Appendix A - Annotated Mplus Output

An annotated LTA model output estimated using Mplus (version 8.6) is shown below. Mplus input and output syntax is presented within gray colored text boxes. Some of the output has been appended to highlight infomation most relevant to applied ressearchers. Annotation is directed towards providing assistance with interpretation and comprehension.

LTA model input:

```
TITLE: Full invariance LTA - LSAY

DATA: FILE = "Invariance_LTA_LSAY.dat";

VARIABLE: NAMES =
  CASENUM COHORT FEMALE MINORITY
  AB39M AB39T AB39U AB39W AB39X
  MATHG7 MATHG10 MATHG12 OPKNOW OPKNOW2
  SIOK SIOK2 GA33A GA33H GA33I GA33K GA33L
  CPROB11 CPROB12 CPROB13 CPROB14 CMOD1
  CPROB21 CPROB22 CPROB23 CPROB24 CMOD2;

 categorical =
  AB39M AB39T AB39U AB39W AB39X    # grade 7 items
  GA33A GA33H GA33I GA33K GA33L;   # grade 10 items

 usevar =
  AB39M AB39T AB39U AB39W AB39X
  GA33A GA33H GA33I GA33K GA33L;

 missing=all(9999);

 classes = c1(4) c2(4);
# Enumeration indicated the four class solution at each time point
# C1 is the latent class variable for 7th grade
# C2 is the latent class variable for 10th grade

ANALYSIS:
  estimator = MLR;
  type = mixture;
  starts = 500 100; # Starting values may be increased to increase
                    # the likelihood of LL being a global maximum.

MODEL:
  %overall%
```

```
# Regression of the 10th grade latent class variable,c2, on the 7th grade latent class variable, c1.
  c2 on c1;

MODEL c1: # Measurement model for c1, the latent class variable for 7th grade (time point 1)

# To estimate thresholds the 7th grade items are mentioned under each class-specific statement
  %c1#1%
  [AB39M$1-AB39X$1] (1-5);    # (1-5) is included to label the 5 class-specific item thresholds.
                             #
  %c1#2%                      # By labeling them and using the same numbers for the first
  [AB39M$1-AB39X$1] (6-10);   # class under 'MODEL C2' we are constraining the item
                             # thresholds to be the same for each class.
  %c1#3%                      #
  [AB39M$1-AB39X$1] (11-15);  # This is how measurement invariance across the LCA models for each
                             # time point is specified.
  %c1#4%                      #
  [AB39M$1-AB39X$1] (16-20);  #

  MODEL c2: # Measurement model for c2, the latent class variable for 10th grade (time point 2)

  %c2#1%                      #
  [GA33A$1-GA33L$1] (1-5);    # Here label numbers are repeated, all parameter labels
                             # match those above (e.g., (1-5)).
  %c2#2%                      #
  [GA33A$1-GA33L$1] (6-10);   # The symbol '$' is used to refer to binary or ordinal
                             # variable thresholds.
  %c2#3%                      # Because items in this example are binary, only a single
  [GA33A$1-GA33L$1] (11-15);  # threshold is mentioned.
                             #
  %c2#4%                      #
  [GA33A$1-GA33L$1] (16-20);  #
```

LTA model output:

Note, due to the estimation of a series of mixture models in LTA re-ordering of the classes occurs. Although the solution is the same, the transition matrix presented in the manuscript does not match the order of the values shown in this output. This is important to check and is part of the process of conducting LTA. To avoid class switching see the Mplus manual for adding the `OPTSEED` statement.

```
SUMMARY OF ANALYSIS # The analysis sample size for this model is N = 3061


Number of groups                                           1
Number of observations                                  3061

Number of dependent variables                             10
Number of independent variables                            0
Number of continuous latent variables                      0
Number of categorical latent variables                     2
```

```
Observed dependent variables

  Binary and ordered categorical (ordinal)
    AB39M         AB39T         AB39U         AB39W         AB39X         GA33A
    GA33H         GA33I         GA33K         GA33L

Categorical latent variables
    C1            C2
```

