MPLUS Analysis Examples Replication Chapter 8

Mplus includes all input code and output in the *.out file. This document contains selected output from each analysis for Chapter 8. All data preparation and management was done using SAS and then read into Mplus using a text file format produced by SAS. Plots can be produced in MPlus with additional coding but are not included here, see the Mplus documentation for details and examples.

Some options available in Stata or other software presented in Chapter 8 including design-adjusted GOF tests, margins plots prepared via a simple command using model output, and design-adjusted model fit statistics are not available in Mplus.In addition, use of type=complex with Bayesian methods is not available in Mplus. Therefore, some options are not included in this document.

```
  TITLE: ASDA3 ANALYSIS EXAMPLE 8.1 NCSR DATA BIVARIATE TEST: AGE
   DATA:
   FILE IS "P:\asda3\replication mplus\ncsr.txt";

   VARIABLE:
   NAMES ARE
   AGE CASEID DSM_SO ED4CAT MAR3CAT MDE_OND NCSRWTLG NCSRWTSH OBESE6CA
   REGION SECLUSTR SESTRAT SEX
   SO_OND WKSTAT3C ag60 ag1829 ag3044 ag4559 ag4cat ald ed011 ed12 ed16
   ed1315 married mde nevmar
   numsecu prevmar racecat sexf sexm;

   USEVARIABLES ARE sestrat numsecu mde ncsrwtlg ag3044 ag4559 ag60 ;
   missing are . ;
   weight is ncsrwtlg  ;
   stratification is sestrat ;
   cluster is numsecu ;
   categorical are mde ;

   ANALYSIS:
   type is complex;
   estimator is mlr ;

   Model:
   mde on
   ag3044 (pag3044)
   ag4559 (pag4559)
   ag60 (pag60) ;

   Model test:
   pag3044=0 ;
   pag4559=0 ;
   pag60=0 ;

INPUT READING TERMINATED NORMALLY
ASDA3 ANALYSIS EXAMPLE 8.1 NCSR DATA BIVARIATE TEST: AGE

SUMMARY OF ANALYSIS

Number of groups                                                 1
Number of observations                                        9282

Number of dependent variables                                    1
Number of independent variables                                  3
Number of continuous latent variables                            0

Observed dependent variables

  Binary and ordered categorical (ordinal)
   MDE

Observed independent variables
   AG3044      AG4559      AG60

Variables with special functions

  Stratification        SESTRAT
  Cluster variable      NUMSECU
  Weight variable       NCSRWTLG
```

```
Estimator                                                      MLR
Information matrix                                        OBSERVED
Optimization Specifications for the Quasi-Newton Algorithm for
Continuous Outcomes
  Maximum number of iterations                                 100
  Convergence criterion                                0.100D-05
Optimization Specifications for the EM Algorithm
  Maximum number of iterations                                 500
  Convergence criteria
    Loglikelihood change                               0.100D-02
    Relative loglikelihood change                      0.100D-05
    Derivative                                         0.100D-02
Optimization Specifications for the M step of the EM Algorithm for
Categorical Latent variables
  Number of M step iterations                                    1
  M step convergence criterion                         0.100D-02
  Basis for M step termination                         ITERATION
Optimization Specifications for the M step of the EM Algorithm for
Censored, Binary or Ordered Categorical (Ordinal), Unordered
Categorical (Nominal) and Count Outcomes
  Number of M step iterations                                    1
  M step convergence criterion                         0.100D-02
  Basis for M step termination                         ITERATION
  Maximum value for logit thresholds                          15
  Minimum value for logit thresholds                         -15
  Minimum expected cell size for chi-square            0.100D-01
Maximum number of iterations for H1                         2000
Convergence criterion for H1                           0.100D-03
Optimization algorithm                                       EMA
Integration Specifications
  Type                                                  STANDARD
  Number of integration points                                15
  Dimensions of numerical integration                          0
  Adaptive quadrature                                         ON
Link                                                       LOGIT
Cholesky                                                     OFF

Input data file(s)
  P:\asda3\replication mplus\ncsr.txt
Input data format  FREE


SUMMARY OF DATA

     Number of missing data patterns             1
     Number of y missing data patterns           0
     Number of u missing data patterns           1
     Number of strata                       42
     Number of clusters                     84


COVARIANCE COVERAGE OF DATA

Minimum covariance coverage value   0.100


UNIVARIATE PROPORTIONS AND COUNTS FOR CATEGORICAL VARIABLES
```

```
    MDE
      Category 1    0.808          7502.042
      Category 2    0.192          1779.958
THE MODEL ESTIMATION TERMINATED NORMALLY
MODEL FIT INFORMATION

Number of Free Parameters                        4

Loglikelihood

          H0 Value                       -4469.780
          H0 Scaling Correction Factor       1.7672
            for MLR

Information Criteria

          Akaike (AIC)                    8947.560
          Bayesian (BIC)                  8976.103
          Sample-Size Adjusted BIC        8963.392
            (n* = (n + 2) / 24)

Wald Test of Parameter Constraints

          Value                             60.871
          Degrees of Freedom                    3
          P-Value                           0.0000



MODEL RESULTS

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

 MDE        ON
    AG3044             0.274      0.074      3.692      0.000
    AG4559             0.243      0.092      2.648      0.008
    AG60              -0.595      0.107     -5.542      0.000

 Thresholds
    MDE$1              1.490      0.059     25.259      0.000


LOGISTIC REGRESSION ODDS RATIO RESULTS

 MDE        ON
    AG3044             1.316
    AG4559             1.275
    AG60               0.552


QUALITY OF NUMERICAL RESULTS

     Condition Number for the Information Matrix              0.382E-01
       (ratio of smallest to largest eigenvalue)
```

```
  TITLE: ASDA3 ANALYSIS EXAMPLE 8.1 NCSR DATA BIVARIATE TEST: GENDER
   DATA:
   FILE IS "P:\asda3\replication mplus\ncsr.txt";

   VARIABLE:
   NAMES ARE
   AGE CASEID DSM_SO ED4CAT MAR3CAT MDE_OND NCSRWTLG NCSRWTSH OBESE6CA
   REGION SECLUSTR SESTRAT SEX
   SO_OND WKSTAT3C ag60 ag1829 ag3044 ag4559 ag4cat ald ed011 ed12 ed16
   ed1315 married mde nevmar
   numsecu prevmar racecat sexf sexm;

   USEVARIABLES ARE SESTRAT NUMSECU MDE NCSRWTLG SEXM;
   missing are . ;
   WEIGHT IS NCSRWTlg ;
   stratification is sestrat ;
   cluster is numsecu ;
   categorical are mde ;

   ANALYSIS:
   type is complex;
   estimator is mlr ;

   Model:
   mde on sexm ;



INPUT READING TERMINATED NORMALLY



ASDA3 ANALYSIS EXAMPLE 8.1 NCSR DATA BIVARIATE TEST: GENDER

SUMMARY OF ANALYSIS

Number of groups                                                 1
Number of observations                                        9282

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

Observed dependent variables

  Binary and ordered categorical (ordinal)
   MDE

Observed independent variables
   SEXM

Variables with special functions

  Stratification        SESTRAT
  Cluster variable      NUMSECU
  Weight variable       NCSRWTLG

Estimator                                                      MLR
Information matrix                                        OBSERVED
```

```
Optimization Specifications for the Quasi-Newton Algorithm for
Continuous Outcomes
  Maximum number of iterations                                100
  Convergence criterion                                0.100D-05
Optimization Specifications for the EM Algorithm
  Maximum number of iterations                                500
  Convergence criteria
    Loglikelihood change                               0.100D-02
    Relative loglikelihood change                      0.100D-05
    Derivative                                         0.100D-02
Optimization Specifications for the M step of the EM Algorithm for
Categorical Latent variables
  Number of M step iterations                                   1
  M step convergence criterion                         0.100D-02
  Basis for M step termination                         ITERATION
Optimization Specifications for the M step of the EM Algorithm for
Censored, Binary or Ordered Categorical (Ordinal), Unordered
Categorical (Nominal) and Count Outcomes
  Number of M step iterations                                   1
  M step convergence criterion                         0.100D-02
  Basis for M step termination                         ITERATION
  Maximum value for logit thresholds                          15
  Minimum value for logit thresholds                         -15
  Minimum expected cell size for chi-square            0.100D-01
Maximum number of iterations for H1                         2000
Convergence criterion for H1                           0.100D-03
Optimization algorithm                                       EMA
Integration Specifications
  Type                                                  STANDARD
  Number of integration points                                15
  Dimensions of numerical integration                          0
  Adaptive quadrature                                         ON
Link                                                       LOGIT
Cholesky                                                     OFF

Input data file(s)
  P:\asda3\replication mplus\ncsr.txt
Input data format  FREE


SUMMARY OF DATA

     Number of missing data patterns             1
     Number of y missing data patterns           0
     Number of u missing data patterns           1
     Number of strata                       42
     Number of clusters                     84


COVARIANCE COVERAGE OF DATA

Minimum covariance coverage value   0.100


UNIVARIATE PROPORTIONS AND COUNTS FOR CATEGORICAL VARIABLES

    MDE
      Category 1    0.808         7502.042
      Category 2    0.192         1779.958
```

THE MODEL ESTIMATION TERMINATED NORMALLY

MODEL FIT INFORMATION

Number of Free Parameters 2

Loglikelihood

H0 Value	-4496.281
H0 Scaling Correction Factor for MLR	2.0415

Information Criteria

Akaike (AIC)	8996.561
Bayesian (BIC)	9010.833
Sample-Size Adjusted BIC (n* = (n + 2) / 24)	9004.477

MODEL RESULTS

		Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
MDE	ON				
SEXM		-0.482	0.072	-6.660	0.000
Thresholds					
MDE$1		1.230	0.038	32.000	0.000

