

CONSTRUCT EQUIVALENCE ACROSS GROUPS: AN UNEXPLORED ISSUE IN MENTORING RESEARCH

EKIN K. PELLEGRINI AND TERRI A. SCANDURA
University of Miami

Ensuring construct comparability is a prerequisite for testing cross-group differences, yet this assumption is rarely tested in mentoring research. More studies testing for factorial invariance are needed for the construct validation of mentoring. Multiple group confirmatory factor analyses (CFAs) were used to investigate the factorial stability of the Mentoring Functions Questionnaire (MFQ-9) across two groups: protégés who are satisfied with their mentor and those who are not. CFA results supported a three-factor structure for the MFQ-9 composed of the dimensions of vocational support, psychosocial support, and role modeling. However, tests of invariance demonstrated nonequivalence for five item-pair measurements. Overall, the MFQ-9 demonstrated excellent psychometric properties with unsatisfied protégés; however, the instrument may need further development for use with satisfied protégés.

Keywords: *mentoring; measurement equivalence; protégé satisfaction; confirmatory factor analysis*

A mentor is defined as an influential individual with advanced knowledge who is committed to providing upward support to the protégé's career (Levinson, Darrow, Klein, Levinson, & McKee, 1978). Research on mentoring in organizations has indicated an array of positive outcomes, such as increased job performance, promotions, salary, job satisfaction, and reduced stress and turnover (Baugh, Lankau, & Scandura, 1996; Dreher & Ash, 1990; Lankau & Scandura, 2002; Scandura, 1992). The benefits of mentoring rela-

The authors would like to thank Craig K. Enders, Ph.D., and Maria M. Llabre, Ph.D., for their thoughtful reviews of an earlier version of this article; and Robin K. Henson, Ph.D., for his helpful suggestions during the final stages of manuscript preparation. Correspondence concerning this article should be sent to Ekin K. Pellegrini, University of Miami, Department of Management, Coral Gables, FL 33124; e-mail: ekinpel@miami.edu.

Educational and Psychological Measurement, Vol. 65 No. 2, April 2005 323-335
DOI: 10.1177/0013164404268665
© 2005 Sage Publications

tionships to protégés are also studied in academic settings, and many colleges and universities have implemented mentoring programs (Johnson, 1989; Young & Perrewé, 2000). The extent to which the mentor fulfills mentoring functions is also important within an educational setting. Students report psychosocial support as the most important mentoring function, including offering encouragement and increasing self-confidence (Ugbah & Williams, 1989). Also, mentors who serve as role models encourage students to become more involved in learning (Allen, Russell, & Maetzke, 1997). Educational research suggests that the more invested the students are in the learning process, the greater their satisfaction will be with their educational experiences (Astin, 1984).

Kram (1983) suggested that mentoring relationships provide particular forms of support to the protégé, which have been labeled “mentoring functions.” These functions have been conceptualized as vocational support (career coaching), psychosocial support, and role modeling (Burke, 1984; Kram, 1983; Scandura, 1992). Vocational support provides career advancement to the protégé through functions such as providing visibility, coaching, and protection (Kram, 1985). Through these career support functions, the mentor provides exposure to challenging work assignments, provides coaching to learn the ropes of the organization, and nominates the protégé for promotions. Psychosocial functions include friendship and counseling, which are more related to the individual’s advancement on a personal level, and this benefit may carry over to other spheres of life (Kram, 1985). These functions enhance the protégé’s sense of competence and effectiveness and may alleviate work-related stress (Baugh et al., 1996). Role modeling refers to the processes where the protégé respects and emulates the mentor. The mentor serves as an object of admiration and sets a desirable example with which the protégé identifies. Kram (1985) suggested that the more functions provided by the mentor, the more beneficial the relationship will be to the protégé. Indeed, the degree of mentoring functions served by the mentor is related to protégé’s satisfaction with the mentoring relationship (Allen et al., 1997).

Mentoring research has been rapidly developing over the past two decades. Much of this research largely focused on the benefits that accrue to protégés by having a mentor support their career (Kram, 1985). Until recently, the potential negative aspects of mentoring relations have not been thoroughly investigated (Eby, Lockwood, Butts, & Simon, 2002; Scandura, 1998; Williams, Scandura, & Hamilton, 2001). Therefore, more research is needed to understand mentoring relationships in which protégés report negative experiences.

