

APPENDIX 21: TEST DIMENSIONALITY

MATHEMATICS

Table 21–1. Mathematics—Test Dimensionality

Table of STANDARDIZED RESIDUAL variance (in Eigenvalue units)

		-- Empirical --		Modeled
Total raw variance in observations	=	65.7	100.0%	100.0%
Raw variance explained by measures	=	18.7	28.5%	29.8%
Raw variance explained by persons	=	9.9	15.1%	15.8%
Raw Variance explained by items	=	8.8	13.4%	14.0%
Raw unexplained variance (total)	=	47.0	71.5%	100.0%
Unexplned variance in 1st contrast	=	1.8	2.8%	3.9%
Unexplned variance in 2nd contrast	=	1.6	2.5%	3.5%
Unexplned variance in 3rd contrast	=	1.5	2.3%	3.2%
Unexplned variance in 4th contrast	=	1.3	2.0%	2.8%
Unexplned variance in 5th contrast	=	1.3	1.9%	2.7%

STANDARDIZED RESIDUAL VARIANCE SCREE PLOT

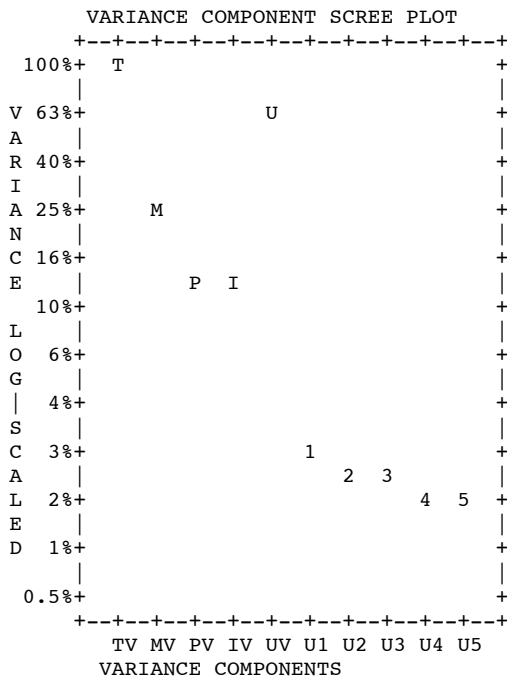
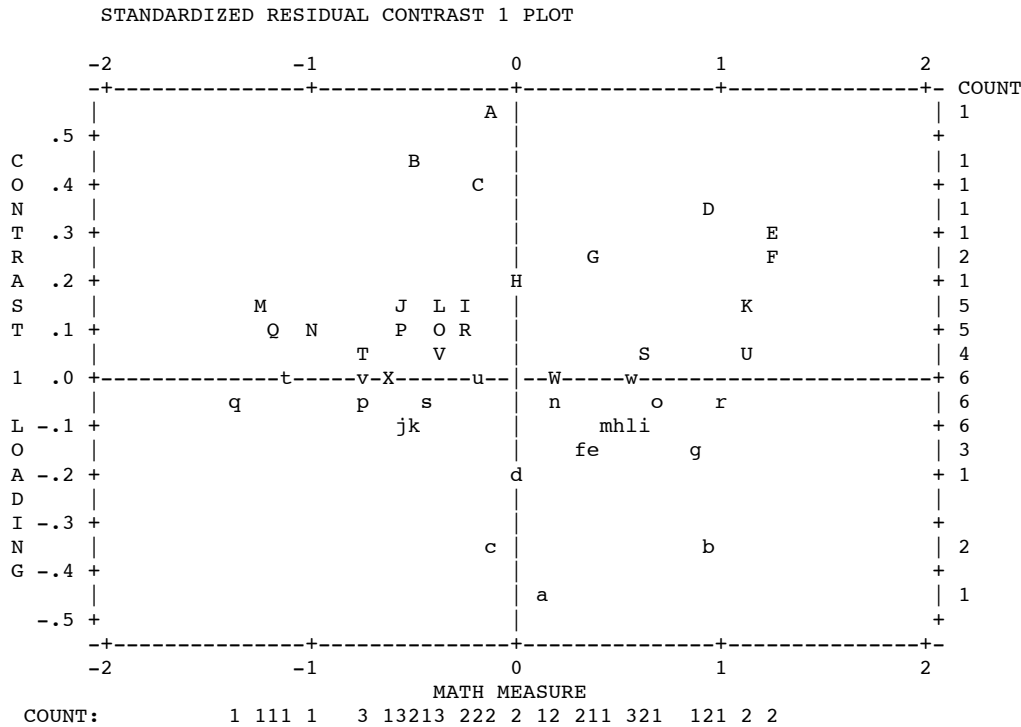