LOGISTIC REGRESSION ODDS RATIO RESULTS

MDE	ON	
SEXM		0.618

QUALITY OF NUMERICAL RESULTS

Condition Number for the Information Matrix (ratio of smallest to largest eigenvalue)	0.167E+00

```
  TITLE: ASDA3 ANALYSIS EXAMPLE 8.1 NCSR DATA BIVARIATE TEST: ALD
   DATA:
   FILE IS "P:\asda3\replication mplus\ncsr.txt";

   VARIABLE:
   NAMES ARE
   AGE CASEID DSM_SO ED4CAT MAR3CAT MDE_OND NCSRWTLG NCSRWTSH OBESE6CA
   REGION SECLUSTR SESTRAT SEX
   SO_OND WKSTAT3C ag60 ag1829 ag3044 ag4559 ag4cat ald ed011 ed12 ed16
   ed1315 married mde nevmar
   numsecu prevmar racecat sexf sexm;

   USEVARIABLES ARE SESTRAT NUMSECU MDE NCSRWTLG ALD ;
   missing are . ;
   WEIGHT IS NCSRWTlg ;
   stratification is sestrat ;
   cluster is numsecu ;
   categorical are mde ;

   ANALYSIS:
   type is complex;
   estimator is mlr ;

   Model:
   mde on
   ald (p1) ;
   model test:
   p1=0 ;



INPUT READING TERMINATED NORMALLY



ASDA3 ANALYSIS EXAMPLE 8.1 NCSR DATA BIVARIATE TEST: ALD

SUMMARY OF ANALYSIS

Number of groups                                                 1
Number of observations                                        9282

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

Observed dependent variables

  Binary and ordered categorical (ordinal)
   MDE

Observed independent variables
   ALD

Variables with special functions

  Stratification        SESTRAT
  Cluster variable      NUMSECU
  Weight variable       NCSRWTLG
```

```
Estimator                                                      MLR
Information matrix                                        OBSERVED
Optimization Specifications for the Quasi-Newton Algorithm for
Continuous Outcomes
  Maximum number of iterations                                 100
  Convergence criterion                                0.100D-05
Optimization Specifications for the EM Algorithm
  Maximum number of iterations                                 500
  Convergence criteria
    Loglikelihood change                               0.100D-02
    Relative loglikelihood change                      0.100D-05
    Derivative                                         0.100D-02
Optimization Specifications for the M step of the EM Algorithm for
Categorical Latent variables
  Number of M step iterations                                    1
  M step convergence criterion                         0.100D-02
  Basis for M step termination                         ITERATION
Optimization Specifications for the M step of the EM Algorithm for
Censored, Binary or Ordered Categorical (Ordinal), Unordered
Categorical (Nominal) and Count Outcomes
  Number of M step iterations                                    1
  M step convergence criterion                         0.100D-02
  Basis for M step termination                         ITERATION
  Maximum value for logit thresholds                          15
  Minimum value for logit thresholds                         -15
  Minimum expected cell size for chi-square            0.100D-01
Maximum number of iterations for H1                         2000
Convergence criterion for H1                           0.100D-03
Optimization algorithm                                       EMA
Integration Specifications
  Type                                                  STANDARD
  Number of integration points                                15
  Dimensions of numerical integration                          0
  Adaptive quadrature                                         ON
Link                                                       LOGIT
Cholesky                                                     OFF

Input data file(s)
  P:\asda3\replication mplus\ncsr.txt
Input data format  FREE


SUMMARY OF DATA

     Number of missing data patterns             1
     Number of y missing data patterns           0
     Number of u missing data patterns           1
     Number of strata                       42
     Number of clusters                     84


COVARIANCE COVERAGE OF DATA

Minimum covariance coverage value   0.100


UNIVARIATE PROPORTIONS AND COUNTS FOR CATEGORICAL VARIABLES
```

```
    MDE
      Category 1    0.808         7502.042
      Category 2    0.192         1779.958



THE MODEL ESTIMATION TERMINATED NORMALLY



MODEL FIT INFORMATION

Number of Free Parameters                       2

Loglikelihood

          H0 Value                       -4443.031
          H0 Scaling Correction Factor      2.1300
            for MLR

Information Criteria

          Akaike (AIC)                    8890.062
          Bayesian (BIC)                  8904.333
          Sample-Size Adjusted BIC        8897.978
            (n* = (n + 2) / 24)

Wald Test of Parameter Constraints

          Value                            106.144
          Degrees of Freedom                     1
          P-Value                           0.0000

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

 MDE        ON
    ALD                1.343      0.130     10.303      0.000

 Thresholds
    MDE$1              1.537      0.045     34.405      0.000


LOGISTIC REGRESSION ODDS RATIO RESULTS

 MDE        ON
    ALD                3.831

QUALITY OF NUMERICAL RESULTS

     Condition Number for the Information Matrix              0.794E-01
       (ratio of smallest to largest eigenvalue)
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 8\c8 ex 8.1 bivariate test ald.dgm
```

```
  TITLE: ASDA3 ANALYSIS EXAMPLE 8.1 NCSR DATA BIVARIATE TEST: EDUCATION
   DATA:
   FILE IS "P:\asda3\replication mplus\ncsr.txt";
   VARIABLE:
   NAMES ARE
   AGE CASEID DSM_SO ED4CAT MAR3CAT MDE_OND NCSRWTLG NCSRWTSH OBESE6CA
   REGION SECLUSTR SESTRAT SEX
   SO_OND WKSTAT3C ag60 ag1829 ag3044 ag4559 ag4cat ald ed011 ed12 ed16
   ed1315 married mde nevmar
   numsecu prevmar racecat sexf sexm;

   USEVARIABLES ARE SESTRAT NUMSECU MDE NCSRWTLG ED12 ED1315 ED16 ;
   missing are . ;
   WEIGHT IS NCSRWTlg ;
   stratification is sestrat ;
   cluster is numsecu ;
   categorical are mde ;
   ANALYSIS:
   type is complex;
   estimator is mlr ;
   Model:
   mde on
   ED12 (p1)
   ED1315 (P2)
   ED16 (P3) ;
   MODEL TEST:
   p1=0 ;
   P2=0 ;
   P3=0 ;



INPUT READING TERMINATED NORMALLY



ASDA3 ANALYSIS EXAMPLE 8.1 NCSR DATA BIVARIATE TEST: EDUCATION

SUMMARY OF ANALYSIS

Number of groups                                                 1
Number of observations                                        9282

Number of dependent variables                                    1
Number of independent variables                                  3
Number of continuous latent variables                            0

Observed dependent variables

  Binary and ordered categorical (ordinal)
   MDE

Observed independent variables
   ED12        ED1315      ED16

Variables with special functions

  Stratification        SESTRAT
  Cluster variable      NUMSECU
```

```
  Weight variable       NCSRWTLG

Estimator                                                MLR
Information matrix                                  OBSERVED
Optimization Specifications for the Quasi-Newton Algorithm for
Continuous Outcomes
  Maximum number of iterations                          100
  Convergence criterion                          0.100D-05
Optimization Specifications for the EM Algorithm
  Maximum number of iterations                          500
  Convergence criteria
    Loglikelihood change                         0.100D-02
    Relative loglikelihood change                0.100D-05
    Derivative                                   0.100D-02
Optimization Specifications for the M step of the EM Algorithm for
Categorical Latent variables
  Number of M step iterations                             1
  M step convergence criterion                   0.100D-02
  Basis for M step termination                   ITERATION
Optimization Specifications for the M step of the EM Algorithm for
Censored, Binary or Ordered Categorical (Ordinal), Unordered
Categorical (Nominal) and Count Outcomes
  Number of M step iterations                             1
  M step convergence criterion                   0.100D-02
  Basis for M step termination                   ITERATION
  Maximum value for logit thresholds                    15
  Minimum value for logit thresholds                   -15
  Minimum expected cell size for chi-square      0.100D-01
Maximum number of iterations for H1                   2000
Convergence criterion for H1                     0.100D-03
Optimization algorithm                                 EMA
Integration Specifications
  Type                                            STANDARD
  Number of integration points                          15
  Dimensions of numerical integration                    0
  Adaptive quadrature                                   ON
Link                                                 LOGIT
Cholesky                                               OFF

Input data file(s)
  P:\asda3\replication mplus\ncsr.txt
Input data format  FREE


SUMMARY OF DATA

     Number of missing data patterns             1
     Number of y missing data patterns           0
     Number of u missing data patterns           1
     Number of strata                       42
     Number of clusters                     84


COVARIANCE COVERAGE OF DATA

Minimum covariance coverage value   0.100


UNIVARIATE PROPORTIONS AND COUNTS FOR CATEGORICAL VARIABLES
```

MDE		
Category 1	0.808	7502.042
Category 2	0.192	1779.958

THE MODEL ESTIMATION TERMINATED NORMALLY

MODEL FIT INFORMATION

Number of Free Parameters	4

Loglikelihood

H0 Value	-4528.475
H0 Scaling Correction Factor for MLR	1.5793

Information Criteria

Akaike (AIC)	9064.951
Bayesian (BIC)	9093.494
Sample-Size Adjusted BIC (n* = (n + 2) / 24)	9080.783

Wald Test of Parameter Constraints

Value	12.090
Degrees of Freedom	3
P-Value	0.0071

MODEL RESULTS

		Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
MDE	ON				
ED12		0.156	0.088	1.775	0.076
ED1315		0.325	0.095	3.435	0.001
ED16		0.228	0.100	2.280	0.023
Thresholds					
MDE$1		1.635	0.089	18.416	0.000

LOGISTIC REGRESSION ODDS RATIO RESULTS

MDE	ON	
ED12		1.169
ED1315		1.385
ED16		1.256

QUALITY OF NUMERICAL RESULTS

```
     Condition Number for the Information Matrix              0.267E-01
       (ratio of smallest to largest eigenvalue)


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 8\c8 ex 8.1 bivariate test education.dgm
```

```
  TITLE: ASDA3 ANALYSIS EXAMPLE 8.1 NCSR DATA BIVARIATE TEST: MARITAL STATUS
   DATA:
   FILE IS "P:\asda3\replication mplus\ncsr.txt";
   VARIABLE:
   NAMES ARE
   AGE CASEID DSM_SO ED4CAT MAR3CAT MDE_OND NCSRWTLG NCSRWTSH OBESE6CA
   REGION SECLUSTR SESTRAT SEX
   SO_OND WKSTAT3C ag60 ag1829 ag3044 ag4559 ag4cat ald ed011 ed12 ed16
   ed1315 married mde nevmar
   numsecu prevmar racecat sexf sexm;

   USEVARIABLES ARE SESTRAT NUMSECU MDE NCSRWTLG PREVMAR NEVMAR ;
   missing are . ;
   WEIGHT IS NCSRWTlg ;
   stratification is sestrat ;
   cluster is numsecu ;
   categorical are mde ;

   ANALYSIS:
   type is complex;
   estimator is mlr ;

   Model:
   mde on
   PREVMAR (P1)
   NEVMAR (P2) ;
   model test:
   p1=0 ;
   P2=0 ;



INPUT READING TERMINATED NORMALLY



ASDA3 ANALYSIS EXAMPLE 8.1 NCSR DATA BIVARIATE TEST: MARITAL STATUS

SUMMARY OF ANALYSIS

Number of groups                                                 1
Number of observations                                        9282

Number of dependent variables                                    1
Number of independent variables                                  2
Number of continuous latent variables                            0

Observed dependent variables

  Binary and ordered categorical (ordinal)
   MDE

Observed independent variables
   PREVMAR     NEVMAR

Variables with special functions

  Stratification        SESTRAT
```

```
  Cluster variable      NUMSECU
  Weight variable       NCSRWTLG

Estimator                                                MLR
Information matrix                                  OBSERVED
Optimization Specifications for the Quasi-Newton Algorithm for
Continuous Outcomes
  Maximum number of iterations                           100
  Convergence criterion                           0.100D-05
Optimization Specifications for the EM Algorithm
  Maximum number of iterations                           500
  Convergence criteria
    Loglikelihood change                          0.100D-02
    Relative loglikelihood change                 0.100D-05
    Derivative                                    0.100D-02
Optimization Specifications for the M step of the EM Algorithm for
Categorical Latent variables
  Number of M step iterations                              1
  M step convergence criterion                    0.100D-02
  Basis for M step termination                    ITERATION
Optimization Specifications for the M step of the EM Algorithm for
Censored, Binary or Ordered Categorical (Ordinal), Unordered
Categorical (Nominal) and Count Outcomes
  Number of M step iterations                              1
  M step convergence criterion                    0.100D-02
  Basis for M step termination                    ITERATION
  Maximum value for logit thresholds                      15
  Minimum value for logit thresholds                     -15
  Minimum expected cell size for chi-square       0.100D-01
Maximum number of iterations for H1                     2000
Convergence criterion for H1                    0.100D-03
Optimization algorithm                                   EMA
Integration Specifications
  Type                                              STANDARD
  Number of integration points                            15
  Dimensions of numerical integration                      0
  Adaptive quadrature                                     ON
Link                                                   LOGIT
Cholesky                                                 OFF

Input data file(s)
  P:\asda3\replication mplus\ncsr.txt
Input data format  FREE


SUMMARY OF DATA

     Number of missing data patterns             1
     Number of y missing data patterns           0
     Number of u missing data patterns           1
     Number of strata                       42
     Number of clusters                     84


COVARIANCE COVERAGE OF DATA

Minimum covariance coverage value   0.100
```

UNIVARIATE PROPORTIONS AND COUNTS FOR CATEGORICAL VARIABLES

MDE

Category 1	0.808	7502.042
Category 2	0.192	1779.958

THE MODEL ESTIMATION TERMINATED NORMALLY

MODEL FIT INFORMATION

Number of Free Parameters 3

Loglikelihood

H0 Value	-4517.714
H0 Scaling Correction Factor for MLR	2.0224

Information Criteria

Akaike (AIC)	9041.428
Bayesian (BIC)	9062.835
Sample-Size Adjusted BIC (n* = (n + 2) / 24)	9053.302

Wald Test of Parameter Constraints

Value	28.562
Degrees of Freedom	2
P-Value	0.0000

MODEL RESULTS

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
MDE ON				
PREVMAR	0.405	0.076	5.344	0.000
NEVMAR	0.138	0.096	1.446	0.148
Thresholds				
MDE$1	1.563	0.052	30.169	0.000

