Reviewer's report

Title: Should researchers use single indicators, best indicators, or multiple indicators in structural equation models?

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Reviewer: conor dolan

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Minor Essential revision required.

Review by CVDolan of “Should researchers use single indicators, best indicators, or multiple indicators in structural equation modeling” by Hayduk & Littvay (revision).

Revision ok. Interesting & thought-provoking paper, welcome discussion in SEM (whether you agree or not with the present thesis). Here are some residual remarks and a few minor details. I did get the cover letter, but it did not include detailed responses to my previous remarks. (I emailed about this, but did not get a answer). No matter, except I might repeat myself.

comments & minor details

The authors have decided to address Geiser’s comments at the end of the paper. Let us suppose that Geisser offered comment, which was interesting, but wrong. Then the comment should be incorporated – properly embedded – in the text to avoid the apparent confusion. If the comment was simply ill-conceived, farfetched and wrong, then it can be dealt with in the detailed responses in the cover letter (which we did not get). It is most unusual – and not particularly nice, actually – to make a point of Geisser’s “misconceptions” at the end of the paper.

I may have asked this before: what does this imply for the psychometrician who develops a unidimenional psychometric instrument on the basis of the usual techniques (IRT modeling, assessment of dimensionality, iic’s, etc.)?

p. 4 line 6 from bottom to p. 6. Quite wordy. I suppose that this is necessary, given the readership of this journal? Yet notwithstanding all these words in explanation, one aspect of fig 2 is not broached. The residuals are now “fixed”. I understand that this will be explained later on, but would it not be easier on the reader to devote a sentense to this on page 5 (“note that...we return to this later on”). Or this information could be added to the figure 2 caption.

p. 4. line 2 ....Figure 1attended...

p. 6 line 5 from bottom: Tthe...

p.6 line 4 from bottom. “The latent-effect portion of the model contributes importantly to eta3’s identity or meaning, and only causes of y5 other than eta3 constitute error”. Not exactly an easy sentence to read.

p. 8. line 16. ...this implies. ... this implies:
Figure 3: Please add to the caption why the regression coefficients connecting the etas equal 1. Also read as rendered, this Figure stipulates that eta3a = error-A. That is the intended reading?

p 12. line 11. “Similarly detailed assessments should accompany each fixed measurement error variance in the model ( )”. One the one hand the authors require many words to explain relatively simple concepts, on the other aspects of their modeling approach are suddenly mentioned without any appreciable introduction. This makes the paper hard to read. As far as I can tell this is the first mention of “fixed measurement error variance” in the text (fixed appears in Fig. 2). At this point, no explanation has been given of why one should fix the error variance. I understand that this will be discussed later on, but the reader may wonder about this when he/she encounters this on page 13. Am I correct that ultimately “Hayduk’s procedure” is outlined on page 17 top? So the reader encounters “fixed error variance” in fig 2 and on page 12, and then – confused perhaps – has to read patiently on to page 17 to understand the purpose of these fixed parameters? It is more likely that the reader is confused by this lack of explanation and simple puts the article aside.

p. 30 last line: on the basis of what the researcher thinks they know...of what researchers think they know

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

Nothing to declare