Supplemental online material for

Investigating the Normativity of Trait Estimates From Multidimensional Forced-Choice Data

Hypotheses not listed in main text

RQ 1. Questionnaire design and MFC-IRT scoring

Item keying × trait correlations.

For each trait correlation level, there will be an optimum (or best performing) level of item keying:

H1d.2: For all uncorrelated traits, this level will be 1/2 mixed comparisons.

H1d.3: For mixed correlations, this will be 1/3 mixed comparisons.

H1d.4: For all positive correlations, this will be 1/3 mixed comparisons.

H1d.5: The effect in H1d.4 will be larger than those in H1d.2 and H1d.3.

Number of items per trait x trait correlations.

Trait correlations play a more important role in Unequal 2 than in Unequal 1 and for neuroticism than for the other traits.

H1e.1: The effect in H1b will be larger in Unequal 2 than in Unequal 1.

H1e.2: For mixed trait correlations, version Unequal 2 will yield better trait recovery than Unequal 1.

H1e.3: The effect in H1e.2 will be larger for neuroticism than for the other traits.

RQ 4. Questionnaire design and (partially) ipsative scoring

Items per trait × trait correlations.

H4e.1: The effect in H4b will be larger in Unequal 2 than in Unequal 1.

H4e.2: For mixed trait correlations, version Unequal 2 will yield better trait recovery than Unequal 1.

H4e.3: The effect in H4e.2 will be larger for neuroticism than for the other traits.

Details on the Design Matrices Used in the Simulation Study

Table S1

Number of traits	Number of items per trait	Pairwise trait comparisons missing	Block size	Blocks missing
5	Equal	0 (0%)	2	0
			3	0
			4	0
	Unequal 1/2	1 (0.1%)	2	1 (0.1%)
			3	3 (0.3%)
			4	3 (0.3%)
15	Equal	0	2	0
		2 (0.02%)	3	397 (4%)
		0	4	1336 (13%)
	Unequal 1/2	24 (23%)	2	24 (22%)
			3	392 (4%)
			4	1329 (13%)

The full design matrices can be found on:

https://osf.io/pcnwv/?view_only=35fae1b0ec474d768bf7688a17d16208

Table S2

Contrasts and % of variance in summary measures explained by questionnaire design within

Thurstonian IRT scoring for the simulation including 1/3 mixed comparisons.

Hyp.	Factor / Contrast	Variance explained			Contrast		
		$r(\theta,\hat{\theta})$	MAB	MSE	$r(\theta,\hat{\theta})$	MAB	MSE
	Main effects						
	Trait correlations	5	2	4			
	Questionnaire length	8	13	9			
	Item keying	66	68	67			
	Trait correlations × item keying	14	7	12			
	Residuals	7	9	7			
	Planned contrasts						
	In Unequal 2 vs. in Unequal 1						
H1e.1	mixed vs. uncorrelated	0	0	0	0.00	0.00	0.00
H1e.1	uncorrelated vs. all positive	0	0	0	0.00	0.00	0.00
	Unequal 2 vs. Unequal 1						
H1e.2	in mixed	0	0	0	0.00	0.01	0.01
	In uncorrelated						
H1d.2	0 vs. 1/2	2	1	2	-0.01	0.02	0.02
H1d.2	1/3 vs. 1/2	0	0	0	0.00	0.00	0.00
H1d.2	2/3 vs. 1/2	0	0	0	0.00	0.00	0.00
	In mixed						
H1d.3	0 vs. 1/3	5	3	4	0.01	-0.02	-0.02
H1d.3	1/2 vs. 1/3	0	0	0	0.00	0.00	0.00
H1d.3	2/3 vs. 1/3	0	0	0	0.00	0.00	0.00
	In all positive						
H1d.4	0 vs. 1/3	9	5	8	-0.10	0.11	0.16
H1d.4	1/2 vs. 1/3	0	0	0	0.00	0.00	0.00
H1d.4	2/3 vs. 1/3	0	0	0	0.00	0.00	0.00

Note. Hyp. = Hypothesis, MAB = mean absolute bias, MSE = mean squared error. Main

effects are based on the saturated model and are only shown when the associated variance

explanation was above 1%. Horizontal lines separate non-orthogonal contrasts. Block size

was fixed to 3 and number of traits to 5 in this simulation.

Table S3

Percentage of variance in summary measures explained by trait and questionnaire design within Thurstonian IRT scoring.

Hyp.	Factor	$r(\theta, \hat{\theta})$	MAB	MSE
	Number of Traits	4	3	3
	Trait correlations	9	7	9
	Blocksize	3	3	3
	Number of items per trait	0	1	0
	Item keying	43	47	44
	trait	4	5	4
	Number of Traits × Item keying	7	5	6
	Trait correlations × Item keying	20	16	19
	Number of items per trait × trait	6	9	6
H1e.3	Trait correlations × Item keying × Trait	0	0	0
	Residuals	4	4	4

Note. Hyp. = Hypothesis, MAB = mean absolute bias, MSE = mean squared error. Main effects are based on the saturated model and are only shown when the associated variance explanation was above 1%.

Table S4

Contrasts and % of variance in bias for the total score and for the Mahalanobis distance explained by questionnaire design within Thurstonian

IRT scoring.

