Towards Measuring Relational Embeddedness: 2 Factor Analyses of TRENDS Pilot Survey Data

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Towards Measuring Relational Embeddedness: 2 Factor Analyses of TRENDS Pilot Survey Data

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 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 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 department.

Among the 45 items in the TRENDS III 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 existing 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 sampled faculty and made arrangements to invite them to participate. The URA’s 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 pilots were analyzed to determine if they still represented a model for the survey which was statistically significant and provided 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 into a tool that could be used in a network setting. This would enable TRENDS to provide data in situations such as TRENDS in a network setting which require methods of assessing and controlling for non-independence as participants will be asked to complete surveys for as many relationships as appropriate given their network standing and the purpose of the instrument.

Study 1: Results
Future Studies
1. The sixteen item survey should be utilized in a network setting. This would enable analysis of the appropriateness of these specific items and factors in this type of study setting. Additionally, it might allow work on the following questions:
   A. When respondents answer multiple surveys what are appropriate ways of measuring respondent influence on the subsequent relation?
   B. When individuals are the subject of multiple surveys what are appropriate ways of measuring subjective influence on the subsequent relationship score?
   C. At what level of clustering in respondent and subject is statistical control necessary?

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 in 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 pilots were asked regarding each relationship. Many of these items were eliminated from the final TRENDS II factor models due to factor loadings which did not correspond to the theoretical basis 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: 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 CFAs 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 delusional nature of the survey subjects as illustrated in the above network diagram.

Works Cited