LOGISTIC REGRESSION ODDS RATIO RESULTS

MDE ON	
PREVMAR	1.499
NEVMAR	1.148

QUALITY OF NUMERICAL RESULTS

```
     Condition Number for the Information Matrix              0.977E-01
       (ratio of smallest to largest eigenvalue)


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 8\c8 ex 8.1 bivariate test marital status.dgm

     Beginning Time:  14:03:30
        Ending Time:  14:03:32
       Elapsed Time:  00:00:02
```

```
  TITLE: ASDA3 ANALYSIS EXAMPLE 8.1 NCSR DATA INITIAL MODEL, TEST AGE
   DATA:
   FILE IS "P:\asda3\replication mplus\ncsr.txt";
   VARIABLE:
   NAMES ARE
   AGE CASEID DSM_SO ED4CAT MAR3CAT MDE_OND NCSRWTLG NCSRWTSH OBESE6CA
   REGION SECLUSTR SESTRAT SEX
   SO_OND WKSTAT3C ag60 ag1829 ag3044 ag4559 ag4cat ald ed011 ed12 ed16
   ed1315 married mde nevmar
   numsecu prevmar racecat sexf sexm;

   USEVARIABLES ARE SESTRAT NUMSECU MDE NCSRWTLG AG3044 AG4559 AG60 SEXM
   ALD ED12 ED1315 ED16 PREVMAR NEVMAR ;

   missing are . ;
   WEIGHT IS NCSRWTlg ;
   stratification is sestrat ;
   cluster is numsecu ;
   categorical are mde ;

   ANALYSIS:
   type is complex;
   estimator is mlr ;

   Model:
   mde on
   AG3044 (P1)
   AG4559 (P2)
   AG60 (P3)
   SEXM (p4)
   ALD (p5)
   ED12 (p6)
   ED1315 (p7)
   ED16 (p8)
   PREVMAR (p9)
   NEVMAR (p10) ;

   model test:
   0=P1 ;
   0=P2 ;
   0=P3 ;

   Output: cinterval ;



INPUT READING TERMINATED NORMALLY



ASDA3 ANALYSIS EXAMPLE 8.1 NCSR DATA INITIAL MODEL, TEST AGE

SUMMARY OF ANALYSIS

Number of groups                                                 1
Number of observations                                        9282

Number of dependent variables                                    1
Number of independent variables                                 10
```

```
Number of continuous latent variables                          0

Observed dependent variables

  Binary and ordered categorical (ordinal)
   MDE

Observed independent variables
   AG3044      AG4559      AG60        SEXM        ALD         ED12
   ED1315      ED16        PREVMAR     NEVMAR

Variables with special functions

  Stratification        SESTRAT
  Cluster variable      NUMSECU
  Weight variable       NCSRWTLG

Estimator                                                       MLR
Information matrix                                         OBSERVED
Optimization Specifications for the Quasi-Newton Algorithm for
Continuous Outcomes
  Maximum number of iterations                                  100
  Convergence criterion                                  0.100D-05
Optimization Specifications for the EM Algorithm
  Maximum number of iterations                                  500
  Convergence criteria
    Loglikelihood change                                 0.100D-02
    Relative loglikelihood change                        0.100D-05
    Derivative                                           0.100D-02
Optimization Specifications for the M step of the EM Algorithm for
Categorical Latent variables
  Number of M step iterations                                     1
  M step convergence criterion                           0.100D-02
  Basis for M step termination                           ITERATION
Optimization Specifications for the M step of the EM Algorithm for
Censored, Binary or Ordered Categorical (Ordinal), Unordered
Categorical (Nominal) and Count Outcomes
  Number of M step iterations                                     1
  M step convergence criterion                           0.100D-02
  Basis for M step termination                           ITERATION
  Maximum value for logit thresholds                             15
  Minimum value for logit thresholds                            -15
  Minimum expected cell size for chi-square              0.100D-01
Maximum number of iterations for H1                           2000
Convergence criterion for H1                             0.100D-03
Optimization algorithm                                         EMA
Integration Specifications
  Type                                                    STANDARD
  Number of integration points                                   15
  Dimensions of numerical integration                             0
  Adaptive quadrature                                            ON
Link                                                          LOGIT
Cholesky                                                        OFF

Input data file(s)
  P:\asda3\replication mplus\ncsr.txt
Input data format  FREE
```

SUMMARY OF DATA

Number of missing data patterns	1
Number of y missing data patterns	0
Number of u missing data patterns	1
Number of strata	42
Number of clusters	84

COVARIANCE COVERAGE OF DATA

Minimum covariance coverage value 0.100

UNIVARIATE PROPORTIONS AND COUNTS FOR CATEGORICAL VARIABLES

MDE		
Category 1	0.808	7502.042
Category 2	0.192	1779.958

THE MODEL ESTIMATION TERMINATED NORMALLY

MODEL FIT INFORMATION

Number of Free Parameters	11

Loglikelihood

H0 Value	-4295.718
H0 Scaling Correction Factor for MLR	1.6444

Information Criteria

Akaike (AIC)	8613.437
Bayesian (BIC)	8691.931
Sample-Size Adjusted BIC (n* = (n + 2) / 24)	8656.975

Wald Test of Parameter Constraints

Value	59.949
Degrees of Freedom	3
P-Value	0.0000

MODEL RESULTS

		Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
MDE	ON				
AG3044		0.256	0.094	2.708	0.007
AG4559		0.206	0.092	2.256	0.024

AG60	-0.676	0.141	-4.783	0.000
SEXM	-0.577	0.077	-7.477	0.000
ALD	1.424	0.154	9.235	0.000
ED12	0.079	0.097	0.818	0.413
ED1315	0.231	0.093	2.477	0.013
ED16	0.163	0.111	1.473	0.141
PREVMAR	0.486	0.085	5.695	0.000
NEVMAR	0.116	0.108	1.071	0.284
Thresholds				
MDE$1	1.583	0.121	13.120	0.000

LOGISTIC REGRESSION ODDS RATIO RESULTS

MDE ON	
AG3044	1.291
AG4559	1.229
AG60	0.509
SEXM	0.561
ALD	4.152
ED12	1.082
ED1315	1.259
ED16	1.177
PREVMAR	1.626
NEVMAR	1.123

QUALITY OF NUMERICAL RESULTS

Condition Number for the Information Matrix (ratio of smallest to largest eigenvalue)	0.132E-01

CONFIDENCE INTERVALS OF MODEL RESULTS

	Lower .5%	Lower 2.5%	Lower 5%	Estimate	Upper 5%	Upper 2.5%	Upper .5%
MDE ON							
AG3044	0.013	0.071	0.100	0.256	0.411	0.441	0.499
AG4559	-0.029	0.027	0.056	0.206	0.357	0.386	0.442
AG60	-1.040	-0.953	-0.908	-0.676	-0.443	-0.399	-0.312
SEXM	-0.776	-0.729	-0.704	-0.577	-0.450	-0.426	-0.378
ALD	1.027	1.122	1.170	1.424	1.677	1.726	1.821
ED12	-0.170	-0.111	-0.080	0.079	0.239	0.269	0.329
ED1315	-0.009	0.048	0.077	0.231	0.384	0.413	0.470
ED16	-0.122	-0.054	-0.019	0.163	0.345	0.380	0.448
PREVMAR	0.266	0.319	0.346	0.486	0.627	0.654	0.706
NEVMAR	-0.162	-0.096	-0.062	0.116	0.293	0.327	0.393
Thresholds							
MDE$1	1.272	1.347	1.385	1.583	1.782	1.820	1.894

CONFIDENCE INTERVALS FOR THE LOGISTIC REGRESSION ODDS RATIO RESULTS

MDE	ON						
	AG3044	1.013	1.073	1.106	1.291	1.508	1.554	1.647
	AG4559	0.971	1.027	1.057	1.229	1.429	1.471	1.556
	AG60	0.354	0.386	0.403	0.509	0.642	0.671	0.732
	SEXM	0.460	0.483	0.494	0.561	0.637	0.653	0.685
	ALD	2.792	3.070	3.222	4.152	5.351	5.617	6.177
	ED12	0.843	0.895	0.923	1.082	1.270	1.309	1.389
	ED1315	0.991	1.049	1.080	1.259	1.468	1.511	1.600
	ED16	0.885	0.948	0.981	1.177	1.412	1.462	1.565
	PREVMAR	1.305	1.376	1.413	1.626	1.872	1.923	2.027
	NEVMAR	0.850	0.909	0.940	1.123	1.340	1.387	1.482

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 8\c8 ex 8.1 initial model with test of age.dgm

Beginning Time: 14:09:25
Ending Time: 14:09:27
Elapsed Time: 00:00:02

```
  TITLE: ASDA3 ANALYSIS EXAMPLE 8.1 NCSR DATA INITIAL MODEL, TEST EDUCATION
   DATA:
   FILE IS "P:\asda3\replication mplus\ncsr.txt";
   VARIABLE:
   NAMES ARE
   AGE CASEID DSM_SO ED4CAT MAR3CAT MDE_OND NCSRWTLG NCSRWTSH OBESE6CA
   REGION SECLUSTR SESTRAT SEX
   SO_OND WKSTAT3C ag60 ag1829 ag3044 ag4559 ag4cat ald ed011 ed12 ed16
   ed1315 married mde nevmar
   numsecu prevmar racecat sexf sexm;

   USEVARIABLES ARE SESTRAT NUMSECU MDE NCSRWTLG AG3044 AG4559 AG60 SEXM
   ALD ED12 ED1315 ED16 PREVMAR NEVMAR ;

   missing are . ;
   WEIGHT IS NCSRWTlg ;
   stratification is sestrat ;
   cluster is numsecu ;
   categorical are mde ;
   ANALYSIS:
   type is complex;
   estimator is mlr ;
   Model:
   mde on
   AG3044 (P1)
   AG4559 (P2)
   AG60 (P3)
   SEXM (p4)
   ALD (p5)
   ED12 (p6)
   ED1315 (p7)
   ED16 (p8)
   PREVMAR (p9)
   NEVMAR (p10) ;
   model test:
   0=P6 ;
   0=P7 ;
   0=P8 ;


  Output: cinterval ;



INPUT READING TERMINATED NORMALLY



ASDA3 ANALYSIS EXAMPLE 8.1 NCSR DATA INITIAL MODEL, TEST EDUCATION

SUMMARY OF ANALYSIS

Number of groups                                                 1
Number of observations                                        9282

Number of dependent variables                                    1
Number of independent variables                                 10
Number of continuous latent variables                            0
```

```
Observed dependent variables

  Binary and ordered categorical (ordinal)
   MDE

Observed independent variables
   AG3044      AG4559      AG60        SEXM        ALD         ED12
   ED1315      ED16        PREVMAR     NEVMAR

Variables with special functions

  Stratification        SESTRAT
  Cluster variable      NUMSECU
  Weight variable       NCSRWTLG

Estimator                                                    MLR
Information matrix                                      OBSERVED
Optimization Specifications for the Quasi-Newton Algorithm for
Continuous Outcomes
  Maximum number of iterations                               100
  Convergence criterion                                0.100D-05
Optimization Specifications for the EM Algorithm
  Maximum number of iterations                               500
  Convergence criteria
    Loglikelihood change                               0.100D-02
    Relative loglikelihood change                      0.100D-05
    Derivative                                         0.100D-02
Optimization Specifications for the M step of the EM Algorithm for
Categorical Latent variables
  Number of M step iterations                                  1
  M step convergence criterion                         0.100D-02
  Basis for M step termination                         ITERATION
Optimization Specifications for the M step of the EM Algorithm for
Censored, Binary or Ordered Categorical (Ordinal), Unordered
Categorical (Nominal) and Count Outcomes
  Number of M step iterations                                  1
  M step convergence criterion                         0.100D-02
  Basis for M step termination                         ITERATION
  Maximum value for logit thresholds                          15
  Minimum value for logit thresholds                         -15
  Minimum expected cell size for chi-square            0.100D-01
Maximum number of iterations for H1                         2000
Convergence criterion for H1                           0.100D-03
Optimization algorithm                                       EMA
Integration Specifications
  Type                                                  STANDARD
  Number of integration points                                15
  Dimensions of numerical integration                          0
  Adaptive quadrature                                         ON
Link                                                       LOGIT
Cholesky                                                     OFF

Input data file(s)
  P:\asda3\replication mplus\ncsr.txt
Input data format  FREE
```

SUMMARY OF DATA

Number of missing data patterns	1
Number of y missing data patterns	0
Number of u missing data patterns	1
Number of strata	42
Number of clusters	84