Factor	Total Score		Mahalanobis Distance			
	MAB	MSE	Mean	Median	SD	Mean^2
Number of Traits	10	8	80	86	26	67
Trait correlations	6	10	4	4	4	5
Blocksize	0	0	3	3	2	4
Item keying	72	58	9	4	58	15
Number of Traits × Trait correlations	0	0	2	2	1	4
Number of Traits × Blocksize	0	0	1	1	0	2
Number of Traits × Item keying	2	7	0	0	4	0
Trait correlations × Item keying	9	17	0	0	3	1
Residuals	0	0	1	1	2	1
1/2, 2/3 vs. 0	72	58	9	4	58	15
15 vs. 5	2	7	0	0	4	0

Note. Hyp. = Hypothesis, MAB = mean absolute bias, MSE = mean squared error. Main effects are based on the saturated model and are only

shown when the associated variance explanation was above 1%.

Table S5

Means and standard deviations for relevant conditions of questionnaire design for the total score and the Mahalanobis distance.

Factor 1	Factor 2	Total Score				Mahalanobis Distance							
Number of Traits	Item keying	MAB		MSE		Mean		Median		SD		Mean^2	
5	0	0.38	(0.08)	0.24	(0.10)	1.42	(0.10)	1.00	(0.10)	1.35	(0.10)	3.84	(0.49)
	1/2	0.13	(0.01)	0.03	(0.01)	0.75	(0.11)	0.61	(0.10)	0.55	(0.08)	0.88	(0.26)
	2/3	0.12	(0.01)	0.02	(0.00)	0.78	(0.12)	0.63	(0.10)	0.58	(0.09)	0.96	(0.29)
15	0	0.25	(0.09)	0.11	(0.08)	2.95	(0.36)	2.63	(0.36)	1.53	(0.15)	11.22	(2.46)
	1/2	0.08	(0.01)	0.01	(0.00)	2.43	(0.42)	2.27	(0.39)	1.05	(0.18)	7.23	(2.38)
	2/3	0.07	(0.01)	0.01	(0.00)	2.49	(0.44)	2.31	(0.41)	1.08	(0.20)	7.57	(2.57)

Note. MAB = mean absolute bias, MSE = mean squared error. Standard deviations are given in parentheses.

Table S6

True and estimated reliability for relevant conditions of score type and block size.

Scoring	Blocksize	True Reliability		Estimated Reliability		Difference in Fisher Z	
MFC-IRT	2	0.85	(0.08)	0.86	(0.06)	-0.02	(0.12)
	3	0.83	(0.08)	0.86	(0.06)	-0.10	(0.11)
	4	0.82	(0.09)	0.86	(0.06)	-0.16	(0.10)
MFC-CTT	2	0.79	(0.11)	0.85	(0.04)	-0.17	(0.24)
	3	0.77	(0.11)	0.84	(0.05)	-0.17	(0.22)
	4	0.75	(0.11)	0.82	(0.05)	-0.16	(0.21)
RS-IRT	2	0.98	(0.01)	0.98	(0.01)	-0.13	(0.11)
	3	0.95	(0.02)	0.96	(0.02)	-0.06	(0.10)
	4	0.93	(0.02)	0.93	(0.03)	-0.02	(0.09)
TF-IRT	2	0.93	(0.02)	0.94	(0.02)	-0.03	(0.03)
	3	0.88	(0.03)	0.88	(0.03)	-0.02	(0.03)
	4	0.84	(0.04)	0.84	(0.05)	-0.01	(0.04)

Note. MFC = multidimensional forced-choice format, IRT = item response theory scoring, CTT = classical test theory scoring, RS = rating scale format, TF = true-false format. Standard deviations are given in parentheses.

Table S7

Contrasts and % of variance explained in summary measures by questionnaire design within

partially ipsative classical test theory scoring.

Hyp.	Factor	$r(\theta,\hat{\theta})$	MAB	MSE
	Number of Traits	1	0	1
	Trait correlations	9	7	9
	Blocksize	1	2	1
	Item keying	48	50	48
	Number of Traits × Item keying	4	4	4
	Trait correlations × Item keying	20	16	20
	Trait correlations × Number of items per trait × Item keying	1	0	1
	Residuals	16	19	16
H4a.1	1/2 vs. 2/3	0	0	0
H4a.2	1/2, 2/3 vs. 0	48	50	48
H4c	in mixed, uncorrelated vs. in all positive	19	15	19
	many vs. few traits	4	4	4
H4b	Mixed vs. uncorrelated	1	1	1
H4b	Uncorrelated vs. all positive	8	6	8
H4e.1	in Unequal 1	0	0	0
H4e.1		0	0	0
H4e.1	in Unequal 2	0	0	0
H4e.1		0	0	0
H4e.2	Unequal 2 vs. Unequal 1 in mixed	0	0	0

Note. Hyp. = Hypothesis, MAB = mean absolute bias, MSE = mean squared error. Main

effects are based on the saturated model and are only shown when the associated variance

explanation was above 1%. Horizontal lines separate non-orthogonal contrasts.

Table S8

Means and standard deviations of summary measures for relevant conditions of questionnaire design within partially ipsative classical test theory scoring.

