psychology international

MDPI

Correction

Correction: Vispoel et al. Extending Applications of Generalizability Theory-Based Bifactor Model Designs. *Psych* 2023, *5*, 545–575

Walter P. Vispoel [1,*], Hyeryung Lee [1], Tingting Chen [1] and Hyeri Hong [2]

[1] Department of Psychological and Quantitative Foundations, University of Iowa, Iowa City, IA 52242, USA; hyeryung-lee@uiowa.edu (H.L.); tingting-chen@uiowa.edu (T.C.)
[2] Department of Curriculum and Instruction, California State University, Fresno, CA 93740, USA; hyerihong@mail.fresnostate.edu
* Correspondence: walter-vispoel@uiowa.edu

In the original publication [1], there were errors in text and tables.

Text Correction

(1) It is now fixed in the sentence "To enable readers to apply these techniques, we provide detailed formulas, code in R, and sample data for conducting all demonstrated analyses within this article".

A correction has been made to the abstract:

"To enable readers to apply these techniques, we provide detailed formulas, code in R, and sample data for conducting all demonstrated analyses".

(2) The word "The" was missing in the sentence below and equation number 19 was incorrectly notated.

A correction has been made to equation number: 19.

The PRMSE index for a subscale reduces to its reliability coefficient (conventional or GT-based), and the corresponding PRMSE index for its composite can be estimated using Equation (19).

$$\text{PRMSE}_{(\text{composite})} = r^2_{U_{subscale_j} U_{composite}} * G\ coefficient_{(composite)}, \text{where U} = \text{universe score.} \quad (19)$$

(3) The mistakes in Equation (19) further required changes to sentences explaining the results on Section 5.2 (Paragraph 10), Section 5.3 (Paragraph 3), Section 6.3 (Paragraph 1), Section 6.4 (Paragraph 1) and Section 7 (Paragraph 1).

Corrections have been made to Section 5.2 (Paragraph 10), Section 5.3 (Paragraph 3), Section 6.3 (Paragraph 1), Section 6.4 (Paragraph 1) and Section 7 (Paragraph 1):

Section 5.2 (Paragraph 10)

VARs for designs with the number of items equaling 4, 8, and 12 and the number of occasions equaling 1, 2, and 3 are shown in Table 9 for all scales. Prophecy graphs showing VARs for all subscales such as those shown in Figure 2 for all in-between values for the number of items are provided in our online Supplemental Material. In line with the ECV/EUV ratios just reported, VAR values in Table 9 for the baseline design (Design 1) support added value (i.e., confidence interval lower limits exceed 1.000) for just the aesthetic sensitivity subscale. In most cases, VARs increase with added items and/or occasions but typically to a diminishing degree with progressively similar incremental changes. For the aesthetic sensitivity subscale, lower confidence interval limits for VARs exceed 1.000 in all designs. For the creative imagination subscale, confidence interval lower limits exceed 1.000 with 4 items across 3 occasions, 8 items across 1, 2, or 3 occasions, and 12 items across 1, 2, or 3 occasions. Finally, the intellectual curiosity subscale only yields confidence interval lower limits above 1.00 with 12 items across 2 or 3 occasions. Overall, these results underscore

check for updates

Citation: Vispoel, W.P.; Lee, H.; Chen, T.; Hong, H. Correction: Vispoel et al. Extending Applications of Generalizability Theory-Based Bifactor Model Designs. *Psych* 2023, *5*, 545–575. *Psychol. Int.* **2024**, *6*, 636–643. https://doi.org/10.3390/psycholint6020038

Received: 13 March 2024
Accepted: 11 April 2024
Published: 28 May 2024

the benefits of altered GT–bifactor designs not only in gauging possible improvements in subscale score generalizability and dependability but also in isolating specific conditions that would support added value for any given subscale.

Section 5.3 (Paragraph 3)

Scale viability and added value. Results for scale viability and added value for the restricted designs in Table 11 again show that general factor effects exceed group factor effects for all scales and that ECV/EUV ratios are lowest for aesthetic sensitivity and highest for intellectual curiosity. Added value is supported (lower confidence interval limits exceed 1.000) for aesthetic sensitivity and creative imagination in all designs shown and for intellectual curiosity in all designs except within the *persons* × *items* design with 4 items per subscale. Overall, these results demonstrate that subscale added value depends both on the construct being measured and the specific source(s) of measurement error being modeled.

Section 6.3 (Paragraph 1)

As a result, the denominator of D coefficients takes both relative inter-person and mean differences in item and occasion scores into account when representing overall dependability of scores and levels of agreement in score location when making decisions based on individual cut scores.

Section 6.4 (Paragraph 1)

Given the sizable contribution of the group factor effects to universe score variance for aesthetic sensitivity and the negligible contribution for intellectual curiosity, aesthetic sensitivity scores satisfied the criterion for added value with confidence interval lower limits exceeding 1.000 in the baseline and subsequent expanded facet condition designs, but intellectual curiosity did so only when tripling numbers of items and pooling results over 2 or 3 occasions.