COVARIANCE COVERAGE OF DATA

Minimum covariance coverage value 0.100

UNIVARIATE PROPORTIONS AND COUNTS FOR CATEGORICAL VARIABLES

MDE		
Category 1	0.808	7502.042
Category 2	0.192	1779.958

THE MODEL ESTIMATION TERMINATED NORMALLY

MODEL FIT INFORMATION

Number of Free Parameters 11

Loglikelihood

H0 Value	-4295.718
H0 Scaling Correction Factor for MLR	1.6444

Information Criteria

Akaike (AIC)	8613.437
Bayesian (BIC)	8691.931
Sample-Size Adjusted BIC (n* = (n + 2) / 24)	8656.975

Wald Test of Parameter Constraints

Value	**6.709**
Degrees of Freedom	**3**
P-Value	**0.0818**

MODEL RESULTS

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
MDE ON				
AG3044	0.256	0.094	2.708	0.007
AG4559	0.206	0.092	2.256	0.024
AG60	-0.676	0.141	-4.783	0.000
SEXM	-0.577	0.077	-7.477	0.000
ALD	1.424	0.154	9.235	0.000
ED12	0.079	0.097	0.818	0.413
ED1315	0.231	0.093	2.477	0.013
ED16	0.163	0.111	1.473	0.141
PREVMAR	0.486	0.085	5.695	0.000
NEVMAR	0.116	0.108	1.071	0.284
Thresholds				
MDE$1	1.583	0.121	13.120	0.000

LOGISTIC REGRESSION ODDS RATIO RESULTS

MDE ON	
AG3044	1.291
AG4559	1.229
AG60	0.509
SEXM	0.561
ALD	4.152
ED12	1.082
ED1315	1.259
ED16	1.177
PREVMAR	1.626
NEVMAR	1.123

QUALITY OF NUMERICAL RESULTS

Condition Number for the Information Matrix 0.132E-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%
MDE ON							
AG3044	0.013	0.071	0.100	0.256	0.411	0.441	0.499
AG4559	-0.029	0.027	0.056	0.206	0.357	0.386	0.442
AG60	-1.040	-0.953	-0.908	-0.676	-0.443	-0.399	-0.312
SEXM	-0.776	-0.729	-0.704	-0.577	-0.450	-0.426	-0.378
ALD	1.027	1.122	1.170	1.424	1.677	1.726	1.821
ED12	-0.170	-0.111	-0.080	0.079	0.239	0.269	0.329
ED1315	-0.009	0.048	0.077	0.231	0.384	0.413	0.470
ED16	-0.122	-0.054	-0.019	0.163	0.345	0.380	0.448
PREVMAR	0.266	0.319	0.346	0.486	0.627	0.654	0.706
NEVMAR	-0.162	-0.096	-0.062	0.116	0.293	0.327	0.393

Thresholds

MDE$1	1.272	1.347	1.385	1.583	1.782	1.820	1.894

CONFIDENCE INTERVALS FOR THE LOGISTIC REGRESSION ODDS RATIO RESULTS

MDE ON

AG3044	1.013	1.073	1.106	1.291	1.508	1.554	1.647
AG4559	0.971	1.027	1.057	1.229	1.429	1.471	1.556
AG60	0.354	0.386	0.403	0.509	0.642	0.671	0.732
SEXM	0.460	0.483	0.494	0.561	0.637	0.653	0.685
ALD	2.792	3.070	3.222	4.152	5.351	5.617	6.177
ED12	0.843	0.895	0.923	1.082	1.270	1.309	1.389
ED1315	0.991	1.049	1.080	1.259	1.468	1.511	1.600
ED16	0.885	0.948	0.981	1.177	1.412	1.462	1.565
PREVMAR	1.305	1.376	1.413	1.626	1.872	1.923	2.027
NEVMAR	0.850	0.909	0.940	1.123	1.340	1.387	1.482

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 8\c8 ex 8.1 initial model with test of education.dgm

```
TITLE: ASDA3 ANALYSIS EXAMPLE 8.1 NCSR DATA INITIAL MODEL, TEST SEX X AGE INTS
 DATA:
 FILE IS "P:\asda3\replication mplus\ncsr.txt";
 VARIABLE:
 NAMES ARE
 AGE CASEID DSM_SO ED4CAT MAR3CAT MDE_OND NCSRWTLG NCSRWTSH OBESE6CA
 REGION SECLUSTR SESTRAT SEX
 SO_OND WKSTAT3C ag60 ag1829 ag3044 ag4559 ag4cat ald ed011 ed12 ed16
 ed1315 married mde nevmar
 numsecu prevmar racecat sexf sexm;
 USEVARIABLES ARE SESTRAT NUMSECU MDE NCSRWTLG AG3044 AG4559 AG60 SEXM ALD
 ED12 ED1315 ED16 PREVMAR NEVMAR
 SAG3044 SAG4559 SAG60 SALD SED12 SED1315 SED16 SPREVMAR SNEVMAR ;
 missing are . ;
 WEIGHT IS NCSRWTlg ;
 stratification is sestrat ;
 cluster is numsecu ;
 categorical are mde ;

 DEFINE:
 SAG3044=SEXM*AG3044 ;
 SAG4559=SEXM*AG4559 ;
 SAG60=SEXM*AG60 ;
 SALD=SEXM*ALD ;
 SED12=SEXM*ED12 ;
 SED1315=SEXM*ED1315 ;
 SED16=SEXM*ED16 ;
 SPREVMAR=SEXM*PREVMAR ;
 SNEVMAR=SEXM*NEVMAR ;

 ANALYSIS:
 type is complex;
 estimator is mlr ;

 Model:
 mde on
 AG3044 AG4559 AG60 SEXM ALD ED12 ED1315 ED16 PREVMAR NEVMAR
 SAG3044 (P1)
 SAG4559 (P2)
 SAG60 (P3)
 SALD (P4)
 SED12 (P5)
 SED1315 (P6)
 SED16 (P7)
 SPREVMAR (P8)
 SNEVMAR (P9) ;
 MODEL TEST :
 P1=0 ;
 P2=0 ;
 P3=0 ;



INPUT READING TERMINATED NORMALLY
```

ASDA3 ANALYSIS EXAMPLE 8.1 NCSR DATA INITIAL MODEL, TEST SEX X AGE INTS

SUMMARY OF ANALYSIS

Number of groups 1
Number of observations 9282

Number of dependent variables 1
Number of independent variables 19
Number of continuous latent variables 0

Observed dependent variables

  Binary and ordered categorical (ordinal)
   MDE

Observed independent variables
   AG3044 AG4559 AG60 SEXM ALD ED12
   ED1315 ED16 PREVMAR NEVMAR SAG3044 SAG4559
   SAG60 SALD SED12 SED1315 SED16 SPREVMAR
   SNEVMAR

Variables with special functions

  Stratification SESTRAT
  Cluster variable NUMSECU
  Weight variable NCSRWTLG

Estimator MLR
Information matrix OBSERVED
Optimization Specifications for the Quasi-Newton Algorithm for
Continuous Outcomes
  Maximum number of iterations 100
  Convergence criterion 0.100D-05
Optimization Specifications for the EM Algorithm
  Maximum number of iterations 500
  Convergence criteria
    Loglikelihood change 0.100D-02
    Relative loglikelihood change 0.100D-05
    Derivative 0.100D-02
Optimization Specifications for the M step of the EM Algorithm for
Categorical Latent variables
  Number of M step iterations 1
  M step convergence criterion 0.100D-02
  Basis for M step termination ITERATION
Optimization Specifications for the M step of the EM Algorithm for
Censored, Binary or Ordered Categorical (Ordinal), Unordered
Categorical (Nominal) and Count Outcomes
  Number of M step iterations 1
  M step convergence criterion 0.100D-02
  Basis for M step termination ITERATION
  Maximum value for logit thresholds 15
  Minimum value for logit thresholds -15
  Minimum expected cell size for chi-square 0.100D-01
Maximum number of iterations for H1 2000
Convergence criterion for H1 0.100D-03
Optimization algorithm EMA
Integration Specifications
  Type STANDARD

```
  Number of integration points                                  15
  Dimensions of numerical integration                            0
  Adaptive quadrature                                           ON
Link                                                         LOGIT
Cholesky                                                       OFF

Input data file(s)
  P:\asda3\replication mplus\ncsr.txt
Input data format  FREE


SUMMARY OF DATA

     Number of missing data patterns             1
     Number of y missing data patterns           0
     Number of u missing data patterns           1
     Number of strata                       42
     Number of clusters                     84


COVARIANCE COVERAGE OF DATA

Minimum covariance coverage value   0.100


UNIVARIATE PROPORTIONS AND COUNTS FOR CATEGORICAL VARIABLES

    MDE
      Category 1    0.808         7502.042
      Category 2    0.192         1779.958



THE MODEL ESTIMATION TERMINATED NORMALLY



MODEL FIT INFORMATION

Number of Free Parameters                       20

Loglikelihood

          H0 Value                       -4292.727
          H0 Scaling Correction Factor      1.7006
            for MLR

Information Criteria

          Akaike (AIC)                    8625.454
          Bayesian (BIC)                  8768.171
          Sample-Size Adjusted BIC        8704.614
            (n* = (n + 2) / 24)

Wald Test of Parameter Constraints

          Value                             0.780
          Degrees of Freedom                    3
          P-Value                           0.8543
```

MODEL RESULTS

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
MDE ON				
AG3044	0.220	0.114	1.937	0.053
AG4559	0.215	0.102	2.094	0.036
AG60	-0.646	0.175	-3.685	0.000
SEXM	-0.546	0.357	-1.530	0.126
ALD	1.553	0.211	7.360	0.000
ED12	0.131	0.084	1.559	0.119
ED1315	0.297	0.117	2.540	0.011
ED16	0.242	0.152	1.595	0.111
PREVMAR	0.418	0.111	3.780	0.000
NEVMAR	0.017	0.130	0.134	0.894
SAG3044	0.097	0.201	0.482	0.630
SAG4559	0.003	0.213	0.012	0.990
SAG60	-0.038	0.302	-0.125	0.900
SALD	-0.200	0.242	-0.827	0.408
SED12	-0.138	0.271	-0.508	0.611
SED1315	-0.169	0.269	-0.627	0.531
SED16	-0.194	0.344	-0.564	0.573
SPREVMAR	0.183	0.208	0.878	0.380
SNEVMAR	0.232	0.212	1.094	0.274
Thresholds				
MDE$1	1.600	0.134	11.939	0.000

LOGISTIC REGRESSION ODDS RATIO RESULTS

MDE ON	
AG3044	1.247
AG4559	1.239
AG60	0.524
SEXM	0.579
ALD	4.726
ED12	1.139
ED1315	1.346
ED16	1.274
PREVMAR	1.519
NEVMAR	1.017
SAG3044	1.102
SAG4559	1.003
SAG60	0.963
SALD	0.818
SED12	0.871
SED1315	0.845
SED16	0.824
SPREVMAR	1.200
SNEVMAR	1.261

QUALITY OF NUMERICAL RESULTS

Condition Number for the Information Matrix (ratio of smallest to largest eigenvalue)	0.244E-02

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 8\c8 ex 8.1 initial model with int of sex x all predictors,

```
TITLE: ASDA3 ANALYSIS EXAMPLE 8.1 NCSR DATA INITIAL MODEL, TEST SEX X EDU INTS
 DATA:
 FILE IS "P:\asda3\replication mplus\ncsr.txt";
 VARIABLE:
 NAMES ARE
 AGE CASEID DSM_SO ED4CAT MAR3CAT MDE_OND NCSRWTLG NCSRWTSH OBESE6CA
 REGION SECLUSTR SESTRAT SEX
 SO_OND WKSTAT3C ag60 ag1829 ag3044 ag4559 ag4cat ald ed011 ed12 ed16
 ed1315 married mde nevmar
 numsecu prevmar racecat sexf sexm;

 USEVARIABLES ARE SESTRAT NUMSECU MDE NCSRWTLG AG3044 AG4559 AG60 SEXM ALD
 ED12 ED1315 ED16 PREVMAR NEVMAR
 SAG3044 SAG4559 SAG60 SALD SED12 SED1315 SED16 SPREVMAR SNEVMAR ;
 missing are . ;
 WEIGHT IS NCSRWTlg ;
 stratification is sestrat ;
 cluster is numsecu ;
 categorical are mde ;

 DEFINE:
 SAG3044=SEXM*AG3044 ;
 SAG4559=SEXM*AG4559 ;
 SAG60=SEXM*AG60 ;
 SALD=SEXM*ALD ;
 SED12=SEXM*ED12 ;
 SED1315=SEXM*ED1315 ;
 SED16=SEXM*ED16 ;
 SPREVMAR=SEXM*PREVMAR ;
 SNEVMAR=SEXM*NEVMAR ;

 ANALYSIS:
 type is complex;
 estimator is mlr ;

 Model:
 mde on
 AG3044 AG4559 AG60 SEXM ALD ED12 ED1315 ED16 PREVMAR NEVMAR
 SAG3044 (P1)
 SAG4559 (P2)
 SAG60 (P3)
 SALD (P4)
 SED12 (P5)
 SED1315 (P6)
 SED16 (P7)
 SPREVMAR (P8)
 SNEVMAR (P9) ;

 !TEST EDUCATION ;
 MODEL TEST :
 P5=0 ;
 P6=0 ;
 P7=0 ;
```

