```
Mplus VERSION 7.11 (Mac)
MUTHEN & MUTHEN
12/20/2016  10:37 AM

INPUT INSTRUCTIONS


    TITLE:
     m3, b1, LM, PEK average, LGM,aehplus Conditional, male

    DATA:
      File = /Users/andreazammit/Desktop/PEKavgfile.csv;
    VARIABLE:
     Names are
            SubjectID  sex   DemEver    Educyrs    AgeAtWave_1
            Wave_1     Wave_2     Wave_3     Wave_4     Wave_5
            MMS_1MMS_2 MMS_3 MMS_4 MMS_5
            GDSScore_1 GDSScore_2  GDSScore_3 GDSScore_4 GDSScore_5
            FreeRecall_1 FreeRecall_2 FreeRecall_3  FreeRecall_4 FreeRecall_5
            BostonFree_1 BostonFree_2 BostonFree_3 BostonFree_4
BostonFree_5
            Vocraw_1   Vocraw_2    Vocraw_3    Vocraw_4    Vocraw_5
            Spnraw_1   Spnraw_2    Spnraw_3    Spnraw_4    Spnraw_5
            Symraw_1   Symraw_2    Symraw_3    Symraw_4    Symraw_5
            Blockraw_1 Blockraw_2  Blockraw_3  Blockraw_4  Blockraw_5
            FAS_1FAS_2 FAS_3 FAS_4 FAS_5
            CAT_1CAT_2 CAT_3 CAT_4 CAT_5
            LM_1 LM_2  LM_3  LM_4  LM_5
            TrA1_1     TrA1_2      TrA1_3      TrA1_4      TrA1_5
            TrB1_1     TrB1_2      TrB1_3      TrB1_4      TrB1_5
            Ht_1 SmokEver_1  cvd   DMever
            pekavg1    pekavg2     pekavg3     pekavg4     pekavg5;
          MISSING = ALL(-9999);
                 USEVAR are time1 time2 time3 time4 time5 !time6 time7
                           p1 p2 p3 p4 p5 !p6 p7
                          c1 c2 c3 c4 c5 !c6 c7
                          Bage educ height Diab SmokHist Cardio;
                 TSCORES =   time1 time2 time3 time4 time5; !time6 time7;
                USEOBSERVATIONS are DemEver EQ 0 and sex EQ 0;
    DEFINE:
      p1=pekavg1; p2=pekavg2; p3=pekavg3;
         p4=pekavg4; p5=pekavg5;
    c1= LM_1; c2= LM_2; c3= LM_3; c4= LM_4; c5= LM_5;
                 Bage=AgeAtWave_1-70;
                 Bagesq=(AgeatWave_1-70)**2;

                 Educ=Educyrs-7;

                 time1=wave_1;
                 time2=wave_2;
                 time3=wave_3;
                 time4=wave_4;
                 time5=wave_5;

                Height=Ht_1-172;
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```
              SmokHist=SmokEver_1;
              DepSymp = GDSScore_1;
              Cardio = cvd;
              Diab=DMever;
              AgeAtWave_1Educyrs=Bage*Educ;
ANALYSIS:
 TYPE = RANDOM;
       ESTIMATOR=MLF;
       miterations=40000;
   h1convergence = 0.00001;
       COVERAGE = .001;
OUTPUT:
 sampstat
MODEL:
     ip sp | p1-p5 AT time1-time5;
     ic sc  | c1 - c5 AT time1-time5;
          ip(v_ip);
     sp(v_sp);
     ic(v_ic);
     sc(v_sc);
     ip WITH sp(c_ipsp);
     ip WITH ic(c_ipic);
     ip WITH sc (c_ipsc);
     sp WITH ic (c_spic);
     sp WITH sc (c_spsc);
     ic WITH SC (C_ICSC);
      ip sp  ic sc WITH  ip sp  ic sc;
     ip sp  ic sc  ON Bage educ height smokhist cardio diab;
      c1-c5 (res_c)
       p1-p5 (res_p);
        p1-p5 pwith c1-c5(res_cov);
         height;



 MODEL CONSTRAINT:

             NEW r_ipic; !assigns labels to new parameters;
             NEW r_spsc;
             NEW r_res_pc;

             r_ipic = c_ipic/((v_ip**0.5)*(v_ic**0.5));
             r_spsc = c_spsc/((v_sp**0.5)*(v_sc**0.5));
             r_res_pc = res_cov/((res_p**0.5)*(res_c**0.5));

  SAVEDATA:
  FILE IS EAS_P_LM_Slopes_m_pekavg;
  ! *rename for each specific variable combination*;
  SAVE = FSCORES;

  PLOT:   TYPE IS PLOT3;
    OUTPUT: sampstat Cinterval;
```

```
*** WARNING
  Data set contains cases with missing on x-variables.
  These cases were not included in the analysis.
  Number of cases with missing on x-variables:  11
