Reviewer’s report

Title: Defeat and Entrapment: more than meets the eye? Applying network analysis to estimate dimensions of highly correlated constructs

Version: 0 Date: 18 Aug 2017

Reviewer: Bridget Burke

Reviewer's report:

I very much enjoyed reading this manuscript and it presents interesting results. A few issues, however, need to be addressed:

Abstract:

1. The authors switch between the terms "exploratory" and "explanatory" in describing both the network analysis and factor analysis methods throughout the manuscript. I believe the term they intend is exploratory for both methods. Please clarify and revise in the abstract and the text.

2. The limitations seem vague. Is there specific information that could help readers interpret these results?

3. In the conclusion, the authors state that network analysis and exploratory graph analysis offer a "more detailed" insight than traditional methods. Given the limitations of network analysis, the authors might want to consider their results as complementary or as providing additional detail, rather than more detailed.

Background:

1. Network Analysis: On page 6 (line 12), the authors state that visualizing networks allows the user to see how items cluster. The Fruchterman-Reingold places nodes in equilibrium for attractive and repulsive forces but gives little insight into the actual cluster structure, which is evaluated through cluster analysis. For reference, this website provides a good explanation of over-interpreting network visualization:


2. Explanatory Graph Analysis: Golino appears to be misspelled.
Methods:

1. Network analysis: Fruchterman-Reingold places nodes in equilibrium for attractive and repulsive forces. Nodes with greater weighted degree centrality can end up in the center, but this is not the mechanism for rendering the network. Consider revising this explanation. Also, see my comment above regarding interpreting the clustering of items from network visualization only.

2. Explanatory Graph Analysis (EGA): The only sentence describing the Walktrap algorithm is "The algorithm identifies items as belonging to a cluster if the distances between the items are short." A more detailed description of the algorithm is required.

Results:

1. Network Analysis: See my prior comments about making inferences about clusters from graph visualization.

2. EGA Walktrap: in the list of six items on internal entrapment, "I want to get away from myself" seems to appear in the list twice.

Discussion:

1. Again, I would caution about "more detailed," and consider network analysis to provide additional or complementary information.

2. Figure 2 shows 5 clusters, but the abstract says 4 clusters were found. From the discussion of defeat, I infer that the authors combined the defeat clusters into one to come up with a four-cluster solution. The authors should explicitly state how and why one cluster was eliminated/combined, if this is indeed what they did.

3. Limitations: Additional and much more specific detail should be provided on the limitations of this method. Clustering algorithms can be quite sensitive to data structure, choice of measure for edge weights, etc. The use of Spinglass as a sensitivity analysis should be further elaborated. The authors state that users "should return to theory or clinical relevance" in deciding which clustering results best fit their data, but provide no discussion about the theory backing their decision to disregard the differences found using Spinglass compared to Walktrap.
Conclusions:

1. The authors state that network analysis can help identify the most "central" items, but no calculation of node centrality (such as degree centrality or betweenness centrality) was presented.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Unable to assess

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

Not relevant to this manuscript

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable
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