INPUT READING TERMINATED NORMALLY

ASDA3 ANALYSIS EXAMPLE 8.1 NCSR DATA INITIAL MODEL, TEST SEX X EDU INTS

SUMMARY OF ANALYSIS

Number of groups	1
Number of observations	9282
Number of dependent variables	1
Number of independent variables	19
Number of continuous latent variables	0

Observed dependent variables

  Binary and ordered categorical (ordinal)
   MDE

Observed independent variables

AG3044	AG4559	AG60	SEXM	ALD	ED12
ED1315	ED16	PREVMAR	NEVMAR	SAG3044	SAG4559
SAG60	SALD	SED12	SED1315	SED16	SPREVMAR
SNEVMAR					

Variables with special functions

Stratification	SESTRAT
Cluster variable	NUMSECU
Weight variable	NCSRWTLG

Estimator	MLR
Information matrix	OBSERVED

Optimization Specifications for the Quasi-Newton Algorithm for Continuous Outcomes

Maximum number of iterations	100
Convergence criterion	0.100D-05

Optimization Specifications for the EM Algorithm

Maximum number of iterations	500
Convergence criteria	
Loglikelihood change	0.100D-02
Relative loglikelihood change	0.100D-05
Derivative	0.100D-02

Optimization Specifications for the M step of the EM Algorithm for Categorical Latent variables

Number of M step iterations	1
M step convergence criterion	0.100D-02
Basis for M step termination	ITERATION

Optimization Specifications for the M step of the EM Algorithm for Censored, Binary or Ordered Categorical (Ordinal), Unordered Categorical (Nominal) and Count Outcomes

Number of M step iterations	1
M step convergence criterion	0.100D-02
Basis for M step termination	ITERATION
Maximum value for logit thresholds	15
Minimum value for logit thresholds	-15
Minimum expected cell size for chi-square	0.100D-01
Maximum number of iterations for H1	2000

```
Convergence criterion for H1                              0.100D-03
Optimization algorithm                                          EMA
Integration Specifications
  Type                                                     STANDARD
  Number of integration points                                   15
  Dimensions of numerical integration                             0
  Adaptive quadrature                                            ON
Link                                                          LOGIT
Cholesky                                                        OFF

Input data file(s)
  P:\asda3\replication mplus\ncsr.txt
Input data format  FREE


SUMMARY OF DATA

     Number of missing data patterns             1
     Number of y missing data patterns           0
     Number of u missing data patterns           1
     Number of strata                       42
     Number of clusters                     84


COVARIANCE COVERAGE OF DATA

Minimum covariance coverage value   0.100


UNIVARIATE PROPORTIONS AND COUNTS FOR CATEGORICAL VARIABLES

    MDE
      Category 1    0.808         7502.042
      Category 2    0.192         1779.958



THE MODEL ESTIMATION TERMINATED NORMALLY



MODEL FIT INFORMATION

Number of Free Parameters                       20

Loglikelihood

          H0 Value                       -4292.727
          H0 Scaling Correction Factor      1.7006
            for MLR

Information Criteria

          Akaike (AIC)                    8625.454
          Bayesian (BIC)                  8768.171
          Sample-Size Adjusted BIC        8704.614
            (n* = (n + 2) / 24)
```

Wald Test of Parameter Constraints

Value	**0.395**
Degrees of Freedom	**3**
P-Value	**0.9412**

MODEL RESULTS

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
MDE ON				
AG3044	0.220	0.114	1.937	0.053
AG4559	0.215	0.102	2.094	0.036
AG60	-0.646	0.175	-3.685	0.000
SEXM	-0.546	0.357	-1.530	0.126
ALD	1.553	0.211	7.360	0.000
ED12	0.131	0.084	1.559	0.119
ED1315	0.297	0.117	2.540	0.011
ED16	0.242	0.152	1.595	0.111
PREVMAR	0.418	0.111	3.780	0.000
NEVMAR	0.017	0.130	0.134	0.894
SAG3044	0.097	0.201	0.482	0.630
SAG4559	0.003	0.213	0.012	0.990
SAG60	-0.038	0.302	-0.125	0.900
SALD	-0.200	0.242	-0.827	0.408
SED12	-0.138	0.271	-0.508	0.611
SED1315	-0.169	0.269	-0.627	0.531
SED16	-0.194	0.344	-0.564	0.573
SPREVMAR	0.183	0.208	0.878	0.380
SNEVMAR	0.232	0.212	1.094	0.274
Thresholds				
MDE$1	1.600	0.134	11.939	0.000

LOGISTIC REGRESSION ODDS RATIO RESULTS

MDE ON	
AG3044	1.247
AG4559	1.239
AG60	0.524
SEXM	0.579
ALD	4.726
ED12	1.139
ED1315	1.346
ED16	1.274
PREVMAR	1.519
NEVMAR	1.017
SAG3044	1.102
SAG4559	1.003
SAG60	0.963
SALD	0.818
SED12	0.871
SED1315	0.845
SED16	0.824
SPREVMAR	1.200

SNEVMAR 1.261

QUALITY OF NUMERICAL RESULTS

Condition Number for the Information Matrix 0.244E-02
(ratio of smallest to largest eigenvalue)

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 8\c8 ex 8.1 initial model with int of sex x all predictors,

```
TITLE: ASDA3 ANALYSIS EXAMPLE 8.1 NCSR DATA INITIAL MODEL, TEST SEX X MARITAL INTS
 DATA:
 FILE IS "P:\asda3\replication mplus\ncsr.txt";
 VARIABLE:
 NAMES ARE
 AGE CASEID DSM_SO ED4CAT MAR3CAT MDE_OND NCSRWTLG NCSRWTSH OBESE6CA
 REGION SECLUSTR SESTRAT SEX
 SO_OND WKSTAT3C ag60 ag1829 ag3044 ag4559 ag4cat ald ed011 ed12 ed16
 ed1315 married mde nevmar
 numsecu prevmar racecat sexf sexm;

 USEVARIABLES ARE SESTRAT NUMSECU MDE NCSRWTLG AG3044 AG4559 AG60 SEXM ALD
 ED12 ED1315 ED16 PREVMAR NEVMAR
 SAG3044 SAG4559 SAG60 SALD SED12 SED1315 SED16 SPREVMAR SNEVMAR ;
 missing are . ;
 WEIGHT IS NCSRWTlg ;
 stratification is sestrat ;
 cluster is numsecu ;
 categorical are mde ;

 DEFINE:
 SAG3044=SEXM*AG3044 ;
 SAG4559=SEXM*AG4559 ;
 SAG60=SEXM*AG60 ;
 SALD=SEXM*ALD ;
 SED12=SEXM*ED12 ;
 SED1315=SEXM*ED1315 ;
 SED16=SEXM*ED16 ;
 SPREVMAR=SEXM*PREVMAR ;
 SNEVMAR=SEXM*NEVMAR ;

 ANALYSIS:
 type is complex;
 estimator is mlr ;

 Model:
 mde on
 AG3044 AG4559 AG60 SEXM ALD ED12 ED1315 ED16 PREVMAR NEVMAR
 SAG3044 (P1)
 SAG4559 (P2)
 SAG60 (P3)
 SALD (P4)
 SED12 (P5)
 SED1315 (P6)
 SED16 (P7)
 SPREVMAR (P8)
 SNEVMAR (P9) ;

 !TEST MARITAL STATUS ;
 MODEL TEST :
 P8=0 ;
 P9=0 ;
```

INPUT READING TERMINATED NORMALLY

ASDA3 ANALYSIS EXAMPLE 8.1 NCSR DATA INITIAL MODEL, TEST SEX X MARITAL INTS

SUMMARY OF ANALYSIS

Number of groups	1
Number of observations	9282
Number of dependent variables	1
Number of independent variables	19
Number of continuous latent variables	0

Observed dependent variables

Binary and ordered categorical (ordinal)
MDE

Observed independent variables

AG3044	AG4559	AG60	SEXM	ALD	ED12
ED1315	ED16	PREVMAR	NEVMAR	SAG3044	SAG4559
SAG60	SALD	SED12	SED1315	SED16	SPREVMAR
SNEVMAR					

Variables with special functions

Stratification	SESTRAT
Cluster variable	NUMSECU
Weight variable	NCSRWTLG

Estimator	MLR
Information matrix	OBSERVED

Optimization Specifications for the Quasi-Newton Algorithm for Continuous Outcomes

Maximum number of iterations	100
Convergence criterion	0.100D-05

Optimization Specifications for the EM Algorithm

Maximum number of iterations	500
Convergence criteria	
Loglikelihood change	0.100D-02
Relative loglikelihood change	0.100D-05
Derivative	0.100D-02

Optimization Specifications for the M step of the EM Algorithm for Categorical Latent variables

Number of M step iterations	1
M step convergence criterion	0.100D-02
Basis for M step termination	ITERATION

Optimization Specifications for the M step of the EM Algorithm for Censored, Binary or Ordered Categorical (Ordinal), Unordered Categorical (Nominal) and Count Outcomes

Number of M step iterations	1
M step convergence criterion	0.100D-02
Basis for M step termination	ITERATION
Maximum value for logit thresholds	15
Minimum value for logit thresholds	-15
Minimum expected cell size for chi-square	0.100D-01
Maximum number of iterations for H1	2000

```
Convergence criterion for H1                              0.100D-03
Optimization algorithm                                          EMA
Integration Specifications
  Type                                                     STANDARD
  Number of integration points                                   15
  Dimensions of numerical integration                             0
  Adaptive quadrature                                            ON
Link                                                          LOGIT
Cholesky                                                        OFF

Input data file(s)
  P:\asda3\replication mplus\ncsr.txt
Input data format  FREE


SUMMARY OF DATA

     Number of missing data patterns             1
     Number of y missing data patterns           0
     Number of u missing data patterns           1
     Number of strata                       42
     Number of clusters                     84


COVARIANCE COVERAGE OF DATA

Minimum covariance coverage value   0.100


UNIVARIATE PROPORTIONS AND COUNTS FOR CATEGORICAL VARIABLES

    MDE
      Category 1    0.808         7502.042
      Category 2    0.192         1779.958



THE MODEL ESTIMATION TERMINATED NORMALLY



MODEL FIT INFORMATION

Number of Free Parameters                       20

Loglikelihood

          H0 Value                       -4292.727
          H0 Scaling Correction Factor      1.7006
            for MLR

Information Criteria

          Akaike (AIC)                    8625.454
          Bayesian (BIC)                  8768.171
          Sample-Size Adjusted BIC        8704.614
            (n* = (n + 2) / 24)
```

Wald Test of Parameter Constraints

Value	**1.567**
Degrees of Freedom	**2**
P-Value	**0.4567**

MODEL RESULTS

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
MDE ON				
AG3044	0.220	0.114	1.937	0.053
AG4559	0.215	0.102	2.094	0.036
AG60	-0.646	0.175	-3.685	0.000
SEXM	-0.546	0.357	-1.530	0.126
ALD	1.553	0.211	7.360	0.000
ED12	0.131	0.084	1.559	0.119
ED1315	0.297	0.117	2.540	0.011
ED16	0.242	0.152	1.595	0.111
PREVMAR	0.418	0.111	3.780	0.000
NEVMAR	0.017	0.130	0.134	0.894
SAG3044	0.097	0.201	0.482	0.630
SAG4559	0.003	0.213	0.012	0.990
SAG60	-0.038	0.302	-0.125	0.900
SALD	-0.200	0.242	-0.827	0.408
SED12	-0.138	0.271	-0.508	0.611
SED1315	-0.169	0.269	-0.627	0.531
SED16	-0.194	0.344	-0.564	0.573
SPREVMAR	0.183	0.208	0.878	0.380
SNEVMAR	0.232	0.212	1.094	0.274
Thresholds				
MDE$1	1.600	0.134	11.939	0.000

