IRTPRO Version 2.0
Output generated by IRTPRO estimation engine Version 4.54 (32-bit)

Project:	may31 analysis
Description:	
Date:	31 May 2018
Time:	11:00 AM

Table of Contents

Graded Model Item Parameter Estimates, logit: $a\theta + c$

Item	Label	a	s.e.	c_1	s.e.	c_2	s.e.	c_3	s.e.	c_4	s.e.	c_5	s.e.	c_6	s.e.
1	tol1	[7] 4.05	0.29	[1] 2.91	0.27	[2] -0.16	0.22	[3] -2.75	0.26	[4] -4.32	0.32	[5] -5.74	0.40	[6] -7.82	0.54
2	tol2	[14] 4.44	0.32	[8] 2.84	0.28	[9] -0.53	0.24	[10] -3.04	0.30	[11] -4.75	0.37	[12] -6.18	0.44	[13] -8.09	0.57
3	tol3	[21] 3.96	0.28	[15] 2.53	0.25	[16] -0.61	0.22	[17] -2.82	0.26	[18] -4.26	0.32	[19] -5.72	0.39	[20] -7.10	0.48
4	tol4	[28] 3.00	0.20	[22] 2.11	0.20	[23] -0.44	0.17	[24] -1.97	0.19	[25] -2.81	0.22	[26] -4.24	0.27	[27] -6.35	0.39
5	tol5	[35] 3.04	0.21	[29] 0.94	0.18	[30] -1.45	0.19	[31] -2.63	0.22	[32] -3.37	0.25	[33] -4.66	0.30	[34] -6.70	0.43

Graded Model Item Parameter Estimates for Group 1, logit: $a(\theta - b)$ (Back to TOC)

Item	Label	a	s.e.	b_1	s.e.	b_2	s.e.	b_3	s.e.	b_4	s.e.	b_5	s.e.	b_6	s.e.
1	tol1	[7] 4.05	0.29	-0.72	0.06	0.04	0.05	0.68	0.06	1.07	0.07	1.41	0.08	1.93	0.11
2	tol2	[14] 4.44	0.32	-0.64	0.06	0.12	0.05	0.69	0.06	1.07	0.07	1.39	0.08	1.82	0.10
3	tol3	[21] 3.96	0.28	-0.64	0.06	0.15	0.05	0.71	0.06	1.07	0.07	1.44	0.08	1.79	0.10
4	tol4	[28] 3.00	0.20	-0.70	0.07	0.15	0.06	0.66	0.06	0.94	0.07	1.41	0.09	2.11	0.13
5	tol5	[35] 3.04	0.21	-0.31	0.06	0.48	0.06	0.86	0.07	1.11	0.08	1.53	0.09	2.21	0.14

Summed-Score Based Item Diagnostic Tables and X^2s for Group 1 (Back to TOC)

S-X^2 Item Level Diagnostic Statistics

Item	Label	X^2	d.f.	Probability
1	tol1	98.73	62	0.0021
2	tol2	136.26	63	0.0001
3	tol3	113.83	67	0.0003
4	tol4	108.18	76	0.0090
5	tol5	133.31	75	0.0001

Group Parameter Estimates (Back to TOC)

Group	Label	μ	s.e.	σ^2	s.e.	σ	s.e.
1	Group 1	0.00	-----	1.00	-----	1.00	-----

Marginal fit (X^2) and Standardized LD X^2 Statistics for Group 1 (Back to TOC)

Item	Label	Marginal X^2	1	2	3	4
1	tol1	2.3				
2	tol2	2.5	3.2			
3	tol3	2.6	4.9	5.6		
4	tol4	1.9	6.5	9.3	9.2	
5	tol5	0.9	9.5	16.4	11.2	13.1

Item Information Function Values for Group 1 at 15 Values of θ from -2.8 to 2.8 (Back to TOC)

Item	Label	θ: -2.8	-2.4	-2.0	-1.6	-1.2	-0.8	-0.4	-0.0	0.4	0.8	1.2	1.6	2.0	2.4	2.8
1	tol1	0.00	0.02	0.09	0.44	1.79	4.09	3.97	4.49	4.41	4.97	5.08	4.80	4.24	1.86	0.46
2	tol2	0.00	0.01	0.05	0.27	1.39	4.38	4.63	5.10	5.34	5.90	6.08	5.81	4.34	1.32	0.25
3	tol3	0.00	0.01	0.07	0.33	1.38	3.59	3.87	4.11	4.47	4.80	4.89	4.80	3.42	1.18	0.28
4	tol4	0.02	0.05	0.18	0.54	1.36	2.29	2.42	2.56	2.77	2.85	2.79	2.65	2.53	1.92	0.91
5	tol5	0.00	0.02	0.05	0.18	0.54	1.39	2.36	2.55	2.74	2.94	2.93	2.79	2.65	2.18	1.12
Test Information:		1.03	1.11	1.44	2.75	7.47	16.73	18.26	19.81	20.73	22.46	22.78	21.85	18.18	9.46	4.01
Expected s.e.:		0.99	0.95	0.83	0.60	0.37	0.24	0.23	0.22	0.22	0.21	0.21	0.21	0.23	0.33	0.50

Marginal Reliability for Response Pattern Scores: 0.90

Likelihood-based Values and Goodness of Fit Statistics (Back to TOC)

Statistics based on the loglikelihood	
-2loglikelihood:	8111.58
Akaike Information Criterion (AIC):	8181.58
Bayesian Information Criterion (BIC):	8336.56

Statistics based on the full item x item x ... classification

The table is too sparse to compute the general multinomial goodness of fit statistics.

Statistics based on one- and two-way marginal tables

The M_2 statistics were not requested.

Summary of the Data and Control Parameters (Back to TOC)

Sample Size	619
Number of Items	5
Number of Dimensions	1

Item	Label	Categories	Model
1	tol1	7	Graded
2	tol2	7	Graded
3	tol3	7	Graded
4	tol4	7	Graded
5	tol5	7	Graded

Parameter Estimation Control Values

Bock-Aitkin EM Algorithm		
Maximum number of cycles:	500	
Convergence criterion:	1.00e-005	
Maximum number of M-step iterations:	50	
Convergence criterion for iterative M-steps:	1.00e-006	
Number of rectangular quadrature points:	49	
Minimum, Maximum quadrature points:	-6.00	6.00
SEM algorithm tolerance:	1.00e-003	
Standard error computation algorithm:	Supplemented EM	

Miscellaneous Control Values

Print parameter numbers?	Yes
Z tolerance, max. abs. logit value:	50.00
Number of processor cores used:	8
Number of cycles completed:	141
Maximum parameter change:	0.00e+000
Number of free parameters:	35

Processing times (in seconds)

E-step computations:	0.05
M-step computations:	0.22
Standard error computations:	0.47
Goodness-of-fit statistics:	0.03
Total:	0.77

Output Files

HTML results and control parameters: E:\Scale Construction\Recoded for higher=tolerance\Study 3\study3.Test1-irt.htm

Convergence and Numerical Stability

Engine status:	Normal termination
SEM algorithm status:	Normal
First-order test:	Convergence criteria satisfied
Condition number of information matrix:	1.99e+002
Second-order test:	Solution is a possible local maximum