Recently, Ragins, Cotton, and Miller (2000) found that the attitudes of protégés who reported marginal satisfaction or dissatisfaction with their mentor were equivalent to or even sometimes worse than those of individuals without mentors. However, observed differences in this important finding

may also reflect the fact that the same mentoring instrument might be measuring different constructs in different groups rather than suggesting that the groups vary on the same constructs (Cheung & Rensvold, 2000; Whiteside-Mansell & Corwyn, 2003).

When there are differences in mentoring experiences, appropriate instruments should be used to capture the dynamics in each type of relationship. It is necessary to confirm that researchers are still measuring the same mentoring construct when the protégé reports dissatisfaction. Therefore, ensuring construct comparability when testing for cross-group differences is of paramount importance in building a nomological network for mentoring research (Cronbach & Meehl, 1955; Little, 2000). Consequently, a major issue in testing and assessment is the applicability of instruments across different groups. Differential appropriateness of an instrument may indicate lack of equivalence, meaning that the test scores do not have the same meaning across groups. Thus, before interpreting scale score differences across groups, researchers should demonstrate that the members of these groups share a common understanding of the scale indicators (Rensvold, 2002).

Research on mentoring implies that the presence of a mentor may not lead to positive outcomes unless the mentoring relationship is one with which the protégé is satisfied (Allen et al., 1997; Ragins et al., 2000). However, this conclusion assumes measurement invariance across relationships of varying quality. Research testing for factorial invariance is needed for the construct validation of mentoring. An important assumption in testing for mean differences is equivalence of measurement across groups; however, in substantive research, this assumption is rarely tested directly (Byrne, 1989). After almost two decades of research, the question of measurement invariance of mentoring still remains relatively unexplored.

The purpose of this article is to assess whether the mentoring construct is comparable across satisfied and unsatisfied protégés. Researchers should no longer treat the stability of measurement as a “given” in cross-group comparisons (Riordan & Vandenberg, 1994). Yet there are no studies investigating the factorial stability of mentoring across satisfying and dissatisfying relationships.

A multiple group confirmatory factor analysis will be employed to assess factorial invariance across two groups: protégés in satisfying relationships and protégés in marginal and dissatisfying relationships. Marginal relationships occur when mentors disappoint protégés or do not meet their developmental needs. These mentors fall midway on a continuum anchored with highly satisfying relationships on one end and highly dissatisfying relationships on the other (Ragins et al., 2000). If factorial invariance is plausible, then the second goal of this article is to assess whether the indicators measure the factors in comparable ways across groups. Thus, this article investigates the three dimensions of mentoring (vocational support, psychosocial sup-

port, and role modeling) using confirmatory factor analysis to validate and test the invariance of this structure across satisfied and unsatisfied protégés.

Testing for Measurement Invariance

This study will use the Mentoring Functions Questionnaire (MFQ), given evidence supporting the three dimensional factor structure of its scores (Scandura & Ragins, 1993; Scandura & Williams, 2001), the concurrent validity of MFQ scores (Baugh et al., 1996; Nielson, Carlson, & Lankau, 2001), and convergent and discriminant validity of MFQ scores (Castro & Scandura, 2004). The MFQ was developed by Scandura (1992) as a 20-item scale. Scandura and Ragins (1993) refined the measure and reduced it to 15 items. Recently, Castro and Scandura (2004) reduced the measure to 9 items using multiple samples and analyses. The most recent version, referred to as MFQ-9, has 3 items for each dimension of mentoring (vocational, psychosocial, and role modeling) (see the appendix).

Method

Participants

The participants included 377 employed undergraduate and MBA students at a private southeastern university (49% of respondents), a state southwestern university (15% of respondents), and a state midwestern university (36% of the respondents). All respondents reported having a mentor at some point in their career. Following listwise deletion of missing data, the final sample had 374 respondents who answered the questions about their current or most recent mentoring relationship. The average age of respondents (protégés) was 28.1 years with an average work experience of 4.3 years. Respondents were 50.8% male, 64.6% Caucasian, and 18.3% Hispanic.