Table 21-1 (continued). Mathematics—Test Dimensionality

Table of STANDARDIZED RESIDUAL variance (in Eigenvalue units)

		-- Empirical --		Modeled
Total raw variance in observations	=	65.7	100.0%	100.0%
Raw variance explained by measures	=	18.7	28.5%	29.8%
Raw variance explained by persons	=	9.9	15.1%	15.8%
Raw Variance explained by items	=	8.8	13.4%	14.0%
Raw unexplained variance (total)	=	47.0	71.5%	100.0%
Unexplned variance in 1st contrast	=	1.8	2.8%	3.9%



READING

Table 21–2. Reading—Test Dimensionality

Table of STANDARDIZED RESIDUAL variance (in Eigenvalue units)

		-- Empirical --		Modeled
Total raw variance in observations	=	89.7	100.0%	100.0%
Raw variance explained by measures	=	30.7	34.2%	35.2%
Raw variance explained by persons	=	16.3	18.2%	18.7%
Raw Variance explained by items	=	14.4	16.0%	16.5%
Raw unexplained variance (total)	=	59.0	65.8%	100.0%
Unexplned variance in 1st contrast	=	1.8	2.0%	3.1%
Unexplned variance in 2nd contrast	=	1.6	1.8%	2.7%
Unexplned variance in 3rd contrast	=	1.4	1.5%	2.3%
Unexplned variance in 4th contrast	=	1.3	1.5%	2.2%
Unexplned variance in 5th contrast	=	1.3	1.4%	2.1%

