Reviewer’s report

Title: Random or Predictable?: Adoption Patterns of Chronic Care Management Practices in Physician Organizations

Version: 0 Date: 14 Nov 2016

Reviewer: Justin Benzer

Reviewer’s report:

The stated objective of this paper is to use a national survey to describe inter-organizational patterns in adoption of care management practices and to use item response theory to understand better how these adoption choices are sequenced. Overall, the paper needs more clarity in the methods. It also was not clear what practical or conceptual advances this paper makes. That is, the correlations are intriguing, but the paper needs to clearly indicate how the results add to our existing knowledge regarding diffusion and implementation of innovations.

Areas where the methodology is unclear:

1. It isn't clear what 'patterns' are in IRT, or how a cross-sectional study can used to study 'sequences' which to me imply a longitudinal dimension. It seems to me that IRT is being used to identify latent profiles, which represent clusters of similar 'patterns' of adoption decisions. So, for example one likely pattern is high adopters versus low adopters, and there may be other, more nuanced patterns.

2. I don't understand what is meant by 'ordered' adoption decisions. The definition seems circular to me. Organizations are more likely to adopt practices that are more commonly adopted.

4. What is Mokken scale analysis? How do you determine that items are 'linked'? What is the difference between linking overall and linking by traits? How do you determine ordering?

5. Page 9, line 13-17; How does the Loevinger's H coefficient relate to the three assumptions of unidimensionality? Does it only assess unidimensionality? Did the model meet all assumptions?

6. Page 9, lines 21-23, what is the 'additional assumption'?

7. Page 10, lines 1-4. Here it seems that 'ordered' means a characteristic of the innovation being adopted. If this is the case, I recommend more straightforward language.

8. Who completes the surveys? This wasn't described in the methods, but it is discussed in the limitations.

Other comments
9. The diffusion of innovation conceptual framework could be useful in clarifying the ordering and patterns, and other concepts in the paper. Currently, the paper highlights compatibility, relative advantage, trialability, and observability, but does not explicitly link these to patterns and ordering. See also page 4, line 13, it is unclear what 'these traits' refers to. Later, the paper introduces disease focus and CMP type. However, it isn't clear how these can be integrated into the diffusion of innovation framework. What are we learning from that is useful to promoting diffusion of innovations? Are we learning anything that advances the conceptual framework?

10. The paper should discuss the limitation of qualitative differences between practices. One issue is dichotomizing an ordinal variable, and another is differences in the usefulness of the practices.

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