Section 7 (Paragraph 1)

Scale viability and added-value indices best supported reporting of aesthetic sensitivity and creative imagination subscales in addition to composite scores.

Error in Table and Legend

There were mistakes in Tables 1–4, 9 and 11 as published. Table 1, the table caption was missing the word "estimating". Some equations were incorrectly notated, and hat symbols for estimated parameters were missing. Tables 2–4, some equations were incorrectly notated. Tables 9 and 11, the mistake in Equation (19) required some corrections to these indices, and the explanation in the table footer was incomplete. The corrected Tables 1–4, 9 and 11 appear below.

Table 1. Formulas for estimating item-level variance components for composite and subscale scores.

Composite	Subscale
$\hat{\sigma}^2_{general(C)} = \left(\sum_{j=1}^{n_j} \left(\frac{n_{i(j)}}{n_I} \hat{\delta}_j \right) \right)^2$	$\hat{\sigma}^2_{general(j)} = \hat{\delta}^2_j$
$\hat{\sigma}^2_{group(C)} = \sum_{j=1}^{n_j} \left(\frac{n_{i(j)}}{n_I} \hat{\lambda}_j \right)^2$	$\hat{\sigma}^2_{group(j)} = \hat{\lambda}^2_j$
$\hat{\sigma}^2_{pi(C)} = \sum_{j=1}^{n_j} \left(\left(\frac{n_{i(j)}}{n_I} \right)^2 \hat{\sigma}^2_{pi(j)} \right)$	$\hat{\sigma}^2_{pi(j)} = \hat{\sigma}^2_{pi(j)}$
$\hat{\sigma}^2_{po(C)} = \left(\sum_{j=1}^{n_j} \left(\frac{n_{i(j)}}{n_I} \hat{\beta}_j \right) \right)^2$	$\hat{\sigma}^2_{po(j)} = \hat{\beta}^2_j$

Table 1. *Cont.*

Composite	Subscale
$\hat{\sigma}^2_{pio,e(C)} = \sum_{j=1}^{n_j}\left(\left(\frac{n_{i(j)}}{n_I}\right)^2\hat{\sigma}^2_{pio,e(j)}\right)$	$\hat{\sigma}^2_{pio,e(j)} = \hat{\sigma}^2_{pio,e(j)}$
$\hat{\sigma}^2_{i(C)} = \sum_{j=1}^{n_j}\left(\left(\frac{n_{i(j)}}{n_I}\right)^2\frac{1}{n_{i(j)}-1}\sum_{i=1}^{n_{i(j)}}(item\ factor\ mean_i)^2\right)$	$\hat{\sigma}^2_{i(j)} = \frac{1}{n_{i(j)}-1}\sum_{i=1}^{n_{i(j)}}(item\ factor\ mean_i)^2$
$\hat{\sigma}^2_{o(C)} = \sum_{j=1}^{n_j}\left(\left(\frac{n_{i(j)}}{n_I}\right)^2\frac{1}{n_o-1}\sum_{i=1}^{n_o}(occasion\ factor\ mean_i)^2\right)$	$\hat{\sigma}^2_{o(j)} = \frac{1}{n_o-1}\sum_{i=1}^{n_o}(occasion\ factor\ mean_i)^2$
$\hat{\sigma}^2_{io(C)} = \sum_{j=1}^{n_j}\left(\left(\frac{n_{i(j)}}{n_I}\right)^2\frac{1}{\left(n_{i(j)}-1\right)\times(n_o-1)}\sum_{i=1}^{n_{i(j)}\times n_o}(intercept_i)^2\right)$	$\hat{\sigma}^2_{io(j)} = \frac{1}{\left(n_{i(j)}-1\right)\times(n_o-1)}\sum_{i=1}^{n_{i(j)}\times n_o}(intercept_i)^2$

Note. n_j: number of subscales, n_I: number of items in the composite scale, n_o: number of occasions, $n_{i(j)}$: number of items in the j_{th} subscale.

Table 2. Prophecy formulas for key GT-based indices within *persons* × *items* × *occasions* designs.

