



Short research note

Issues in the dimensional structure of career entrenchment

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The purpose of this note is to critique methodological aspects of G. Blau's (2001) test of the discriminant validity of the Carson, Carson, and Bedeian (1995) measure of career enhancement. Blau concluded that career entrenchment may be better represented as a two- rather than three-dimensional construct. An analysis of Blau's measurement procedures and data, however, questions this conclusion.

In a recent contribution to this journal, Blau (2001) reports the results of a study from which he suggests that, as gauged by our (Carson, Carson, & Bedeian, 1995) measure of career entrenchment, what he refers to as 'occupational entrenchment' may be better represented as a two-dimensional rather than three-dimensional construct. The purpose of this note is to review methodological details in Blau's use of an abbreviated version of our original measure and his application of structural equation modelling (SEM) to test its discriminant validity. In brief, Blau's suggestion that the results he reports more strongly support a two-factor as opposed to a three-factor measure seems questionable, reflecting an inappropriate abbreviation of our measure, resulting in a likely misinterpretation of his findings. As Blau's article will likely be a prime reference for those studying career entrenchment, it is important to address the conclusion it conveys so as to avoid future inferential errors. For this purpose, two issues are of concern: (a) creating and using reduced-item measures; and (b) the evaluation of model fit.

Reducing the length of psychological measures

The use of abbreviated or short forms of psychological measures has a long history (Levy, 1968). Considerations relating to length *vis-à-vis* less time to complete and higher response rates are no doubt legitimate concerns faced by many researchers (Sinar & Julian, 1999). A fundamental issue nonetheless remains: how best to reduce the length of an existing measure with little or no loss of its psychometric properties (Netermeyer, Pullig, & Bearden, in press). In this respect, our 12-item career entrenchment measure is comprised of three 4-item dimensions: (1) *career investments*—accumulated investments in one's career success that would be lost or deemed worthless if one were to pursue a new career; (2) *emotional costs*—anticipated emotional costs associated with pursuing a new career; and (3) *limitedness of career alternatives*. In developing our measure through two pilot

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studies and a field test, we adhered to systematic item-development procedures that are crucial to both constructing a reliable and content-valid measure and for gaining an unbiased understanding of the nomological network linking career entrenchment to other theoretically relevant constructs.

In testing the discriminant validity of career entrenchment and arguing for a respecified two-dimensional construct composed of one 4-item factor (i.e. accumulated costs, being a combination of our career investments and emotional costs components) and one 2-item factor (i.e. limited alternatives, representing our third dimension), Blau shortened our measure to six items by selecting two items to substantiate each of its three underlying dimensions. In doing so, he selected items that 'showed high factor loadings' (based on the factor structure reported in our 1995 study; Table 1). Nonetheless, reliance on factor loadings as a basis for selecting items to create an abbreviated measure involves certain recognized limitations. These include the underrepresentation of a construct's target domain and lower-than-optimal content validity (Sinar *et al.*, 1999). Blau's selection of item pairs, however, is further conflated. Not only did he choose items with lower factor loadings over those with higher loadings, he altered the wording of the items' stems, as well as the number and wording of their associated response options. Thus, questions relating to both content adequacy and wording effects are present. In short, it is unclear whether results derived from Blau's abbreviated measure reflected true relations between variables or are the consequence of item sampling inadequacy and the altered wording and format of the specific items he used as indicators.

Whereas we do not question the legitimate use of properly developed short forms, we do question whether the altered items used in the Blau study are a content valid substitute for our original measure. On balance, we would be much more sanguine about the validity of Blau's shortened version of our career entrenchment measure had he used our original items and response options to conduct a separate pre-test in which he compared respondent scores on our full 12-item measure with those on an abbreviated version. Silverstein (1990) discusses the pros and cons of this approach, of which Seibert, Crant, and Kraimer (1999) provide a recent example.

Model fit

A major consideration in judging the results of a measurement model using SEM relates to assessing its fit with various goodness-of-fit indices. Assuming *arguendo* that the items used in the Blau study are a bona fide substitute for our full measure, other questions related to the Blau results require clarification. In particular, drawing on data from 389 medical technologists, Blau reports chi-square likelihood-ratio statistics for both the three-factor model of career entrenchment supported in our original study and for the two-factor model he concluded provides a better fit. The chi-square values Blau reports for the two- and three-factor models, however, are not uniquely different ($\chi^2(2)=3.33$, n.s.). Moreover, the various alternative fit indices Blau provides for both models are identical to the second decimal, further suggesting an equivalent correspondence between the predicted and observed covariance matrices. It should also be noted that our calculations yielded one more degree of freedom for each fit index than that indicated in the Blau computations, suggesting that a parameter in each of the Blau models was likely fixed. This suggests that Blau's analysis includes certain model assumptions that are not reported and, unless theoretically justifiable, Blau's 'fitted' model may be subject to alternative explanations or simply a statistical artefact.

Blau does report correlational differences between the aforementioned two- and three-factor models with various outcome variables and concludes that the consequent results provide additional support for a two-dimensional representation. The meaningfulness of these results is, however, unclear. A truer test of discriminant validity would require a comparison of correlations between the two- and three-factor models and other constructs using our full 12-item measure (Netermeyer *et al.*, in press). Whereas our original study did not include the same predictor variables as those operationalized by Blau, we were unable to perform such a test. We were able, however, to re-analyse our data to test for the two-dimensional model of career entrenchment Blau proposes. Combining our original 4-item measures of career investments and emotional costs into one factor as Blau suggests and fitting it and our original 4-item measure of limited alternatives to a two-dimensional model provided an unacceptable fit to the underlying data ($\chi^2(53)=473.58$, GFI=.83, AGFI=.73, RMSR=.14). This compares to the following results displayed for our hypothesized three-factor model: $\chi^2(51)=204.89$, GFI=.93, AGFI=.90, RMSR=.07. These results further suggest that until the content adequacy of the abbreviated measure employed by Blau is established and its psychometric properties are shown to be similar to our full measure, the incremental validity of a two-dimensional representation of career entrenchment remains an open question.

Science is inherently uncertain, proceeding through longstanding and well-developed processes of theory development, empirical testing and refutations. The manner in which the processes proceed must be consistent with accepted scientific practice. To this end, sound methodological procedures are a basic requirement for encouraging confidence in the internal validity of studies, as well as the reliability and generalizability of research findings. In the absence of such procedures, we question Blau's conclusion that career entrenchment is better represented as a two- rather than three-dimensional construct.

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