*** WARNING
  Data set contains cases with missing on all variables except
  x-variables.  These cases were not included in the analysis.
  Number of cases with missing on all variables except x-variables:  59
   2 WARNING(S) FOUND IN THE INPUT INSTRUCTIONS



m3, b1, LM, PEK average, LGM,aehplus Conditional, male

SUMMARY OF ANALYSIS

Number of groups                                                 1
Number of observations                                         690

Number of dependent variables                                   10
Number of independent variables                                  6
Number of continuous latent variables                            4

Observed dependent variables

  Continuous
   P1          P2          P3          P4          P5          C1
   C2          C3          C4          C5

Observed independent variables
   BAGE        EDUC        HEIGHT      DIAB        SMOKHIST    CARDIO

Continuous latent variables
   IP          SP          IC          SC

Variables with special functions

  Time scores
   TIME1       TIME2       TIME3       TIME4       TIME5


Estimator                                                      MLF
Information matrix                                        OBSERVED
Maximum number of iterations                                   100
Convergence criterion                                  0.100D-05
Maximum number of EM iterations                            40000
Convergence criteria for the EM algorithm
  Loglikelihood change                                 0.100D-02
  Relative loglikelihood change                        0.100D-05
  Derivative                                           0.100D-03
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-04
Optimization algorithm EMA

Input data file(s)
/Users/andreazammit/Desktop/PEKavgfile.csv
Input data format FREE

SUMMARY OF DATA

Number of missing data patterns 63

COVARIANCE COVERAGE OF DATA

Minimum covariance coverage value 0.001

PROPORTION OF DATA PRESENT

Covariance Coverage

	P1	P2	P3	P4	P5
P1	0.352				
P2	0.190	0.216			
P3	0.148	0.149	0.177		
P4	0.119	0.122	0.128	0.174	
P5	0.093	0.099	0.104	0.132	0.193
C1	0.348	0.216	0.177	0.174	0.193
C2	0.235	0.213	0.174	0.171	0.191
C3	0.172	0.170	0.171	0.165	0.187
C4	0.139	0.139	0.145	0.168	0.181
C5	0.113	0.113	0.122	0.154	0.183
HEIGHT	0.349	0.197	0.154	0.125	0.099
BAGE	0.352	0.216	0.177	0.174	0.193
EDUC	0.352	0.216	0.177	0.174	0.193
DIAB	0.352	0.216	0.177	0.174	0.193
SMOKHIST	0.352	0.216	0.177	0.174	0.193
CARDIO	0.352	0.216	0.177	0.174	0.193

Covariance Coverage

	C1	C2	C3	C4	C5
C1	0.991				
C2	0.570	0.577			
C3	0.407	0.404	0.409		
C4	0.304	0.303	0.297	0.307	
C5	0.268	0.264	0.259	0.249	0.268
HEIGHT	0.357	0.242	0.178	0.145	0.119
BAGE	0.991	0.577	0.409	0.307	0.268
EDUC	0.991	0.577	0.409	0.307	0.268
DIAB	0.991	0.577	0.409	0.307	0.268
SMOKHIST	0.991	0.577	0.409	0.307	0.268

CARDIO	0.991	0.577	0.409	0.307	0.268

Covariance Coverage

	HEIGHT	BAGE	EDUC	DIAB	SMOKHIST
HEIGHT	0.361				
BAGE	0.361	1.000			
EDUC	0.361	1.000	1.000		
DIAB	0.361	1.000	1.000	1.000	
SMOKHIST	0.361	1.000	1.000	1.000	1.000
CARDIO	0.361	1.000	1.000	1.000	1.000

Covariance Coverage

	CARDIO
CARDIO	1.000

SAMPLE STATISTICS

NO CONVERGENCE IN THE MISSING DATA ESTIMATION OF THE SAMPLE STATISTICS.

THE MODEL ESTIMATION TERMINATED NORMALLY

THE MISSING DATA EM ALGORITHM USED TO COMPUTE SAMPLE STATISTICS HAS NOT CONVERGED WITH RESPECT TO THE PARAMETER ESTIMATES. THIS MAY BE DUE TO SPARSE DATA LEADING TO A SINGULAR COVARIANCE MATRIX ESTIMATE. INCREASE THE NUMBER OF EM ITERATIONS.

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

MODEL FIT INFORMATION

Number of Free Parameters 43

Loglikelihood

H0 Value -10911.697

Information Criteria

Akaike (AIC)	21909.393