Formula
G coefficient $= \frac{\left(\hat{\sigma}^2_{(general)}+\hat{\sigma}^2_{(group)}\right)}{\left(\hat{\sigma}^2_{(general)}+\hat{\sigma}^2_{(group)}\right)+\left(\frac{\hat{\sigma}^2_{(pi)}}{n'_i}+\frac{\hat{\sigma}^2_{(po)}}{n'_o}+\frac{\hat{\sigma}^2_{(pio,e)}}{n'_in'_o}\right)}$
Proportion of general factor variance $= \frac{\hat{\sigma}^2_{(general)}}{\left(\hat{\sigma}^2_{(general)}+\hat{\sigma}^2_{(group)}\right)+\left(\frac{\hat{\sigma}^2_{(pi)}}{n'_i}+\frac{\hat{\sigma}^2_{(po)}}{n'_o}+\frac{\hat{\sigma}^2_{(pio,e)}}{n'_in'_o}\right)}$
Proportion of group factor variance $= \frac{\hat{\sigma}^2_{(group)}}{\left(\hat{\sigma}^2_{(general)}+\hat{\sigma}^2_{(group)}\right)+\left(\frac{\hat{\sigma}^2_{(pi)}}{n'_i}+\frac{\hat{\sigma}^2_{(po)}}{n'_o}+\frac{\hat{\sigma}^2_{(pio,e)}}{n'_in'_o}\right)}$
Global D coefficient $= \frac{\left(\hat{\sigma}^2_{(general)}+\hat{\sigma}^2_{(group)}\right)}{\left(\hat{\sigma}^2_{(general)}+\hat{\sigma}^2_{(group)}\right)+\left(\frac{\hat{\sigma}^2_{(pi)}+\hat{\sigma}^2_{(i)}}{n'_i}+\frac{\hat{\sigma}^2_{(po)}+\hat{\sigma}^2_{(o)}}{n'_o}+\frac{\hat{\sigma}^2_{(pio,e)}+\hat{\sigma}^2_{(io)}}{n'_in'_o}\right)}$
Cut-score-specific D coefficient $= \frac{\left(\hat{\sigma}^2_{(general)}+\hat{\sigma}^2_{(group)}\right)+\left[\left(\overline{Y}-Cut\ Score\right)^2-\hat{\sigma}^2_{\overline{Y}}\right]}{\left(\hat{\sigma}^2_{(general)}+\hat{\sigma}^2_{(group)}\right)+\left[\left(\overline{Y}-Cut\ Score\right)^2-\hat{\sigma}^2_{\overline{Y}}\right]+\left(\frac{\hat{\sigma}^2_{(pi)}+\hat{\sigma}^2_{(i)}}{n'_i}+\frac{\hat{\sigma}^2_{(po)}+\hat{\sigma}^2_{(o)}}{n'_o}+\frac{\hat{\sigma}^2_{(pio,e)}+\hat{\sigma}^2_{(io)}}{n'_in'_o}\right)}$
where $\hat{\sigma}^2_{\overline{Y}} = \frac{\hat{\sigma}^2_{(general)}+\hat{\sigma}^2_{(group)}}{n'_p}+\frac{\hat{\sigma}^2_{(pi)}}{n'_pn'_i}+\frac{\hat{\sigma}^2_{(po)}}{n'_pn'_o}+\frac{\hat{\sigma}^2_{(pio,e)}}{n'_pn'_in'_o}+\frac{\hat{\sigma}^2_{(i)}}{n'_i}+\frac{\hat{\sigma}^2_{(o)}}{n'_o}+\frac{\hat{\sigma}^2_{(io)}}{n'_in'_o}$
Proportion of specific-factor error variance $= \frac{\frac{\hat{\sigma}^2_{(pi)}}{n'_i}}{\left(\hat{\sigma}^2_{(general)}+\hat{\sigma}^2_{(group)}\right)+\left(\frac{\hat{\sigma}^2_{(pi)}}{n'_i}+\frac{\hat{\sigma}^2_{(po)}}{n'_o}+\frac{\hat{\sigma}^2_{(pio,e)}}{n'_in'_o}\right)}$
Proportion of transient error variance $= \frac{\frac{\hat{\sigma}^2_{(po)}}{n'_o}}{\left(\hat{\sigma}^2_{(general)}+\hat{\sigma}^2_{(group)}\right)+\left(\frac{\hat{\sigma}^2_{(pi)}}{n'_i}+\frac{\hat{\sigma}^2_{(po)}}{n'_o}+\frac{\hat{\sigma}^2_{(pio,e)}}{n'_in'_o}\right)}$
Proportion of random-response error variance $= \frac{\frac{\hat{\sigma}^2_{(pio,e)}}{n'_in'_o}}{\left(\hat{\sigma}^2_{(general)}+\hat{\sigma}^2_{(group)}\right)+\left(\frac{\hat{\sigma}^2_{(pi)}}{n'_i}+\frac{\hat{\sigma}^2_{(po)}}{n'_o}+\frac{\hat{\sigma}^2_{(pio,e)}}{n'_in'_o}\right)}$
Value-added ratio $= \frac{G\ coefficient_{(subscale_j)}}{r^2_{U_{subscale_j}U_{composite}}*G\ coefficeint_{(composite)}}$, where U = universe score.

Note. Item-level variance components for composites and subscales from Table 1 are used within these formulas. Primes appear over *n*s in the equations to signify that they can be changed in decision studies.

Table 3. Prophecy formulas for key GT-based indices within restricted *persons* × *items* designs.