Factor 1	Factor 2	$r(\theta,\hat{\theta})$		MAB		MSE	
Trait correlations	Item keying						
mixed	0	0.83	(0.05)	0.46	(0.07)	0.34	(0.10)
	1/2	0.91	(0.03)	0.34	(0.05)	0.19	(0.06)
	2/3	0.90	(0.03)	0.35	(0.05)	0.20	(0.06)
positive	0	0.72	(0.04)	0.59	(0.04)	0.55	(0.08)
	1/2	0.91	(0.03)	0.34	(0.05)	0.18	(0.05)
	2/3	0.91	(0.02)	0.33	(0.04)	0.18	(0.04)
uncorrelated	0	0.87	(0.04)	0.40	(0.05)	0.26	(0.07)
	1/2	0.91	(0.03)	0.34	(0.05)	0.18	(0.05)
	2/3	0.90	(0.02)	0.35	(0.04)	0.19	(0.05)
Number of Traits	Item keying						
5	0	0.76	(0.08)	0.54	(0.09)	0.47	(0.15)
	1/2	0.92	(0.02)	0.32	(0.05)	0.17	(0.05)
	2/3	0.91	(0.02)	0.34	(0.04)	0.18	(0.05)
15	0	0.82	(0.07)	0.47	(0.09)	0.35	(0.14)
	1/2	0.91	(0.03)	0.34	(0.05)	0.19	(0.05)
	2/3	0.90	(0.02)	0.35	(0.04)	0.19	(0.05)
Number of items per trait	Trait correlations						
Equal	mixed	0.88	(0.04)	0.39	(0.06)	0.24	(0.08)
	positive	0.85	(0.09)	0.43	(0.12)	0.31	(0.18)
	uncorrelated	0.89	(0.02)	0.36	(0.04)	0.21	(0.05)
Unequal 1	mixed	0.87	(0.07)	0.39	(0.10)	0.26	(0.13)
	positive	0.85	(0.10)	0.42	(0.13)	0.30	(0.19)
	uncorrelated	0.90	(0.04)	0.36	(0.06)	0.21	(0.08)
Unequal 2	mixed	0.89	(0.04)	0.37	(0.07)	0.23	(0.08)
	positive	0.85	(0.10)	0.42	(0.13)	0.30	(0.19)
	uncorrelated	0.90	(0.04)	0.36	(0.06)	0.21	(0.07)

Note. MAB = mean absolute bias, MSE = mean squared error. Standard deviations are given in parentheses.

Table S9

Percentage of variance explained in summary measures by trait and questionnaire design within partially ipsative classical test theory scoring.

Hyp.	Factor	$r(\theta, \hat{\theta})$	MAB	MSE
	Number of Traits	1	0	1
	Trait correlations	9	7	9
	Blocksize	1	2	1
	Item keying	48	50	48
	Trait	4	5	4
	Number of Traits × Item keying	4	4	4
	Trait correlations × Item keying	20	16	20
	Number of items per trait × Trait	5	7	5
	Item keying × Trait	1	1	1
	Trait correlations × Number of items per trait × Item keying	1	0	1
	Trait correlations × Item keying × Trait	1	1	1
	Number of items per trait × Item keying × Trait	0	1	0
	Trait correlations × Number of items per trait × Item keying × Trait	1	0	1
H4e.3	Trait correlations × Item keying × Trait	0	0	0
	Residuals	4	3	3

Note. Hyp. = Hypothesis, MAB = mean absolute bias, MSE = mean squared error. Main effects are based on the saturated model and are only shown when the associated variance explanation was above 1%.

Table S10

Contrasts and % of variance explained by questionnaire design for sums versus differences of

traits within partially ipsative classical test theory scoring.

Hyp.	Factor	MAB	MSE
	Trait correlations	4	5
	Blocksize	2	1
	Item keying	25	23
H4f.2	Sums vs. differences	14	13
	Number of Traits × Item keying	1	1
	Trait correlations × Item keying	10	12
	Trait correlations × Sums vs. differences	4	5
	Item keying × Sums vs. differences	23	22
	Trait correlations × Item keying × Sums vs. differences	6	9
	Residuals	9	6
H4f.4	sums vs. differences for many vs. few traits	0	0

Note. Hyp. = Hypothesis, MAB = mean absolute bias, MSE = mean squared error. Main

effects are based on the saturated model and are only shown when the associated variance

explanation was above 1%.

Table S11

Means and standard deviations of summary measures for relevant conditions of questionnaire design for sums and differences of traits within partially ipsative classical test theory scoring.

Factor 1	Factor 2	MAB		MSE	
Differences	5	0.47	(0.06)	0.36	(0.09)
Sums	5	0.64	(0.24)	0.74	(0.60)
Differences	15	0.48	(0.05)	0.37	(0.08)
Sums	15	0.59	(0.18)	0.61	(0.43)

Note. MAB = mean absolute bias, MSE = mean squared error. Standard deviations are given in parentheses.

Table S12

Predicted correlations in the empirical study on differentiation of judgments.

Construct/Criterion	N	E	O	A	C	Reference
Satisfaction with life	–	+	+	+	+	DeNeve & Cooper (1998); Judge, Heller, & Mount (2002); Nickel, Roberts, & Chernyshenko (2019)
Depression / mental health	–	+		+	+	Nickel et al. (2019); Strickhouser et al. (2017)
Quality of life	–	+		+	+	Nickel et al. (2019)
Supervision, number supervised, hire, fire, budget	–	+	+	+	+	Cheng & Furnham (2014)
Change of place of employment	–		+	–	–	Zimmerman (2008)
Facebook, number of Facebook friends		+				Wetzel & Frick (2019)
Body Mass Index					–	Nickel et al. (2019)
Excercise		+			+	Wilson & Dishman (2015)
Alcohol	+			–	–	Malouff et al. (2007)
Smoking	+			–	–	Bogg & Roberts (2004); Malouff et al. (2006)
Relationship duration, marriage, duration of marriage	–				+	Lodi-Smith & Roberts (2007)
Divorce	+			–	–	Roberts et al. (2007)
Time since divorce	+			–	–	
Break-up	+			–	–	
Charity work					+	Lodi-Smith & Roberts (2007)

Note. N = neuroticism, E = extraversion, O = openness, A = agreeableness, C = conscientiousness, + = positive correlation, – = negative correlation, empty fields = no correlation > |.1| expected.

