Value                               0.000
          Degrees of Freedom                      0
          P-Value                           0.0000

SRMR (Standardized Root Mean Square Residual)

          Value                               0.000



MODEL RESULTS

                                                    Two-Tailed
                    Estimate       S.E.  Est./S.E.    P-Value

 Means
    N_INCDIFF_        -6.120      1.703     -3.594      0.000

 Variances
    N_INCDIFF_     27718.162  15430.607      1.796      0.072
```

QUALITY OF NUMERICAL RESULTS

Condition Number for the Information Matrix 0.270E-02
(ratio of smallest to largest eigenvalue)

CONFIDENCE INTERVALS OF MODEL RESULTS

	Lower .5%	Lower 2.5%	Lower 5%	Estimate	Upper 5%	Upper 2.5%	Upper .5%
Means							
N_INCDIF	-10.506	-9.457	-8.921	-6.120	-3.319	-2.782	-1.733
Variances							
N_INCDIF	*********	-2525.828	2334.812	27718.162	53101.512	57962.152	67464.320

DIAGRAM INFORMATION

Use View Diagram under the Diagram menu in the Mplus Editor to view the diagram.
If running Mplus from the Mplus Diagrammer, the diagram opens automatically.

Diagram output
p:\asda3\replication mplus\chapter 11\c11 2 waves adjusted weight.dgm

Beginning Time: 13:39:31
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Elapsed Time: 00:00:01

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INPUT INSTRUCTIONS

```
  TITLE: ASDA 3 EXAMPLE 11.3.2 2 WAVES MULTIPLE IMPUTATION MISSING DATA
   ! Note this imputes ln_inc10 directly
   DATA:
   FILE IS "P:\ASDA 2\Data sets\HRS 2012\HRS 2006_2012 Longitudinal File\
   mi_2waves_mplus.txt";
   VARIABLE:
   NAMES ARE
   STRATUM NUMSECU arthritis_06 diabetes_06 age_06 kwgtr_dec kwgtr ln_inc06
   ln_inc10 incdiff_06_10
   ed011 ed12 ed1315 ed16 married prevmar nevmar hisp white black other
   excellent verygood good fair poor ;
   ! order of variables in output data sets will match usevariables,auxiliary from impute
   ! impute ln_inc10
   USEVARIABLES ARE
   STRATUM NUMSECU arthritis_06 diabetes_06 age_06
   kwgtr_dec
   ln_inc06
   ln_inc10
   ed12 ed1315 ed16
   prevmar nevmar
   white black other
   verygood good fair poor
   ;
   AUXILIARY IS kwgtr ;
   missing are . ;

   ! Impute with M=5 data set and Sequential Regression Imputation model
   DATA IMPUTATION:
   IMPUTE=ln_inc10 ;
   NDATASETS=5 ;
   MODEL=SEQUENTIAL ;
   SAVE= IMP2WAVES_inc10*.DAT ;



*** WARNING in VARIABLE command
  Note that only the first 8 characters of variable names are used in the output.
  Shorten variable names to avoid any confusion.
*** WARNING in MODEL command
  All variables are uncorrelated with all other variables in the model.
  Check that this is what is intended.
   2 WARNING(S) FOUND IN THE INPUT INSTRUCTIONS



ASDA 3 EXAMPLE 11.3.2 2 WAVES MULTIPLE IMPUTATION MISSING DATA

SUMMARY OF ANALYSIS

Number of groups                                                 1
Average number of observations                               11789

Number of replications
```

```
    Requested                                                  5
    Completed                                                  5

Number of dependent variables                                 20
Number of independent variables                                0
Number of continuous latent variables                          0

Observed dependent variables

  Continuous
   STRATUM     NUMSECU     ARTHRITIS_  DIABETES_0  AGE_06      KWGTR_DEC
   LN_INC06    LN_INC10    ED12        ED1315      ED16        PREVMAR
   NEVMAR      WHITE       BLACK       OTHER       VERYGOOD    GOOD
   FAIR        POOR

Observed auxiliary variables
   KWGTR


Variables used for imputation

  Variables imputed as continuous
   LN_INC10


Estimator                                                     ML
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
Specifications for Bayesian Estimation
  Point estimate                                          MEDIAN
  Number of Markov chain Monte Carlo (MCMC) chains             2
  Random seed for the first chain                              0
  Starting value information                           UNPERTURBED
  Treatment of categorical mediator                        LATENT
  Algorithm used for Markov chain Monte Carlo           GIBBS(PX1)
  Convergence criterion                                 0.500D-01
  Maximum number of iterations                              50000
  K-th iteration used for thinning                              1
Specifications for Data Imputation
  Number of imputed data sets                                  5
  H1 imputation model type                             SEQUENTIAL
  Iteration intervals for thinning                           100

Input data file(s)
  P:\ASDA 2\Data sets\HRS 2012\HRS 2006_2012 Longitudinal File\mi_2waves_mplus.t