Formula
$\text{G coefficient} = \frac{\left(\hat{\sigma}^2_{(general)} + \hat{\sigma}^2_{(group)} + \frac{\hat{\sigma}^2_{(po)}}{n'_o}\right)}{\left(\hat{\sigma}^2_{(general)} + \hat{\sigma}^2_{(group)} + \frac{\hat{\sigma}^2_{(po)}}{n'_o}\right) + \left(\frac{\hat{\sigma}^2_{(pi)}}{n'_i} + \frac{\hat{\sigma}^2_{(pio,e)}}{n'_i n'_o}\right)}$
$\text{Global D coefficient} = \frac{\left(\hat{\sigma}^2_{(general)} + \hat{\sigma}^2_{(group)} + \frac{\hat{\sigma}^2_{(po)}}{n'_o}\right)}{\left(\hat{\sigma}^2_{(general)} + \hat{\sigma}^2_{(group)} + \frac{\hat{\sigma}^2_{(po)}}{n'_o}\right) + \left(\frac{\hat{\sigma}^2_{(pi)} + \hat{\sigma}^2_{(i)}}{n'_i} + \frac{\hat{\sigma}^2_{(pio,e)} + \hat{\sigma}^2_{(io)}}{n'_i n'_o}\right)}$
$\text{Cut-score-specific D coefficient} = \frac{\left(\hat{\sigma}^2_{(general)} + \hat{\sigma}^2_{(group)}\right) + \left[\left(\overline{Y} - Cut\ Score\right)^2 - \hat{\sigma}^2_{\overline{Y}}\right]}{\left(\hat{\sigma}^2_{(general)} + \hat{\sigma}^2_{(group)}\right) + \left[\left(\overline{Y} - Cut\ Score\right)^2 - \hat{\sigma}^2_{\overline{Y}}\right] + \left(\frac{\hat{\sigma}^2_{(pi)} + \hat{\sigma}^2_{(i)}}{n'_i} + \frac{\hat{\sigma}^2_{(po)} + \hat{\sigma}^2_{(o)}}{n'_o} + \frac{\hat{\sigma}^2_{(pio,e)} + \hat{\sigma}^2_{(io)}}{n'_i n'_o}\right)},$ where $\hat{\sigma}^2_{\overline{Y}} = \frac{\hat{\sigma}^2_{(general)} + \hat{\sigma}^2_{(group)}}{n'_p} + \frac{\hat{\sigma}^2_{(pi)}}{n'_p n'_i} + \frac{\hat{\sigma}^2_{(po)}}{n'_p n'_o} + \frac{\hat{\sigma}^2_{(pio,e)}}{n'_p n'_i n'_o} + \frac{\hat{\sigma}^2_{(i)}}{n'_i} + \frac{\hat{\sigma}^2_{(io)}}{n'_i n'_o}$
$\text{Total error} = \frac{\frac{\hat{\sigma}^2_{(pi)}}{n'_i} + \frac{\hat{\sigma}^2_{(pio,e)}}{n'_i n'_o}}{\left(\hat{\sigma}^2_{(general)} + \hat{\sigma}^2_{(group)} + \frac{\hat{\sigma}^2_{(po)}}{n'_o}\right) + \left(\frac{\hat{\sigma}^2_{(pi)}}{n'_i} + \frac{\hat{\sigma}^2_{(pio,e)}}{n'_i n'_o}\right)}$
$\text{Value-added ratio} = \frac{G\ coefficient_{(subscale_j)}}{r^2_{U_{subscale_j}\ U_{composite}} * G\ coefficeint_{(composite)}}$, where U = universe score.

Note. Item-level variance components for composites and subscales from Table 1 are used within these formulas. Primes appear over *n*s in the equations to signify that they can be changed in decision studies.

Table 4. Prophecy formulas for key GT-based indices within restricted *persons* × *occasions* designs.