LOGISTIC REGRESSION ODDS RATIO RESULTS

MDE ON	
AG3044	1.247
AG4559	1.239
AG60	0.524
SEXM	0.579
ALD	4.726
ED12	1.139
ED1315	1.346
ED16	1.274
PREVMAR	1.519
NEVMAR	1.017
SAG3044	1.102
SAG4559	1.003
SAG60	0.963
SALD	0.818
SED12	0.871
SED1315	0.845
SED16	0.824
SPREVMAR	1.200

SNEVMAR 1.261

QUALITY OF NUMERICAL RESULTS

Condition Number for the Information Matrix 0.244E-02
(ratio of smallest to largest eigenvalue)

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 8\c8 ex 8.1 initial model with int of sex x all predictors,

Beginning Time: 14:26:38
Ending Time: 14:26:41
Elapsed Time: 00:00:03

```
TITLE: ASDA3 ANALYSIS EXAMPLE 8.1 NCSR DATA FINAL MODEL, WEIGHTS INFORMATIVE?
 DATA:
 FILE IS "P:\asda3\replication mplus\ncsr.txt";
 VARIABLE:
 NAMES ARE
 AGE CASEID DSM_SO ED4CAT MAR3CAT MDE_OND NCSRWTLG NCSRWTSH OBESE6CA
 REGION SECLUSTR SESTRAT SEX
 SO_OND WKSTAT3C ag60 ag1829 ag3044 ag4559 ag4cat ald ed011 ed12 ed16
 ed1315 married mde nevmar
 numsecu prevmar racecat sexf sexm;

 USEVARIABLES ARE SESTRAT NUMSECU NCSRWTLG AG3044 AG4559 AG60 SEXM ALD
 ED12 ED1315 ED16 PREVMAR NEVMAR MDE
 WAG3044 WAG4559 WAG60 WALD WED12 WED1315 WED16 WPREVMAR WNEVMAR WSEXM ;

 USEOBSERVATIONS = (NCSRWTLG > 0) ;

 missing are . ;
 !WEIGHT IS NCSRWTlg ;
 stratification is sestrat ;
 cluster is numsecu ;
 categorical are mde  ;

! Need each variable ncsrwtlg * each model predictor ;
 DEFINE:
 WAG3044=ncsrwtlg*AG3044 ;
 WAG4559=ncsrwtlg*AG4559 ;
 WAG60=ncsrwtlg*AG60 ;
 WALD=ncsrwtlg*ALD ;
 WED12=ncsrwtlg*ED12 ;
 WED1315=ncsrwtlg*ED1315 ;
 WED16=ncsrwtlg*ED16 ;
 WPREVMAR=ncsrwtlg*PREVMAR ;
 WNEVMAR=ncsrwtlg*NEVMAR ;
 WSEXM=NCSRWTLG*SEXM ;

 ANALYSIS:
 type is complex;
 estimator is mlr ;

 Model:
 mde on
 AG3044 AG4559 AG60 SEXM ALD ED12 ED1315 ED16 PREVMAR NEVMAR
  NCSRWTLG (P1)
  WAG3044 (P2)
  WAG4559 (P3)
  WAG60 (P4)
  WALD (P5)
  WED12 (P6)
  WED1315 (P7)
  WED16 (P8)
  WPREVMAR (P9)
  WNEVMAR (P10)
  WSEXM (P11)
  ;
 MODEL TEST :
 P1=0 ;
 P2=0 ;
```

```
   P3=0 ;
   P4=0 ;
   P5=0 ;
   P6=0 ;
   P7=0 ;
   P8=0 ;
   P9=0 ;
   P10=0 ;
   P11=0 ;

   OUTPUT: cinterval ;


*** WARNING in VARIABLE command
  When a subpopulation is analyzed with TYPE=COMPLEX, standard errors
  may be incorrect.  Use the SUBPOPULATION option instead of the
  USEOBSERVATIONS option to obtain correct standard errors.
   1 WARNING(S) FOUND IN THE INPUT INSTRUCTIONS



ASDA3 ANALYSIS EXAMPLE 8.1 NCSR DATA FINAL MODEL, WEIGHTS INFORMATIVE?

SUMMARY OF ANALYSIS

Number of groups                                                 1
Number of observations                                        5692

Number of dependent variables                                    1
Number of independent variables                                 21
Number of continuous latent variables                            0

Observed dependent variables

  Binary and ordered categorical (ordinal)
   MDE

Observed independent variables
   NCSRWTLG    AG3044      AG4559      AG60        SEXM        ALD
   ED12        ED1315      ED16        PREVMAR     NEVMAR      WAG3044
   WAG4559     WAG60       WALD        WED12       WED1315     WED16
   WPREVMAR    WNEVMAR     WSEXM

Variables with special functions

  Stratification        SESTRAT
  Cluster variable      NUMSECU

Estimator                                                      MLR
Information matrix                                        OBSERVED
Optimization Specifications for the Quasi-Newton Algorithm for
Continuous Outcomes
  Maximum number of iterations                                 100
  Convergence criterion                                 0.100D-05
Optimization Specifications for the EM Algorithm
  Maximum number of iterations                                 500
  Convergence criteria
    Loglikelihood change                                0.100D-02
    Relative loglikelihood change                       0.100D-05
```

```
    Derivative                                          0.100D-02
Optimization Specifications for the M step of the EM Algorithm for
Categorical Latent variables
  Number of M step iterations                                   1
  M step convergence criterion                          0.100D-02
  Basis for M step termination                          ITERATION
Optimization Specifications for the M step of the EM Algorithm for
Censored, Binary or Ordered Categorical (Ordinal), Unordered
Categorical (Nominal) and Count Outcomes
  Number of M step iterations                                   1
  M step convergence criterion                          0.100D-02
  Basis for M step termination                          ITERATION
  Maximum value for logit thresholds                           15
  Minimum value for logit thresholds                          -15
  Minimum expected cell size for chi-square             0.100D-01
Maximum number of iterations for H1                          2000
Convergence criterion for H1                            0.100D-03
Optimization algorithm                                        EMA
Integration Specifications
  Type                                                   STANDARD
  Number of integration points                                 15
  Dimensions of numerical integration                           0
  Adaptive quadrature                                          ON
Link                                                        LOGIT
Cholesky                                                      OFF

Input data file(s)
  P:\asda3\replication mplus\ncsr.txt
Input data format  FREE


SUMMARY OF DATA

     Number of missing data patterns             1
     Number of y missing data patterns           0
     Number of u missing data patterns           1
     Number of strata                       42
     Number of clusters                     84


COVARIANCE COVERAGE OF DATA

Minimum covariance coverage value   0.100


UNIVARIATE PROPORTIONS AND COUNTS FOR CATEGORICAL VARIABLES

    MDE
      Category 1    0.684         3896.000
      Category 2    0.316         1796.000



THE MODEL ESTIMATION TERMINATED NORMALLY
```

MODEL FIT INFORMATION

Number of Free Parameters 22

Loglikelihood

H0 Value	-3094.739
H0 Scaling Correction Factor for MLR	1.3863

Information Criteria

Akaike (AIC)	6233.479
Bayesian (BIC)	6379.709
Sample-Size Adjusted BIC (n* = (n + 2) / 24)	6309.799

Wald Test of Parameter Constraints

Value	**103.586**
Degrees of Freedom	**11**
P-Value	**0.0000**

MODEL RESULTS

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
MDE ON				
AG3044	0.175	0.159	1.104	0.270
AG4559	0.297	0.205	1.453	0.146
AG60	0.190	0.238	0.797	0.426
SEXM	-0.398	0.147	-2.705	0.007
ALD	-0.194	0.261	-0.743	0.457
ED12	0.370	0.137	2.701	0.007
ED1315	0.446	0.167	2.667	0.008
ED16	0.444	0.224	1.979	0.048
PREVMAR	0.268	0.161	1.663	0.096
NEVMAR	0.277	0.162	1.709	0.087
NCSRWTLG	-1.366	0.373	-3.658	0.000
WAG3044	0.213	0.193	1.100	0.271
WAG4559	0.159	0.222	0.718	0.473
WAG60	-0.402	0.280	-1.436	0.151
WALD	1.212	0.444	2.728	0.006
WED12	-0.329	0.185	-1.780	0.075
WED1315	-0.489	0.207	-2.363	0.018
WED16	-0.596	0.323	-1.846	0.065
WPREVMAR	0.210	0.166	1.267	0.205
WNEVMAR	0.116	0.183	0.632	0.527
WSEXM	0.048	0.173	0.279	0.780
Thresholds				
MDE$1	0.069	0.239	0.288	0.773

LOGISTIC REGRESSION ODDS RATIO RESULTS

MDE	ON	
	AG3044	1.191
	AG4559	1.346
	AG60	1.209
	SEXM	0.671
	ALD	0.824
	ED12	1.447
	ED1315	1.562
	ED16	1.559
	PREVMAR	1.308
	NEVMAR	1.320
	NCSRWTLG	0.255
	WAG3044	1.237
	WAG4559	1.172
	WAG60	0.669
	WALD	3.359
	WED12	0.720
	WED1315	0.614
	WED16	0.551
	WPREVMAR	1.233
	WNEVMAR	1.123
	WSEXM	1.050

QUALITY OF NUMERICAL RESULTS

Condition Number for the Information Matrix (ratio of smallest to largest eigenvalue) 0.953E-03

CONFIDENCE INTERVALS OF MODEL RESULTS

MDE	ON	Lower .5%	Lower 2.5%	Lower 5%	Estimate	Upper 5%	Upper 2.5%	Upper .5%
	AG3044	-0.233	-0.136	-0.086	0.175	0.436	0.486	0.584
	AG4559	-0.230	-0.104	-0.039	0.297	0.634	0.699	0.825
	AG60	-0.424	-0.277	-0.202	0.190	0.582	0.657	0.804
	SEXM	-0.778	-0.687	-0.641	-0.398	-0.156	-0.110	-0.019
	ALD	-0.865	-0.705	-0.623	-0.194	0.235	0.317	0.478
	ED12	0.017	0.101	0.145	0.370	0.595	0.638	0.722
	ED1315	0.015	0.118	0.171	0.446	0.721	0.774	0.877
	ED16	-0.134	0.004	0.075	0.444	0.813	0.884	1.022
	PREVMAR	-0.147	-0.048	0.003	0.268	0.534	0.585	0.684
	NEVMAR	-0.141	-0.041	0.010	0.277	0.544	0.595	0.695
	NCSRWTLG	-2.327	-2.097	-1.980	-1.366	-0.752	-0.634	-0.404
	WAG3044	-0.286	-0.166	-0.106	0.213	0.531	0.592	0.711
	WAG4559	-0.412	-0.275	-0.205	0.159	0.523	0.593	0.730
	WAG60	-1.122	-0.950	-0.862	-0.402	0.058	0.146	0.319
	WALD	0.068	0.341	0.481	1.212	1.942	2.082	2.355
	WED12	-0.805	-0.691	-0.633	-0.329	-0.025	0.033	0.147
	WED1315	-1.021	-0.894	-0.829	-0.489	-0.148	-0.083	0.044
	WED16	-1.427	-1.228	-1.126	-0.596	-0.065	0.037	0.236
	WPREVMAR	-0.217	-0.115	-0.063	0.210	0.482	0.534	0.636
	WNEVMAR	-0.357	-0.244	-0.186	0.116	0.418	0.476	0.589
	WSEXM	-0.398	-0.291	-0.236	0.048	0.333	0.388	0.494

