

SHORT COMMUNICATION

Careless responses and construct validity of Wong–Law Emotional Intelligence Scale

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Abstract

Careless response in the investigation of emotional intelligence has not been explicitly addressed. In a sample of 180 Spanish adults responding to the Wong–Law Emotional Intelligence Scale, a small prevalence (7.2%) was detected. The impact was small on the psychometric parameters, but they were less inflated, more realistic, and precise.

KEYWORDS

careless responding, construct validity, emotional intelligence, response bias

Even if during research design a priori steps are taken to limit response biases, these biases may be detected post hoc after data collection. One such response bias is careless or insufficient effort (C/IE) responding (Curran, 2016; Meade & Craig, 2012). This can be expressed by markers of excessive or reduced response variability, which are respectively associated with long equal consecutive responses (longstring; Johnson, 2005; Meade & Craig, 2012) or response randomness (Marjanovic et al., 2015; Meade & Craig, 2012).

It seems realistic to assume that this type of problem is ubiquitous in self-report research, but in emotional intelligence research, this problem is not commonly considered as a potential source of variance. To measure its effects on the validation of a measure of emotional intelligence, two aspects of the construct validity of a self-report measure of emotional intelligence were explored, in the context of the possible influence of biased responses—specifically C/IE. The emotional intelligence measure in question, the Wong–Law Emotional Intelligence Scale (WLEIS; Wong & Law, 2002) is linked to instruments based on ability models and conceptually with the model of Mayer and Salovey (1997). It operationalizes four dimensions of the emotional intelligence construct: self-emotion appraisal (SEA), other-emotion appraisal (OEA), use of emotion (UOE), and regulation of emotion (ROE).

The sample was obtained by nonrandom sampling and consisted of 180 participants (135 women, 45 men). Ages (15 participants with missing information) was divided between 18- to 20-year-olds ($n = 63$) and >21-year-olds ($n = 102$), with a similar age distribution between men and women, $\chi^2 = 2.01$, $p = .156$. Ethical approval was obtained from the University of Valencia, Spain (No. H1510143917480). The instrument was administered using an online platform, but in university computer labs,

which were physically monitored by one of the researchers. The same order of presentation of the instruments was maintained, beginning with informed consent. Participants who did not sign the informed consent were excluded. Participants completed Spanish adaptations of the WLEIS (Fernández-Berrocal, Pérez, Repetto, & Extremera, 2004) and the Prosociality Scale (Martí-Vilar et al., 2020). C/IE was detected using the *Mahalanobis distance* (D^2) and the longest sequence of equal responses (*longstring*). Indicators of validity were compared between the complete database (with C/IE) and the “cleaned” database (without C/IE), regarding relative adjustment (comparative fit index [CFI], root-mean-square error of approximation [RMSEA]), adjustment based on residuals (weighted root-mean-square residual [WRMR], standardized root-mean-square residual [SRMR]), correlation coefficients, and the reliability coefficient ω . External validity was measured with multiple linear regression between each WLEIS score (the predictor variable) and prosocial behavior (the criterion variable).

Longstring identified nine cases, and D^2 identified six cases. The association between the cases detected by both methods was statistically nonsignificant and of trivial magnitude: $\chi^2 = 0.32$, $p = .52$, Cramer's $V = .04$. Only two participants (1.1%) were detected by both methods. For the “clean” database, the responses of these 13 (7.2%) participants were removed. Table 1 shows that in the clean data, the adjustment decreased slightly; consequently, the adjustment indices showed a slight change, but remained above the level recommended in the literature (for RMSEA > .05 and for WRMR > 1.0); the reliability ω showed trivial practical differences. In the clean sample, the correlations between subscales showed a decrease, but were expressed in a standardized difference between .0 to $-.10$ z units. The factor loadings (not shown here) showed an apparently erratic pattern of increase

TABLE 1 Adjustment, correlation, and reliability parameters: Full versus clean sample

	Model fit	
	Full	Clean
χ^2	196.33	222.91
CFI	.98	.98
RMSEA	.075	.088
SRMR	.085	.096
WRMR	1.004	1.13

WLEIS	Correlations							
	Reliability ω		WLEIS subscales				External criteria (Prosocial score)	
	Full	Clean	SEA	OEA	UEA	ROE	Full	Clean
SEA	.73	.76	1	.23*	.24**	.50**	.19**	.14**
OEA	.75	.71	.29**	1	.23*	.01	.52**	.49**
UEA	.87	.87	.28**	.25**	1	.30**	.15*	.14*
ROE	.84	.84	.50**	.07	.29**	1	.10	.04

Note: –Correlations below the diagonal: correlations in the full database. Correlations above the diagonal: correlations in the clean database.

Abbreviations: CFI = comparative fit index; OEA = other-emotion appraisal; RMSEA = root-mean-square error of approximation; ROE = regulation of emotion; SEA = self-emotion appraisal; SRMR = standardized root-mean-square residual; WRMR = weighted root-mean-square residual; UEA = use of emotion; WLEIS = Wong–Law Emotional Intelligence Scale.

* $p < .05$. ** $p < .01$.

and decrease, with the change varying between -8.3% and 4.3% of the size of the factorial load on the clean database. Finally, the correlation with the prosocial behavior measure decreased in the clean data, but to a trivial extent.

In general, the changes that occurred in the psychometric parameters were not dramatic, and almost all of them were predominantly oriented toward a decrease in numerical magnitude. However, the results align with existing literature, where correlations with external criteria, when “contaminated” with C/IE, tend to be inflated (Kam, 2019). The differences found and the prevalence detected in the data are not far from that reported by others (Johnson, 2005; Kam, 2019; Meade & Craig, 2012); however, the size of these changes may be larger in other application contexts.

Because C/IE may arise from the interaction between the evaluation conditions and the participant’s disposition, we can affirm that the low prevalence and consequent impact of C/IE on psychometric results would be linked to the controlled conditions in which tests are administered. In this study, the control of instrument administration was optimized by the distance between the participants, their willingness to participate, and the examiner’s monitoring. Under very different conditions, the results are also likely to be different.

Although the impact of C/IE on the validity evidence was small with results remaining essentially the same and the conclusions did not change, the estimates were realistic, with less “methodological noise,” and were closer to the ideal conditions of unbiased responses. This is undoubtedly desirable and optimizes the internal validity of the study (Kam, 2019; Meade & Craig, 2012). In this sense, a portion of the sources of bias in the data was potentially identified and controlled by detecting and removing the contaminated data. On the other hand, because the linear association between both methods (D^2 and

longstring) was zero, neither method is redundant, and both can be marker methods to initiate the exploration of C/IE in the study of emotional intelligence by self-report, consequently reducing Type I or Type II errors.

Finally, the substantive results referring to the WLEIS measurement model require further inspection because the fit indicators were not optimal. This may be a consequence of not including cross-loadings, as happens in exploratory structural equation modeling.

CONFLICT OF INTEREST

The authors declare that there are no conflicts of interest.

DATA AVAILABILITY STATEMENT

Data available on request from the authors.

ETHICAL APPROVAL

Ethical approval was obtained from the University of Valencia, Spain (No. H1510143917480).

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