

**ภาคผนวก ค**  
**ตัวอย่างคำสั่งการวิเคราะห์กลุ่มแฝง**

TITLE: LPA

DATA:

FILE IS "D:\DATA8OCTOBER\datanew.dat";

VARIABLE:

NAMES ARE STT STD REB REC SUP COM TS SS PD  
PE GM HR ST GA CS AO PN TC

EV LD CA CN CO LI;

USEVARIABLES ARE LD CA CN CO LI;

CLASSES IS C(4);

ANALYSIS:

TYPE = MIXTURE;

ITERATIONS = 1000;

CONVERGENCE = 0.00005;

SAVEDATA:

FILE = C2\_LCA.txt;

save = cprobabilities;

OUTPUT:

TECH11 TECH14;

MODEL FIT INFORMATION

Number of Free Parameters 28

Loglikelihood

H0 Value -1151.500

H0 Scaling Correction Factor 1.1701

for MLR

Information Criteria

Akaike (AIC)	2359.001
Bayesian (BIC)	2488.363
Sample-Size Adjusted BIC	2399.452
$(n^* = (n + 2) / 24)$	

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

Latent		
Classes		
1	290.29814	0.38706
2	186.88105	0.24917
3	119.26190	0.15902
4	153.55890	0.20475

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

Latent		
Classes		
1	290.29814	0.38706
2	186.88105	0.24917

3	119.26190	0.15902
4	153.55890	0.20475

### CLASSIFICATION QUALITY

Entropy                      0.949

### CLASSIFICATION OF INDIVIDUALS BASED ON THEIR MOST LIKELY LATENT CLASS MEMBERSHIP

#### Class Counts and Proportions

Latent

Classes

1	289	0.38533
2	187	0.24933
3	120	0.16000
4	154	0.20533

#### Average Latent Class Probabilities for Most Likely Latent Class Membership (Row) by Latent Class (Column)

	1	2	3	4
1	0.978	0.000	0.005	0.017
2	0.000	0.980	0.020	0.000
3	0.019	0.031	0.950	0.000
4	0.036	0.000	0.000	0.964

### MODEL RESULTS

## Two-Tailed

	Estimate	S.E.	Est./S.E.	P-Value
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## Latent Class 1

## Means

LD	3.744	0.010	379.305	
	0.000			
CA	3.704	0.015	245.752	0.000
CN	3.736	0.013	282.419	
	0.000			
CO	3.677	0.014	268.721	
	0.000			
LI	3.143	0.035	89.736	
	0.000			

## Variances

LD	0.037	0.003	11.139	
	0.000			
CA	0.055	0.003	16.142	
	0.000			
CN	0.029	0.002	12.735	
	0.000			
CO	0.040	0.003	11.855	
	0.000			

LI	0.494	0.018	27.367	
	0.000			
Latent Class 2				
Means				
LD	4.717	0.016	288.331	
0.000				
CA	4.613	0.015	303.903	0.000
CN	4.575	0.014	331.824	
0.000				
CO	4.525	0.015	305.951	
	0.000			
LI	3.542	0.063	55.920	
	0.000			
Variances				
LD	0.037	0.003	11.139	
	0.000			
CA	0.055	0.003	16.142	
	0.000			
CN	0.029	0.002	12.735	
	0.000			
CO	0.040	0.003	11.855	
	0.000			
LI	0.494	0.018	27.367	
	0.000			

## Latent Class 3

## Means

LD	4.256	0.021	202.878	0.000
CA	4.176	0.022	191.888	0.000
CN	4.201	0.018	231.336	0.000
CO	4.201	0.019	218.244	0.000
LI		3.255	0.067	48.793
	0.000			

## Variances

LD		0.037	0.003	11.139
	0.000			
CA	0.055		0.003	16.142
	0.000			
CN		0.029		0.002
	0.000			12.735
CO		0.040		0.003
	0.000			11.855
LI		0.494		0.018
	0.000			27.367

## Latent Class 4



## Means

LD	3.344	0.030	113.238	0.000
CA	3.298	0.029	113.459	0.000
CN	3.212	0.020	164.116	0.000
CO	3.257	0.024	137.750	0.000
LI	3.329	0.061	54.790	0.000

## Variances

LD	0.037	0.003	11.139	0.000
CA	0.055	0.003	16.142	0.000
CN	0.029	0.002	12.735	0.000
CO	0.040	0.003	11.855	0.000
LI	0.494	0.018	27.367	0.000

## Categorical Latent Variables

## Means

C#1	0.637	0.120	5.291
	0.000		
C#2	0.196	0.118	1.660
	0.097		
C#3	-0.253	0.135	-1.876
	0.061		

## TECHNICAL 11 OUTPUT

### Random Starts Specifications for the k-1 Class

#### Analysis Model

Number of initial stage random starts	20
Number of final stage optimizations	4

## VUONG-LO-MENDELL-RUBIN LIKELIHOOD RATIO TEST FOR 3 (H0) VERSUS 4 CLASSES

H0Loglikelihood Value	-1413.685
2 Times the Loglikelihood Difference	524.370
Difference in the Number of Parameters	6
Mean	18.552
Standard Deviation	34.500
P-Value	0.0000

## LO-MENDELL-RUBIN ADJUSTED LRT TEST

Value	511.492
P-Value	0.0000

PARAMETRIC BOOTSTRAPPED LIKELIHOOD RATIO  
TEST FOR 3 (H0) VERSUS 4 CLASSES

H0Loglikelihood Value	-1413.685
2 Times the Loglikelihood Difference	524.370
Difference in the Number of Parameters	6
Approximate P-Value	0.0000
Successful Bootstrap Draws	5