Response Probabilities

Below are the response probabilities and counts for the data. This can be used to check if your data was read in correctly. That is, category 2 reflects $P(u_j = 1)$ from equation (1) in the main text.

```
UNIVARIATE PROPORTIONS AND COUNTS FOR CATEGORICAL VARIABLES

    AB39M
       Category 1    0.387         1177.000
       Category 2    0.613         1865.000
    AB39T
       Category 1    0.596         1782.000
       Category 2    0.404         1206.000
    AB39U
       Category 1    0.508         1519.000
       Category 2    0.492         1473.000
    AB39W
       Category 1    0.596         1796.000
       Category 2    0.404         1216.000
    AB39X
       Category 1    0.539         1639.000
       Category 2    0.461         1404.000
    GA33A
       Category 1    0.425          956.000
       Category 2    0.575         1294.000
    GA33H
       Category 1    0.572         1278.000
       Category 2    0.428          957.000
    GA33I
       Category 1    0.491         1097.000
       Category 2    0.509         1137.000
    GA33K
       Category 1    0.580         1297.000
       Category 2    0.420          941.000
    GA33L
       Category 1    0.584         1314.000
       Category 2    0.416          936.000
```

In this section the first column lists the latent variables C1 and C2. The second Column lists the latent classes k that compose each latent variable. The third column is the model estimated class counts which are distinct from modal assignment counts as indicated by the non-integer estimates. Column four are the model estimated class proportions, note that each latent variable's respective proportions sum to one (i.e., For C1 the first 4 rows).

```
FINAL CLASS COUNTS AND PROPORTIONS FOR EACH LATENT CLASS VARIABLE
BASED ON THE ESTIMATED MODEL

  Latent Class
    Variable    Class

    C1             1        888.43665           0.29024
                   2        908.18719           0.29670
                   3        443.55807           0.14491
                   4        820.81805           0.26815
    C2             1       1069.36035           0.34935
                   2        475.95325           0.15549
                   3        506.74429           0.16555
                   4       1008.94208           0.32961
```

Transition Probabilities

The transition probability matrix describes stability (diagonal of matrix) or change (off-diagonal of matrix) for each class across the two latent class variables. Typically, these parameters are of central interest in an LTA model and are used to determine transition of observations between discrete classes across time-points. The values in the transition matrix are derived from the multinomial logistic regression of C2 on C1 and the latent class intercepts or the class size logit estimates (e.g., [C1#1]). The value in the upper-left of the matrix is interpreted as: 56% of those in Class 1 in 7th grade remained in Class 1 in 10th grade. The value in the top row column 2 is interpreted as: 9.1% of those in Class 1 in 7th grade transitioned to Class 2 in 10th grade. Note that the multinomial logistic regression estimates are presented farther down in the output.

```
LATENT TRANSITION PROBABILITIES BASED ON THE ESTIMATED MODEL

  C1 Classes (Rows) by C2 Classes (Columns)

              1         2         3         4

    1       0.557     0.091     0.157     0.194
    2       0.266     0.264     0.151     0.319
    3       0.352     0.082     0.302     0.264
    4       0.215     0.144     0.117     0.524
```

This Mplus model includes a total of 16 estimated response patterns, that is all combinations of the 4 classes from C1 by the 4 classes from C2, as shown in the output below. Class counts and proportions are shown in the first and second columns respectively. This section provides the joint distribution of C1 and C2. Note that the proportions in the last column sum to one.

```
FINAL CLASS COUNTS AND PROPORTIONS FOR THE LATENT CLASS PATTERNS
BASED ON THE ESTIMATED MODEL

  Latent Class
    Pattern

    1  1         495.29300           0.16181
    1  2          80.91665           0.02643
    1  3         139.85871           0.04569
    1  4         172.36826           0.05631
    2  1         241.41055           0.07887
```

```
2   2       239.90708           0.07838
2   3       137.09390           0.04479
2   4       289.77570           0.09467
3   1       156.27037           0.05105
3   2        36.54762           0.01194
3   3       133.74095           0.04369
3   4       116.99915           0.03822
4   1       176.38644           0.05762
4   2       118.58190           0.03874
4   3        96.05074           0.03138
4   4       429.79898           0.14041
```