STANDARDIZED RESIDUAL VARIANCE SCREE PLOT

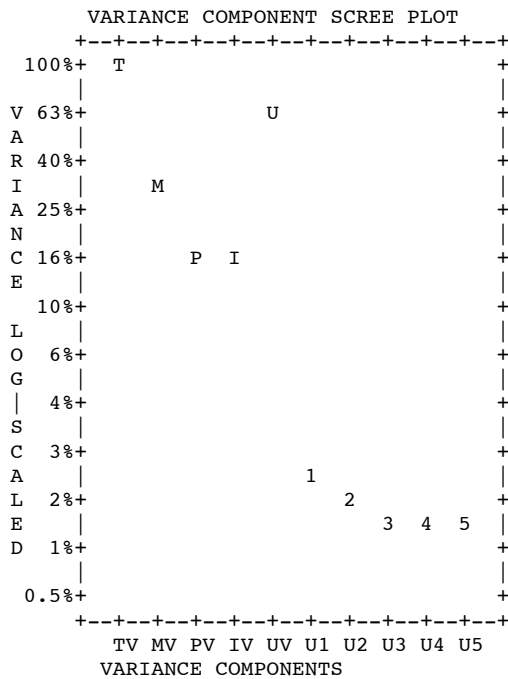
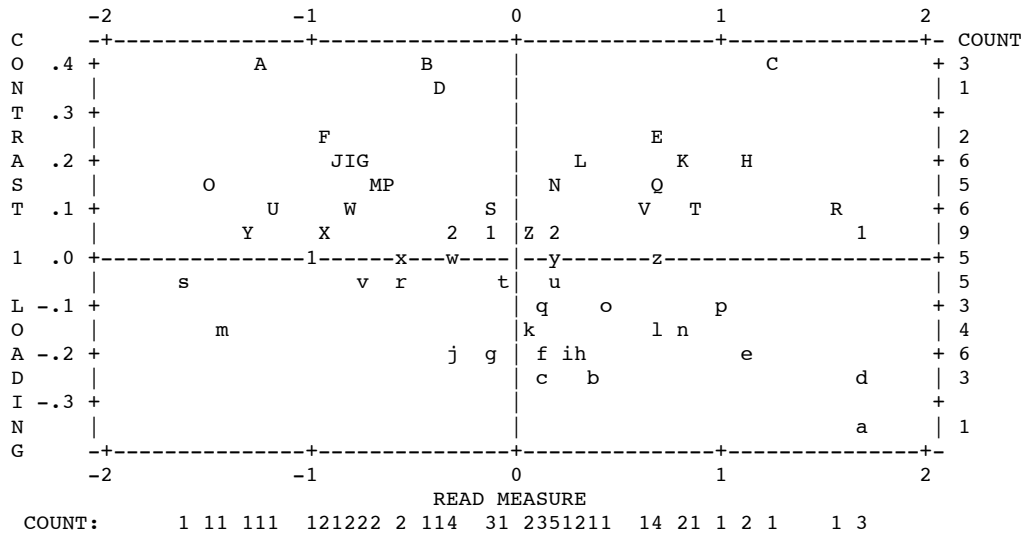


Table 21-2 (continued). Reading—Test Dimensionality

Table of STANDARDIZED RESIDUAL variance (in Eigenvalue units)

		-- Empirical --		Modeled
Total raw variance in observations	=	89.7	100.0%	100.0%
Raw variance explained by measures	=	30.7	34.2%	35.2%
Raw variance explained by persons	=	16.3	18.2%	18.7%
Raw Variance explained by items	=	14.4	16.0%	16.5%
Raw unexplained variance (total)	=	59.0	65.8%	100.0%
Unexplned variance in 1st contrast	=	1.8	2.0%	3.1%

STANDARDIZED RESIDUAL CONTRAST 1 PLOT



WRITING

Table 21-3. Writing—Test Dimensionality

Table of STANDARDIZED RESIDUAL variance (in Eigenvalue units)

		-- Empirical --		Modeled
Total raw variance in observations	=	50.9	100.0%	100.0%
Raw variance explained by measures	=	18.9	37.1%	36.0%
Raw variance explained by persons	=	14.5	28.5%	27.6%
Raw Variance explained by items	=	4.4	8.6%	8.4%
Raw unexplained variance (total)	=	32.0	62.9%	64.0%
Unexplned variance in 1st contrast	=	2.5	4.9%	7.8%
Unexplned variance in 2nd contrast	=	1.3	2.6%	4.1%
Unexplned variance in 3rd contrast	=	1.2	2.4%	3.9%
Unexplned variance in 4th contrast	=	1.2	2.3%	3.6%

STANDARDIZED RESIDUAL VARIANCE SCREE PLOT

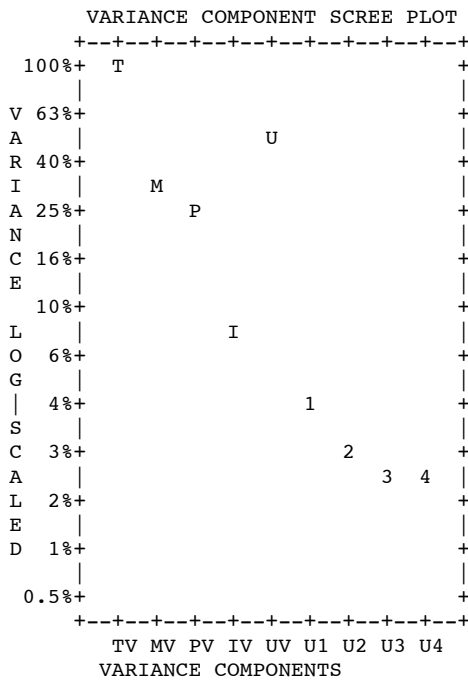


Table 21-3 (continued). Writing—Test Dimensionality

Table of STANDARDIZED RESIDUAL variance (in Eigenvalue units)