Table S13

Standardized factor loadings from the Big Five Triplets in the multidimensional forced-choice versus the true-false version.

Trait	Item	loading MFC	loading TF	Est/SE MFC	Est/SE TF	*p*-value MFC	*p*-value TF
N	1	0.83	0.83	32.40	39.02	≤ .001	≤ .001
	6	0.61	0.84	14.27	37.09	≤ .001	≤ .001
	9	0.76	0.87	20.17	46.60	≤ .001	≤ .001
	12	0.82	0.76	21.71	23.44	≤ .001	≤ .001
	13	-0.76	0.70	-18.80	20.66	≤ .001	≤ .001
	22	-0.25	0.72	-4.37	25.99	≤ .001	≤ .001
	23	0.63	0.64	17.18	19.81	≤ .001	≤ .001
	27	-0.54	0.78	-9.10	29.93	≤ .001	≤ .001
	29	-0.64	0.82	-14.12	33.48	≤ .001	≤ .001
	32	-0.54	0.76	-9.12	29.37	≤ .001	≤ .001
	34	-0.55	0.74	-10.67	27.17	≤ .001	≤ .001
	39	-0.82	0.85	-9.49	37.02	≤ .001	≤ .001
	40	-0.58	0.65	-15.07	20.03	≤ .001	≤ .001
	43	-0.69	0.89	-14.35	47.52	≤ .001	≤ .001
	47	-0.77	0.83	-18.89	37.59	≤ .001	≤ .001
	50	-0.58	0.65	-12.35	20.21	≤ .001	≤ .001
	53	-0.60	0.76	-12.66	29.62	≤ .001	≤ .001
	57	-0.38	0.55	-6.55	15.96	≤ .001	≤ .001
E	2	-0.49	0.68	-11.01	20.78	≤ .001	≤ .001
	5	-0.74	0.75	-18.09	24.92	≤ .001	≤ .001
	7	-0.73	0.87	-20.22	36.97	≤ .001	≤ .001
	11	0.45	0.78	7.29	25.77	≤ .001	≤ .001
	14	0.74	0.66	21.24	16.27	≤ .001	≤ .001
	18	0.12	0.41	1.57	9.53	0.116	≤ .001

	20	-0.63	0.78	-12.71	24.81	≤ .001	≤ .001
	28	0.80	0.80	24.98	30.54	≤ .001	≤ .001
	33	0.83	0.85	22.04	31.57	≤ .001	≤ .001
	35	0.55	0.74	11.72	22.79	≤ .001	≤ .001
	49	0.74	0.62	22.37	18.27	≤ .001	≤ .001
	52	0.87	0.68	30.18	15.61	≤ .001	≤ .001
	60	0.74	0.81	20.35	30.56	≤ .001	≤ .001
O	10	-0.62	0.69	-9.94	16.17	≤ .001	≤ .001
	15	0.90	0.89	14.17	36.90	≤ .001	≤ .001
	17	-0.37	0.49	-6.78	10.64	≤ .001	≤ .001
	21	0.69	0.75	14.19	23.57	≤ .001	≤ .001
	23	0.24	0.23	4.65	5.17	≤ .001	≤ .001
	37	0.55	0.78	10.91	22.17	≤ .001	≤ .001
	42	0.80	0.93	13.49	34.23	≤ .001	≤ .001
	44	0.66	0.67	14.27	15.34	≤ .001	≤ .001
	48	0.81	0.83	17.66	30.39	≤ .001	≤ .001
	53	0.07	0.20	1.17	5.43	0.242	≤ .001
A	3	-0.61	0.74	-13.77	15.98	≤ .001	≤ .001
	4	-0.66	0.52	-10.11	10.18	≤ .001	≤ .001
	16	-0.34	-0.27	-4.62	-4.41	≤ .001	≤ .001
	24	0.49	0.78	5.30	17.31	≤ .001	≤ .001
	25	0.61	0.79	11.00	15.56	≤ .001	≤ .001
	55	0.59	0.68	9.73	12.34	≤ .001	≤ .001
	59	0.85	0.59	12.03	10.05	≤ .001	≤ .001
C	8	-0.02	0.43	-0.28	8.99	0.781	≤ .001
	19	0.50	0.36	8.65	7.67	≤ .001	≤ .001
	26	0.75	0.88	15.62	29.86	≤ .001	≤ .001
	30	0.70	0.75	13.09	22.33	≤ .001	≤ .001
	31	0.47	0.38	8.37	7.99	≤ .001	≤ .001
	36	0.83	0.73	15.79	21.41	≤ .001	≤ .001

38	0.53	0.57	11.43	14.42	≤ .001	≤ .001
41	0.72	0.58	14.97	11.95	≤ .001	≤ .001
45	0.52	0.78	7.36	23.35	≤ .001	≤ .001
46	0.50	0.58	9.45	12.97	≤ .001	≤ .001
51	0.77	0.66	12.70	15.13	≤ .001	≤ .001
54	0.47	0.71	7.61	18.20	≤ .001	≤ .001
56	0.36	0.67	5.82	16.45	≤ .001	≤ .001
58	0.35	0.44	5.48	8.40	≤ .001	≤ .001

Note. MFC = multidimensional forced-choice format, TF = true-false format, N = neuroticism, E = extraversion, O = openness, A = agreeableness, C = conscientiousness. Item numbers refer to item numbers in the Big Five Triplets (Wetzel & Frick, 2020). The Big Five Triplets are available from https://osf.io/ft9ud/.