Formula
$\text{G coefficient} = \frac{\left(\hat{\sigma}^2_{(general)} + \hat{\sigma}^2_{(group)} + \frac{\hat{\sigma}^2_{(pi)}}{n'_i}\right)}{\left(\hat{\sigma}^2_{(general)} + \hat{\sigma}^2_{(group)} + \frac{\hat{\sigma}^2_{(pi)}}{n'_i}\right) + \left(\frac{\hat{\sigma}^2_{(po)}}{n'_o} + \frac{\hat{\sigma}^2_{(pio,e)}}{n'_i n'_o}\right)}$
$\text{Global D coefficient} = \frac{\left(\hat{\sigma}^2_{(general)} + \hat{\sigma}^2_{(group)} + \frac{\hat{\sigma}^2_{(pi)}}{n'_i}\right)}{\left(\hat{\sigma}^2_{(general)} + \hat{\sigma}^2_{(group)} + \frac{\hat{\sigma}^2_{(pi)}}{n'_i}\right) + \left(\frac{\hat{\sigma}^2_{(po)} + \hat{\sigma}^2_{(o)}}{n'_o} + \frac{\hat{\sigma}^2_{(pio,e)} + \hat{\sigma}^2_{(io)}}{n'_i n'_o}\right)}$
$\text{Cut-score-specific D coefficient} = \frac{\left(\hat{\sigma}^2_{(general)} + \hat{\sigma}^2_{(group)} + \frac{\hat{\sigma}^2_{(pi)}}{n'_i}\right) + \left[\left(\overline{Y} - Cut\ Score\right)^2 - \hat{\sigma}^2_{\overline{Y}}\right]}{\left(\hat{\sigma}^2_{(general)} + \hat{\sigma}^2_{(group)} + \frac{\hat{\sigma}^2_{(pi)}}{n'_i}\right) + \left[\left(\overline{Y} - Cut\ Score\right)^2 - \hat{\sigma}^2_{\overline{Y}}\right] + \left(\frac{\hat{\sigma}^2_{(po)} + \hat{\sigma}^2_{(o)}}{n'_o} + \frac{\hat{\sigma}^2_{(pio,e)} + \hat{\sigma}^2_{(io)}}{n'_i n'_o}\right)}$ where $\hat{\sigma}^2_{\overline{Y}} = \frac{\hat{\sigma}^2_{(general)} + \hat{\sigma}^2_{(group)}}{n'_p} + \frac{\hat{\sigma}^2_{(pi)}}{n'_p n'_i} + \frac{\hat{\sigma}^2_{(po)}}{n'_p n'_o} + \frac{\hat{\sigma}^2_{(pio,e)}}{n'_p n'_i n'_o} + \frac{\hat{\sigma}^2_{(o)}}{n'_o} + \frac{\hat{\sigma}^2_{(io)}}{n'_i n'_o}$
$\text{Total error} = \frac{\frac{\hat{\sigma}^2_{(po)}}{n'_o} + \frac{\hat{\sigma}^2_{(pio,e)}}{n'_i n'_o}}{\left(\hat{\sigma}^2_{(general)} + \hat{\sigma}^2_{(group)} + \frac{\hat{\sigma}^2_{(pi)}}{n'_i}\right) + \left(\frac{\hat{\sigma}^2_{(po)}}{n'_o} + \frac{\hat{\sigma}^2_{(pio,e)}}{n'_i n'_o}\right)}$
$\text{Value-added ratio} = \frac{G\ coefficient_{(subscale_j)}}{r^2_{U_{subscale_j}\ U_{composite}} * G\ coefficeint_{(composite)}}$, where U = universe score.

Note. Item-level variance components for composites and subscales from Table 1 are used within these formulas. Primes appear over *n*s in the equations to signify that they can be changed in decision studies.

Table 9. Scale viability and added-value indices for BFI-2 open-mindedness composite and subscale scores for *persons* × *items* × *occasions* full designs.

