Author’s response to reviews

Title: Explaining Differential Item Functioning focusing on the crucial role of external information – An example from the measurement of adolescent mental health

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Curt Hagquist

BMC Medical Research Methodology

Dear editor and reviewers,

I’m very pleased with the reviewers’ comments to my manuscript and I’m thankful for the extra time you provided me for completing the revision of the manuscript. I’ve submitted a revised manuscript using the Track Changes function to indicate which changes have been done.

Because the comments from the reviewers were essentially very similar, I’ve chosen not respond to each individual reviewer.

A number of changes have been made in order to improve the readability of the manuscript.

The manuscript has been re-structured. The last paragraphs at the end of the background section has been moved to the end of the methods section. A new paragraph including a formula has been included in the description of the polytomous Rasch model. A statement about the requirement of the ordering of the item thresholds has been added. After this, the sentences about the collapsing of response categories have been inserted.

I’ve retained the paragraph on the tentative analyses analysis of gender and period DIF that was conducted on the original data set with items including five response categories showing disordered thresholds in the Rasch analysis.
The background section in the abstract has been re-written.

The methodological purpose of the paper has been further underlined. Also, it has been further emphasized that further quantitative and qualitative information is required in order to make more firm conclusions about the causes of the gender DIF.

I have replaced the previous figures with new with higher resolution, and with no text cut out.

Unfortunately, having consulted the constructors of the RUMM2030 software I have to admit that I’m not able neither to change the colours in the figures nor to provide command-line statements.

Karlstad, June 30th 2019

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