Bayesian (BIC)	22104.471
Sample-Size Adjusted BIC (n* = (n + 2) / 24)	21967.939

MODEL RESULTS

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
IP ON				
BAGE	-2.581	1.725	-1.496	0.135
EDUC	2.776	2.744	1.011	0.312
HEIGHT	0.623	1.274	0.489	0.625
SMOKHIST	-22.367	18.896	-1.184	0.237
CARDIO	-21.970	24.707	-0.889	0.374
DIAB	-9.867	20.989	-0.470	0.638
SP ON				
BAGE	-0.572	0.538	-1.063	0.288
EDUC	-0.345	0.784	-0.440	0.660
HEIGHT	0.892	0.452	1.974	0.048
SMOKHIST	2.246	5.618	0.400	0.689
CARDIO	7.858	9.102	0.863	0.388
DIAB	-2.584	6.804	-0.380	0.704
IC ON				
BAGE	-0.153	0.061	-2.500	0.012
EDUC	-0.004	0.031	-0.116	0.907
HEIGHT	0.057	0.074	0.765	0.444
SMOKHIST	0.201	0.452	0.443	0.657
CARDIO	0.612	0.707	0.865	0.387
DIAB	-0.631	0.695	-0.908	0.364
SC ON				
BAGE	-0.088	0.022	-4.058	0.000
EDUC	0.008	0.029	0.266	0.790
HEIGHT	-0.010	0.021	-0.488	0.625
SMOKHIST	-0.028	0.206	-0.136	0.892
CARDIO	0.049	0.268	0.184	0.854
DIAB	0.298	0.256	1.167	0.243
IP WITH				
SP	-983.044	499.152	-1.969	0.049
IC	44.505	71.687	0.621	0.535
SC	-16.947	19.732	-0.859	0.390
SP WITH				
IC	-9.245	19.643	-0.471	0.638
SC	3.157	4.565	0.692	0.489
IC WITH				
SC	-0.674	0.969	-0.695	0.487
P1 WITH				
C1	-8.049	15.763	-0.511	0.610
P2 WITH				
C2	-8.049	15.763	-0.511	0.610

P3 WITH				
C3	-8.049	15.763	-0.511	0.610
P4 WITH				
C4	-8.049	15.763	-0.511	0.610
P5 WITH				
C5	-8.049	15.763	-0.511	0.610
Means				
HEIGHT	0.297	0.497	0.599	0.549
Intercepts				
P1	0.000	0.000	999.000	999.000
P2	0.000	0.000	999.000	999.000
P3	0.000	0.000	999.000	999.000
P4	0.000	0.000	999.000	999.000
P5	0.000	0.000	999.000	999.000
C1	0.000	0.000	999.000	999.000
C2	0.000	0.000	999.000	999.000
C3	0.000	0.000	999.000	999.000
C4	0.000	0.000	999.000	999.000
C5	0.000	0.000	999.000	999.000
IP	395.653	31.829	12.431	0.000
SP	-7.379	9.746	-0.757	0.449
IC	20.517	0.748	27.443	0.000
SC	0.752	0.332	2.263	0.024
Variances				
HEIGHT	54.239	4.683	11.582	0.000
Residual Variances				
P1	3639.606	198.127	18.370	0.000
P2	3639.606	198.127	18.370	0.000
P3	3639.606	198.127	18.370	0.000
P4	3639.606	198.127	18.370	0.000
P5	3639.606	198.127	18.370	0.000
C1	15.147	0.730	20.746	0.000
C2	15.147	0.730	20.746	0.000
C3	15.147	0.730	20.746	0.000
C4	15.147	0.730	20.746	0.000
C5	15.147	0.730	20.746	0.000
IP	11044.226	2136.859	5.168	0.000
SP	308.399	117.848	2.617	0.009
IC	33.347	3.738	8.922	0.000
SC	0.440	0.229	1.921	0.055
New/Additional Parameters				
R_IPIC	0.073	0.119	0.618	0.537
R_SPSC	0.271	0.388	0.699	0.485
R_RES_PC	-0.034	0.067	-0.512	0.609

QUALITY OF NUMERICAL RESULTS

Condition Number for the Information Matrix 0.145E-05
(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%
IP ON							
BAGE	-7.024	-5.962	-5.419	-2.581	0.257	0.801	1.863
EDUC	-4.293	-2.603	-1.739	2.776	7.290	8.154	9.844
HEIGHT	-2.659	-1.875	-1.473	0.623	2.719	3.120	3.905
SMOKHIST	-71.040	-59.404	-53.452	-22.367	8.718	14.670	26.306
CARDIO	-85.610	-70.396	-62.613	-21.970	18.673	26.455	41.670
DIAB	-63.930	-51.005	-44.394	-9.867	24.659	31.271	44.196
SP ON							
BAGE	-1.958	-1.627	-1.457	-0.572	0.313	0.483	0.814
EDUC	-2.365	-1.882	-1.635	-0.345	0.945	1.192	1.675
HEIGHT	-0.272	0.006	0.149	0.892	1.635	1.777	2.055
SMOKHIST	-12.225	-8.766	-6.996	2.246	11.488	13.257	16.717
CARDIO	-15.589	-9.983	-7.116	7.858	22.831	25.698	31.304
DIAB	-20.111	-15.921	-13.777	-2.584	8.609	10.752	14.943
IC ON							
BAGE	-0.310	-0.272	-0.253	-0.153	-0.052	-0.033	0.005
EDUC	-0.082	-0.064	-0.054	-0.004	0.047	0.056	0.075
HEIGHT	-0.134	-0.089	-0.065	0.057	0.179	0.202	0.247
SMOKHIST	-0.964	-0.686	-0.543	0.201	0.944	1.087	1.365
CARDIO	-1.209	-0.774	-0.551	0.612	1.774	1.997	2.432
DIAB	-2.422	-1.994	-1.775	-0.631	0.512	0.731	1.159
SC ON							
BAGE	-0.144	-0.131	-0.124	-0.088	-0.052	-0.046	-0.032

