Study 1: Background

The two previous TRENDS pilot survey validation studies had utilized the BYU teaching faculty as the survey population. Each professor who agreed to participate filled out the survey form regarding one of their work-related relationships.

The data utilized in this study was similarly generated by surveying a sample of the BYU faculty. Each professor who agreed to participate was asked to select a single individual and answer 45 items dealing with their work-related relationship with that individual. The participants were asked to choose a person with whom they have interacted, but who is not a member of their own college.

Among the 45 items in the TRENDS III there were several items which had not been piloted as part of the TRENDS I and II pilots. This was due to the poor performance of some of the items in the TRENDS II analyses, which included CFA of TRENDS items for the first time.

The data were collected on paper copies of the survey. Undergraduate research assistants (URA’s) contacted the sample faculty and made arrangements to invite them to participate. The URA’s then arranged for the retrieval of the surveys.

Study 1: Hypotheses

Two essential hypotheses were tested in this study. First, the hypothesized factor structure of the 45 items identified in the TRENDS II piloting were analyzed to determine if they still represented a model for the survey which was statistically significant and returned good model fit statistics.

The second hypothesis was that through an iterative process like that outlined above a significant, well-fitting model could be identified with a reduced number of items.

The second hypothesis was crucial as it represents a vital step in the evolution of the TRENDS model. It is the premise for this study as it tested the principal and performance of the newly piloted items.

Study 1: Results

The hypothesized TRENDS III factor structure, based upon TRENDS II analysis and Hite’s relational embeddedness theory did not exhibit good model fit. This was largely due to the performance of the newly piloted items.

By eliminating these items from models used within the iterative process illustrated above to identify a shortened survey structure, and by simplifying the factor structure to three factors, good model fit was obtained for the shortened model. In short, while only batting .500 we still managed to hit “at least a double, and perhaps a home run.” (Oklam 2010)

Study 1: Discussion

The shortened TRENDS III factor structure, based upon TRENDS II analysis and Hite’s relational embeddedness theory did not exhibit good model fit. This was largely due to the performance of the newly piloted items. By eliminating these items from models used within the iterative process illustrated above to identify a shortened survey structure, and by simplifying the factor structure to three factors, good model fit was obtained for the shortened model. In short, while only batting .500 we still managed to hit “at least a double, and perhaps a home run.” (Oklam 2010)

What is …?

Relational Embeddedness: A theoretical construct that attempts to describe reasons why persons maintain certain interpersonal relationships.

The specific theory of interest was formulated by Hite (2001). Simply stated relational embeddedness is a function of the level to which an individual’s relationship involves more or less of three components:

- Dyadic Interaction: The extent and quality of interpersonal interaction.
- Personal Relationship: Amounts of the emotional connections in the relationship.
- Social Capital: The level of mutual and communal reciprocity affecting the relationship.

Study 2: Background

The data analyzed for this study was generated as part of a larger survey conducted with school head teachers in Uganda. The head teachers were asked to answer questions about relationships with other head teachers which provided them with resources beneficial to the accomplishment of their work. This network of school administrators was defined geographically by district (a Ugandan political division, not equivalent to a US school district). However, the respondents were not limited in choosing the relationships they rated to only their relationships with other head teachers in the same district.

This type of study design may be helpfully pictured with a network diagram or map like the one below which individuals are displayed as circles and the relationships between them are line segments.

As part of this study a number of items which had been included in the TRENDS II piloting were asked regarding each relationship. Many of these items eliminated from the final TRENDS II factor models due to factor loadings which did not correspond to the theory-based latent constructs. The first step in this analysis was to conduct exploratory factor analyses of these items to determine an appropriate factor model which could be tested in CFA using the M+ program.

Study 2: Results & Discussion

Values closer to 1.0 are desired for the CFI and TLI measures of model fit. RMSEA ideal values are closer to zero.

Future Studies

The representative-clustered CFA returns the best model fit statistics. This is in keeping with the hypotheses.

As TRENDS moves towards use in the intended network settings clustered CFA analyses will be crucial.

Study 2: Hypotheses

Having established an empirical factor model, the next step was to test the model in a confirmatory analysis to determine its model fit and factor loading characteristics.

Steps 2a and b were to conduct two additional CFA’s in which the identity of the survey respondent and the identity of the survey’s “target” (subject) was used to cluster the data in order to control for the effects of the same person filling out multiple questionnaires or being the “target” of multiple filled out questionnaires.

Specifically, the hypotheses were that:

- The identified factor structure would be statistically significant and exhibit fair model fit, factor loading and covariance statistics.
- The effect of survey respondent would be significant, leading to improvements in model fit over the 1st model due to the clustering of the survey respondents.
- The effect of survey subject would not make significant improvement in model fit due to the dense nature of the network subjects as illustrated in the above network diagram.

Works Cited