Table S14

Model-based convergent validity coefficients for MFC and TF with significance tests and effect sizes of the differences

Criterion	Trait	Prediction	r MFC	r TF	R^2 MFC	R^2 TF	Z MFC	Z TF	Difference	Size	Est/SE	p-value
CES-D short form	N	+	0.74	0.81	0.55	0.66	0.96	1.13	-0.07	negligible	-1.50	0.13
	E	-	-0.22	-0.37	0.05	0.14	-0.22	-0.39	-0.15	small	3.34	≤ .001
	O	0	-0.13	-0.08	0.02	0.01	-0.14	-0.08				
	A	-	-0.08	-0.41	0.01	0.17	-0.08	-0.44	-0.33	medium	7.36	≤ .001
	C	-	-0.21	-0.30	0.04	0.09	-0.21	-0.31	-0.09	negligible	1.97	0.06
SWLS	N	-	-0.53	-0.60	0.28	0.37	-0.59	-0.70	-0.08	negligible	1.68	0.10
	E	+	0.18	0.37	0.03	0.14	0.18	0.39	-0.19	small	-4.18	≤ .001
	O	+	0.05	0.10	0.00	0.01	0.05	0.10	-0.05	negligible	-1.02	0.24
	A	+	0.11	0.38	0.01	0.14	0.11	0.40	-0.27	small	-5.97	≤ .001
	C	+	0.21	0.35	0.04	0.12	0.21	0.36	-0.14	small	-3.03	≤ .001
WHO-QoL BREF	N	-	-0.65	-0.74	0.43	0.55	-0.78	-0.95	-0.09	negligible	1.90	0.07
	E	+	0.22	0.40	0.05	0.16	0.22	0.42	-0.18	small	-3.97	≤ .001
	O	0	0.13	0.08	0.02	0.01	0.13	0.08				
	A	+	0.11	0.42	0.01	0.17	0.11	0.44	-0.30	medium	-6.78	≤ .001
	C	+	0.35	0.40	0.12	0.16	0.36	0.42	-0.05	negligible	-1.16	0.20

Subsample with Facebook account = yes												
Frequency of drinking alcohol	N	+	-0.09	-0.07	0.01	0.01	-0.09	-0.07	-0.02	negligible	-0.32	0.38
	E	0	0.15	0.16	0.02	0.03	0.15	0.16				
	O	0	-0.01	0.03	0.00	0.00	-0.01	0.03				
	A	-	0.10	0.14	0.01	0.02	0.10	0.15	0.05	negligible	-0.99	0.25
	C	-	-0.08	-0.08	0.01	0.01	-0.08	-0.08	0.01	negligible	-0.16	0.39
Body mass index	N	0	0.04	0.07	0.00	0.01	0.04	0.07				
	E	0	-0.01	-0.03	0.00	0.00	-0.01	-0.03				
	O	0	0.01	0.02	0.00	0.00	0.01	0.02				
	A	0	0.14	0.02	0.02	0.00	0.14	0.02				
	C	-	-0.22	-0.16	0.05	0.03	-0.22	-0.16	0.06	negligible	-1.02	0.24
Broke up with a romantic partner within the past 10 years	N	+	0.08	0.05	0.01	0.00	0.08	0.05	0.03	negligible	0.53	0.35
	E	0	0.14	0.11	0.02	0.01	0.14	0.11				
	O	0	0.17	0.16	0.03	0.03	0.18	0.17				
	A	-	0.06	-0.01	0.00	0.00	0.06	-0.01	-0.08	negligible	1.52	0.13
	C	-	-0.08	-0.07	0.01	0.01	-0.08	-0.07	0.01	negligible	-0.26	0.39

Divorced	N	+	0.02	0.03	0.00	0.00	0.02	0.03	-0.00	negligible	-0.08	0.40
	E	0	0.02	-0.01	0.00	0.00	0.02	-0.01				
	O	0	0.07	0.03	0.01	0.00	0.07	0.03				
	A	-	0.04	-0.06	0.00	0.00	0.04	-0.06	-0.10	negligible	1.87	0.07
	C	-	-0.04	-0.06	0.00	0.00	-0.04	-0.06	-0.02	negligible	0.43	0.36
Exercise regularly	N	0	-0.12	-0.13	0.01	0.02	-0.12	-0.13				
	E	+	0.07	0.12	0.00	0.01	0.07	0.12	-0.05	negligible	-0.99	0.25
	O	0	0.12	0.11	0.01	0.01	0.12	0.11				
	A	0	0.01	0.01	0.00	0.00	0.01	0.01				
	C	+	0.05	0.13	0.00	0.02	0.05	0.13	-0.08	negligible	-1.66	0.10
Time divorced	N	+	-0.10	-0.01	0.01	0.00	-0.10	-0.01	-0.09	negligible	-0.55	0.34
	E	0	0.11	0.13	0.01	0.02	0.11	0.13				
	O	0	-0.22	-0.03	0.05	0.00	-0.22	-0.03				
	A	-	-0.04	-0.07	0.00	0.00	-0.04	-0.07	-0.02	negligible	0.13	0.40
	C	-	0.17	0.04	0.03	0.00	0.18	0.04	-0.14	small	0.82	0.28
Time in marriage	N	-	0.02	-0.09	0.00	0.01	0.02	-0.09	-0.11	small	1.26	0.18
	E	0	-0.11	-0.05	0.01	0.00	-0.11	-0.05				
	O	0	-0.10	-0.11	0.01	0.01	-0.10	-0.11				
	A	0	0.05	0.00	0.00	0.00	0.05	0.00				

