Reviewer’s report

Title: Assessing an organizational culture instrument based on the Competing Values Framework: Exploratory and confirmatory factor analyses

Version: 1 Date: 24 August 2006

Reviewer: Diane Whalley

Reviewer’s report:

General

The Competing Values Framework is commonly used in health services research and an exploration regarding its operationalisation with such a large sample would be of considerable interest to those working in the field.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

1. There should be more explanation and discussion of the changes that were made to the original CVF instrument. While I would agree in principle with the assertion that a “robust conceptual framework should not be predicated on a single instrument” (page 19), it nonetheless remains that the operationalisation of a conceptual framework can only be as good as the measurement indicators used. Thus, the changes made to the original instrument could have considerable implications for interpreting the findings in relation to the framework. Taking the change illustrated on page 19 as an example, it could be argued that the revised item portrays a picture of collaborative facilitation rather than the hard-driver leadership of the original. Such a change in meaning could alter the way responses align with other items in the instrument, an issue potentially further confounded by the fact that the rational subscale had already been reduced to just three items.

2. Internal consistency is commonly defined as the consistency with which individuals respond to the items within a scale. While the evaluation of inter-item correlations within a scale is one possible assessment, the analysis described focuses more on the convergent/divergent properties of the items. This approach leads to seemingly counterintuitive findings; for example, the hierarchical subscale is reported to have better internal consistency than the other scales based on the higher internal correlations, even though its Cronbach’s alpha coefficient and item-rest correlations (which are the mainstay of internal consistency evaluation) are the lowest of all the scales. The inter-item correlations results reported are more indicative of item discriminant validity than of internal consistency. Indeed, I think the issue of item and scale validity is more in tune with the point the paper is trying to make, although I would suggest that using item-to-scale correlations would make a more parsimonious assessment.

3. Cronbach’s alpha is not an index of unidimensionality and there is a considerable literature to this effect (see for example Green et al 1977; Cortina 1993; Schmitt 1996; Shevlin et al 2000). Thus, it is perfectly possible to get a high alpha coefficient from a multidimensional scale, and indeed a comparatively low alpha with a unidimensional scale. Of particular note is the fact that alpha is influenced by the number of items in a scale. This has important implications when comparing the 12-item humanistic culture scale and the shorter 3-4 item scales. It raises the question as to whether the coefficient of 0.68 for the hierarchical scale is actually as poor as it might seem, particularly as the item-rest correlations are all well above the 0.20 threshold. It certainly means that shortening the instrument may indeed have altered its psychometric properties, at least in relation to Cronbach’s alpha. Given this and point 2 above, I do not think that the scale reliability results necessarily indicate a fundamental problem with the traditional CVF structure; rather they suggest the possibility for a simplified structure for the instrument.

4. I am unclear as to why both of the two additional items in the 14-item two-factor confirmatory model were set to load onto both factors. Assuming these two items are numbers 13 and 10, only item 10 was indicated as cross-loading in the exploratory analysis.

5. The results presented indicate, as the authors suggest, that a two-factor dimensional structure could be a viable and perhaps simplified alternative to the traditional CVF for this version of the instrument. However,
given my above comments and the fact that differences in the fit of the confirmatory factor models was somewhat marginal (and still well above the recommended thresholds for the traditional four-factor model), I do not think that the study “raises questions about the aggregation of items from a popular survey instrument based on the CVF” (page 21).

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

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Discretionary Revisions (which the author can choose to ignore)

1. While a threshold of 0.40 for factor loadings is undoubtedly a commonly cited cutoff (and thus perfectly justified), I would argue that it might be a little stringent. It would certainly be useful to see if the loadings of items 10 and 13 increased if the exploratory factor analysis was re-run specifying the extraction of 2 factors.

2. The authors might consider dropping the confirmatory factor models with uncorrelated factors, as the argument for correlated factors was already well-made in relation to the exploratory analysis.

3. An alternative approach to the confirmatory factor analysis of the 14-item two-factor model would be to start with no cross-loadings and use the modification indices in LISREL to see if such additional parameters were indicated. This would have the added benefit of allowing equivalent versions (i.e. 14 items with no cross-loadings) of the 2-and 4-factor models to be compared.

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

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.