This section presents the joint probability patterns by latent class. Given there are 4 classes in 7th grade and 4 classes in 10th grade, there are 16 possible patterns. This set of marginals presents the prevalence of each of these 16 patterns. These patterns can be used to see the prevalence of specific transition patterns. For example, the pattern of being in class 1 at time 1 and class 1 at time 2 has 16% of the sample, whereas the pattern of being in class 3 in 7th grade and class 2 in 10th grade only has 1.1% of the sample.

```
FINAL CLASS COUNTS AND PROPORTIONS FOR THE LATENT CLASS PATTERNS
BASED ON ESTIMATED POSTERIOR PROBABILITIES

  Latent Class
    Pattern

    1   1       495.29413           0.16181
    1   2        80.91538           0.02643
    1   3       139.86096           0.04569
    1   4       172.37002           0.05631
    2   1       241.41062           0.07887
    2   2       239.90595           0.07838
    2   3       137.09562           0.04479
    2   4       289.77310           0.09467
    3   1       156.27062           0.05105
    3   2        36.54607           0.01194
    3   3       133.73765           0.04369
    3   4       117.00055           0.03822
    4   1       176.38637           0.05762
    4   2       118.57912           0.03874
    4   3        96.05312           0.03138
    4   4       429.80072           0.14041
```

Marginal probabilities based on estimated posterior probabilities. This estimate of the relative size of the classes are the most commonly reported. Note that it accounts for the non-perfect assignment to classes, thus shown see non-integer values for the class counts (column 3). This estimate is based on summing the columns for each posterior probability.

```
FINAL CLASS COUNTS AND PROPORTIONS FOR EACH LATENT CLASS VARIABLE
BASED ON ESTIMATED POSTERIOR PROBABILITIES

  Latent Class
    Variable     Class

    C1               1       888.44048           0.29025
```

```
              2          908.18528              0.29670
              3          443.55490              0.14491
              4          820.81934              0.26815
    C2        1         1069.36174              0.34935
              2          475.94652              0.15549
              3          506.74735              0.16555
              4         1008.94438              0.32961
```

Modal assignment

Below are the class counts and proportions if you assign individuals into classes based on their modal class assignment (e.g., the class with the highest posterior probability of membership). These are not commonly used for describing the classes. Note, if you use the ML 3-step, these are used but adjusted for non-perfect assignment to class.

```
FINAL CLASS COUNTS AND PROPORTIONS FOR THE LATENT CLASSES
BASED ON THEIR MOST LIKELY LATENT CLASS PATTERN


Class Counts and Proportions


Latent Class
Pattern

1  1              648              0.21170
1  2               49              0.01601
1  3              126              0.04116
1  4              164              0.05358
2  1              197              0.06436
2  2              109              0.03561
2  3               93              0.03038
2  4              358              0.11696
3  1              267              0.08723
3  2               16              0.00523
3  3               88              0.02875
3  4               99              0.03234
4  1              141              0.04606
4  2               67              0.02189
4  3               78              0.02548
4  4              561              0.18327
```

Marginal distribution of the classes based on modal class assignment. These are not commonly reported as they do not account for the classification error present in the model. When reporting class distributions the model estimated posterior probabilities are most commonly reported.

```
FINAL CLASS COUNTS AND PROPORTIONS FOR EACH LATENT CLASS VARIABLE
BASED ON THEIR MOST LIKELY LATENT CLASS PATTERN


   Latent Class
     Variable     Class

     C1             1              987              0.32244
                    2              757              0.24730
                    3              470              0.15354
```

	4	847	0.27671
C2	1	1253	0.40934
	2	241	0.07873
	3	385	0.12578
	4	1182	0.38615

Average Posterior Probabilities

Below are the average posterior probability matrix $AvePP_k$ estimates, which are used as a metric of class-specific classification precision (diagonal of matrix) and mis-classification or error (off-diagonal of matrix). What often is reported is the diagonals of these in the LCA context (see Masyn, 2013).

```
# CUT / NOT FOUND IN OUTPUT

# OUTPUT APPENDED
```

	1	2	3	4	5	6	7	8	9
1	0.659	0.046	0.078	0.063	0.038	0.016	0.009	0.012	0.047
2	0.040	0.576	0.006	0.071	0.002	0.214	0.000	0.017	0.003
3	0.124	0.075	0.563	0.020	0.006	0.021	0.059	0.005	0.008
4	0.000	0.069	0.013	0.666	0.000	0.026	0.002	0.125	0.000
5	0.059	0.001	0.003	0.000	0.669	0.070	0.067	0.001	0.018
6	0.005	0.030	0.002	0.004	0.023	0.679	0.036	0.059	0.006
7	0.008	0.002	0.027	0.000	0.084	0.175	0.556	0.021	0.003
8	0.010	0.003	0.003	0.013	0.115	0.166	0.068	0.501	0.008
9	0.072	0.004	0.008	0.007	0.118	0.041	0.026	0.039	0.402
10	0.004	0.074	0.000	0.018	0.003	0.310	0.000	0.026	0.021
11	0.012	0.006	0.047	0.002	0.017	0.052	0.116	0.007	0.057
12	0.000	0.007	0.002	0.065	0.000	0.051	0.003	0.227	0.000
13	0.000	0.000	0.000	0.000	0.116	0.011	0.011	0.000	0.027
14	0.000	0.000	0.000	0.000	0.005	0.118	0.007	0.007	0.001
15	0.000	0.000	0.000	0.000	0.011	0.035	0.104	0.004	0.002
16	0.000	0.000	0.000	0.003	0.020	0.030	0.013	0.088	0.002