```
    EDUC           -0.068      -0.050      -0.041       0.008       0.056
0.065       0.084
    HEIGHT         -0.064      -0.051      -0.045      -0.010       0.024
0.031       0.044
    SMOKHIST       -0.558      -0.431      -0.367      -0.028       0.310
0.375       0.502
    CARDIO         -0.640      -0.476      -0.391       0.049       0.490
0.574       0.739
    DIAB           -0.360      -0.203      -0.122       0.298       0.719
0.799       0.957

 IP       WITH
    SP          -2268.759   -1961.381   -1804.148    -983.044    -161.940
-4.707     302.671
    IC           -140.146     -96.001     -73.420      44.505     162.430
185.012     229.156
    SC            -67.774     -55.623     -49.407     -16.947      15.513
21.728      33.879

 SP       WITH
    IC            -59.842     -47.746     -41.558      -9.245      23.068
29.256      41.352
    SC             -8.602      -5.791      -4.353       3.157      10.667
12.105      14.916

 IC       WITH
    SC             -3.170      -2.573      -2.268      -0.674       0.921
1.226       1.823

 P1       WITH
    C1            -48.652     -38.945     -33.980      -8.049      17.881
22.846      32.553

 P2       WITH
    C2            -48.652     -38.945     -33.980      -8.049      17.881
22.846      32.553

 P3       WITH
    C3            -48.652     -38.945     -33.980      -8.049      17.881
22.846      32.553

 P4       WITH
    C4            -48.652     -38.945     -33.980      -8.049      17.881
22.846      32.553

 P5       WITH
    C5            -48.652     -38.945     -33.980      -8.049      17.881
22.846      32.553

 Means
    HEIGHT         -0.982      -0.676      -0.520       0.297       1.114
1.271       1.577