		-- Empirical --		Modeled
Total raw variance in observations	=	50.9	100.0%	100.0%
Raw variance explained by measures	=	18.9	37.1%	36.0%
Raw variance explained by persons	=	14.5	28.5%	27.6%
Raw Variance explained by items	=	4.4	8.6%	8.4%
Raw unexplained variance (total)	=	32.0	62.9%	100.0%
Unexplned variance in 1st contrast	=	2.5	4.9%	7.8%

STANDARDIZED RESIDUAL CONTRAST 1 PLOT

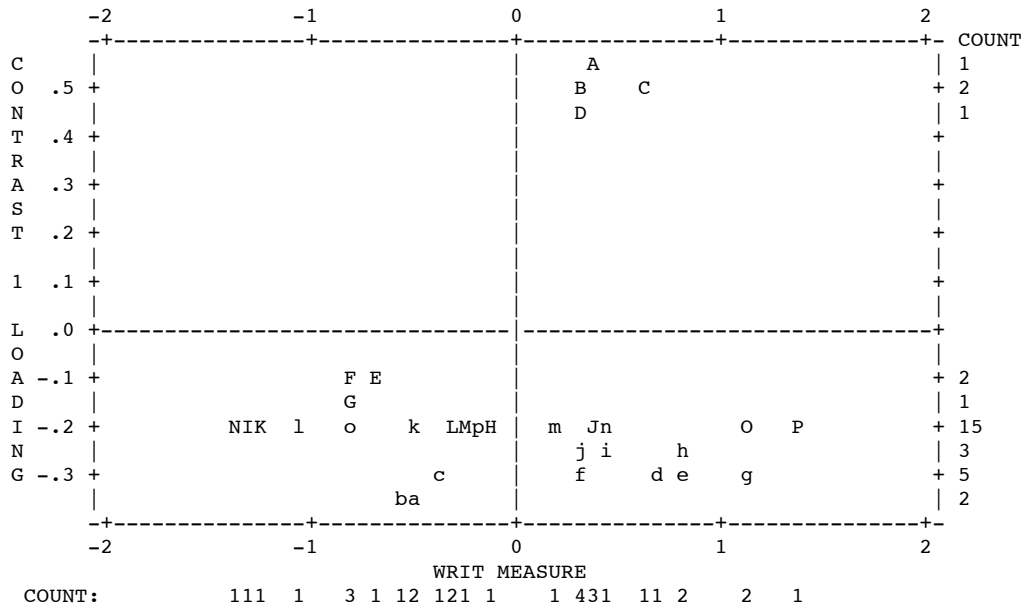


Table 21–3 (continued). Writing—Test Dimensionality

CONTRAST 1 FROM PRINCIPAL COMPONENT ANALYSIS

Table of STANDARDIZED RESIDUAL variance (in Eigenvalue units)

					-- Empirical --	Modeled
Total raw variance in observations	=	50.9	100.0%			100.0%
Raw variance explained by measures	=	18.9	37.1%			36.0%
Raw variance explained by persons	=	14.5	28.5%			27.6%
Raw Variance explained by items	=	4.4	8.6%			8.4%
Raw unexplained variance (total)	=	32.0	62.9%	100.0%		64.0%
Unexplnd variance in 1st contrast	=	2.5	4.9%	7.8%		

STANDARDIZED RESIDUAL LOADINGS FOR WRIT (SORTED BY LOADING)