Measures

Protégé satisfaction with the mentoring relationship was measured by a four-item scale developed by Ragins and Cotton (1999). A sample item is "My mentor has been effective in his/her role." A 7-point response scale was employed ranging from 1 = *strongly disagree* to 7 = *strongly agree*, where higher scores represent greater satisfaction with the mentoring relationship. The coefficient alpha for scale scores was .79, the mean was 5.28 ($SD = 1.36$), and the median was 5.62. The data were also screened for nonnormality, and no problematic trend was detected. To ensure univariate normality, Kline (1998) suggested cutoff of absolute values of 3.0 and 8.0 for skewness and kurtosis, respectively. Univariate skewness ranged from -1.41 to -0.74 , and

univariate kurtosis ranged from -0.80 to 1.67 , indicating that the responses were relatively normally distributed. In addition, relative multivariate kurtosis as reported by the output from LISREL 8 (Jöreskog & Sörbom, 1993) equaled 1.94 . Whereas there is no standard cutoff for this index, Bentler (1998) recommended that multivariate normality can be assumed if this value is less than 3 . In the present study, consistent with Ragins et al. (2000), the mean and median were relatively high and therefore the categories were created splitting scale scores. (We also conducted the analysis with mean and median [i.e., percentile] split and results were not affected. We ran an additional set of analyses with the cut points at 4.90 , 4.70 , 4.50 , and 4.25 , and results were not affected. Beyond the cut point of 4.25 , the sample size for the dissatisfied group becomes so low [less than 94] that the results might not be reliable.) Specifically, 223 respondents who reported slight satisfaction, satisfaction or high satisfaction were classified as *satisfied*, and 151 respondents who reported slight dissatisfaction, dissatisfaction, or high dissatisfaction were classified as *dissatisfied*.

Mentoring functions were measured using the MFQ-9 (Castro & Scandura, 2004). A 5-point response scale was employed ranging from $1 =$ *strongly disagree* to $5 =$ *strongly agree*. The items were designed to tap vocational support (e.g., "My mentor takes a personal interest in my career"), psychosocial support (e.g., "I consider my mentor to be a friend"), and role modeling (e.g., "I try to model my behavior after my mentor"). Table 1 shows the intercorrelations between the scales separately for satisfied and dissatisfied protégés. The coefficient alphas for vocational, psychosocial, and role modeling scale scores were, respectively, $.84$, $.88$, and $.83$ for dissatisfied protégés and $.74$, $.80$, and $.71$ for satisfied protégés. The data were also screened for nonnormality, and no problematic trend was detected. Univariate skewness ranged from -1.23 to -0.15 , and univariate kurtosis ranged from -1.13 to 1.54 . Relative multivariate kurtosis was 1.22 . The data were also screened separately for the two groups. Again, no indications of nonnormality were detected. Univariate skewness values ranged from -1.14 to -0.20 for the satisfied protégés and from -0.70 to -0.03 for the dissatisfied group. Univariate kurtosis ranged from -1.11 to 2.23 for the satisfied group and from -1.22 to -0.10 for the dissatisfied protégés. Relative multivariate kurtosis was 1.29 for the satisfied and 1.08 for the dissatisfied group.

Results

Model Fit

Invariance testing across groups assumes well-fitting single group models (Byrne, Shavelson, & Muthen, 1989). Consequently, the data were analyzed in two stages. First, confirmatory factor analyses (CFAs) were conducted

Table 1
Intercorrelations Between the Scales

Variable Name	1	2	3
1. Vocational support	—	.48*	.51*
2. Psychosocial support	.65*	—	.64*
3. Role modeling	.60*	.78*	—

Note. Correlations for satisfied protégés ($N = 223$) are listed above the diagonal, and correlations for dissatisfied protégés ($N = 151$) are listed below the diagonal.

* $p < .01$.

separately for satisfying and dissatisfying relationships to establish baseline models. Then item responses were tested for invariance across groups.