	10	11	12	13	14	15	16
1	0.004	0.016	0.009	0.002	0.000	0.000	0.000
2	0.057	0.001	0.012	0.000	0.000	0.000	0.000
3	0.006	0.103	0.003	0.001	0.001	0.005	0.001
4	0.007	0.004	0.086	0.000	0.000	0.000	0.002
5	0.001	0.003	0.000	0.095	0.005	0.008	0.000
6	0.048	0.005	0.010	0.003	0.068	0.007	0.015
7	0.001	0.028	0.000	0.008	0.013	0.066	0.006
8	0.004	0.009	0.027	0.007	0.007	0.004	0.055
9	0.032	0.140	0.087	0.011	0.003	0.002	0.008
10	0.434	0.000	0.090	0.000	0.018	0.000	0.002
11	0.038	0.614	0.015	0.002	0.003	0.011	0.001
12	0.043	0.020	0.558	0.000	0.002	0.000	0.022
13	0.001	0.004	0.000	0.715	0.049	0.067	0.001
14	0.002	0.001	0.000	0.051	0.657	0.048	0.102
15	0.002	0.040	0.001	0.076	0.131	0.548	0.046
16	0.001	0.002	0.009	0.073	0.075	0.047	0.636

Class-specific Item Threshold

This section presents the class-specific item threshold parameters which are estimated in the logit scale. These are often converted to probabilities. Note that since we assume measurement invariance in this example, the thresholds for consistent patterns (e.g., 1 1) the thresholds are constrained to be the equal. Logits estimated close to the extreme ends of the logit scale are fixed by Mplus to 15 and -15 to avoid estimation complications.

```
MODEL RESULTS

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

Latent Class C1#1

 Thresholds
    AB39M$1               0.956       0.100       9.574      0.000
    AB39T$1               3.735       1.010       3.697      0.000
    AB39U$1               3.352       0.935       3.584      0.000
    AB39W$1               2.805       0.172      16.301      0.000
    AB39X$1               4.347       0.782       5.562      0.000

Latent Class C1#2

 Thresholds
    AB39M$1              -0.724       0.102      -7.086      0.000
    AB39T$1               0.815       0.147       5.536      0.000
    AB39U$1               0.268       0.147       1.825      0.068
    AB39W$1               0.280       0.172       1.635      0.102
    AB39X$1              -0.833       0.572      -1.457      0.145

Latent Class C1#3

 Thresholds
    AB39M$1              -0.304       0.158      -1.923      0.055
    AB39T$1               0.421       0.234       1.803      0.071
    AB39U$1              -0.890       0.776      -1.146      0.252
    AB39W$1               1.580       0.288       5.485      0.000
    AB39X$1              15.000       0.000      99.000    999.000

Latent Class C1#4

 Thresholds
    AB39M$1              -2.098       0.109      19.324      0.000
    AB39T$1              -2.572       0.274      -9.383      0.000
    AB39U$1              -2.824       0.225      12.574      0.000
    AB39W$1              -2.215       0.150      14.768      0.000
    AB39X$1              -2.566       0.184      13.964      0.000


Latent Class C2#1

 Thresholds
    GA33A$1               0.956       0.100       9.574      0.000
    GA33H$1               3.735       1.010       3.697      0.000
    GA33I$1               3.352       0.935       3.584      0.000
```

```
      GA33K$1              2.805        0.172       16.301        0.000
      GA33L$1              4.347        0.782        5.562        0.000


Latent Class C2#2

 Thresholds
      GA33A$1             -0.724        0.102       -7.086        0.000
      GA33H$1              0.815        0.147        5.536        0.000
      GA33I$1              0.268        0.147        1.825        0.068
      GA33K$1              0.280        0.172        1.635        0.102
      GA33L$1             -0.833        0.572       -1.457        0.145


Latent Class C2#3

 Thresholds
      GA33A$1             -0.304        0.158       -1.923        0.055
      GA33H$1              0.421        0.234        1.803        0.071
      GA33I$1             -0.890        0.776       -1.146        0.252
      GA33K$1              1.580        0.288        5.485        0.000
      GA33L$1             15.000        0.000      999.000      999.000


Latent Class C2#4

 Thresholds
      GA33A$1             -2.098        0.109      -19.324        0.000
      GA33H$1             -2.572        0.274       -9.383        0.000
      GA33I$1             -2.824        0.225      -12.574        0.000
      GA33K$1             -2.215        0.150      -14.768        0.000
      GA33L$1             -2.566        0.184      -13.964        0.000


# OUTPUT APPENDED
```