Input data format  FREE


SUMMARY OF DATA FOR THE FIRST DATA SET

     Number of missing data patterns             1


SUMMARY OF MISSING DATA PATTERNS FOR THE FIRST DATA SET
```

MISSING DATA PATTERNS (x = not missing)

	1
STRATUM	x
NUMSECU	x
ARTHRITI	x
DIABETES	x
AGE_06	x
KWGTR_DE	x
LN_INC06	x
LN_INC10	x
ED12	x
ED1315	x
ED16	x
PREVMAR	x
NEVMAR	x
WHITE	x
BLACK	x
OTHER	x
VERYGOOD	x
GOOD	x
FAIR	x
POOR	x

MISSING DATA PATTERN FREQUENCIES

Pattern	Frequency
1	11789

COVARIANCE COVERAGE OF DATA FOR THE FIRST DATA SET

Minimum covariance coverage value 0.100

PROPORTION OF DATA PRESENT

Covariance Coverage

	STRATUM	NUMSECU	ARTHRITI	DIABETES	AGE_06
STRATUM	1.000				
NUMSECU	1.000	1.000			
ARTHRITI	1.000	1.000	1.000		
DIABETES	1.000	1.000	1.000	1.000	
AGE_06	1.000	1.000	1.000	1.000	1.000
KWGTR_DE	1.000	1.000	1.000	1.000	1.000
LN_INC06	1.000	1.000	1.000	1.000	1.000
LN_INC10	1.000	1.000	1.000	1.000	1.000
ED12	1.000	1.000	1.000	1.000	1.000
ED1315	1.000	1.000	1.000	1.000	1.000
ED16	1.000	1.000	1.000	1.000	1.000
PREVMAR	1.000	1.000	1.000	1.000	1.000
NEVMAR	1.000	1.000	1.000	1.000	1.000
WHITE	1.000	1.000	1.000	1.000	1.000
BLACK	1.000	1.000	1.000	1.000	1.000

OTHER	1.000	1.000	1.000	1.000	1.000
VERYGOOD	1.000	1.000	1.000	1.000	1.000
GOOD	1.000	1.000	1.000	1.000	1.000
FAIR	1.000	1.000	1.000	1.000	1.000
POOR	1.000	1.000	1.000	1.000	1.000

Covariance Coverage

	KWGTR_DE	LN_INC06	LN_INC10	ED12	ED1315
KWGTR_DE	1.000				
LN_INC06	1.000	1.000			
LN_INC10	1.000	1.000	1.000		
ED12	1.000	1.000	1.000	1.000	
ED1315	1.000	1.000	1.000	1.000	1.000
ED16	1.000	1.000	1.000	1.000	1.000
PREVMAR	1.000	1.000	1.000	1.000	1.000
NEVMAR	1.000	1.000	1.000	1.000	1.000
WHITE	1.000	1.000	1.000	1.000	1.000
BLACK	1.000	1.000	1.000	1.000	1.000
OTHER	1.000	1.000	1.000	1.000	1.000
VERYGOOD	1.000	1.000	1.000	1.000	1.000
GOOD	1.000	1.000	1.000	1.000	1.000
FAIR	1.000	1.000	1.000	1.000	1.000
POOR	1.000	1.000	1.000	1.000	1.000

Covariance Coverage

	ED16	PREVMAR	NEVMAR	WHITE	BLACK
ED16	1.000				
PREVMAR	1.000	1.000			
NEVMAR	1.000	1.000	1.000		
WHITE	1.000	1.000	1.000	1.000	
BLACK	1.000	1.000	1.000	1.000	1.000
OTHER	1.000	1.000	1.000	1.000	1.000
VERYGOOD	1.000	1.000	1.000	1.000	1.000
GOOD	1.000	1.000	1.000	1.000	1.000
FAIR	1.000	1.000	1.000	1.000	1.000
POOR	1.000	1.000	1.000	1.000	1.000

Covariance Coverage

	OTHER	VERYGOOD	GOOD	FAIR	POOR
OTHER	1.000				
VERYGOOD	1.000	1.000			
GOOD	1.000	1.000	1.000		
FAIR	1.000	1.000	1.000	1.000	
POOR	1.000	1.000	1.000	1.000	1.000

SAMPLE STATISTICS

NOTE: These are average results over 5 data sets.

SAMPLE STATISTICS

Means

	STRATUM	NUMSECU	ARTHRITI	DIABETES	AGE_06
1	30.634	60.772	0.625	0.213	69.519

Means

	KWGTR_DE	LN_INC06	LN_INC10	ED12	ED1315
1	4.485	10.291	10.200	0.331	0.207

Means

	ED16	PREVMAR	NEVMAR	WHITE	BLACK
1	0.217	0.492	0.041	0.732	0.158

Means

	OTHER	VERYGOOD	GOOD	FAIR	POOR
1	0.022	0.279	0.306	0.223	0.090

Covariances

	STRATUM	NUMSECU	ARTHRITI	DIABETES	AGE_06
STRATUM	224.135				
NUMSECU	448.369	897.186			
ARTHRITI	0.229	0.462	0.234		
DIABETES	-0.020	-0.038	0.020	0.168	
AGE_06	-2.700	-5.403	1.016	0.008	106.779
KWGTR_DE	1.248	2.486	-0.175	-0.097	-10.667
LN_INC06	-0.250	-0.496	-0.073	-0.048	-2.209
LN_INC10	-0.263	-0.524	-0.066	-0.048	-2.254
ED12	0.095	0.193	0.007	-0.002	0.157
ED1315	-0.023	-0.050	-0.002	-0.006	-0.374
ED16	-0.331	-0.661	-0.025	-0.011	-0.472
PREVMAR	-0.240	-0.479	0.026	0.004	1.203
NEVMAR	-0.136	-0.271	-0.003	-0.001	-0.199
WHITE	1.047	2.093	0.002	-0.025	0.497
BLACK	-0.925	-1.843	0.004	0.015	-0.255
OTHER	-0.023	-0.045	-0.002	0.002	-0.067
VERYGOOD	0.078	0.155	-0.024	-0.027	-0.292
GOOD	-0.055	-0.108	0.007	0.003	0.164
FAIR	0.003	0.003	0.028	0.027	0.360
POOR	0.119	0.239	0.015	0.013	0.100

Covariances

	KWGTR_DE	LN_INC06	LN_INC10	ED12	ED1315
KWGTR_DE	8.300				
LN_INC06	0.536	1.716			
LN_INC10	0.603	0.936	2.247		
ED12	-0.024	-0.032	-0.022	0.221	
ED1315	0.089	0.047	0.047	-0.068	0.164
ED16	0.166	0.158	0.153	-0.072	-0.045

PREVMAR	-0.127	-0.235	-0.220	0.009	-0.006
NEVMAR	0.049	-0.019	-0.013	-0.002	0.000
WHITE	0.348	0.148	0.167	0.022	0.007
BLACK	-0.283	-0.073	-0.082	-0.006	-0.003
OTHER	0.016	-0.002	-0.001	-0.003	0.001
VERYGOOD	0.082	0.091	0.087	0.002	0.006
GOOD	-0.026	0.018	0.018	0.008	0.007
FAIR	-0.098	-0.102	-0.105	-0.002	-0.008
POOR	-0.031	-0.064	-0.059	-0.002	-0.007

Covariances

	ED16	PREVMAR	NEVMAR	WHITE	BLACK
ED16	0.170				
PREVMAR	-0.034	0.250			
NEVMAR	0.003	-0.020	0.039		
WHITE	0.024	-0.025	-0.004	0.196	
BLACK	-0.014	0.024	0.004	-0.116	0.133
OTHER	0.003	0.000	0.000	-0.016	-0.003
VERYGOOD	0.022	-0.016	0.000	0.026	-0.013
GOOD	-0.005	-0.001	-0.001	0.001	0.004
FAIR	-0.024	0.019	0.001	-0.027	0.012
POOR	-0.010	0.009	0.000	-0.011	0.005

Covariances

	OTHER	VERYGOOD	GOOD	FAIR	POOR
OTHER	0.022				
VERYGOOD	0.001	0.201			
GOOD	0.000	-0.085	0.212		
FAIR	-0.001	-0.062	-0.068	0.173	
POOR	0.001	-0.025	-0.027	-0.020	0.082

Correlations

	STRATUM	NUMSECU	ARTHRITI	DIABETES	AGE_06
STRATUM	1.000				
NUMSECU	1.000	1.000			
ARTHRITI	0.032	0.032	1.000		
DIABETES	-0.003	-0.003	0.099	1.000	
AGE_06	-0.017	-0.017	0.203	0.002	1.000
KWGTR_DE	0.029	0.029	-0.125	-0.082	-0.358
LN_INC06	-0.013	-0.013	-0.115	-0.089	-0.163
LN_INC10	-0.012	-0.012	-0.091	-0.078	-0.146
ED12	0.014	0.014	0.033	-0.009	0.032
ED1315	-0.004	-0.004	-0.011	-0.034	-0.089
ED16	-0.054	-0.054	-0.123	-0.063	-0.111
PREVMAR	-0.032	-0.032	0.108	0.018	0.233
NEVMAR	-0.046	-0.046	-0.031	-0.009	-0.097
WHITE	0.158	0.158	0.010	-0.139	0.109
BLACK	-0.169	-0.169	0.023	0.102	-0.068
OTHER	-0.010	-0.010	-0.025	0.028	-0.044
VERYGOOD	0.012	0.012	-0.111	-0.148	-0.063
GOOD	-0.008	-0.008	0.033	0.016	0.034
FAIR	0.000	0.000	0.138	0.160	0.084
POOR	0.028	0.028	0.112	0.115	0.034

Correlations

	KWGTR_DE	LN_INC06	LN_INC10	ED12	ED1315
KWGTR_DE	1.000				
LN_INC06	0.142	1.000			
LN_INC10	0.140	0.477	1.000		
ED12	-0.017	-0.051	-0.031	1.000	
ED1315	0.076	0.089	0.077	-0.359	1.000
ED16	0.139	0.293	0.247	-0.370	-0.269
PREVMAR	-0.088	-0.358	-0.294	0.038	-0.028
NEVMAR	0.086	-0.072	-0.044	-0.021	0.006
WHITE	0.273	0.256	0.252	0.107	0.042
BLACK	-0.269	-0.154	-0.151	-0.034	-0.019
OTHER	0.038	-0.010	-0.003	-0.039	0.012
VERYGOOD	0.063	0.154	0.130	0.011	0.032
GOOD	-0.020	0.030	0.025	0.036	0.040
FAIR	-0.082	-0.187	-0.168	-0.010	-0.047
POOR	-0.038	-0.171	-0.138	-0.016	-0.061

Correlations

	ED16	PREVMAR	NEVMAR	WHITE	BLACK
ED16	1.000				
PREVMAR	-0.165	1.000			
NEVMAR	0.041	-0.204	1.000		
WHITE	0.133	-0.114	-0.041	1.000	
BLACK	-0.090	0.130	0.055	-0.716	1.000
OTHER	0.043	-0.005	0.013	-0.248	-0.065
VERYGOOD	0.119	-0.072	0.005	0.131	-0.080
GOOD	-0.028	-0.005	-0.014	0.005	0.022
FAIR	-0.137	0.092	0.010	-0.147	0.079
POOR	-0.088	0.066	0.007	-0.085	0.051

Correlations

	OTHER	VERYGOOD	GOOD	FAIR	POOR
OTHER	1.000				
VERYGOOD	0.010	1.000			
GOOD	-0.007	-0.413	1.000		
FAIR	-0.008	-0.333	-0.356	1.000	
POOR	0.028	-0.195	-0.208	-0.168	1.000

MODEL FIT INFORMATION