Design/Scale	Index (CI)					
	ECV	**EUV**	**ECV/EUV**	**PRMSE(s)**	**PRMSE(c)**	**VAR**
Design 1: *i*(*s*) = 4, *o* = 1						
Open-Mindedness	0.882 (0.867, 0.894)	0.118 (0.106, 0.133)	7.509 (6.531, 8.412)			
Aesthetic Sensitivity	0.582 (0.534, 0.629)	0.418 (0.371, 0.466)	1.391 (1.145, 1.699)	0.719 (0.692, 0.740)	0.634 (0.607, 0.658)	1.135 (1.094, 1.178)
Creative Imagination	0.702 (0.641, 0.762)	0.298 (0.238, 0.359)	2.357 (1.784, 3.206)	0.632 (0.583, 0.673)	0.624 (0.594, 0.652)	1.012 (0.928, 1.096)
Intellectual Curiosity	0.957 (0.839, 1.000)	0.043 (0.000, 0.161)	22.170 (5.229, 2026.368)	0.628 (0.585, 0.667)	0.687 (0.648, 0.712)	0.914 (0.855, 1.000)
Subscale Average	0.747	0.253	8.639	0.659	0.648	1.020
Design 2: *i*(*s*) = 4, *o* = 2						
Open-Mindedness	0.882 (0.867, 0.894)	0.118 (0.106, 0.133)	7.509 (6.534, 8.417)			
Aesthetic Sensitivity	0.582 (0.534, 0.629)	0.418 (0.371, 0.466)	1.391 (1.144, 1.696)	0.779 (0.758, 0.796)	0.683 (0.660, 0.703)	1.140 (1.106, 1.177)
Creative Imagination	0.702 (0.641, 0.762)	0.298 (0.238, 0.359)	2.357 (1.785, 3.200)	0.716 (0.677, 0.751)	0.672 (0.645, 0.697)	1.065 (0.995, 1.137)
Intellectual Curiosity	0.957 (0.840, 1.000)	0.043 (0.000, 0.160)	22.170 (5.231, 2028.344)	0.701 (0.667, 0.735)	0.740 (0.702, 0.761)	0.948 (0.899, 1.028)
Subscale Average	0.747	0.253	8.639	0.732	0.698	1.051
Design 3: *i*(*s*) = 4, *o* = 3						
Open-Mindedness	0.882 (0.867, 0.894)	0.118 (0.106, 0.133)	7.509 (6.532, 8.421)			
Aesthetic Sensitivity	0.582 (0.534, 0.630)	0.418 (0.370, 0.466)	1.391 (1.145, 1.702)	0.801 (0.781, 0.818)	0.701 (0.679, 0.720)	1.142 (1.110, 1.179)
Creative Imagination	0.702 (0.641, 0.762)	0.298 (0.238, 0.359)	2.357 (1.783, 3.209)	0.750 (0.714, 0.782)	0.690 (0.664, 0.714)	1.086 (1.021, 1.155)
Intellectual Curiosity	0.957 (0.840, 1.000)	0.043 (0.000, 0.160)	22.170 (5.248, 2038.343)	0.729 (0.698, 0.762)	0.759 (0.722, 0.779)	0.961 (0.915, 1.039)
Subscale Average	0.747	0.253	8.639	0.760	0.717	1.063
Design 4: *i*(*s*) = 8, *o* = 1						
Open-Mindedness	0.882 (0.867, 0.894)	0.118 (0.106, 0.133)	7.509 (6.531, 8.420)			
Aesthetic Sensitivity	0.582 (0.534, 0.629)	0.418 (0.371, 0.466)	1.391 (1.145, 1.697)	0.825 (0.793, 0.846)	0.680 (0.650, 0.706)	1.213 (1.172, 1.256)
Creative Imagination	0.702 (0.641, 0.762)	0.298 (0.238, 0.359)	2.357 (1.786, 3.205)	0.734 (0.675, 0.783)	0.670 (0.637, 0.700)	1.096 (1.002, 1.186)
Intellectual Curiosity	0.957 (0.840, 0.999)	0.043 (0.001, 0.160)	22.170 (5.250, 1964.877)	0.745 (0.692, 0.789)	0.737 (0.694, 0.765)	1.011 (0.944, 1.097)
Subscale Average	0.747	0.253	8.639	0.768	0.696	1.107
Design 5: *i*(*s*) = 8, *o* = 2						
Open-Mindedness	0.882 (0.867, 0.894)	0.118 (0.106, 0.133)	7.509 (6.531, 8.415)			
Aesthetic Sensitivity	0.582 (0.533, 0.629)	0.418 (0.371, 0.467)	1.391 (1.143, 1.697)	0.869 (0.849, 0.884)	0.723 (0.698, 0.744)	1.203 (1.171, 1.238)
Creative Imagination	0.702 (0.641, 0.762)	0.298 (0.238, 0.359)	2.357 (1.784, 3.201)	0.811 (0.769, 0.845)	0.712 (0.683, 0.738)	1.139 (1.069, 1.209)
Intellectual Curiosity	0.957 (0.839, 1.000)	0.043 (0.000, 0.161)	22.170 (5.218, 2044.612)	0.809 (0.772, 0.840)	0.783 (0.743, 0.805)	1.034 (0.985, 1.108)
Subscale Average	0.747	0.253	8.639	0.830	0.739	1.125
Design 6: *i*(*s*) = 8, *o* = 3						
Open-Mindedness	0.882 (0.867, 0.894)	0.118 (0.106, 0.133)	7.509 (6.533, 8.420)			
Aesthetic Sensitivity	0.582 (0.533, 0.630)	0.418 (0.370, 0.467)	1.391 (1.143, 1.700)	0.885 (0.868, 0.898)	0.738 (0.715, 0.758)	1.199 (1.169, 1.233)
Creative Imagination	0.702 (0.641, 0.762)	0.298 (0.238, 0.359)	2.357 (1.785, 3.207)	0.840 (0.806, 0.868)	0.727 (0.699, 0.751)	1.156 (1.094, 1.219)
Intellectual Curiosity	0.957 (0.839, 1.000)	0.043 (0.000, 0.161)	22.170 (5.214, 2033.926)	0.833 (0.803, 0.860)	0.799 (0.759, 0.820)	1.042 (1.000, 1.114)
Subscale Average	0.747	0.253	8.639	0.852	0.755	1.132