Multinomial Logistic Regression & Logit Intercept Parameters

The following output are the parameters of the latent class variable model expressed as logits. The first section of parameters are the multinomial logistic regression or structural paths between the latent variables. These parameters are used to compute the transition probability matrix shown below (b11...b13). The section labeled 'Means' presents the logit intercepts for the latent class variable which are used to compute class size counts & proportions for the estimated model. These intercept parameters are used to compute the transition probability matrix shown in table below (a1...a3).

		C2 = 1	C2 = 2	C2 = 3	C2 = 4
Time 1	C1 = 1	a1+b11	a2+b21	a3+b31	0
	C1 = 2	a1+b12	a2+b22	a3+b32	0
	C1 = 3	a1+b13	a2+b23	a3+b33	0
	C1 = 4	a1	a2	a3	0

```
Categorical Latent Variables

# NOTE: Symbols (%) and labels (!) added to output which are not found in Mplus syntax.
```

9

```
%C2#1%     ON
   %C1#1%         !b11!      1.946      0.194     10.019      0.000
   %C1#2%         !b12!      0.708      0.234      3.023      0.003
   %C1#3%         !b13!      1.180      0.280      4.219      0.000


%C2#2%     ON
   %C1#1%         !b21!      0.532      0.375      1.417      0.156
   %C1#2%         !b22!      1.099      0.301      3.646      0.000
   %C1#3%         !b23!      0.124      1.088      0.114      0.909


%C2#3%     ON
   %C1#1%         !b31!      1.289      0.329      3.917      0.000
   %C1#2%         !b32!      0.750      0.357      2.100      0.036
   %C1#3%         !b33!      1.632      0.535      3.049      0.002


Means
   %C1#1%                    0.079      0.117      0.676      0.499
   %C1#2%                    0.101      0.153      0.660      0.509
   %C1#3%                   -0.615      0.464     -1.327      0.185
   %C2#1%         !a1!      -0.891      0.157     -5.674      0.000
   %C2#2%         !a2!      -1.288      0.267     -4.815      0.000
   %C2#3%         !a3!      -1.498      0.407     -3.685      0.000
```