Number of Free Parameters 40

Loglikelihood

H0 Value -290405.502
H1 Value -216130.191

* The loglikelihood cannot be used directly for chi-square testing with imputed data.

Information Criteria

Akaike (AIC)	580891.003
Bayesian (BIC)	581186.000
Sample-Size Adjusted BIC (n* = (n + 2) / 24)	581058.885

Chi-Square Test of Model Fit

Value	143489.577
Degrees of Freedom	190
P-Value	0.0000

RMSEA (Root Mean Square Error Of Approximation)

Estimate	0.253	
90 Percent C.I.	0.252	0.254
Probability RMSEA <= .05	0.000	

CFI/TLI

CFI	0.000
TLI	0.000

Chi-Square Test of Model Fit for the Baseline Model

Value	143489.582
Degrees of Freedom	190
P-Value	0.0000

SRMR (Standardized Root Mean Square Residual)

Value	0.141

MODEL RESULTS

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value	Rate of Missing
Means					
STRATUM	30.634	0.138	222.144	0.000	0.000
NUMSECU	60.772	0.276	220.228	0.000	0.001
ARTHRITIS_	0.625	0.004	140.276	0.000	0.000
DIABETES_0	0.213	0.004	56.473	0.000	0.000
AGE_06	69.519	0.094	740.704	0.000	-0.028
KWGTR_DEC	4.485	0.027	169.111	0.000	-0.001
LN_INC06	10.291	0.012	842.855	0.000	0.024
LN_INC10	10.200	0.015	682.240	0.000	0.156
ED12	0.331	0.004	76.374	0.000	0.000
ED1315	0.207	0.004	55.436	0.000	0.000
ED16	0.217	0.004	57.167	0.000	0.000
PREVMAR	0.492	0.005	106.859	0.000	0.001
NEVMAR	0.041	0.002	22.490	0.000	0.000
WHITE	0.732	0.004	179.450	0.000	-0.001
BLACK	0.158	0.003	47.039	0.000	0.000
OTHER	0.022	0.001	16.305	0.000	0.000
VERYGOOD	0.279	0.004	67.480	0.000	0.000

GOOD	0.306	0.004	72.140	0.000	0.000
FAIR	0.223	0.004	58.123	0.000	0.000
POOR	0.090	0.003	34.075	0.000	0.000

Variances

STRATUM	224.137	2.919	76.779	0.000	0.000
NUMSECU	897.180	11.684	76.784	0.000	0.000
ARTHRITIS_	0.234	0.003	76.772	0.000	0.000
DIABETES_0	0.168	0.002	76.776	0.000	0.000
AGE_06	106.779	1.391	76.778	0.000	0.000
KWGTR_DEC	8.300	0.108	76.769	0.000	0.000
LN_INC06	1.716	0.022	76.776	0.000	0.000
LN_INC10	2.247	0.037	61.223	0.000	0.402
ED12	0.221	0.003	76.787	0.000	0.000
ED1315	0.164	0.002	76.773	0.000	0.000
ED16	0.170	0.002	76.775	0.000	0.000
PREVMAR	0.250	0.003	76.776	0.000	0.000
NEVMAR	0.039	0.001	76.774	0.000	0.000
WHITE	0.196	0.003	76.780	0.000	0.000
BLACK	0.133	0.002	76.778	0.000	0.000
OTHER	0.022	0.000	76.773	0.000	0.000
VERYGOOD	0.201	0.003	76.786	0.000	0.000
GOOD	0.212	0.003	76.772	0.000	0.000
FAIR	0.173	0.002	76.778	0.000	0.000
POOR	0.082	0.001	76.775	0.000	0.000

QUALITY OF NUMERICAL RESULTS

Average Condition Number for the Information Matrix 0.116E-03
(ratio of smallest to largest eigenvalue)

TECHNICAL 1 OUTPUT

PARAMETER SPECIFICATION

	NU				
	STRATUM	NUMSECU	ARTHRITI	DIABETES	AGE_06
1	1	2	3	4	5

	NU				
	KWGTR_DE	LN_INC06	LN_INC10	ED12	ED1315
1	6	7	8	9	10

	NU				
	ED16	PREVMAR	NEVMAR	WHITE	BLACK
1	11	12	13	14	15

	NU				
	OTHER	VERYGOOD	GOOD	FAIR	POOR

1	16	17	18	19	20

THETA

	STRATUM	NUMSECU	ARTHRITI	DIABETES	AGE_06
STRATUM	21				
NUMSECU	0	22			
ARTHRITI	0	0	23		
DIABETES	0	0	0	24	
AGE_06	0	0	0	0	25
KWGTR_DE	0	0	0	0	0
LN_INC06	0	0	0	0	0
LN_INC10	0	0	0	0	0
ED12	0	0	0	0	0
ED1315	0	0	0	0	0
ED16	0	0	0	0	0
PREVMAR	0	0	0	0	0
NEVMAR	0	0	0	0	0
WHITE	0	0	0	0	0
BLACK	0	0	0	0	0
OTHER	0	0	0	0	0
VERYGOOD	0	0	0	0	0
GOOD	0	0	0	0	0
FAIR	0	0	0	0	0
POOR	0	0	0	0	0

THETA

	KWGTR_DE	LN_INC06	LN_INC10	ED12	ED1315
KWGTR_DE	26				
LN_INC06	0	27			
LN_INC10	0	0	28		
ED12	0	0	0	29	
ED1315	0	0	0	0	30
ED16	0	0	0	0	0
PREVMAR	0	0	0	0	0
NEVMAR	0	0	0	0	0
WHITE	0	0	0	0	0
BLACK	0	0	0	0	0
OTHER	0	0	0	0	0
VERYGOOD	0	0	0	0	0
GOOD	0	0	0	0	0
FAIR	0	0	0	0	0
POOR	0	0	0	0	0

THETA

	ED16	PREVMAR	NEVMAR	WHITE	BLACK
ED16	31				
PREVMAR	0	32			
NEVMAR	0	0	33		
WHITE	0	0	0	34	
BLACK	0	0	0	0	35
OTHER	0	0	0	0	0
VERYGOOD	0	0	0	0	0

GOOD	0	0	0	0	0
FAIR	0	0	0	0	0
POOR	0	0	0	0	0

THETA

	OTHER	VERYGOOD	GOOD	FAIR	POOR
OTHER	36				
VERYGOOD	0	37			
GOOD	0	0	38		
FAIR	0	0	0	39	
POOR	0	0	0	0	40

STARTING VALUES

NU

	STRATUM	NUMSECU	ARTHRITI	DIABETES	AGE_06
1	0.000	0.000	0.000	0.000	0.000

NU

	KWGTR_DE	LN_INC06	LN_INC10	ED12	ED1315
1	0.000	0.000	0.000	0.000	0.000

NU

	ED16	PREVMAR	NEVMAR	WHITE	BLACK
1	0.000	0.000	0.000	0.000	0.000

NU

	OTHER	VERYGOOD	GOOD	FAIR	POOR
1	0.000	0.000	0.000	0.000	0.000

THETA

	STRATUM	NUMSECU	ARTHRITI	DIABETES	AGE_06
STRATUM	112.068				
NUMSECU	0.000	448.593			
ARTHRITI	0.000	0.000	0.117		
DIABETES	0.000	0.000	0.000	0.084	
AGE_06	0.000	0.000	0.000	0.000	53.389
KWGTR_DE	0.000	0.000	0.000	0.000	0.000
LN_INC06	0.000	0.000	0.000	0.000	0.000
LN_INC10	0.000	0.000	0.000	0.000	0.000
ED12	0.000	0.000	0.000	0.000	0.000
ED1315	0.000	0.000	0.000	0.000	0.000
ED16	0.000	0.000	0.000	0.000	0.000
PREVMAR	0.000	0.000	0.000	0.000	0.000
NEVMAR	0.000	0.000	0.000	0.000	0.000
WHITE	0.000	0.000	0.000	0.000	0.000

BLACK	0.000	0.000	0.000	0.000	0.000
OTHER	0.000	0.000	0.000	0.000	0.000
VERYGOOD	0.000	0.000	0.000	0.000	0.000
GOOD	0.000	0.000	0.000	0.000	0.000
FAIR	0.000	0.000	0.000	0.000	0.000
POOR	0.000	0.000	0.000	0.000	0.000

THETA

	KWGTR_DE	LN_INC06	LN_INC10	ED12	ED1315
KWGTR_DE	4.150				
LN_INC06	0.000	0.858			
LN_INC10	0.000	0.000	1.122		
ED12	0.000	0.000	0.000	0.111	
ED1315	0.000	0.000	0.000	0.000	0.082
ED16	0.000	0.000	0.000	0.000	0.000
PREVMAR	0.000	0.000	0.000	0.000	0.000
NEVMAR	0.000	0.000	0.000	0.000	0.000
WHITE	0.000	0.000	0.000	0.000	0.000
BLACK	0.000	0.000	0.000	0.000	0.000
OTHER	0.000	0.000	0.000	0.000	0.000
VERYGOOD	0.000	0.000	0.000	0.000	0.000
GOOD	0.000	0.000	0.000	0.000	0.000
FAIR	0.000	0.000	0.000	0.000	0.000
POOR	0.000	0.000	0.000	0.000	0.000

THETA

	ED16	PREVMAR	NEVMAR	WHITE	BLACK
ED16	0.085				
PREVMAR	0.000	0.125			
NEVMAR	0.000	0.000	0.020		
WHITE	0.000	0.000	0.000	0.098	
BLACK	0.000	0.000	0.000	0.000	0.067
OTHER	0.000	0.000	0.000	0.000	0.000
VERYGOOD	0.000	0.000	0.000	0.000	0.000
GOOD	0.000	0.000	0.000	0.000	0.000
FAIR	0.000	0.000	0.000	0.000	0.000
POOR	0.000	0.000	0.000	0.000	0.000

THETA

	OTHER	VERYGOOD	GOOD	FAIR	POOR
OTHER	0.011				
VERYGOOD	0.000	0.101			
GOOD	0.000	0.000	0.106		
FAIR	0.000	0.000	0.000	0.087	
POOR	0.000	0.000	0.000	0.000	0.041

SAVEDATA INFORMATION

  Save file
    IMP2WAVES_inc10*.DAT

  Order of variables

    STRATUM
    NUMSECU
    ARTHRITI
    DIABETES
    AGE_06
    KWGTR_DE
    LN_INC06
    LN_INC10
    ED12
    ED1315
    ED16
    PREVMAR
    NEVMAR
    WHITE
    BLACK
    OTHER
    VERYGOOD
    GOOD
    FAIR
    POOR
    KWGTR

  Save file format   Free

  Save file record length   10000

DIAGRAM INFORMATION

  Use View Diagram under the Diagram menu in the Mplus Editor to view the diagram.
  If running Mplus from the Mplus Diagrammer, the diagram opens automatically.

  Diagram output
    p:\asda3\replication mplus\chapter 11\c11 2 waves mi impute.dgm

     Beginning Time: 13:41:19
        Ending Time: 13:43:14
       Elapsed Time: 00:01:55

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Mplus VERSION 7.4
MUTHEN & MUTHEN
04/09/2025   1:58 PM

INPUT INSTRUCTIONS