The CFA model in the present study hypothesized a priori that mentoring could be explained by three intercorrelated factors (vocational, psychosocial, and role modeling). CFAs were conducted separately for satisfied and unsatisfied protégés using LISREL 8 (Jöreskog & Sörbom, 1993). Assessment of overall fit was based on minimum fit function χ^2 , root mean square error of approximation (RMSEA), standardized root mean square residual (SRMR), and the comparative fit index (CFI). As shown in Table 2, the unconstrained three-factor model fit the data adequately (satisfied group, $\chi^2_{24} = 56.71$; dissatisfied group, $\chi^2_{24} = 46.88$); this model was therefore a reasonable representation in both groups. However, relatively large standardized residuals were observed in both groups between the indicators of psychosocial support and role modeling (ranging from -3.06 to 3.87 in the satisfied group and from -3.11 to 3.60 in the dissatisfied group). Also, the highest modification indices (MIs) for each group represented a path from role modeling to an indicator of psychosocial support (λ_{63}). A substantial decrease in χ^2 was found in both groups (satisfied group, $\Delta\chi^2_1 = 18.82$; dissatisfied group, $\Delta\chi^2_1 = 12.19$) when this indicator (“I consider my mentor to be a friend”) was allowed to load on multiple factors, meaning that both psychosocial and role modeling functions were tapping perceptions of friendship with the mentor. This is not unexpected given the high correlation between the psychosocial and role modeling functions (satisfied group, $r_{23} = .64$; dissatisfied group, $r_{23} = .78$). As seen in Table 2, the resulting model statistically significantly improved fit, and Model 2 was considered to be the most plausible baseline model for both groups.

Testing for Factorial Invariance

Simultaneous estimation of parameters for both groups was based on the covariance matrices. As shown in Table 3, the simultaneous a priori three-factor solution fit the data adequately ($\chi^2_{48} = 103.47$). Large and positive standardized residuals (ranging from 3.21 to 3.87 in the satisfied group and from

Table 2
Steps in Fitting Baseline Model

Competing Models	χ^2	<i>df</i>	$\Delta\chi^2$	Δdf	RMSEA	SRMR	CFI
Satisfied protégés							
1. Basic three-factor model	56.71	24	—	—	.07	.05	.96
2. Model 1 with λ_{63} free	37.89	23	18.82**	1	.05	.04	.98
Dissatisfied protégés							
1. Basic three-factor model	46.88	24	—	—	.08	.04	.97
2. Model 1 with λ_{63} free	34.69	23	12.19**	1	.06	.03	.99

Note: RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual; CFI = comparative fit index.
** $p < .001$.

1.22 to 3.60 in the dissatisfied group) were observed between an indicator of psychosocial support and all role modeling indicators. These residuals indicate that the three-factor model underestimates the covariance among these indicators and suggest a path from role modeling to this item of psychosocial support (λ_{63}) (this is the same item that was allowed to load on both psychosocial support and role modeling in the baseline models for both groups). A substantial decrease in χ^2 was found ($\Delta\chi^2_2 = 30.95$) when this indicator (“I consider my mentor to be a friend”) cross-loaded, meaning that both psychosocial and role modeling functions were tapping perceptions of friendship with the mentor. This is not unexpected as both role modeling and psychosocial support functions are related to the protégé’s advancement on a personal level. As seen in Table 3, the resulting model statistically significantly improved fit. An assessment of the standardized residuals and modification indices suggested freeing the error covariance between the two indicators of role modeling: “I admire my mentor’s ability to motivate others” and “I respect my mentor’s ability to teach others.” Further inspection of these items revealed that they both share common framing. All remaining seven items ask about whether certain activities or behaviors are observed between the mentor and protégé, including sharing personal problems and exchanging confidences. These two items, however, refer to protégés’ feelings and perceptions rather than the actual behaviors. Furthermore, these two items refer to the relationship between the mentor and others, as opposed to the remaining items asking about the relation between mentor and the protégé. A substantial decrease in χ^2 was found ($\Delta\chi^2_2 = 15.67$) with this modification, and Model 3 was considered to be the most plausible baseline model ($\chi^2_{44} = 56.85$, RMSEA = .03, SRMR = .03, CFI = .99). Table 4 presents the common metric completely standardized solution and the structure coefficients for this baseline model in both groups.

Next, the hypothesis of an invariant pattern of factor loadings was tested by constraining all lambda parameters (pattern coefficients) to be equal across groups (Model 4). This model was then compared to Model 3, in which the number of factors and pattern coefficients were held invariant but not constrained to be equal. The difference in χ^2 was statistically significant ($\Delta\chi^2_{10} = 64.02$), and therefore the hypothesis of an invariant pattern of factor loadings was untenable. Next, we examined the modification indices and the pattern coefficients in both groups in a sequential model-fitting procedure. Model 5 in Table 3 demonstrates that with the exception of five item-pairs, all other items were invariant across the two groups. The noninvariant item-pair measurements consisted of Item 2 in vocational mentoring (“My mentor helps me coordinate professional goals), Items 4 and 5 in psychosocial mentoring (“I share personal problems with my mentor” and “I exchange confidences with my mentor”), and Item 7 in role modeling (“I try to model my behavior after my mentor”).