Table 9. *Cont.*

Design/Scale	Index (CI)					
	ECV	EUV	ECV/EUV	PRMSE(s)	PRMSE(c)	VAR
Design 7: *i*(s) = 12, *o* = 1						
Open-Mindedness	0.882 (0.867, 0.894)	0.118 (0.106, 0.133)	7.509 (6.527, 8.420)			
Aesthetic Sensitivity	0.582 (0.534, 0.630)	0.418 (0.370, 0.466)	1.391 (1.144, 1.699)	0.867 (0.833, 0.889)	0.697 (0.666, 0.724)	1.244 (1.203, 1.287)
Creative Imagination	0.702 (0.640, 0.762)	0.298 (0.238, 0.360)	2.357 (1.781, 3.206)	0.776 (0.711, 0.828)	0.687 (0.652, 0.718)	1.130 (1.032, 1.223)
Intellectual Curiosity	0.957 (0.839, 1.000)	0.043 (0.000, 0.161)	22.170 (5.220, 2101.003)	0.795 (0.736, 0.841)	0.755 (0.711, 0.784)	1.052 (0.981, 1.138)
Subscale Average	0.747	0.253	8.639	0.813	0.713	1.142
Design 8: *i*(s) = 12, *o* = 2						
Open-Mindedness	0.882 (0.867, 0.894)	0.118 (0.106, 0.133)	7.509 (6.529, 8.419)			
Aesthetic Sensitivity	0.582 (0.534, 0.629)	0.418 (0.371, 0.466)	1.391 (1.144, 1.698)	0.904 (0.883, 0.918)	0.737 (0.712, 0.759)	1.227 (1.196, 1.261)
Creative Imagination	0.702 (0.641, 0.762)	0.298 (0.238, 0.359)	2.357 (1.783, 3.205)	0.848 (0.805, 0.882)	0.726 (0.696, 0.752)	1.168 (1.098, 1.238)
Intellectual Curiosity	0.957 (0.840, 1.000)	0.043 (0.000, 0.160)	22.170 (5.236, 2032.403)	0.853 (0.815, 0.883)	0.798 (0.757, 0.821)	1.068 (1.020, 1.141)
Subscale Average	0.747	0.253	8.639	0.868	0.754	1.155
Design 9: *i*(s) = 12, *o* = 3						
Open-Mindedness	0.882 (0.867, 0.894)	0.118 (0.106, 0.133)	7.509 (6.535, 8.414)			
Aesthetic Sensitivity	0.582 (0.534, 0.630)	0.418 (0.370, 0.466)	1.391 (1.144, 1.699)	0.917 (0.901, 0.928)	0.751 (0.728, 0.771)	1.221 (1.192, 1.254)
Creative Imagination	0.702 (0.641, 0.762)	0.298 (0.238, 0.359)	2.357 (1.783, 3.202)	0.875 (0.842, 0.901)	0.740 (0.712, 0.765)	1.183 (1.123, 1.245)
Intellectual Curiosity	0.957 (0.840, 1.000)	0.043 (0.000, 0.160)	22.170 (5.262, 2048.940)	0.874 (0.845, 0.898)	0.814 (0.773, 0.835)	1.074 (1.034, 1.144)
Subscale Average	0.747	0.253	8.639	0.889	0.768	1.159

Note. *i*(s) = items per subscale, *o* = occasion(s), CI = 95% confidence interval limits, ECV = explained common variance, EUV = explained unique variance, PRMSE(c) = proportional reduction in mean squared error for composite score, PRMSE(s) = proportional reduction in mean squared error for subscale score, and VAR = value-added ratio. Values for ECV, EUV, and ECV/EUV are the same across designs because loadings for general and group factors remain constant within the prophecy formulas and the number of items is the same across subscales.

Table 11. Scale viability and added-value indices for BFI-2 open-mindedness composite and subscale scores within restricted designs.

Design/Scale	Index (CI)					
	ECV	EUV	ECV/EUV	PRMSE(s)	PRMSE(c)	VAR
Persons* × *Items						
Design 1: *i*(s) = 4						
Open-Mindedness	0.882 (0.867, 0.894)	0.118 (0.106, 0.133)	7.509 (6.532, 8.421)			
Aesthetic Sensitivity	0.582 (0.533, 0.630)	0.418 (0.370, 0.467)	1.391 (1.143, 1.701)	0.744 (0.730, 0.759)	0.633 (0.606, 0.657)	1.175 (1.122, 1.240)
Creative Imagination	0.702 (0.641, 0.762)	0.298 (0.238, 0.359)	2.357 (1.786, 3.202)	0.722 (0.700, 0.745)	0.608 (0.577, 0.636)	1.186 (1.114, 1.275)
Intellectual Curiosity	0.957 (0.839, 1.000)	0.043 (0.000, 0.161)	22.170 (5.218, 2050.789)	0.685 (0.665, 0.713)	0.670 (0.629, 0.701)	1.021 (0.960, 1.124)
Subscale Average	0.747	0.253	8.639	0.717	0.637	1.127