```
  TITLE: ASDA 3 EXAMPLE 2 WAVES OF DATA, ANALYSIS OF MI DATA SETS FROM MPLUS
   ! USE IMPUTED DATA SETS FROM IMPUTE COMMAND OF MPLUS, IMPUTED LN_INC10;
   DATA:
   FILE IS "P:\ASDA3\Replication Mplus\Chapter 11\imp2waves_inc10list.dat";

   TYPE = IMPUTATION ;

   ! order must match that given in usevar and auxilliary list from imputation code
   VARIABLE:
   NAMES ARE
   STRATUM NUMSECU arthritis_06 diabetes_06 age_06
   kwgtr_dec
   ln_inc06
   ln_inc10
   ed12 ed1315 ed16
   prevmar nevmar
   white black other
   verygood good fair poor kwgtr ;

   USEVARIABLES ARE stratum numsecu kwgtr n_incdiff_06_10 t_incdiff_06_10 ;
   WEIGHT = kwgtr ;
   missing are . ;
   STRATIFICATION IS STRATUM ;
   CLUSTER IS NUMSECU ;
   ! define the difference of the exponent of each income variable
   ! and divide by 1000 to avoid variance > 1,000,000;

   DEFINE:
   N_INCDIFF_06_10 = (EXP(LN_INC10) - EXP(LN_INC06)) / 1000 ;
   ! trim lower and upper tails of difference (in thousands)
   if n_incdiff_06_10 ge -12300 then t_incdiff_06_10=n_incdiff_06_10 ;
   if n_incdiff_06_10 lt -12300 then t_incdiff_06_10 = -12300 ;
   if n_incdiff_06_10 gt 2062 then t_incdiff_06_10 = 2062 ;

   ANALYSIS:
   type is complex ;
   estimator = mlr ;
   MODEL:
   n_incdiff_06_10 t_incdiff_06_10 ;
   output:
   cint ;
   sampstat ;