CON- TRAST	LOADING	INFINIT OUTFIT			ENTRY NUMBER WRIT	G R	LOADING	INFINIT OUTFIT			ENTRY NUMBER WRIT	G R
		MEASURE	MNSQ	MNSQ WEIGHT				MEASURE	MNSQ	MNSQ WEIGHT		
1	.53	.3786	.80	.81 2	A 32 592205_49_FTF 0		-.34	-.4917	1.03	1.04 1	a 10 596081_18_FTD M	
1	.49	.3008	.77	.77 2	B 31 592201_42_FTF 0		-.33	-.5435	1.04	1.07 1	b 5 596022_10_FTD M	
1	.49	.6074	.90	.90 2	C 29 598822_17_FTD 0		-.32	-.3954	1.01	.92 1	c 18 599025_45_FTD M	
1	.45	.3310	.88	.88 2	D 28 592204_06_FTF 0		-.30	.6928	1.10	1.18 1	d 14 592093_37_FTF M	
							-.29	.7944	1.02	1.06 1	e 7 592160_12_FTF M	
							-.29	.2899	1.07	1.17 1	f 23 589057_53_FTF M	
							-.29	1.1549	1.07	1.19 1	g 9 599062_15_FTD M	
							-.27	.8302	.98	.98 1	h 27 592190_05_FTF 0	
							-.27	.4520	1.09	1.17 1	i 17 596080_44_FTD M	
							-.23	.2971	1.08	1.14 1	j 8 599033_13_FTD M	
							-.22	-.5074	1.06	1.13 1	k 12 599027_21_FTD M	
							-.22	-1.0635	.96	.89 1	l 13 592090_36_FTF M	
							-.22	.1808	1.12	1.26 1	m 21 589052_50_FTF M	
							-.22	.3609	.92	.93 1	n 30 592199_22_FTF 0	
							-.21	-.8376	1.02	1.08 1	o 22 589056_52_FTF M	
							-.21	-.2724	1.01	1.10 1	p 25 592120_55_FTF M	
							-.20	1.3460	1.05	1.13 1	P 11 596082_19_FTD M	
							-.20	1.1555	1.22	1.39 1	O 16 596078_43_FTD M	
							-.20	-1.3805	1.02	.98 1	N 4 596018_08_FTD M	
							-.20	-.3195	.98	.98 1	M 24 592118_54_FTF M	
							-.19	-.3019	1.03	1.06 1	L 20 592175_47_FTF M	
							-.19	-1.2810	1.01	1.00 1	K 1 596031_02_FTD M	
							-.19	.3793	1.11	1.28 1	J 19 596073_46_FTD M	
							-.18	-1.2880	.95	.91 1	I 15 592094_39_FTF M	
							-.18	-.1385	1.19	1.52 1	H 2 596035_03_FTD M	
							-.14	-.8190	.96	.95 1	G 6 596021_11_FTD M	
							-.12	-.8376	.98	.97 1	F 26 592124_56_FTF M	
							-.12	-.6918	1.17	1.54 1	E 3 596034_04_FTD M	

**LARGEST STANDARDIZED RESIDUAL CORRELATIONS
USED TO IDENTIFY DEPENDENT WRIT**

CORREL- ATION	ENTRY NUMBER WRIT	ENTRY NUMBER WRIT
.19	7 592160_12_FTF	11 596082_19_FTD
.15	31 592201_42_FTF	32 592205_49_FTF
-.16	7 592160_12_FTF	32 592205_49_FTF
-.16	29 598822_17_FTD	30 592199_22_FTF
-.16	10 596081_18_FTD	29 598822_17_FTD
-.16	18 599025_45_FTD	29 598822_17_FTD
-.15	10 596081_18_FTD	32 592205_49_FTF
-.15	23 589057_53_FTF	29 598822_17_FTD
-.15	27 592190_05_FTF	32 592205_49_FTF
-.15	5 596022_10_FTD	32 592205_49_FTF