Conditional Item Probabilities

Conditional item probabilities are derived from the threshold parameters using equation (2) in the paper.
These are the values that are used when graphing the posterior probability plots as in Figure 2 (bottom).
Note that since we assume measurement invariance in this analysis, the conditional item probabilities are
constrained to be equal across time when the classes are equal.

```
RESULTS IN PROBABILITY SCALE
# The conditional item probabilities are equal across C1 and C2 (invariance assumed).


Results for Class-specific Model Parts of C1
# Item probabilities for 7th grade


Latent Class C1#1


 AB39M
   Category 1         0.722      0.020     36.062      0.000
   Category 2         0.278      0.020     13.859      0.000
 AB39T
   Category 1         0.977      0.023     42.453      0.000
   Category 2         0.023      0.023      1.013      0.311
 AB39U
   Category 1         0.966      0.031     31.601      0.000
   Category 2         0.034      0.031      1.107      0.268
 AB39W
   Category 1         0.943      0.009    101.838      0.000
   Category 2         0.057      0.009      6.164      0.000
 AB39X
   Category 1         0.987      0.010    100.102      0.000
   Category 2         0.013      0.010      1.296      0.195
```

```
Latent Class C1#2

  AB39M
    Category 1          0.327         0.022         14.536         0.000
    Category 2          0.673         0.022         29.978         0.000
  AB39T
    Category 1          0.693         0.031         22.143         0.000
    Category 2          0.307         0.031          9.805         0.000
  AB39U
    Category 1          0.567         0.036         15.731         0.000
    Category 2          0.433         0.036         12.037         0.000
  AB39W
    Category 1          0.570         0.042         13.549         0.000
    Category 2          0.430         0.042         10.235         0.000
  AB39X
    Category 1          0.303         0.121          2.510         0.012
    Category 2          0.697         0.121          5.773         0.000

Latent Class C1#3

  AB39M
    Category 1          0.425         0.039         11.001         0.000
    Category 2          0.575         0.039         14.905         0.000
  AB39T
    Category 1          0.604         0.056         10.804         0.000
    Category 2          0.396         0.056          7.091         0.000
  AB39U
    Category 1          0.291         0.160          1.818         0.069
    Category 2          0.709         0.160          4.425         0.000
  AB39W
    Category 1          0.829         0.041         20.325         0.000
    Category 2          0.171         0.041          4.187         0.000
  AB39X
    Category 1          1.000         0.000          0.000         1.000
    Category 2          0.000         0.000          0.000         1.000

Latent Class C1#4

  AB39M
    Category 1          0.109         0.011         10.344         0.000
    Category 2          0.891         0.011         84.260         0.000
  AB39T
    Category 1          0.071         0.018          3.927         0.000
    Category 2          0.929         0.018         51.415         0.000
  AB39U
    Category 1          0.056         0.012          4.716         0.000
    Category 2          0.944         0.012         79.473         0.000
  AB39W
    Category 1          0.098         0.013          7.394         0.000
    Category 2          0.902         0.013         67.757         0.000
  AB39X
    Category 1          0.071         0.012          5.859         0.000
    Category 2          0.929         0.012         76.274         0.000
```

```
Results for Class-specific Model Parts of C2
# Item probabilities for 10th grade

Latent Class C2#1

 GA33A
    Category 1         0.722      0.020      36.062         0.000
    Category 2         0.278      0.020      13.859         0.000
 GA33H
    Category 1         0.977      0.023      42.453         0.000
    Category 2         0.023      0.023       1.013         0.311
 GA33I
    Category 1         0.966      0.031      31.601         0.000
    Category 2         0.034      0.031       1.107         0.268
 GA33K
    Category 1         0.943      0.009     101.838         0.000
    Category 2         0.057      0.009       6.164         0.000
 GA33L
    Category 1         0.987      0.010     100.102         0.000
    Category 2         0.013      0.010       1.296         0.195

Latent Class C2#2

 GA33A
    Category 1         0.327      0.022      14.536         0.000
    Category 2         0.673      0.022      29.978         0.000
 GA33H
    Category 1         0.693      0.031      22.143         0.000
    Category 2         0.307      0.031       9.805         0.000
 GA33I
    Category 1         0.567      0.036      15.731         0.000
    Category 2         0.433      0.036      12.037         0.000
 GA33K
    Category 1         0.570      0.042      13.549         0.000
    Category 2         0.430      0.042      10.235         0.000
 GA33L
    Category 1         0.303      0.121       2.510         0.012
    Category 2         0.697      0.121       5.773         0.000

Latent Class C2#3

 GA33A
    Category 1         0.425      0.039      11.001         0.000
    Category 2         0.575      0.039      14.905         0.000
 GA33H
    Category 1         0.604      0.056      10.804         0.000
    Category 2         0.396      0.056       7.091         0.000
 GA33I
    Category 1         0.291      0.160       1.818         0.069
    Category 2         0.709      0.160       4.425         0.000
 GA33K
    Category 1         0.829      0.041      20.325         0.000
    Category 2         0.171      0.041       4.187         0.000
```

```
GA33L
   Category 1         1.000      0.000      0.000      1.000
   Category 2         0.000      0.000      0.000      1.000

Latent Class C2#4

 GA33A
   Category 1         0.109      0.011     10.344      0.000
   Category 2         0.891      0.011     84.260      0.000
 GA33H
   Category 1         0.071      0.018      3.927      0.000
   Category 2         0.929      0.018     51.415      0.000
 GA33I
   Category 1         0.056      0.012      4.716      0.000
   Category 2         0.944      0.012     79.473      0.000
 GA33K
   Category 1         0.098      0.013      7.394      0.000
   Category 2         0.902      0.013     67.757      0.000
 GA33L
   Category 1         0.071      0.012      5.859      0.000
   Category 2         0.929      0.012     76.274      0.000

# OUTPUT APPENDED
```