*** WARNING in VARIABLE command
  Note that only the first 8 characters of variable names are used in the output.
  Shorten variable names to avoid any confusion.
*** WARNING in MODEL command
  All variables are uncorrelated with all other variables in the model.
  Check that this is what is intended.
*** WARNING in OUTPUT command
  SAMPSTAT option is the default for multiple imputation.
   3 WARNING(S) FOUND IN THE INPUT INSTRUCTIONS
```

ASDA 3 EXAMPLE 2 WAVES OF DATA, ANALYSIS OF MI DATA SETS FROM MPLUS

SUMMARY OF ANALYSIS

Number of groups	1
Average number of observations	11789
Number of replications	
Requested	5
Completed	5
Number of dependent variables	2
Number of independent variables	0
Number of continuous latent variables	0

Observed dependent variables

Continuous
N_INCDIFF_ T_INCDIFF_

Variables with special functions

Stratification	STRATUM
Cluster variable	NUMSECU
Weight variable	KWGTR

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)
Multiple data files from
P:\ASDA3\Replication Mplus\Chapter 11\imp2waves_inc10list.dat

Input data format FREE

SUMMARY OF DATA FOR THE FIRST DATA SET

Number of missing data patterns	1
Number of strata	56
Number of clusters	112

SUMMARY OF MISSING DATA PATTERNS FOR THE FIRST DATA SET

MISSING DATA PATTERNS (x = not missing)

	1
N_INCDIF	x
T_INCDIF	x

MISSING DATA PATTERN FREQUENCIES

Pattern	Frequency
1	11789

COVARIANCE COVERAGE OF DATA FOR THE FIRST DATA SET

Minimum covariance coverage value 0.100

PROPORTION OF DATA PRESENT

Covariance Coverage

	N_INCDIF	T_INCDIF
N_INCDIF	1.000	
T_INCDIF	1.000	1.000

SAMPLE STATISTICS

NOTE: These are average results over 5 data sets.

ESTIMATED SAMPLE STATISTICS

Means

	N_INCDIF	T_INCDIF
1	-5.613	-3.219

Covariances

	N_INCDIF	T_INCDIF
N_INCDIF	155506.265	
T_INCDIF	90738.676	59011.183

Correlations

	N_INCDIF	T_INCDIF
N_INCDIF	1.000	
T_INCDIF	0.947	1.000

MODEL FIT INFORMATION

Number of Free Parameters 4

Loglikelihood

H0 Value

Mean -168674.100
Std Dev 133.129
Number of successful computations 5

Proportions		Percentiles	
Expected	Observed	Expected	Observed
0.990	1.000	-168983.798	-168936.046
0.980	1.000	-168947.507	-168936.046
0.950	0.800	-168893.084	-168936.046
0.900	0.800	-168844.718	-168936.046
0.800	0.800	-168786.141	-168936.046
0.700	0.800	-168743.913	-168936.046
0.500	0.800	-168674.100	-168633.376
0.300	0.200	-168604.287	-168621.299
0.200	0.000	-168562.058	-168616.081
0.100	0.000	-168503.481	-168616.081
0.050	0.000	-168455.116	-168616.081
0.020	0.000	-168400.692	-168616.081
0.010	0.000	-168364.401	-168616.081

H1 Value

Mean -155257.603
Std Dev 251.046
Number of successful computations 5

Proportions		Percentiles	
Expected	Observed	Expected	Observed
0.990	1.000	-155841.610	-155732.040
0.980	1.000	-155773.175	-155732.040
0.950	0.800	-155670.548	-155732.040
0.900	0.800	-155579.343	-155732.040
0.800	0.800	-155468.883	-155732.040
0.700	0.800	-155389.251	-155732.040
0.500	0.600	-155257.603	-155258.509
0.300	0.200	-155125.954	-155165.942
0.200	0.200	-155046.323	-155129.084
0.100	0.000	-154935.862	-155129.084
0.050	0.000	-154844.658	-155129.084
0.020	0.000	-154742.030	-155129.084
0.010	0.000	-154673.595	-155129.084

Information Criteria

Akaike (AIC)

Mean 337356.200
Std Dev 266.258
Number of successful computations 5

Proportions		Percentiles	
Expected	Observed	Expected	Observed
0.990	1.000	336736.803	337135.394
0.980	1.000	336809.385	337135.394
0.950	1.000	336918.231	337135.394
0.900	1.000	337014.963	337135.394
0.800	1.000	337132.116	337135.394
0.700	0.800	337216.574	337135.394
0.500	0.200	337356.200	337240.162

0.300	0.200	337495.826	337250.597
0.200	0.200	337580.283	337274.753
0.100	0.200	337697.436	337274.753
0.050	0.200	337794.168	337274.753
0.020	0.000	337903.015	337274.753
0.010	0.000	337975.597	337274.753

Bayesian (BIC)

Mean	337385.699
Std Dev	266.258
Number of successful computations	5

Proportions		Percentiles	
Expected	Observed	Expected	Observed
0.990	1.000	336766.302	337164.894
0.980	1.000	336838.884	337164.894
0.950	1.000	336947.731	337164.894
0.900	1.000	337044.462	337164.894
0.800	1.000	337161.616	337164.894
0.700	0.800	337246.073	337164.894
0.500	0.200	337385.699	337269.661
0.300	0.200	337525.325	337280.097
0.200	0.200	337609.782	337304.253
0.100	0.200	337726.936	337304.253
0.050	0.200	337823.668	337304.253
0.020	0.000	337932.514	337304.253
0.010	0.000	338005.096	337304.253

Sample-Size Adjusted BIC (n* = (n + 2) / 24)

Mean	337372.988
Std Dev	266.258
Number of successful computations	5

Proportions		Percentiles	
Expected	Observed	Expected	Observed
0.990	1.000	336753.591	337152.183
0.980	1.000	336826.173	337152.183
0.950	1.000	336935.019	337152.183
0.900	1.000	337031.751	337152.183
0.800	1.000	337148.905	337152.183
0.700	0.800	337233.362	337152.183
0.500	0.200	337372.988	337256.950
0.300	0.200	337512.614	337267.386
0.200	0.200	337597.071	337291.541
0.100	0.200	337714.225	337291.541
0.050	0.200	337810.956	337291.541
0.020	0.000	337919.803	337291.541
0.010	0.000	337992.385	337291.541

Chi-Square Test of Model Fit

Degrees of freedom	1
Mean	17.281
Std Dev	0.840
Number of successful computations	5

Proportions		Percentiles	
Expected	Observed	Expected	Observed
0.990	1.000	0.000	16.207
0.980	1.000	0.001	16.207
0.950	1.000	0.004	16.207
0.900	1.000	0.016	16.207
0.800	1.000	0.064	16.207
0.700	1.000	0.148	16.207
0.500	1.000	0.455	16.867
0.300	1.000	1.074	17.240
0.200	1.000	1.642	17.328
0.100	1.000	2.706	17.328
0.050	1.000	3.841	17.328
0.020	1.000	5.412	17.328
0.010	1.000	6.635	17.328

RMSEA (Root Mean Square Error Of Approximation)

Mean	0.037
Std Dev	0.001
Number of successful computations	5

Proportions		Percentiles	
Expected	Observed	Expected	Observed
0.990	1.000	0.035	0.036
0.980	1.000	0.035	0.036
0.950	1.000	0.036	0.036
0.900	0.800	0.036	0.036
0.800	0.800	0.036	0.036
0.700	0.800	0.037	0.036
0.500	0.400	0.037	0.037
0.300	0.200	0.038	0.037
0.200	0.200	0.038	0.037
0.100	0.200	0.038	0.037
0.050	0.200	0.039	0.037
0.020	0.000	0.039	0.037
0.010	0.000	0.039	0.037

CFI/TLI

CFI

Mean	0.000
Std Dev	0.000
Number of successful computations	5

Proportions		Percentiles	
Expected	Observed	Expected	Observed
0.990	1.000	0.000	0.000
0.980	1.000	0.000	0.000
0.950	1.000	0.000	0.000
0.900	1.000	0.000	0.000
0.800	1.000	0.000	0.000
0.700	0.400	0.000	0.000
0.500	0.400	0.000	0.000
0.300	0.200	0.000	0.000
0.200	0.200	0.000	0.000
0.100	0.200	0.000	0.000
0.050	0.200	0.000	0.000

0.020	0.000	0.000	0.000
0.010	0.000	0.000	0.000

TLI

Mean	0.000
Std Dev	0.000
Number of successful computations	5

Proportions		Percentiles	
Expected	Observed	Expected	Observed
0.990	1.000	0.000	0.000
0.980	1.000	0.000	0.000
0.950	1.000	0.000	0.000
0.900	1.000	0.000	0.000
0.800	0.800	0.000	0.000
0.700	0.400	0.000	0.000
0.500	0.400	0.000	0.000
0.300	0.200	0.000	0.000
0.200	0.200	0.000	0.000
0.100	0.200	0.000	0.000
0.050	0.200	0.000	0.000
0.020	0.000	0.000	0.000
0.010	0.000	0.000	0.000

SRMR (Standardized Root Mean Square Residual)

Mean	0.424
Std Dev	0.001
Number of successful computations	5

Proportions		Percentiles	
Expected	Observed	Expected	Observed
0.990	1.000	0.422	0.423
0.980	1.000	0.422	0.423
0.950	1.000	0.423	0.423
0.900	0.800	0.423	0.423
0.800	0.800	0.423	0.423
0.700	0.800	0.423	0.423
0.500	0.600	0.424	0.423
0.300	0.200	0.424	0.424
0.200	0.200	0.424	0.424
0.100	0.200	0.424	0.424
0.050	0.000	0.425	0.424
0.020	0.000	0.425	0.424
0.010	0.000	0.425	0.424

MODEL RESULTS

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value	Rate of Missing
Means					
N_INCDIFF_	-5.617	5.291	-1.062	0.288	0.026
T_INCDIFF_	-3.218	3.060	-1.052	0.293	0.080
Variances					
N_INCDIFF_	*********	*********	1.239	0.215	0.000
T_INCDIFF_	59011.191	32903.977	1.793	0.073	0.001

QUALITY OF NUMERICAL RESULTS

Average Condition Number for the Information Matrix 0.420E-03
(ratio of smallest to largest eigenvalue)

CONFIDENCE INTERVALS OF MODEL RESULTS

	Lower .5%	Lower 2.5%	Lower 5%	Estimate	Upper 5%	Upper 2.5%	Upper .5%
Means							
N_INCDIF	-19.247	-15.989	-14.322	-5.617	3.087	4.754	8.012
T_INCDIF	-11.099	-9.215	-8.251	-3.218	1.815	2.778	4.663
Variances							
N_INCDIF	*********	-90516.031	-50976.328	155508.703	361993.750	401533.438	478830.375
T_INCDIF	*********	-5480.605	4884.152	59011.191	113138.234	123502.984	143765.250

TECHNICAL 1 OUTPUT

PARAMETER SPECIFICATION

NU

	N_INCDIF	T_INCDIF
1	1	2

THETA

	N_INCDIF	T_INCDIF
N_INCDIF	3	
T_INCDIF	0	4

STARTING VALUES

NU

	N_INCDIF	T_INCDIF
1	0.000	0.000

THETA

	N_INCDIF	T_INCDIF
N_INCDIF	77183.758	
T_INCDIF	0.000	29166.713

DIAGRAM INFORMATION

Use View Diagram under the Diagram menu in the Mplus Editor to view the diagram.
If running Mplus from the Mplus Diagrammer, the diagram opens automatically.

Diagram output
p:\asda3\replication mplus\chapter 11\c11 2 waves analyze imputed data.dgm

Beginning Time: 13:58:37
Ending Time: 13:58:46
Elapsed Time: 00:00:09

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04/09/2025   2:01 PM

INPUT INSTRUCTIONS

```
   TITLE: ASDA 3 EXAMPLE 11.3.2 - 2 WAVES OF DATA, ANALYSIS OF CALIBRATION DATA
   DATA:
   FILE IS "P:\ASDA 2\Data sets\HRS 2012\HRS 2006_2012 Longitudinal File\
   cal_2waves_mplus.txt";
   VARIABLE:
   NAMES ARE
   STRATUM NUMSECU kwgtr_cal incdiff_06_10 ;
   usevariables are STRATUM NUMSECU kwgtr_cal n_incdiff_06_10 ;
   WEIGHT = kwgtr_cal ;
   missing are . ;
   STRATIFICATION IS STRATUM ;
   CLUSTER IS NUMSECU ;
   DEFINE:
   n_incdiff_06_10=incdiff_06_10/1000 ;
   ANALYSIS:
   type is complex ;
   estimator = mlr ;
   MODEL:
   n_incdiff_06_10 ;
   output:
   cint ;
```

