

Erratum to:

**Asking the Right Questions: Increasing Fairness and Accuracy of
Personality Assessments with Computerised Adaptive Testing**

Doctoral Thesis

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In the original publication of this thesis, column headings of Tables 25 and 26 (p. 108-113) have been entered incorrectly. The “semi-partial correlations” columns should instead be labelled as “squared semi-partial correlations”. The correct tables are provided in this erratum.

In the original publication of this thesis, in Tables 57 and 58 (p. 190) the text “FC: similar social desirability” should instead read “FC: unmatched social desirability”. The correct tables are provided in this erratum.

The online version of the original thesis can be found at: <https://kar.kent.ac.uk/82765/>.

Table 25. Cross-classified regression model with Fisher-Z-transformed true-estimated score correlations as outcome variable

<u>Fixed effects</u>	<u>Baseline variance components only</u>		<u>Main effects only</u>			<u>Main effects and interactions</u>		
	<u>B</u>	<u>SE</u>	<u>B</u>	<u>SE</u>	<u>Squared semi-partial correlations</u>	<u>B</u>	<u>SE</u>	<u>Squared semi-partial correlations</u>
(Intercept)	1.462***	0.024	0.672***	0.035		0.639***	0.028	
Test length			0.201***	0.007	.057	0.204***	0.007	.105
Test length ²			-0.015***	0.001	.016	-0.015***	0.001	.034
WCI			0.158***	0.029	.134	0.247***	0.019	.070
A-optimality			0.288***	0.029	.339	0.336***	0.019	.122
C-optimality			0.158***	0.029	.134	0.333***	0.032	.100
D-optimality			0.252***	0.029	.282	0.271***	0.023	.079
T-optimality			0.107***	0.029	.066	0.156***	0.025	.027
Scale correlation mixed			0.071***	0.02	.059	0.185***	0.018	.070
Scale correlation positive			-0.042*	0.02	.021	-0.095***	0.019	.019
Negative items			0.272***	0.017	.578	0.208***	0.019	.111
Dynamic scale plan			-0.011	0.017	.002	-0.003	0.01	.000
Strict social desirability			-0.030^	0.017	.016	-0.030**	0.009	.035

<u>Fixed effects</u>	<u>Baseline variance components only</u>		<u>Main effects only</u>			<u>Main effects and interactions</u>		
	<u>B</u>	<u>SE</u>	<u>B</u>	<u>SE</u>	<u>Squared semi-partial correlations</u>	<u>B</u>	<u>SE</u>	<u>Squared semi-partial correlations</u>
Test length × Scale correlation mixed						−0.004*	0.002	.001
Test length × Scale correlation positive						0.004^	0.002	.001
Test length × Negative items						0.026***	0.002	.032
Scale correlation mixed × Negative items						−0.178***	0.023	.173
Scale correlation positive × Negative items						0.094***	0.023	.055
Test length × WCI						−0.025***	0.003	.011
Test length × A-optimality						−0.014***	0.003	.003
Test length × C-optimality						−0.015***	0.003	.004
Test length × D-optimality						−0.015***	0.003	.004
Test length × T-optimality						−0.024***	0.003	.009
C-optimality × Scale correlation mixed						−0.057^	0.03	.012
C-optimality × Scale correlation positive						0.058^	0.031	.012
T-optimality × Scale correlation positive						−0.107***	0.027	.051
C-optimality × Negative items						−0.194***	0.026	.158
D-optimality × Negative items						0.065*	0.026	.020
T-optimality × Negative items						0.142***	0.026	.091
C-optimality × Dynamic scale plan						−0.049^	0.025	.013

	<u>Baseline variance components only</u>	<u>Main effects only</u>	<u>Main effects and interactions</u>
<u>Random effects</u>	<u>Variance</u>	<u>Variance</u>	<u>Variance</u>
CAT session sample	0.0384	0.0099	0.0029
Scale	0.0011	0.0011	0.0011
Residual	0.0155	0.0025	0.0022

Significance codes: < .001 ‘***’; .001-.01 ‘**’; .01-.05 ‘*’; .05-.1 ‘^’.

Test length was scaled to 1 = 6 items per scale.