 Intercepts
```

P1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
P2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
P3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
P4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
P5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
C1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
C2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
C3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
C4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
C5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
IP	313.668	333.268	343.294	395.653	448.012	458.038	477.638
SP	-32.482	-26.481	-23.411	-7.379	8.653	11.723	17.725
IC	18.591	19.051	19.287	20.517	21.746	21.982	22.442
SC	-0.104	0.101	0.206	0.752	1.299	1.404	1.608

Variances

HEIGHT	42.176	45.060	46.535	54.239	61.943	63.418	66.302

Residual Variances

P1	3129.271	3251.277	3313.688	3639.606	3965.524	4027.935	4149.941
P2	3129.271	3251.277	3313.688	3639.606	3965.524	4027.935	4149.941
P3	3129.271	3251.277	3313.688	3639.606	3965.524	4027.935	4149.941
P4	3129.271	3251.277	3313.688	3639.606	3965.524	4027.935	4149.941
P5	3129.271	3251.277	3313.688	3639.606	3965.524	4027.935	4149.941
C1	13.266	13.716	13.946	15.147	16.348	16.578	17.027
C2	13.266	13.716	13.946	15.147	16.348	16.578	17.027
C3	13.266	13.716	13.946	15.147	16.348	16.578	17.027
C4	13.266	13.716	13.946	15.147	16.348	16.578	17.027
C5	13.266	13.716	13.946	15.147	16.348	16.578	17.027

IP	5540.104	6855.981	7529.092	11044.226	14559.359	15232.470	16548.348
SP	4.846	77.417	114.539	308.399	502.260	539.382	611.953
IC	23.720	26.022	27.199	33.347	39.496	40.673	42.975
SC	-0.150	-0.009	0.063	0.440	0.818	0.890	1.031
New/Additional Parameters							
R_IPIC	-0.232	-0.159	-0.122	0.073	0.269	0.306	0.379
R_SPSC	-0.728	-0.489	-0.367	0.271	0.909	1.031	1.269
R_RES_PC	-0.207	-0.166	-0.144	-0.034	0.076	0.097	0.138

SAMPLE STATISTICS FOR ESTIMATED FACTOR SCORES

SAMPLE STATISTICS

Means

	IP	IP_SE	SP	SP_SE	IC
1	373.282	83.274	-11.850	17.326	19.364

Means

	IC_SE	SC	SC_SE
1	2.818	0.151	0.634

Covariances

	IP	IP_SE	SP	SP_SE	IC
IP	14886.068				
IP_SE	-52.281	630.573			
SP	-1465.536	15.406	233.675		
SP_SE	-17.786	41.205	2.263	3.422	
IC	22.129	-28.439	3.253	-2.072	26.194
IC_SE	-3.788	3.584	0.109	0.366	-0.537
SC	31.279	-0.002	-1.810	0.039	0.328
SC_SE	-0.513	0.464	0.018	0.048	-0.051

Covariances

	IC_SE	SC	SC_SE
IC_SE	0.200		
SC	-0.007	0.371	
SC_SE	0.013	0.000	0.001

Correlations

	IP	IP_SE	SP	SP_SE	IC
IP	1.000				
IP_SE	-0.017	1.000			
SP	-0.786	0.040	1.000		
SP_SE	-0.079	0.887	0.080	1.000	
IC	0.035	-0.221	0.042	-0.219	1.000
IC_SE	-0.069	0.319	0.016	0.442	-0.235
SC	0.421	0.000	-0.195	0.035	0.105
SC_SE	-0.110	0.486	0.030	0.678	-0.263

Correlations

	IC_SE	SC	SC_SE
IC_SE	1.000		
SC	-0.025	1.000	
SC_SE	0.767	-0.001	1.000

PLOT INFORMATION

The following plots are available:

  Histograms of sample values
  Scatterplots (sample values, estimated factor scores)
  Latent variable distribution plots

SAVEDATA INFORMATION

  Save file
    EAS_P_LM_Slopes_m_pekavg

  Order and format of variables

P1	F10.3
P2	F10.3
P3	F10.3
P4	F10.3
P5	F10.3
C1	F10.3
C2	F10.3
C3	F10.3
C4	F10.3
C5	F10.3
HEIGHT	F10.3
BAGE	F10.3
EDUC	F10.3
DIAB	F10.3
SMOKHIST	F10.3
CARDIO	F10.3

```
    TIME1          F10.3
    TIME2          F10.3
    TIME3          F10.3
    TIME4          F10.3
    TIME5          F10.3
    IP             F10.3
    IP_SE          F10.3
    SP             F10.3
    SP_SE          F10.3
    IC             F10.3
    IC_SE          F10.3
    SC             F10.3
    SC_SE          F10.3

  Save file format
    29F10.3

  Save file record length    10000


     Beginning Time:  10:37:42
        Ending Time:  10:37:45
       Elapsed Time:  00:00:03
```

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