```
*** WARNING in VARIABLE command
  Note that only the first 8 characters of variable names are used in the output.
  Shorten variable names to avoid any confusion.
*** WARNING in MODEL command
  All variables are uncorrelated with all other variables in the model.
  Check that this is what is intended.
*** WARNING
  Data set contains cases with missing on all variables.
  These cases were not included in the analysis.
  Number of cases with missing on all variables:  2387
   3 WARNING(S) FOUND IN THE INPUT INSTRUCTIONS
```

ASDA 3 EXAMPLE 11.3.2 - 2 WAVES OF DATA, ANALYSIS OF CALIBRATION DATA

SUMMARY OF ANALYSIS

Number of groups	1
Number of observations	9402
Number of dependent variables	1
Number of independent variables	0
Number of continuous latent variables	0

Observed dependent variables

  Continuous
   N_INCDIFF_

Variables with special functions

Stratification	STRATUM
Cluster variable	NUMSECU
Weight variable	KWGTR_CA

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)
P:\ASDA 2\Data sets\HRS 2012\HRS 2006_2012 Longitudinal File\cal_2waves_mplus.

Input data format FREE

SUMMARY OF DATA

Number of missing data patterns	1
Number of strata	56
Number of clusters	112

COVARIANCE COVERAGE OF DATA

Minimum covariance coverage value 0.100

PROPORTION OF DATA PRESENT

Covariance Coverage

	N_INCDIF
N_INCDIF	1.000

THE MODEL ESTIMATION TERMINATED NORMALLY

MODEL FIT INFORMATION

Number of Free Parameters 2

Loglikelihood

H0 Value	-61608.891
H0 Scaling Correction Factor for MLR	748.7533
H1 Value	-61608.891
H1 Scaling Correction Factor for MLR	748.7533

Information Criteria

Akaike (AIC)	123221.783
Bayesian (BIC)	123236.080
Sample-Size Adjusted BIC (n* = (n + 2) / 24)	123229.724

Chi-Square Test of Model Fit

Value	0.000*
Degrees of Freedom	0
P-Value	0.0000
Scaling Correction Factor for MLR	1.0000

* The chi-square value for MLM, MLMV, MLR, ULSMV, WLSM and WLSMV cannot be used for chi-square difference testing in the regular way. MLM, MLR and WLSM chi-square difference testing is described on the Mplus website. MLMV, WLSMV, and ULSMV difference testing is done using the DIFFTEST option.

RMSEA (Root Mean Square Error Of Approximation)

Estimate	0.000	
90 Percent C.I.	0.000	0.000
Probability RMSEA <= .05	0.000	

CFI/TLI

CFI	0.000
TLI	1.000

Chi-Square Test of Model Fit for the Baseline Model

Value	0.000
Degrees of Freedom	0
P-Value	0.0000

SRMR (Standardized Root Mean Square Residual)

Value	0.000

MODEL RESULTS

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
Means				
N_INCDIFF_	**-6.328**	**1.775**	**-3.566**	**0.000**
Variances				
N_INCDIFF_	**28785.238**	**16240.995**	**1.772**	**0.076**

QUALITY OF NUMERICAL RESULTS

Condition Number for the Information Matrix 0.278E-02
(ratio of smallest to largest eigenvalue)

CONFIDENCE INTERVALS OF MODEL RESULTS

	Lower .5%	Lower 2.5%	Lower 5%	Estimate	Upper 5%	Upper 2.5%	Upper .5%
Means							
N_INCDIF	-10.899	-9.807	-9.248	-6.328	-3.409	-2.850	-1.757
Variances							
N_INCDIF	*********	-3047.113	2068.801	28785.238	55501.676	60617.590	70618.797

DIAGRAM INFORMATION

Use View Diagram under the Diagram menu in the Mplus Editor to view the diagram.
If running Mplus from the Mplus Diagrammer, the diagram opens automatically.

Diagram output
p:\asda3\replication mplus\chapter 11\c11 2 waves calibration analysis.dgm

Beginning Time: 14:01:08
Ending Time: 14:01:09
Elapsed Time: 00:00:01

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INPUT INSTRUCTIONS

```
   TITLE: ASDA 3 EXAMPLE 11.3.3 - 3+ WAVES OF DATA, WEIGHTED MULTILEVEL MODEL

   Data:
   FILE IS "P:\ASDA 2\Data sets\HRS 2012\HRS 2006_2012 Longitudinal File\
   wmultilevel_3pwaves_mplus.txt";

   Variable:
   NAMES ARE
   basewgt fem_yrs06sq fem_yrssince06 female level1wgt_r level2wgt ln_inc yrs06sq
   yrssince06 newid newid_num numsecu
   str_dum1 str_dum2 str_dum3 str_dum4 str_dum5 str_dum6 str_dum7 str_dum8 str_dum9
   str_dum10 str_dum11
   str_dum12 str_dum13 str_dum14 str_dum15 str_dum16 str_dum17 str_dum18
   str_dum19 str_dum20 str_dum21 str_dum22 str_dum23 str_dum24
   str_dum25 str_dum26 str_dum27 str_dum28 str_dum29 str_dum30
   str_dum31 str_dum32 str_dum33 str_dum34 str_dum35 str_dum36 str_dum37
   str_dum38 str_dum39 str_dum40 str_dum41 str_dum42 str_dum43
   str_dum44 str_dum45 str_dum46 str_dum47 str_dum48 str_dum49 str_dum50
   str_dum51 str_dum52 str_dum53 str_dum54 str_dum55 str_dum56 ;
   Missing are . ;
   weight = level1wgt_r ;
   wtscale=ecluster ;
   bweight = level2wgt ;
   bwtscale = sample ;
   usevar = ln_inc yrssince06 female yrs06sq str_dum2-str_dum56 level2wgt level1wgt_r
   numsecu newid_num fem_yrssince06 fem_yrs06sq ;
   within = female fem_yrssince06 fem_yrs06sq str_dum2-str_dum56 ;
   cluster = numsecu newid_num ;
   Analysis:
   type is twolevel random complex ;
   estimator=mlr ;

  ! Adjust convergence and H1 iterations suggested by Mplus log!
   mconvergence=.01 ;
   !h1iterations = 3000 ;
   Model:
   %within%
   ln_inc on yrssince06 female fem_yrssince06 yrs06sq fem_yrs06sq str_dum2-str_dum56 ;
   %between%
   ln_inc yrssince06 yrs06sq ;
```

*** WARNING in VARIABLE command
  Note that only the first 8 characters of variable names are used in the output.
  Shorten variable names to avoid any confusion.
   1 WARNING(S) FOUND IN THE INPUT INSTRUCTIONS

ASDA 3 EXAMPLE 11.3.3 - 3+ WAVES OF DATA, WEIGHTED MULTILEVEL MODEL

SUMMARY OF ANALYSIS

```
Number of groups                                                 1
Number of observations                                       40325

Number of dependent variables                                    1
Number of independent variables                                 60
Number of continuous latent variables                            0

Observed dependent variables

  Continuous
   LN_INC

Observed independent variables
   YRSSINCE    FEMALE      YRSO6SQ     STR_DUM2    STR_DUM3    STR_DUM4
   STR_DUM5    STR_DUM6    STR_DUM7    STR_DUM8    STR_DUM9    STR_DUM1
   STR_DUM1    STR_DUM1    STR_DUM1    STR_DUM1    STR_DUM1    STR_DUM1
   STR_DUM1    STR_DUM1    STR_DUM1    STR_DUM2    STR_DUM2    STR_DUM2
   STR_DUM2    STR_DUM2    STR_DUM2    STR_DUM2    STR_DUM2    STR_DUM2
   STR_DUM2    STR_DUM3    STR_DUM3    STR_DUM3    STR_DUM3    STR_DUM3
   STR_DUM3    STR_DUM3    STR_DUM3    STR_DUM3    STR_DUM3    STR_DUM4
   STR_DUM4    STR_DUM4    STR_DUM4    STR_DUM4    STR_DUM4    STR_DUM4
   STR_DUM4    STR_DUM4    STR_DUM4    STR_DUM5    STR_DUM5    STR_DUM5
   STR_DUM5    STR_DUM5    STR_DUM5    STR_DUM5    FEM_YRSS    FEM_YRSO