Table 11. *Cont.*

Design/Scale	Index (CI)					
	ECV	**EUV**	**ECV/EUV**	**PRMSE(s)**	**PRMSE(c)**	**VAR**
Design 2: *i*(*s*) = 8						
Open-Mindedness	0.882 (0.867, 0.894)	0.118 (0.106, 0.133)	7.509 (6.532, 8.419)			
Aesthetic Sensitivity	0.582 (0.533, 0.630)	0.418 (0.370, 0.467)	1.391 (1.143, 1.699)	0.853 (0.844, 0.863)	0.679 (0.650, 0.706)	1.255 (1.203, 1.320)
Creative Imagination	0.702 (0.641, 0.762)	0.298 (0.238, 0.359)	2.357 (1.785, 3.202)	0.838 (0.824, 0.854)	0.653 (0.619, 0.683)	1.284 (1.215, 1.368)
Intellectual Curiosity	0.957 (0.840, 1.000)	0.043 (0.000, 0.160)	22.170 (5.251, 2043.285)	0.813 (0.799, 0.832)	0.720 (0.674, 0.753)	1.130 (1.070, 1.227)
Subscale Average	0.747	0.253	8.639	0.835	0.684	1.223
Design 3: *i*(*s*) = 12						
Open-Mindedness	0.882 (0.867, 0.894)	0.118 (0.106, 0.133)	7.509 (6.531, 8.422)			
Aesthetic Sensitivity	0.582 (0.534, 0.630)	0.418 (0.370, 0.466)	1.391 (1.144, 1.699)	0.897 (0.890, 0.904)	0.696 (0.666, 0.724)	1.288 (1.236, 1.352)
Creative Imagination	0.702 (0.641, 0.762)	0.298 (0.238, 0.359)	2.357 (1.787, 3.205)	0.886 (0.875, 0.897)	0.669 (0.634, 0.701)	1.324 (1.256, 1.407)
Intellectual Curiosity	0.957 (0.840, 0.999)	0.043 (0.001, 0.160)	22.170 (5.231, 1986.216)	0.867 (0.856, 0.882)	0.738 (0.691, 0.772)	1.175 (1.116, 1.270)
Subscale Average	0.747	0.253	8.639	0.883	0.701	1.262
Persons* × *Occasions						
Design 1: *o* = 1						
Open-Mindedness	0.882 (0.867, 0.894)	0.118 (0.106, 0.133)	7.509 (6.532, 8.423)			
Aesthetic Sensitivity	0.582 (0.533, 0.630)	0.418 (0.370, 0.467)	1.391 (1.143, 1.699)	0.847 (0.819, 0.869)	0.634 (0.608, 0.656)	1.337 (1.293, 1.384)
Creative Imagination	0.702 (0.641, 0.762)	0.298 (0.238, 0.359)	2.357 (1.783, 3.205)	0.764 (0.717, 0.804)	0.603 (0.576, 0.628)	1.267 (1.187, 1.348)
Intellectual Curiosity	0.957 (0.839, 1.000)	0.043 (0.000, 0.161)	22.170 (5.223, 2041.584)	0.791 (0.747, 0.828)	0.650 (0.618, 0.674)	1.217 (1.154, 1.294)
Subscale Average	0.747	0.253	8.639	0.801	0.629	1.274
Design 2: *o* = 2						
Open-Mindedness	0.882 (0.867, 0.894)	0.118 (0.106, 0.133)	7.509 (6.536, 8.422)			
Aesthetic Sensitivity	0.582 (0.533, 0.630)	0.418 (0.370, 0.467)	1.391 (1.144, 1.701)	0.917 (0.901, 0.930)	0.683 (0.662, 0.702)	1.343 (1.310, 1.380)
Creative Imagination	0.702 (0.641, 0.762)	0.298 (0.238, 0.359)	2.357 (1.786, 3.203)	0.866 (0.835, 0.891)	0.650 (0.626, 0.671)	1.333 (1.276, 1.393)
Intellectual Curiosity	0.957 (0.840, 1.000)	0.043 (0.000, 0.160)	22.170 (5.265, 2027.910)	0.883 (0.855, 0.906)	0.700 (0.671, 0.720)	1.262 (1.218, 1.322)
Subscale Average	0.747	0.253	8.639	0.889	0.678	1.313
Design 3: *o* = 3						
Open-Mindedness	0.882 (0.867, 0.894)	0.118 (0.106, 0.133)	7.509 (6.529, 8.418)			
Aesthetic Sensitivity	0.582 (0.534, 0.629)	0.418 (0.371, 0.466)	1.391 (1.145, 1.698)	0.943 (0.931, 0.952)	0.701 (0.681, 0.719)	1.346 (1.315, 1.380)
Creative Imagination	0.702 (0.641, 0.762)	0.298 (0.238, 0.359)	2.357 (1.784, 3.209)	0.907 (0.884, 0.925)	0.667 (0.644, 0.687)	1.360 (1.311, 1.412)
Intellectual Curiosity	0.957 (0.840, 1.000)	0.043 (0.000, 0.160)	22.170 (5.240, 2012.269)	0.919 (0.898, 0.935)	0.718 (0.690, 0.737)	1.279 (1.242, 1.335)
Subscale Average	0.747	0.253	8.639	0.923	0.695	1.328

Note. *i*(*s*) = items per subscale, *o* = occasion(s), CI = 95% confidence interval limits, ECV = explained common variance, EUV = explained unique variance, PRMSE(c) = proportional reduction in mean squared error for composite score, PRMSE(s) = proportional reduction in mean squared error for subscale score, and VAR = value-added ratio. Values for ECV, EUV, and ECV/EUV are the same across designs because loadings for general and group factors remain constant within the prophecy formulas and the number of items is the same across subscales.

The authors state that the scientific conclusions are unaffected. This correction was approved by the Academic Editor. The original publication has also been updated.

Reference

1. Vispoel, W.P.; Lee, H.; Chen, T.; Hong, H. Extending Applications of Generalizability Theory-Based Bifactor Model Designs. *Psych* **2023**, *5*, 545–575. [CrossRef]