	C	+	-0.02	0.11	0.00	0.01	-0.02	0.11	-0.13	small	-1.50	0.13
Time in serious relationship	N	-	-0.18	-0.19	0.03	0.04	-0.18	-0.19	-0.00	negligible	0.07	0.40
	E	0	-0.14	-0.06	0.02	0.00	-0.14	-0.06				
	O	0	-0.10	-0.16	0.01	0.02	-0.10	-0.16				
	A	0	-0.04	0.03	0.00	0.00	-0.04	0.03				
	C	+	0.12	0.14	0.01	0.02	0.12	0.14	-0.03	negligible	-0.42	0.37
Married	N	-	-0.17	-0.16	0.03	0.03	-0.17	-0.16	0.02	negligible	-0.30	0.38
	E	0	-0.05	0.06	0.00	0.00	-0.05	0.06				
	O	0	-0.07	-0.08	0.01	0.01	-0.07	-0.08				
	A	0	0.03	0.15	0.00	0.02	0.03	0.15				
	C	+	0.16	0.13	0.03	0.02	0.16	0.13	0.03	negligible	0.59	0.34
Frequency of smoking cigarettes	N	+	-0.05	0.01	0.00	0.00	-0.05	0.01	-0.06	negligible	-1.24	0.19
	E	0	0.15	0.12	0.02	0.01	0.15	0.12				
	O	0	0.07	0.06	0.01	0.00	0.07	0.06				
	A	-	0.11	-0.03	0.01	0.00	0.11	-0.03	-0.14	small	2.78	0.01
	C	-	0.08	-0.01	0.01	0.00	0.08	-0.01	-0.09	negligible	1.79	0.08
Full sample												
Responsible for a budget	N	-	-0.08	-0.12	0.01	0.02	-0.08	-0.13	-0.04	negligible	0.76	0.30

	E	+	0.06	0.08	0.00	0.01	0.06	0.08	-0.02	negligible	-0.38	0.37
	O	+	0.07	0.08	0.01	0.01	0.07	0.08	-0.00	negligible	-0.07	0.40
	A	+	0.01	0.05	0.00	0.00	0.01	0.05	-0.03	negligible	-0.61	0.33
	C	+	0.04	0.08	0.00	0.01	0.04	0.08	-0.04	negligible	-0.68	0.32
Charity work	N	0	-0.09	-0.03	0.01	0.00	-0.09	-0.03				
	E	0	0.12	0.13	0.02	0.02	0.12	0.13				
	O	0	0.17	0.17	0.03	0.03	0.17	0.18				
	A	0	0.19	0.15	0.04	0.02	0.20	0.15				
	C	+	0.04	0.05	0.00	0.00	0.04	0.05	-0.01	negligible	-0.22	0.39
Facebook account	N	0	-0.06	-0.01	0.00	0.00	-0.06	-0.01				
	E	+	0.14	0.13	0.02	0.02	0.14	0.13	0.01	negligible	0.18	0.39
	O	0	0.01	-0.02	0.00	0.00	0.01	-0.02				
	A	0	0.12	0.11	0.02	0.01	0.12	0.11				
	C	0	0.01	-0.01	0.00	0.00	0.01	-0.01				
Ability to fire employees	N	-	-0.12	-0.10	0.02	0.01	-0.12	-0.10	0.03	negligible	-0.47	0.36
	E	+	0.08	0.08	0.01	0.01	0.08	0.08	-0.00	negligible	-0.04	0.40
	O	+	0.14	0.04	0.02	0.00	0.14	0.04	0.10	small	1.85	0.07
	A	+	0.00	-0.07	0.00	0.01	0.00	-0.07	0.07	negligible	1.27	0.18

	C	+	0.08	0.02	0.01	0.00	0.08	0.02	0.07	negligible	1.17	0.20
Ability to hire employees	N	-	-0.14	-0.17	0.02	0.03	-0.14	-0.18	-0.03	negligible	0.54	0.35
	E	+	0.06	0.08	0.00	0.01	0.06	0.08	-0.02	negligible	-0.34	0.38
	O	+	0.10	0.05	0.01	0.00	0.10	0.05	0.04	negligible	0.77	0.30
	A	+	0.01	-0.00	0.00	0.00	0.01	-0.00	0.01	negligible	0.14	0.40
	C	+	0.04	0.02	0.00	0.00	0.04	0.02	0.02	negligible	0.40	0.37
Number of facebook friends	N	0	-0.06	-0.04	0.00	0.00	-0.06	-0.04				
	E	+	0.33	0.32	0.11	0.10	0.34	0.33	0.01	negligible	0.15	0.39
	O	0	0.04	0.09	0.00	0.01	0.04	0.09				
	A	0	0.27	0.20	0.08	0.04	0.28	0.21				
	C	0	-0.07	-0.06	0.01	0.00	-0.07	-0.06				
Changed place of employment within the past 10 years	N	-	-0.02	-0.02	0.00	0.00	-0.02	-0.02	0.01	negligible	-0.13	0.40
	E	0	0.10	0.07	0.01	0.01	0.10	0.07				
	O	+	0.14	0.10	0.02	0.01	0.14	0.10	0.04	negligible	0.88	0.27
	A	-	0.02	-0.01	0.00	0.00	0.02	-0.01	-0.03	negligible	0.57	0.34
	C	-	-0.04	-0.04	0.00	0.00	-0.04	-0.04	0.00	negligible	0.00	0.40