Variables with special functions

  Cluster variables     NUMSECU   NEWID_NU
  Weight variable (effective cluster-size scaling)
    LEVEL1WG
  Between weight variable (sample-size scaling)
    LEVEL2WG

  Within variables
   FEMALE      STR_DUM2    STR_DUM3    STR_DUM4    STR_DUM5    STR_DUM6
   STR_DUM7    STR_DUM8    STR_DUM9    STR_DUM1    STR_DUM1    STR_DUM1
   STR_DUM1    STR_DUM1    STR_DUM1    STR_DUM1    STR_DUM1    STR_DUM1
   STR_DUM1    STR_DUM2    STR_DUM2    STR_DUM2    STR_DUM2    STR_DUM2
   STR_DUM2    STR_DUM2    STR_DUM2    STR_DUM2    STR_DUM2    STR_DUM3
   STR_DUM3    STR_DUM3    STR_DUM3    STR_DUM3    STR_DUM3    STR_DUM3
   STR_DUM3    STR_DUM3    STR_DUM3    STR_DUM4    STR_DUM4    STR_DUM4
   STR_DUM4    STR_DUM4    STR_DUM4    STR_DUM4    STR_DUM4    STR_DUM4
   STR_DUM4    STR_DUM5    STR_DUM5    STR_DUM5    STR_DUM5    STR_DUM5
   STR_DUM5    STR_DUM5    FEM_YRSS    FEM_YRSO