Table 26. Cross-classified regression model with RMSEs as outcome variable

<u>Fixed effects</u>	<u>Baseline variance components only</u>		<u>Main effects only</u>			<u>Main effects and interactions</u>		
	<u>B</u>	<u>SE</u>	<u>B</u>	<u>SE</u>	<u>Squared semi-partial correlations</u>	<u>B</u>	<u>SE</u>	<u>Squared semi-partial correlations</u>
(Intercept)	0.448***	0.010	0.774***	0.015		0.798***	0.012	
Test length			-0.088***	0.003	.059	-0.096***	0.003	.125
Test length ²			0.007***	0.000	.020	0.007***	0.000	.042
WCI			-0.066***	0.012	.128	-0.095***	0.009	.055
A-optimality			-0.115***	0.012	.309	-0.139***	0.009	.111
C-optimality			-0.069***	0.012	.136	-0.137***	0.013	.093
D-optimality			-0.101***	0.012	.254	-0.126***	0.009	.093
T-optimality			-0.041**	0.012	.053	-0.056***	0.010	.019
Scale correlation mixed			-0.027**	0.009	.046	-0.077***	0.008	.066
Scale correlation positive			0.021*	0.009	.028	0.091***	0.010	.082
Negative items			-0.106***	0.007	.530	-0.106***	0.008	.154
Dynamic scale plan			0.005	0.007	.002	0.002	0.004	.001
Strict social desirability			0.012	0.007	.014	0.012**	0.004	.029

<u>Fixed effects</u>	<u>Baseline variance components only</u>		<u>Main effects only</u>			<u>Main effects and interactions</u>		
	<u>B</u>	<u>SE</u>	<u>B</u>	<u>SE</u>	<u>Squared semi-partial correlations</u>	<u>B</u>	<u>SE</u>	<u>Squared semi-partial correlations</u>
Test length × Scale correlation mixed						0.003**	0.001	.001
Test length × Scale correlation positive						-0.003**	0.001	.001
Test length × Negative items						-0.004***	0.001	.004
Scale correlation mixed × Negative items						0.073***	0.010	.162
Scale correlation positive × Negative items						-0.044***	0.010	.065
Test length × WCI						0.014***	0.001	.016
Test length × A-optimality						0.012***	0.001	.013
Test length × C-optimality						0.009***	0.001	.007
Test length × D-optimality						0.012***	0.001	.012
Test length × T-optimality						0.013***	0.001	.014
C-optimality × Scale correlation mixed						0.026*	0.013	.014
WCI × Scale correlation positive						-0.057***	0.012	.066
A-optimality × Scale correlation positive						-0.057***	0.012	.065
C-optimality × Scale correlation positive						-0.068***	0.014	.072
D-optimality × Scale correlation positive						-0.048***	0.012	.047
C-optimality × Negative items						0.082***	0.011	.164
T-optimality × Negative items						-0.059***	0.011	.090
C-optimality × Dynamic scale plan						0.019^	0.010	.011

	<u>Baseline variance components only</u>	<u>Main effects only</u>	<u>Main effects and interactions</u>
<u>Random effects</u>	<u>Variance</u>	<u>Variance</u>	<u>Variance</u>
CAT Session Sample	0.0063	0.0018	0.0005
Scale	0.0002	0.0002	0.0002
Residual	0.0025	0.0004	0.0004

Significance codes: <.001 ‘***’; .001-.01 ‘**’; .01-.05 ‘*’; .05-.1 ‘^’.

Test length was scaled to 1 = 6 items per scale.

Table 57. Participant perception around item utility and social desirability

<u>Frequency of occurrence</u>	<u>FC: similar utility</u> (N=1,045)	<u>FC: unmatched social desirability</u> (N=1,081)	<u>SS: obvious social desirability</u> (N=1,090)
0% of the time	1.1%	1.5%	3.3%
25% of the time	30.8%	36.7%	35.3%
50% of the time	42.8%	34.4%	30.6%
75% of the time	23.3%	18.8%	19.9%
100% of the time	2.0%	2.2%	4.1%
Don't know	0.0%	6.4%	6.7%

Table 58. Kruskal-Wallis rank sum test of participant perception of item utility and social desirability

<u>Feedback question*</u>	<u>Kruskal-Wallis</u> <u>chi-squared</u>	<u>df</u>	<u>p-value</u>
FC: similar utility	2.84	3	.42
FC: unmatched social desirability	6.70	3	.08
SS: obvious social desirability	2.46	3	.48

* For significance testing, "don't know" responses were treated as missing.