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//
// WINMIRA 2001 1.45
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//
// date of analysis: 03.11.2009 time : 22:46:59
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Filenames:

```
data: C:\Program Files\Winmira 2001\data\Kft.dat
output: C:\Program Files\Winmira 2001\data\Kft.O12
patterns: C:\Program Files\Winmira 2001\data\Kft.PAT
```

```
number of persons      :    300
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	
1	VAR1	2	105	195	300
2	VAR2	2	125	175	300
3	VAR3	2	157	143	300
4	VAR4	2	187	113	300
5	VAR5	2	206	94	300

```
saturated likelihood      :    -830.3929
number of different patterns :      30
number of possible patterns :      32
```

Number of iterations needed: 165

fitted model: (MIRA) Mixed Rasch Model:

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

Classes are sorted by class size!

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Final estimates in CLASS 1 of 2 with size 0.73571
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Expected Score Frequencies and Personparameters:

score frequency | person parameters and standard errors:

Raw- score	Expected freq.	MLE- estimate	std. error MLE	WLE- estimate	std. error WLE
0	52.89	*****	*****	-2.892	1.743
1	47.72	-1.662	1.197	-1.406	1.135
2	44.53	-0.495	1.011	-0.435	1.008
3	48.60	0.504	1.009	0.450	1.006
4	13.02	1.661	1.190	1.407	1.128
5	8.91	*****	*****	2.868	1.730

```
WLE estimates : Mean      = -0.806 Var = 2.384 stdev = 1.544
                 marginal error variance = 1.668 stdev = 1.292
                 anova reliability = 0.588
                 Andrichs reliability = 0.300
```

WLE = Warm's modified likelihood estimates,

MLE = Standard maximum likelihood estimates.

Raw-score : Mean = 1.758 Stdev = 1.408

expected category frequencies and item scores:

Item label	Item's		relative category frequencies	
	Score	Stdev	0	1
VAR1	0.57	0.50	0.431	0.569
VAR2	0.45	0.50	0.552	0.448
VAR3	0.34	0.47	0.664	0.336
VAR4	0.15	0.36	0.847	0.153
VAR5	0.21	0.41	0.789	0.211

Sum: | 1.72

threshold parameters: ordinal (partial credit) model

item label	item location	threshold parameters
VAR1	-1.41688	
VAR2	-0.68211	
VAR3	-0.01104	
VAR4	1.30905	
VAR5	0.80099	

item fit assessed by the Q-index

itemlabel	Q-index	Zq	p(X>Zq)	
VAR1	0.0727	-0.3063	0.62031	-....!Q...+
VAR2	0.0542	-0.7873	0.78444	-....!.Q..+
VAR3	0.1326	0.4757	0.31714	-..Q.!.....+
VAR4	0.1944	0.8836	0.18845	-Q....!.....+
VAR5	0.1398	0.4161	0.33866	-..Q.!.....+

-?:p<0.05, +?:p>0.95  
-!:p<0.01, +!:p>0.99

Final estimates in CLASS 2 of 2 with size 0.26429

Expected Score Frequencies and Personparameters:

score frequency | person parameters and standard errors:

Raw- score	Expected freq.	MLE- estimate	std. error MLE	WLE- estimate	std. error WLE
0	0.00	*****	*****	-8.098	2.307
1	0.28	-3.523	4.128	-5.878	2.305
2	1.47	0.455	1.237	0.685	1.189
3	1.40	1.749	1.093	1.749	1.093
4	46.98	3.045	1.239	2.814	1.190
5	30.68	*****	*****	4.387	1.802

WLE estimates : Mean = 3.324 Var = 1.044 stdev = 1.022  
marginal error variance = 2.121 stdev = 1.456  
anova reliability = 0.330  
Andrichs reliability = -1.032

WLE = Warm's modified likelihood estimates,  
MLE = Standard maximum likelihood estimates.

Raw-score : Mean = 4.316 Stdev = 0.633

expected category frequencies and item scores:

Item label	Item`s		relative category frequencies	
	Score	Stdev	0	1
VAR1	0.88	0.33	0.123	0.877
VAR2	0.96	0.20	0.041	0.959
VAR3	0.87	0.34	0.131	0.869
VAR4	1.00	0.00	0.000	1.000
VAR5	0.60	0.49	0.402	0.598

Sum: | 4.30

threshold parameters: ordinal (partial credit) model

item label	item location	threshold parameters
VAR1	1.71018	
VAR2	0.45660	
VAR3	1.78197	
VAR4	-6.99970	
VAR5	3.05096	

item fit assessed by the Q-index

itemlabel	Q-index	Zq	p(X>Zq)	
VAR1	-0.0000	-0.1320	0.55251	-....Q....+
VAR2	-0.0000	0.0971	0.46131	-...Q!....+
VAR3	-0.0000	0.1099	0.45624	-...Q!....+
VAR4	0.5000	-0.0003	0.50011	-....Q....+
VAR5	-0.0000	-0.0680	0.52712	-....Q....+

-?:p<0.05, +?:p>0.95

-!:p<0.01, +!:p>0.99

person fit index descriptives:

mean : -0.0480055  
std.dev. : 1.0057860  
  
skewness : -0.7635934  
kurtosis : -0.4685301

statistics of expected class membership:

class	exp. size	mean prob.	1	2
1	0.500	0.979	0.979	0.021
2	0.277	0.916	0.084	0.916

Goodness of fit statistics:

	estimated model	saturated model
Log-Likelihood :	-841.08	-830.39
Number of parameters :	17	31
geom. mean likelihood :	0.57079637	0.57487927

Information Criteria:

AIC-Index :	1716.17	1722.79
BIC-Index :	1779.13	1837.60
CAIC-Index :	1796.13	1868.60

Power Divergence GoF statistics:

	emp. value	chi-square p-value
Cressie Read :	20.00	p= 0.1300
Pearson Chisquare :	19.94	p= 0.1321

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Likelihood ratio	:	21.38	p=	0.0922
Freeman-Tukey Chi^2	:	25.66	p=	0.0286
Degrees of freedom	:	14		

WARNING: Number of cells is larger than number of different patterns!!!  
obs.patterns/cells = 0.937500000000000000  
number of zero cells = 2

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:	1.007	0.817	0.518	0.5274
P(X>Z):	0.157	0.207	0.302	0.2990
Mean:	16.459	15.582	16.431	22.2084
Stdev:	4.888	5.415	6.772	6.5390
p-values (emp. PDF):	0.200	0.225	0.275	0.2500

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!