Estimator                                                      MLR
Information matrix                                        OBSERVED
Maximum number of iterations                                   100
Convergence criterion                                  0.100D-05
Maximum number of EM iterations                                500
Convergence criteria for the EM algorithm
  Loglikelihood change                                 0.100D-02
  Relative loglikelihood change                        0.100D-05
  Derivative                                           0.100D-01
Minimum variance                                       0.100D-03
Maximum number of steepest descent iterations                 20
Maximum number of iterations for H1                         2000
Convergence criterion for H1                           0.100D-03
```

Optimization algorithm EMA

Input data file(s)
P:\ASDA 2\Data sets\HRS 2012\HRS 2006_2012 Longitudinal File\wmultilevel_3pwav
Input data format FREE

SUMMARY OF DATA

Number of missing data patterns 1
Number of NUMSECU clusters 112
Number of NEWID_NUM clusters 11789

COVARIANCE COVERAGE OF DATA

Minimum covariance coverage value 0.100

PROPORTION OF DATA PRESENT

Covariance Coverage

	LN_INC	YRSSINCE	YRS06SQ	FEMALE	STR_DUM2
LN_INC	1.000				
YRSSINCE	1.000	1.000			
YRS06SQ	1.000	1.000	1.000		
FEMALE	1.000	1.000	1.000	1.000	
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM6	1.000	1.000	1.000	1.000	1.000
STR_DUM7	1.000	1.000	1.000	1.000	1.000
STR_DUM8	1.000	1.000	1.000	1.000	1.000
STR_DUM9	1.000	1.000	1.000	1.000	1.000
STR_DUM1	1.000	1.000	1.000	1.000	1.000
STR_DUM1	1.000	1.000	1.000	1.000	1.000
STR_DUM1	1.000	1.000	1.000	1.000	1.000
STR_DUM1	1.000	1.000	1.000	1.000	1.000
STR_DUM1	1.000	1.000	1.000	1.000	1.000
STR_DUM1	1.000	1.000	1.000	1.000	1.000
STR_DUM1	1.000	1.000	1.000	1.000	1.000
STR_DUM1	1.000	1.000	1.000	1.000	1.000
STR_DUM1	1.000	1.000	1.000	1.000	1.000
STR_DUM1	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000

STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
FEM_YRSS	1.000	1.000	1.000	1.000	1.000
FEM_YRS0	1.000	1.000	1.000	1.000	1.000

Covariance Coverage

	STR_DUM3	STR_DUM4	STR_DUM5	STR_DUM6	STR_DUM7
STR_DUM3	1.000				
STR_DUM4	1.000	1.000			
STR_DUM5	1.000	1.000	1.000		
STR_DUM6	1.000	1.000	1.000	1.000	
STR_DUM7	1.000	1.000	1.000	1.000	1.000
STR_DUM8	1.000	1.000	1.000	1.000	1.000
STR_DUM9	1.000	1.000	1.000	1.000	1.000
STR_DUM1	1.000	1.000	1.000	1.000	1.000
STR_DUM1	1.000	1.000	1.000	1.000	1.000
STR_DUM1	1.000	1.000	1.000	1.000	1.000
STR_DUM1	1.000	1.000	1.000	1.000	1.000
STR_DUM1	1.000	1.000	1.000	1.000	1.000
STR_DUM1	1.000	1.000	1.000	1.000	1.000
STR_DUM1	1.000	1.000	1.000	1.000	1.000
STR_DUM1	1.000	1.000	1.000	1.000	1.000
STR_DUM1	1.000	1.000	1.000	1.000	1.000
STR_DUM1	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000

STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
FEM_YRSS	1.000	1.000	1.000	1.000	1.000
FEM_YRS0	1.000	1.000	1.000	1.000	1.000

Covariance Coverage

	STR_DUM8	STR_DUM9	STR_DUM1	STR_DUM1	STR_DUM1
STR_DUM8	1.000				
STR_DUM9	1.000	1.000			
STR_DUM1	1.000	1.000	1.000		
STR_DUM1	1.000	1.000	1.000	1.000	
STR_DUM1	1.000	1.000	1.000	1.000	1.000
STR_DUM1	1.000	1.000	1.000	1.000	1.000
STR_DUM1	1.000	1.000	1.000	1.000	1.000
STR_DUM1	1.000	1.000	1.000	1.000	1.000
STR_DUM1	1.000	1.000	1.000	1.000	1.000
STR_DUM1	1.000	1.000	1.000	1.000	1.000
STR_DUM1	1.000	1.000	1.000	1.000	1.000
STR_DUM1	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000

STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
FEM_YRSS	1.000	1.000	1.000	1.000	1.000
FEM_YRS0	1.000	1.000	1.000	1.000	1.000

Covariance Coverage

	STR_DUM1	STR_DUM1	STR_DUM1	STR_DUM1	STR_DUM1
STR_DUM1	1.000				
STR_DUM1	1.000	1.000			
STR_DUM1	1.000	1.000	1.000		
STR_DUM1	1.000	1.000	1.000	1.000	
STR_DUM1	1.000	1.000	1.000	1.000	1.000
STR_DUM1	1.000	1.000	1.000	1.000	1.000
STR_DUM1	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000

STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
FEM_YRSS	1.000	1.000	1.000	1.000	1.000
FEM_YRS0	1.000	1.000	1.000	1.000	1.000

Covariance Coverage

	STR_DUM1	STR_DUM1	STR_DUM2	STR_DUM2	STR_DUM2
STR_DUM1	1.000				
STR_DUM1	1.000	1.000			
STR_DUM2	1.000	1.000	1.000		
STR_DUM2	1.000	1.000	1.000	1.000	
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000

STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
FEM_YRSS	1.000	1.000	1.000	1.000	1.000
FEM_YRS0	1.000	1.000	1.000	1.000	1.000

Covariance Coverage

	STR_DUM2	STR_DUM2	STR_DUM2	STR_DUM2	STR_DUM2
STR_DUM2	1.000				
STR_DUM2	1.000	1.000			
STR_DUM2	1.000	1.000	1.000		
STR_DUM2	1.000	1.000	1.000	1.000	
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM2	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
FEM_YRSS	1.000	1.000	1.000	1.000	1.000
FEM_YRS0	1.000	1.000	1.000	1.000	1.000

Covariance Coverage

	STR_DUM2	STR_DUM2	STR_DUM3	STR_DUM3	STR_DUM3
STR_DUM2	1.000				
STR_DUM2	1.000	1.000			
STR_DUM3	1.000	1.000	1.000		
STR_DUM3	1.000	1.000	1.000	1.000	
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000

STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
FEM_YRSS	1.000	1.000	1.000	1.000	1.000
FEM_YRS0	1.000	1.000	1.000	1.000	1.000

Covariance Coverage

	STR_DUM3	STR_DUM3	STR_DUM3	STR_DUM3	STR_DUM3
STR_DUM3	1.000				
STR_DUM3	1.000	1.000			
STR_DUM3	1.000	1.000	1.000		
STR_DUM3	1.000	1.000	1.000	1.000	
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM3	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
FEM_YRSS	1.000	1.000	1.000	1.000	1.000
FEM_YRS0	1.000	1.000	1.000	1.000	1.000

Covariance Coverage

	STR_DUM3	STR_DUM3	STR_DUM4	STR_DUM4	STR_DUM4

STR_DUM3	1.000				
STR_DUM3	1.000	1.000			
STR_DUM4	1.000	1.000	1.000		
STR_DUM4	1.000	1.000	1.000	1.000	
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
FEM_YRSS	1.000	1.000	1.000	1.000	1.000
FEM_YRSO	1.000	1.000	1.000	1.000	1.000

Covariance Coverage

	STR_DUM4	STR_DUM4	STR_DUM4	STR_DUM4	STR_DUM4
STR_DUM4	1.000				
STR_DUM4	1.000	1.000			
STR_DUM4	1.000	1.000	1.000		
STR_DUM4	1.000	1.000	1.000	1.000	
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM4	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
FEM_YRSS	1.000	1.000	1.000	1.000	1.000
FEM_YRSO	1.000	1.000	1.000	1.000	1.000

Covariance Coverage

	STR_DUM4	STR_DUM4	STR_DUM5	STR_DUM5	STR_DUM5
STR_DUM4	1.000				
STR_DUM4	1.000	1.000			
STR_DUM5	1.000	1.000	1.000		
STR_DUM5	1.000	1.000	1.000	1.000	
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
STR_DUM5	1.000	1.000	1.000	1.000	1.000
FEM_YRSS	1.000	1.000	1.000	1.000	1.000
FEM_YRSO	1.000	1.000	1.000	1.000	1.000

Covariance Coverage

	STR_DUM5	STR_DUM5	STR_DUM5	STR_DUM5	FEM_YRSS
STR_DUM5	1.000				
STR_DUM5	1.000	1.000			
STR_DUM5	1.000	1.000	1.000		
STR_DUM5	1.000	1.000	1.000	1.000	
FEM_YRSS	1.000	1.000	1.000	1.000	1.000
FEM_YRSO	1.000	1.000	1.000	1.000	1.000

Covariance Coverage

	FEM_YRSO
FEM_YRSO	1.000

WARNING: THE MODEL ESTIMATION HAS REACHED A SADDLE POINT OR A POINT WHERE THE
OBSERVED AND THE EXPECTED INFORMATION MATRICES DO NOT MATCH.
AN ADJUSTMENT TO THE ESTIMATION OF THE INFORMATION MATRIX HAS BEEN MADE.
THE CONDITION NUMBER IS -0.839D-06.
THE PROBLEM MAY ALSO BE RESOLVED BY DECREASING THE VALUE OF THE
MCONVERGENCE OR LOGCRITERION OPTIONS OR BY CHANGING THE STARTING VALUES
OR BY USING THE MLF ESTIMATOR.

THE MODEL ESTIMATION TERMINATED NORMALLY

THE H1 MODEL ESTIMATION DID NOT CONVERGE. CHI-SQUARE TEST AND SAMPLE STATISTICS COULD NOT
BE COMPUTED. INCREASE THE NUMBER OF H1ITERATIONS.

THE BASELINE MODEL ESTIMATION DID NOT CONVERGE. THE CHI-SQUARE VALUE
COULD NOT BE COMPUTED. INCREASE THE NUMBER OF H1ITERATIONS.

MODEL FIT INFORMATION

Number of Free Parameters 69

Loglikelihood

H0 Value	-318808.039
H0 Scaling Correction Factor for MLR	2.8047

Information Criteria

Akaike (AIC)	637754.077
Bayesian (BIC)	638347.803
Sample-Size Adjusted BIC (n* = (n + 2) / 24)	638128.521

MODEL RESULTS

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
Within Level				
LN_INC ON				
YRSSINCE06	0.030	0.014	2.059	0.040
FEMALE	-0.560	0.035	-16.001	0.000
FEM_YRSSIN	0.004	0.021	0.210	0.833
YRS06SQ	-0.011	0.003	-3.864	0.000
FEM_YRS06S	0.001	0.003	0.359	0.720
STR_DUM2	0.162	0.104	1.550	0.121
STR_DUM3	0.321	0.062	5.163	0.000
STR_DUM4	0.470	0.036	13.060	0.000
STR_DUM5	0.259	0.098	2.651	0.008
STR_DUM6	0.217	0.188	1.153	0.249
STR_DUM7	0.738	0.084	8.788	0.000
STR_DUM8	0.378	0.037	10.110	0.000
STR_DUM9	0.532	0.123	4.326	0.000
STR_DUM10	0.793	0.161	4.932	0.000
STR_DUM11	0.238	0.235	1.014	0.310
STR_DUM12	0.280	0.129	2.170	0.030
STR_DUM13	0.608	0.085	7.141	0.000
STR_DUM14	0.478	0.035	13.599	0.000
STR_DUM15	0.522	0.074	7.076	0.000
STR_DUM16	0.224	0.074	3.019	0.003
STR_DUM17	0.581	0.089	6.559	0.000
STR_DUM18	0.763	0.136	5.601	0.000
STR_DUM19	0.631	0.110	5.761	0.000
STR_DUM20	-0.152	0.160	-0.954	0.340
STR_DUM21	0.427	0.103	4.163	0.000
STR_DUM22	0.797	0.180	4.440	0.000
STR_DUM23	0.613	0.034	18.171	0.000
STR_DUM24	0.426	0.059	7.239	0.000
STR_DUM25	0.524	0.079	6.612	0.000
STR_DUM26	0.475	0.092	5.145	0.000
STR_DUM27	0.582	0.042	13.790	0.000
STR_DUM28	0.393	0.070	5.612	0.000
STR_DUM29	0.523	0.037	14.019	0.000
STR_DUM30	0.454	0.035	12.833	0.000
STR_DUM31	0.454	0.045	10.074	0.000
STR_DUM32	0.199	0.113	1.762	0.078
STR_DUM33	0.186	0.109	1.697	0.090
STR_DUM34	-0.023	0.273	-0.085	0.932
STR_DUM35	0.349	0.115	3.031	0.002
STR_DUM36	0.023	0.177	0.130	0.897
STR_DUM37	0.163	0.081	2.018	0.044
STR_DUM38	0.436	0.050	8.804	0.000
STR_DUM39	0.395	0.034	11.615	0.000
STR_DUM40	0.680	0.084	8.108	0.000
STR_DUM41	0.524	0.094	5.581	0.000
STR_DUM42	0.391	0.033	11.712	0.000
STR_DUM43	0.371	0.101	3.677	0.000
STR_DUM44	0.372	0.057	6.589	0.000
STR_DUM45	0.499	0.050	10.035	0.000
STR_DUM46	0.446	0.043	10.322	0.000
STR_DUM47	0.188	0.041	4.533	0.000
STR_DUM48	0.377	0.063	6.013	0.000
STR_DUM49	0.124	0.154	0.807	0.420
STR_DUM50	0.198	0.083	2.390	0.017

STR_DUM51	0.263	0.159	1.654	0.098
STR_DUM52	-0.784	0.173	-4.536	0.000
STR_DUM53	0.481	0.077	6.276	0.000
STR_DUM54	-0.530	0.359	-1.477	0.140
STR_DUM55	0.043	0.135	0.322	0.748
STR_DUM56	0.684	0.216	3.172	0.002

Variances

YRSSINCE06	4.963	0.029	173.905	0.000
YRS06SQ	184.092	1.215	151.536	0.000

Residual Variances

LN_INC	1.097	0.075	14.537	0.000

Between Level

Means

LN_INC	10.281	0.036	285.226	0.000
YRSSINCE06	2.689	0.010	260.139	0.000
YRS06SQ	12.194	0.064	189.789	0.000

Variances

LN_INC	0.907	0.050	18.082	0.000
YRSSINCE06	0.001	0.004	0.128	0.898
YRS06SQ	0.021	0.183	0.116	0.908

QUALITY OF NUMERICAL RESULTS

Condition Number for the Information Matrix -0.839E-06
(ratio of smallest to largest eigenvalue)

DIAGRAM INFORMATION

Mplus diagrams are currently not available for multilevel analysis.
No diagram output was produced.

Beginning Time: 17:58:38
Ending Time: 00:31:48
Elapsed Time: 06:33:10

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