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//
// WINMIRA 2001 1.45
// (c) 2000,2001 by Matthias von Davier
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//
// date of analysis: 03.11.2009 time : 22:49:32
//
```

Filenames:

```
data: C:\Program Files\Winmira 2001\data\Esu.dat
output: C:\Program Files\Winmira 2001\data\Esu.OUT
patterns: C:\Program Files\Winmira 2001\data\Esu.PAT
```

```
number of persons      :    800
number of items        :      5
number of classes      :      2
max. number of iterations :    250
accuracy criterion     : 0.0005
random start value     :   4321
```

item labels and sample frequencies:

no.	label	n of cats	categories				N
			0	1	2	3	
1	VAR1	4	293	108	392	7	800
2	VAR2	4	263	276	93	168	800
3	VAR3	4	401	240	55	104	800
4	VAR4	4	342	342	47	69	800
5	VAR5	4	233	381	75	111	800

```
saturated likelihood      :    -4100.4003
number of different patterns :      280
number of possible patterns :    1024
```

Number of iterations needed: 40

fitted model: (LCA) Latent Class Analysis: class-independent thresholds:

according to the ordinal (partial credit) model in 2 latent classes.

Classes are sorted by class size!

```
Final estimates in CLASS 1 of 2 with size 0.59184
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expected category frequencies and item scores:

Item label	Item's		relative category frequencies			
	Score	Stdev	0	1	2	3
VAR1	1.10	0.94	0.385	0.136	0.471	0.008
VAR2	0.76	0.88	0.466	0.382	0.080	0.071
VAR3	0.32	0.55	0.716	0.257	0.019	0.008
VAR4	0.58	0.72	0.524	0.405	0.038	0.034
VAR5	0.64	0.65	0.436	0.505	0.042	0.017

```
Sum: | 3.40
```

threshold parameters: ordinal (partial credit) model

item label	item location	threshold parameters		
		1	2	3

VAR1		1.28882		1.041		-1.244		4.069
VAR2		0.62694		0.199		1.561		0.121
VAR3		1.50710		1.023		2.610		0.889
VAR4		0.91611		0.257		2.369		0.122
VAR5		1.07943		-0.146		2.480		0.904

Final estimates in CLASS 2 of 2 with size 0.40816
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expected category frequencies and item scores:

Item label	Item`s		relative category frequencies			
	Score	Stdev	0	1	2	3
VAR1	1.20	0.93	0.339	0.134	0.517	0.010
VAR2	1.86	1.10	0.129	0.291	0.168	0.411
VAR3	1.57	1.11	0.190	0.362	0.141	0.307
VAR4	1.13	1.01	0.288	0.460	0.089	0.163
VAR5	1.72	1.00	0.081	0.435	0.168	0.315

Sum: | 7.47

threshold parameters: ordinal (partial credit) model

item label	item location	threshold parameters		
		1	2	3
VAR1	1.17986	0.932	-1.353	3.961
VAR2	-0.38655	-0.814	0.547	-0.893
VAR3	-0.16022	-0.644	0.942	-0.779
VAR4	0.19045	-0.469	1.643	-0.603
VAR5	-0.45151	-1.677	0.949	-0.627

class independent item parameters (LACORD models 1-4)
threshold parameters: ordinal (partial credit) model

item label	threshold parameters		
	1	2	3
VAR1	0.932	-1.353	3.961
VAR2	-0.814	0.547	-0.893
VAR3	-0.644	0.942	-0.779
VAR4	-0.469	1.643	-0.603
VAR5	-1.677	0.949	-0.627

person fit index descriptives:

mean : -0.0596715
std.dev. : 0.9794985

skewness : -0.5095864
kurtosis : -0.0373889

statistics of expected class membership:

class	exp.	mean		
	size	prob.	1	2
1	0.629	0.868	0.868	0.132
2	0.371	0.876	0.124	0.876

Goodness of fit statistics:

	estimated model	saturated model
Log-Likelihood :	-4517.98	-4100.40
Number of parameters :	21	1023
geom. mean likelihood :	0.32319670	0.35876056

Information Criteria:

AIC-Index	:	9077.95	10246.80
BIC-Index	:	9176.33	15039.16
CAIC-Index	:	9197.33	16062.16

Power Divergence GoF statistics:

		emp. value	chi-square p-value
Cressie Read	:	1030.29	p= 0.2637
Pearson Chisquare	:	1442.31	p= 0.0000

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Likelihood ratio	:	835.15	p= 0.9999
Freeman-Tukey Chi^2	:	1097.42	p= 0.0165

Degrees of freedom	:	1002
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WARNING: Number of cells is larger than number of different patterns!!!

obs.patterns/cells	= 0.273437500000000000
number of zero cells	= 744

WARNING: Number of cells is larger than number of subjects!!!

subjects/cells	= 0.781250000000000000
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The data might be very sparse, please do not use the
chi square p-value approximation for the Power Divergence
Goodness of Fit Statistics.
Consider to use the parametric bootstrap procedure instead.
In addition, several start values should be used
(see defaults menu) in order to examine the occurrence
of local likelihood maxima.

Parametric Bootstrap estimates for Goodness of Fit:

No.:	Satlik	LogLik	LR	CressieRead	Pearson X^2	FT
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There might be zero category counts in the Bootstrap Samples:

Please examine the class specific threshold parameters for
boundary values (large positive or negative threshold parameters).

Z:	5.403	6.323	3.152	3.5616
P(X>Z):	0.000	0.000	0.001	0.0002
Mean:	662.215	737.169	971.185	921.6613
Stdev:	32.010	46.359	149.464	49.3477
p-values (emp. PDF):	0.000	0.000	0.000	0.0000

It is recommended to use only the empirical p-values of the
Pearson X^2 and the Cressie Read statistics. Do not use the
FT and LR statistics for model selection!