Thresholds

MDE$1	-0.547	-0.400	-0.325	0.069	0.462	0.538	0.685

CONFIDENCE INTERVALS FOR THE LOGISTIC REGRESSION ODDS RATIO RESULTS

MDE ON

AG3044	0.792	0.873	0.918	1.191	1.546	1.626	1.792
AG4559	0.795	0.901	0.961	1.346	1.885	2.011	2.281
AG60	0.654	0.758	0.817	1.209	1.789	1.929	2.234
SEXM	0.459	0.503	0.527	0.671	0.855	0.896	0.981
ALD	0.421	0.494	0.537	0.824	1.265	1.373	1.612
ED12	1.017	1.107	1.156	1.447	1.813	1.893	2.059
ED1315	1.015	1.126	1.186	1.562	2.056	2.168	2.403
ED16	0.875	1.004	1.078	1.559	2.255	2.420	2.778
PREVMAR	0.863	0.953	1.003	1.308	1.705	1.794	1.982
NEVMAR	0.869	0.960	1.010	1.320	1.723	1.814	2.004
NCSRWTLG	0.098	0.123	0.138	0.255	0.472	0.530	0.668
WAG3044	0.752	0.847	0.900	1.237	1.701	1.807	2.036
WAG4559	0.663	0.759	0.814	1.172	1.688	1.810	2.074
WAG60	0.326	0.387	0.422	0.669	1.060	1.158	1.375
WALD	1.070	1.407	1.618	3.359	6.973	8.020	10.543
WED12	0.447	0.501	0.531	0.720	0.975	1.034	1.158
WED1315	0.360	0.409	0.437	0.614	0.862	0.920	1.045
WED16	0.240	0.293	0.324	0.551	0.937	1.038	1.266
WPREVMAR	0.805	0.892	0.939	1.233	1.620	1.706	1.890
WNEVMAR	0.700	0.784	0.830	1.123	1.519	1.609	1.801
WSEXM	0.672	0.748	0.789	1.050	1.395	1.473	1.639

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 8\c8 ex 8.1 final model, test if weights informative.dgm

```
  TITLE: ASDA3 ANALYSIS EXAMPLE 8.1 NCSR DATA FINAL MODEL LINK LOGIT, NO INTS
   DATA:
   FILE IS "P:\asda3\replication mplus\ncsr.txt";
   VARIABLE:
   NAMES ARE
   AGE CASEID DSM_SO ED4CAT MAR3CAT MDE_OND NCSRWTLG NCSRWTSH OBESE6CA
   REGION SECLUSTR SESTRAT SEX
   SO_OND WKSTAT3C ag60 ag1829 ag3044 ag4559 ag4cat ald ed011 ed12 ed16
   ed1315 married mde nevmar
   numsecu prevmar racecat sexf sexm;

   USEVARIABLES ARE SESTRAT NUMSECU MDE NCSRWTLG AG3044 AG4559 AG60 SEXM ALD
   ED12 ED1315 ED16 PREVMAR NEVMAR ;

   missing are . ;
   WEIGHT IS NCSRWTlg ;
   stratification is sestrat ;
   cluster is numsecu ;
   categorical are mde ;

   ANALYSIS:
   type is complex;
   estimator is mlr ;
   link=logit ;

   Model:
   mde on
   AG3044 AG4559 AG60 SEXM ALD ED12 ED1315 ED16 PREVMAR NEVMAR ;

   OUTPUT: cinterval ;


INPUT READING TERMINATED NORMALLY



ASDA3 ANALYSIS EXAMPLE 8.1 NCSR DATA FINAL MODEL LINK LOGIT, NO INTS

SUMMARY OF ANALYSIS

Number of groups                                                 1
Number of observations                                        9282

Number of dependent variables                                    1
Number of independent variables                                 10
Number of continuous latent variables                            0

Observed dependent variables

  Binary and ordered categorical (ordinal)
   MDE

Observed independent variables
   AG3044      AG4559      AG60        SEXM        ALD         ED12
   ED1315      ED16        PREVMAR     NEVMAR

Variables with special functions
```

```
  Stratification        SESTRAT
  Cluster variable      NUMSECU
  Weight variable       NCSRWTLG

Estimator                                                MLR
Information matrix                                  OBSERVED
Optimization Specifications for the Quasi-Newton Algorithm for
Continuous Outcomes
  Maximum number of iterations                           100
  Convergence criterion                           0.100D-05
Optimization Specifications for the EM Algorithm
  Maximum number of iterations                           500
  Convergence criteria
    Loglikelihood change                          0.100D-02
    Relative loglikelihood change                 0.100D-05
    Derivative                                    0.100D-02
Optimization Specifications for the M step of the EM Algorithm for
Categorical Latent variables
  Number of M step iterations                              1
  M step convergence criterion                    0.100D-02
  Basis for M step termination                    ITERATION
Optimization Specifications for the M step of the EM Algorithm for
Censored, Binary or Ordered Categorical (Ordinal), Unordered
Categorical (Nominal) and Count Outcomes
  Number of M step iterations                              1
  M step convergence criterion                    0.100D-02
  Basis for M step termination                    ITERATION
  Maximum value for logit thresholds                      15
  Minimum value for logit thresholds                     -15
  Minimum expected cell size for chi-square       0.100D-01
Maximum number of iterations for H1                    2000
Convergence criterion for H1                    0.100D-03
Optimization algorithm                                  EMA
Integration Specifications
  Type                                             STANDARD
  Number of integration points                            15
  Dimensions of numerical integration                      0
  Adaptive quadrature                                     ON
Link                                                   LOGIT
Cholesky                                                 OFF

Input data file(s)
  P:\asda3\replication mplus\ncsr.txt
Input data format  FREE


SUMMARY OF DATA

     Number of missing data patterns             1
     Number of y missing data patterns           0
     Number of u missing data patterns           1
     Number of strata                       42
     Number of clusters                     84


COVARIANCE COVERAGE OF DATA

Minimum covariance coverage value   0.100
```

UNIVARIATE PROPORTIONS AND COUNTS FOR CATEGORICAL VARIABLES

MDE

Category 1	0.808	7502.042
Category 2	0.192	1779.958

THE MODEL ESTIMATION TERMINATED NORMALLY

MODEL FIT INFORMATION

Number of Free Parameters 11

Loglikelihood

H0 Value	-4295.718
H0 Scaling Correction Factor for MLR	1.6444

Information Criteria

Akaike (AIC)	8613.437
Bayesian (BIC)	8691.931
Sample-Size Adjusted BIC (n* = (n + 2) / 24)	8656.975

MODEL RESULTS

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
MDE ON				
AG3044	0.256	0.094	2.708	0.007
AG4559	0.206	0.092	2.256	0.024
AG60	-0.676	0.141	-4.783	0.000
SEXM	-0.577	0.077	-7.477	0.000
ALD	1.424	0.154	9.235	0.000
ED12	0.079	0.097	0.818	0.413
ED1315	0.231	0.093	2.477	0.013
ED16	0.163	0.111	1.473	0.141
PREVMAR	0.486	0.085	5.695	0.000
NEVMAR	0.116	0.108	1.071	0.284
Thresholds				
MDE$1	1.583	0.121	13.120	0.000

LOGISTIC REGRESSION ODDS RATIO RESULTS

MDE ON	
AG3044	1.291
AG4559	1.229
AG60	0.509
SEXM	0.561
ALD	4.152
ED12	1.082
ED1315	1.259
ED16	1.177
PREVMAR	1.626

NEVMAR 1.123

QUALITY OF NUMERICAL RESULTS

Condition Number for the Information Matrix 0.132E-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%
MDE ON							
AG3044	0.013	0.071	0.100	0.256	0.411	0.441	0.499
AG4559	-0.029	0.027	0.056	0.206	0.357	0.386	0.442
AG60	-1.040	-0.953	-0.908	-0.676	-0.443	-0.399	-0.312
SEXM	-0.776	-0.729	-0.704	-0.577	-0.450	-0.426	-0.378
ALD	1.027	1.122	1.170	1.424	1.677	1.726	1.821
ED12	-0.170	-0.111	-0.080	0.079	0.239	0.269	0.329
ED1315	-0.009	0.048	0.077	0.231	0.384	0.413	0.470
ED16	-0.122	-0.054	-0.019	0.163	0.345	0.380	0.448
PREVMAR	0.266	0.319	0.346	0.486	0.627	0.654	0.706
NEVMAR	-0.162	-0.096	-0.062	0.116	0.293	0.327	0.393
Thresholds							
MDE$1	1.272	1.347	1.385	1.583	1.782	1.820	1.894

CONFIDENCE INTERVALS FOR THE LOGISTIC REGRESSION ODDS RATIO RESULTS

MDE ON							
AG3044	1.013	1.073	1.106	1.291	1.508	1.554	1.647
AG4559	0.971	1.027	1.057	1.229	1.429	1.471	1.556
AG60	0.354	0.386	0.403	0.509	0.642	0.671	0.732
SEXM	0.460	0.483	0.494	0.561	0.637	0.653	0.685
ALD	2.792	3.070	3.222	4.152	5.351	5.617	6.177
ED12	0.843	0.895	0.923	1.082	1.270	1.309	1.389
ED1315	0.991	1.049	1.080	1.259	1.468	1.511	1.600
ED16	0.885	0.948	0.981	1.177	1.412	1.462	1.565
PREVMAR	1.305	1.376	1.413	1.626	1.872	1.923	2.027
NEVMAR	0.850	0.909	0.940	1.123	1.340	1.387	1.482

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 8\c8 ex 8.1 final model without interactions logit link.dgm

```
  TITLE: ASDA3 ANALYSIS EXAMPLE 8.1 NCSR DATA MODEL OUTCOME IS ALD LINK PROBIT, NO INTS
   DATA:
   FILE IS "P:\asda3\replication mplus\ncsr.txt";
   VARIABLE:
   NAMES ARE
   AGE CASEID DSM_SO ED4CAT MAR3CAT MDE_OND NCSRWTLG NCSRWTSH OBESE6CA
   REGION SECLUSTR SESTRAT SEX
   SO_OND WKSTAT3C ag60 ag1829 ag3044 ag4559 ag4cat ald ed011 ed12 ed16
   ed1315 married mde nevmar
   numsecu prevmar racecat sexf sexm;

   USEVARIABLES ARE SESTRAT NUMSECU MDE NCSRWTLG AG3044 AG4559 AG60 SEXM ALD
   ED12 ED1315 ED16 PREVMAR NEVMAR ;

   missing are . ;
   WEIGHT IS NCSRWTlg ;
   stratification is sestrat ;
   cluster is numsecu ;
   categorical are ald ;

   ANALYSIS:
   type is complex;
   estimator is mlr ;
   link=probit ;

   Model:
   ald on
   SEXM AG3044 AG4559 AG60 ED12 ED1315 ED16 PREVMAR NEVMAR ;

   OUTPUT: cinterval ;



*** WARNING in MODEL command
  Variable is uncorrelated with all other variables:  MDE
*** WARNING in MODEL command
  At least one variable is uncorrelated with all other variables in the model.
  Check that this is what is intended.
   2 WARNING(S) FOUND IN THE INPUT INSTRUCTIONS



ASDA3 ANALYSIS EXAMPLE 8.1 NCSR DATA FINAL MODEL LINK PROBIT, NO INTS

SUMMARY OF ANALYSIS

Number of groups                                                 1
Number of observations                                        9282

Number of dependent variables                                    2
Number of independent variables                                  9
Number of continuous latent variables                            0

Observed dependent variables

  Continuous
   MDE

  Binary and ordered categorical (ordinal)
```

```
   ALD

Observed independent variables
   AG3044      AG4559      AG60        SEXM        ED12        ED1315
   ED16        PREVMAR     NEVMAR

Variables with special functions

  Stratification        SESTRAT
  Cluster variable      NUMSECU
  Weight variable       NCSRWTLG

Estimator                                                    MLR
Information matrix                                      OBSERVED
Optimization Specifications for the Quasi-Newton Algorithm for
Continuous Outcomes
  Maximum number of iterations                               100
  Convergence criterion                                0.100D-05
Optimization Specifications for the EM Algorithm
  Maximum number of iterations                               500
  Convergence criteria
    Loglikelihood change                               0.100D-02
    Relative loglikelihood change                      0.100D-05
    Derivative                                         0.100D-02
Optimization Specifications for the M step of the EM Algorithm for
Categorical Latent variables
  Number of M step iterations                                  1
  M step convergence criterion                         0.100D-02
  Basis for M step termination                         ITERATION
Optimization Specifications for the M step of the EM Algorithm for
Censored, Binary or Ordered Categorical (Ordinal), Unordered
Categorical (Nominal) and Count Outcomes
  Number of M step iterations                                  1
  M step convergence criterion                         0.100D-02
  Basis for M step termination                         ITERATION
  Maximum value for logit thresholds                          10
  Minimum value for logit thresholds                         -10
  Minimum expected cell size for chi-square            0.100D-01
Maximum number of iterations for H1                         2000
Convergence criterion for H1                           0.100D-03
Optimization algorithm                                       EMA
Integration Specifications
  Type                                                  STANDARD
  Number of integration points                                15
  Dimensions of numerical integration                          0
  Adaptive quadrature                                         ON
Link                                                     PROBIT
Cholesky                                                    ON

Input data file(s)
  P:\asda3\replication mplus\ncsr.txt
Input data format  FREE


SUMMARY OF DATA

     Number of missing data patterns             1
     Number of y missing data patterns           1
     Number of u missing data patterns           1
```