Ability to supervise people at work	N	-	-0.17	-0.18	0.03	0.03	-0.17	-0.18	-0.01	negligible	0.25	0.39
	E	+	0.13	0.16	0.02	0.03	0.13	0.16	-0.03	negligible	-0.59	0.34
	O	+	0.08	0.05	0.01	0.00	0.08	0.05	0.04	negligible	0.63	0.33
	A	+	0.01	0.03	0.00	0.00	0.01	0.03	-0.02	negligible	-0.32	0.38
	C	+	0.08	0.05	0.01	0.00	0.08	0.05	0.04	negligible	0.63	0.33
Number of people supervised at work	N	-	-0.10	-0.05	0.01	0.00	-0.10	-0.05	0.05	negligible	-0.56	0.34
	E	+	0.08	0.09	0.01	0.01	0.08	0.09	-0.01	negligible	-0.07	0.40
	O	+	-0.06	-0.13	0.00	0.02	-0.06	-0.13	0.06	negligible	0.66	0.32
	A	+	0.19	-0.05	0.04	0.00	0.19	-0.05	0.24	small	2.50	0.02
	C	+	0.04	0.01	0.00	0.00	0.04	0.01	0.02	negligible	0.22	0.39
Subsample with MFC version at T1												
Married	N	-	-0.18	-0.11	0.03	0.01	-0.19	-0.11	0.07	negligible	-1.07	0.22
	E	0	-0.08	0.04	0.01	0.00	-0.08	0.04				
	O	0	0.01	-0.08	0.00	0.01	0.01	-0.08				
	A	0	0.03	0.11	0.00	0.01	0.03	0.11				
	C	+	0.22	0.16	0.05	0.02	0.23	0.16	0.07	negligible	1.04	0.23
Frequency of drinking alcohol	N	+	-0.12	-0.06	0.01	0.00	-0.12	-0.06	-0.06	negligible	-0.87	0.27

	E	0	0.13	0.18	0.02	0.03	0.13	0.19				
	O	0	0.01	-0.01	0.00	0.00	0.01	-0.01				
	A	-	0.13	0.14	0.02	0.02	0.14	0.14	0.00	negligible	-0.02	0.40
	C	-	-0.05	-0.08	0.00	0.01	-0.05	-0.08	-0.03	negligible	0.43	0.36
Body mass index	N	0	-0.04	0.06	0.00	0.00	-0.04	0.06				
	E	0	0.06	-0.00	0.00	0.00	0.06	-0.00				
	O	0	0.07	-0.02	0.01	0.00	0.07	-0.02				
	A	0	0.10	0.02	0.01	0.00	0.10	0.02				
	C	-	-0.07	-0.17	0.01	0.03	-0.07	-0.17	-0.10	small	1.45	0.14
Broke up with a romantic partner within the past 10 years	N	+	0.00	-0.00	0.00	0.00	0.00	-0.00	0.01	negligible	0.12	0.40
	E	0	0.18	0.13	0.03	0.02	0.18	0.13				
	O	0	0.13	0.12	0.02	0.01	0.13	0.12				
	A	-	0.07	-0.06	0.00	0.00	0.07	-0.06	-0.12	small	1.87	0.07
	C	-	-0.12	-0.09	0.01	0.01	-0.12	-0.09	0.03	negligible	-0.43	0.36
Divorced	N	+	-0.00	0.01	0.00	0.00	-0.00	0.01	-0.01	negligible	-0.15	0.39
	E	0	0.07	0.04	0.00	0.00	0.07	0.04				
	O	0	0.03	0.03	0.00	0.00	0.03	0.03				

	A	-	0.07	-0.04	0.01	0.00	0.07	-0.04	-0.11	small	1.70	0.09
	C	-	-0.08	-0.07	0.01	0.01	-0.08	-0.07	0.01	negligible	-0.11	0.40
Exercise regularly	N	0	-0.15	-0.15	0.02	0.02	-0.15	-0.15				
	E	+	0.03	0.13	0.00	0.02	0.03	0.13	-0.09	negligible	-1.43	0.14
	O	0	0.09	0.06	0.01	0.00	0.09	0.06				
	A	0	0.03	0.00	0.00	0.00	0.03	0.00				
	C	+	0.04	0.15	0.00	0.02	0.04	0.15	-0.11	small	-1.66	0.10
Time divorced	N	+	0.24	0.14	0.06	0.02	0.24	0.15	0.09	negligible	0.43	0.36
	E	0	-0.04	0.19	0.00	0.04	-0.04	0.19				
	O	0	-0.45	-0.22	0.20	0.05	-0.48	-0.22				
	A	-	-0.52	-0.51	0.27	0.26	-0.58	-0.56	0.01	negligible	-0.07	0.40
	C	-	0.26	0.09	0.07	0.01	0.26	0.09	-0.17	small	0.78	0.30
Time in marriage	N	-	-0.00	-0.09	0.00	0.01	-0.00	-0.09	-0.09	negligible	0.83	0.28
	E	0	-0.15	-0.08	0.02	0.01	-0.15	-0.08				
	O	0	-0.09	-0.09	0.01	0.01	-0.09	-0.09				
	A	0	0.02	0.06	0.00	0.00	0.02	0.06				
	C	+	-0.11	0.09	0.01	0.01	-0.11	0.09	-0.21	small	-1.86	0.07
Time in serious relationship	N	-	-0.20	-0.14	0.04	0.02	-0.20	-0.14	0.06	negligible	-0.71	0.31
	E	0	-0.10	-0.04	0.01	0.00	-0.10	-0.04				