Number of strata 42
Number of clusters 84

COVARIANCE COVERAGE OF DATA

Minimum covariance coverage value 0.100

PROPORTION OF DATA PRESENT FOR Y

Covariance Coverage

	MDE	AG3044	AG4559	AG60	SEXM
MDE	1.000				
AG3044	1.000	1.000			
AG4559	1.000	1.000	1.000		
AG60	1.000	1.000	1.000	1.000	
SEXM	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

Covariance Coverage

	ED12	ED1315	ED16	PREVMAR	NEVMAR
ED12	1.000				
ED1315	1.000	1.000			
ED16	1.000	1.000	1.000		
PREVMAR	1.000	1.000	1.000	1.000	
NEVMAR	1.000	1.000	1.000	1.000	1.000

UNIVARIATE PROPORTIONS AND COUNTS FOR CATEGORICAL VARIABLES

ALD

Category 1	0.946	8780.166
Category 2	0.054	501.834

THE MODEL ESTIMATION TERMINATED NORMALLY

MODEL FIT INFORMATION

Number of Free Parameters 12

Loglikelihood

H0 Value	-6366.707
H0 Scaling Correction Factor for MLR	1.8067

Information Criteria

Akaike (AIC)	12757.415
Bayesian (BIC)	12843.045
Sample-Size Adjusted BIC (n* = (n + 2) / 24)	12804.910

MODEL RESULTS

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
ALD ON				
SEXM	0.471	0.056	8.357	0.000
AG3044	0.065	0.085	0.772	0.440
AG4559	-0.034	0.067	-0.515	0.607
AG60	-0.531	0.093	-5.694	0.000
ED12	-0.124	0.095	-1.302	0.193
ED1315	-0.124	0.085	-1.461	0.144
ED16	-0.340	0.092	-3.672	0.000
PREVMAR	0.255	0.070	3.652	0.000
NEVMAR	0.039	0.077	0.506	0.613
Means				
MDE	0.192	0.006	29.931	0.000
Thresholds				
ALD$1	1.719	0.105	16.320	0.000
Variances				
MDE	0.155	0.004	39.242	0.000

QUALITY OF NUMERICAL RESULTS

Condition Number for the Information Matrix (ratio of smallest to largest eigenvalue)	0.438E-03

CONFIDENCE INTERVALS OF MODEL RESULTS

	Lower .5%	Lower 2.5%	Lower 5%	Estimate	Upper 5%	Upper 2.5%	Upper .5%
ALD ON							
SEXM	0.326	0.360	0.378	0.471	0.564	0.581	0.616
AG3044	-0.153	-0.101	-0.074	0.065	0.205	0.231	0.283
AG4559	-0.207	-0.166	-0.145	-0.034	0.076	0.097	0.138
AG60	-0.772	-0.714	-0.685	-0.531	-0.378	-0.348	-0.291
ED12	-0.369	-0.310	-0.280	-0.124	0.033	0.063	0.121
ED1315	-0.344	-0.291	-0.264	-0.124	0.016	0.043	0.095
ED16	-0.578	-0.521	-0.492	-0.340	-0.187	-0.158	-0.101
PREVMAR	0.075	0.118	0.140	0.255	0.370	0.392	0.435
NEVMAR	-0.160	-0.112	-0.088	0.039	0.166	0.190	0.237
Means							
MDE	0.175	0.179	0.181	0.192	0.202	0.204	0.208

Thresholds

ALD$1	1.448	1.513	1.546	1.719	1.893	1.926	1.991

Variances

MDE	0.145	0.147	0.148	0.155	0.161	0.163	0.165

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 8\c8 ex 8.1 outcome is ald, final model without interactions

Beginning Time: 14:44:38
Ending Time: 14:44:40
Elapsed Time: 00:00:02

```
  TITLE: ASDA3 ANALYSIS EXAMPLE 8.1 NCSR DATA FINAL MODEL OUTCOME IS ALD LINK LOGIT, NO INTS
   DATA:
   FILE IS "P:\asda3\replication mplus\ncsr.txt";
   VARIABLE:
   NAMES ARE
   AGE CASEID DSM_SO ED4CAT MAR3CAT MDE_OND NCSRWTLG NCSRWTSH OBESE6CA
   REGION SECLUSTR SESTRAT SEX
   SO_OND WKSTAT3C ag60 ag1829 ag3044 ag4559 ag4cat ald ed011 ed12 ed16
   ed1315 married mde nevmar
   numsecu prevmar racecat sexf sexm;

   USEVARIABLES ARE SESTRAT NUMSECU NCSRWTLG AG3044 AG4559 AG60 SEXM ALD
   ED12 ED1315 ED16 PREVMAR NEVMAR ;

   missing are . ;
   WEIGHT IS NCSRWTlg ;
   stratification is sestrat ;
   cluster is numsecu ;
   categorical are ald ;

   ANALYSIS:
   type is complex;
   estimator is mlr ;
   link=logit ;

   Model:
   ald on
   SEXM AG3044 AG4559 AG60 ED12 ED1315 ED16 PREVMAR NEVMAR ;

   OUTPUT: cinterval ;


INPUT READING TERMINATED NORMALLY

ASDA3 ANALYSIS EXAMPLE 8.1 NCSR DATA FINAL MODEL LINK LOGIT, NO INTS

SUMMARY OF ANALYSIS

Number of groups                                                 1
Number of observations                                        9282

Number of dependent variables                                    1
Number of independent variables                                  9
Number of continuous latent variables                            0

Observed dependent variables

  Binary and ordered categorical (ordinal)
   ALD

Observed independent variables
   AG3044      AG4559      AG60        SEXM        ED12        ED1315
   ED16        PREVMAR     NEVMAR

Variables with special functions

  Stratification        SESTRAT
  Cluster variable      NUMSECU
  Weight variable       NCSRWTLG
```

```
Estimator                                                      MLR
Information matrix                                        OBSERVED
Optimization Specifications for the Quasi-Newton Algorithm for
Continuous Outcomes
  Maximum number of iterations                                 100
  Convergence criterion                                0.100D-05
Optimization Specifications for the EM Algorithm
  Maximum number of iterations                                 500
  Convergence criteria
    Loglikelihood change                               0.100D-02
    Relative loglikelihood change                      0.100D-05
    Derivative                                         0.100D-02
Optimization Specifications for the M step of the EM Algorithm for
Categorical Latent variables
  Number of M step iterations                                    1
  M step convergence criterion                         0.100D-02
  Basis for M step termination                         ITERATION
Optimization Specifications for the M step of the EM Algorithm for
Censored, Binary or Ordered Categorical (Ordinal), Unordered
Categorical (Nominal) and Count Outcomes
  Number of M step iterations                                    1
  M step convergence criterion                         0.100D-02
  Basis for M step termination                         ITERATION
  Maximum value for logit thresholds                          15
  Minimum value for logit thresholds                         -15
  Minimum expected cell size for chi-square            0.100D-01
Maximum number of iterations for H1                         2000
Convergence criterion for H1                           0.100D-03
Optimization algorithm                                       EMA
Integration Specifications
  Type                                                  STANDARD
  Number of integration points                                15
  Dimensions of numerical integration                          0
  Adaptive quadrature                                         ON
Link                                                       LOGIT
Cholesky                                                     OFF

Input data file(s)
  P:\asda3\replication mplus\ncsr.txt
Input data format  FREE


SUMMARY OF DATA

     Number of missing data patterns             1
     Number of y missing data patterns           0
     Number of u missing data patterns           1
     Number of strata                       42
     Number of clusters                     84


COVARIANCE COVERAGE OF DATA

Minimum covariance coverage value   0.100


UNIVARIATE PROPORTIONS AND COUNTS FOR CATEGORICAL VARIABLES
```

```
    ALD
      Category 1    0.946          8780.166
      Category 2    0.054           501.834

THE MODEL ESTIMATION TERMINATED NORMALLY

MODEL FIT INFORMATION

Number of Free Parameters                       10

Loglikelihood

          H0 Value                       -1849.961
          H0 Scaling Correction Factor       1.6507
            for MLR

Information Criteria

          Akaike (AIC)                    3719.921
          Bayesian (BIC)                  3791.279
          Sample-Size Adjusted BIC        3759.501
            (n* = (n + 2) / 24)



MODEL RESULTS

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

 ALD        ON
    SEXM               0.998      0.119      8.379      0.000
    AG3044             0.146      0.178      0.821      0.412
    AG4559            -0.051      0.144     -0.352      0.725
    AG60              -1.120      0.212     -5.273      0.000
    ED12              -0.268      0.194     -1.386      0.166
    ED1315            -0.264      0.176     -1.502      0.133
    ED16              -0.736      0.197     -3.734      0.000
    PREVMAR            0.518      0.142      3.645      0.000
    NEVMAR             0.065      0.169      0.387      0.699

 Thresholds
    ALD$1              3.124      0.225     13.869      0.000

LOGISTIC REGRESSION ODDS RATIO RESULTS

 ALD        ON
    SEXM               2.713
    AG3044             1.158
    AG4559             0.951
    AG60               0.326
    ED12               0.765
    ED1315             0.768
    ED16               0.479
    PREVMAR            1.678
    NEVMAR             1.067


QUALITY OF NUMERICAL RESULTS
```

Condition Number for the Information Matrix 0.120E-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%
ALD ON							
SEXM	0.691	0.765	0.802	0.998	1.194	1.231	1.305
AG3044	-0.313	-0.203	-0.147	0.146	0.439	0.495	0.605
AG4559	-0.421	-0.333	-0.287	-0.051	0.186	0.231	0.320
AG60	-1.668	-1.537	-1.470	-1.120	-0.771	-0.704	-0.573
ED12	-0.767	-0.648	-0.587	-0.268	0.050	0.111	0.231
ED1315	-0.718	-0.610	-0.554	-0.264	0.025	0.081	0.189
ED16	-1.244	-1.123	-1.061	-0.736	-0.412	-0.350	-0.228
PREVMAR	0.152	0.239	0.284	0.518	0.752	0.796	0.884
NEVMAR	-0.369	-0.265	-0.212	0.065	0.343	0.396	0.500
Thresholds							
ALD$1	2.544	2.683	2.754	3.124	3.495	3.566	3.705

CONFIDENCE INTERVALS FOR THE LOGISTIC REGRESSION ODDS RATIO RESULTS

ALD ON							
SEXM	1.996	2.148	2.230	2.713	3.300	3.426	3.687
AG3044	0.732	0.816	0.864	1.158	1.552	1.641	1.831
AG4559	0.656	0.717	0.750	0.951	1.204	1.260	1.377
AG60	0.189	0.215	0.230	0.326	0.463	0.495	0.564
ED12	0.464	0.523	0.556	0.765	1.052	1.118	1.259
ED1315	0.488	0.544	0.575	0.768	1.026	1.084	1.208
ED16	0.288	0.325	0.346	0.479	0.662	0.705	0.796
PREVMAR	1.164	1.270	1.329	1.678	2.120	2.217	2.420
NEVMAR	0.691	0.767	0.809	1.067	1.409	1.486	1.649

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 8\c8 ex 8.1 outcome is ald, final model without interactions

Beginning Time: 14:48:46
Ending Time: 14:48:48
Elapsed Time: 00:00:02