	O	0	-0.11	-0.14	0.01	0.02	-0.11	-0.14				
	A	0	0.01	0.11	0.00	0.01	0.01	0.11				
	C	+	0.12	0.14	0.02	0.02	0.12	0.14	-0.01	negligible	-0.16	0.39
Frequency of smoking cigarettes	N	+	0.01	0.11	0.00	0.01	0.01	0.11	-0.10	small	-1.55	0.12
	E	0	0.13	0.11	0.02	0.01	0.13	0.11				
	O	0	0.11	0.03	0.01	0.00	0.11	0.03				
	A	-	0.12	-0.08	0.01	0.01	0.12	-0.08	-0.20	small	3.02	≤ .001
	C	-	0.14	-0.03	0.02	0.00	0.14	-0.03	-0.17	small	2.58	0.01

Note: MFC = multidimensional forced-choice format, TF = true-false format, N = neuroticism, E = extraversion, O = openness, A = agreeableness, C = conscientiousness, CES-D short form = Center for Epidemiologic Studies–Depression Scale, SWLS = Satisfaction with Life Scale, WHO-QoL BREF = World Health Organization Quality of Life BREF.
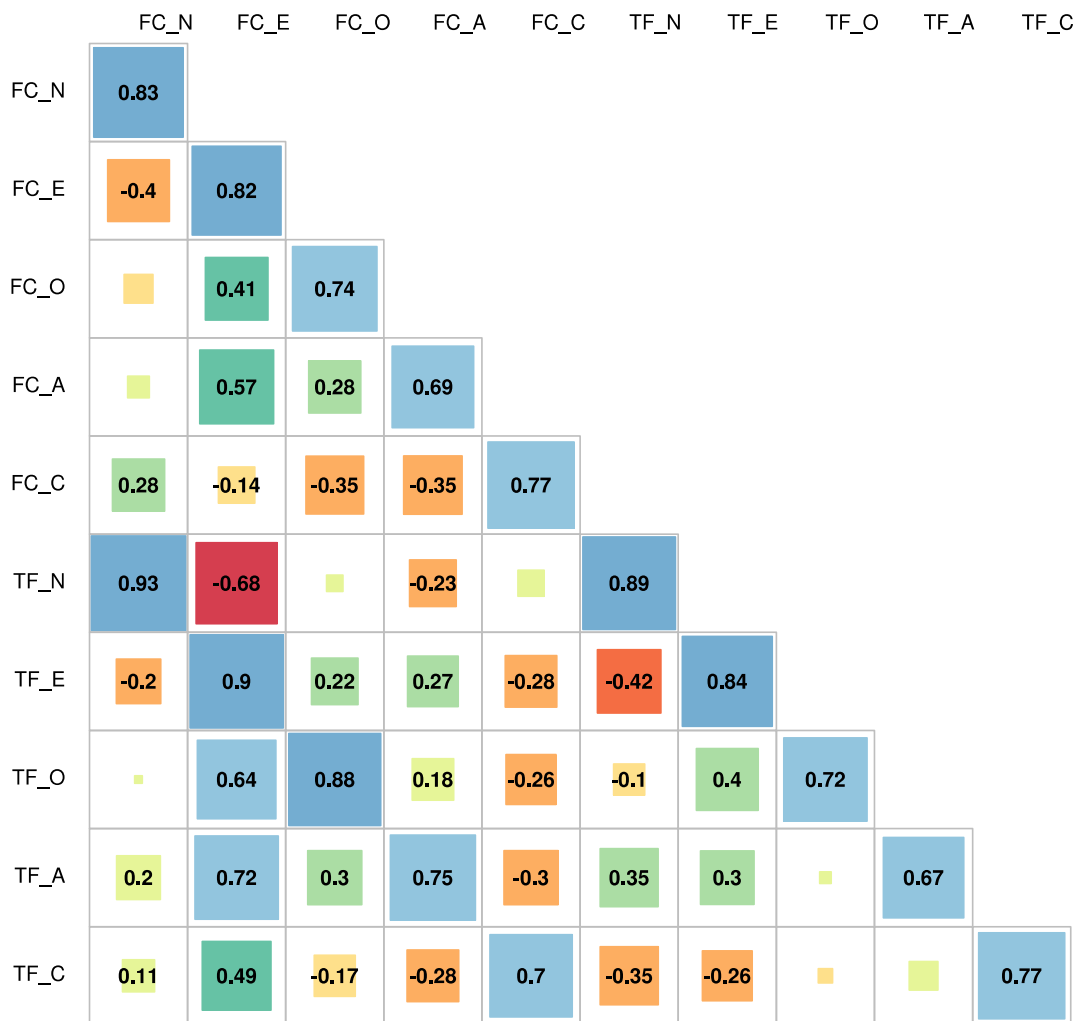
Figure S1. Multitrait multimethod matrix for the Big Five measured with the multidimensional forced-choice (FC) and true-false (TF) version of the Big Five Triplets. N = neuroticism, E = extraversion, O = openness to experience, A = agreeableness, C = conscientiousness.

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