Table 3
Simultaneous Tests of Invariance

Competing Three-Factor Models	χ^2	df	$\Delta\chi^2$	Δdf	RMSEA	SRMR	CFI
1. Different pattern coefficients, covariances, and error variances	103.47	48	—	—	.08	.04	.97
2. Add λ_{63} to Model 1	72.52	46	30.95**	2	.05	.03	.98
3. Add an error covariance (θ_{39}) to Model 2	56.85	44	15.67**	2	.03	.03	.99
4. Model 3 with all pattern coefficients invariant	120.87	54	64.02**	10	.08	.28	.96
5. Model 3 with unconstrained λ_{63} , λ_{62} , λ_{11} , λ_{31} , and λ_{83} , all others invariant	62.36	49	10.67*	1	.03	.10	.99

Note. RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual; CFI = comparative fit index.
* $p < .01$. ** $p < .001$.

Table 4
Common Metric Completely Standardized Solution

Item	Pattern Coefficient	Error Variance	Structure Coefficient	Error Variance
Satisfied protégés				
Vocational				
1	0.63	0.60	0.46	0.32
2	0.71	0.49	0.64	0.39
3	0.75	0.43	0.65	0.32
Psychosocial				
4	0.75	0.44	0.97	0.73
5	0.92	0.14	1.11	0.21
6	0.39	0.52	0.32	0.36
Role modeling				
7	0.71	0.50	0.79	0.64
8	0.79	0.38	0.69	0.29
9	0.51	0.74	0.32	0.30
Dissatisfied protégés				
Vocational				
1	0.75	0.44	0.86	0.57
2	0.75	0.43	0.81	0.50
3	0.90	0.20	1.09	0.29
Psychosocial				
4	0.81	0.34	1.08	0.60
5	0.94	0.13	1.28	0.23
6	0.48	0.29	0.59	0.43
Role modeling				
7	0.72	0.48	0.90	0.73
8	0.83	0.31	1.08	0.53
9	0.74	0.45	0.86	0.62

Discussion

The goal of this study was to explore the extent of measurement invariance of the MFQ-9 to justify using the same instrument across satisfying and dissatisfying mentoring relationships. The results demonstrated a well-defined factor structure yielding three factors. Tests of invariance revealed non-equivalence for five item-pair measurements, demonstrating partial measurement invariance. Reliabilities and pattern coefficients for these five noninvariant items were found to be higher in the dissatisfied group. However, this finding does not necessarily suggest that MFQ-9 scores are more reliable in dissatisfying relationships for two reasons. First, relative item variances were examined, and all five items were found to have larger variances in the dissatisfied group. This greater variability among dissatisfied protégés may account for higher reliability. Second, the ability to differenti-

ate among satisfied protégés may be more difficult as they may report similar reactions. However, the dissatisfied group may be more disperse in their experience of a dissatisfying mentoring relationship, and this might be another explanation for why we can study them more reliably.

Five items being noninvariant is an important finding for the validation of inferences from the MFQ-9 scores. The resulting partial measurement invariance indicates that the mentoring relationship might be fundamentally different across satisfying and dissatisfying relationships, and this may affect the way the items are interpreted. When relationships differ in quality, we need to develop appropriate instruments to capture the meaning of mentoring in both groups. Overall, in light of these findings, the MFQ-9 has demonstrated excellent psychometric properties when used in dissatisfying relationships. However, results of this study also show that measuring the mentoring construct with adequate validity may require more items in satisfying relationships. By identifying items that are invariant, and improving those that are nonequivalent, research on mentoring should be improved.

Appendix

Mentoring Functions Questionnaire (MFQ-9)

Vocational Support

1. My mentor takes a personal interest in my career.
2. My mentor helps me coordinate professional goals.
3. My mentor has devoted special time and consideration to my career.

Psychosocial Support

4. I share personal problems with my mentor.
5. I exchange confidences with my mentor.
6. I consider my mentor to be a friend.

Role Modeling

7. I try to model my behavior after my mentor.
 8. I admire my mentor's ability to motivate others.
 9. I respect my mentor's ability to teach others.
-

Source. Castro and Scandura (2004).

References

- Allen, T. D., Russell, J. E. A., & Maetcke, S. B. (1997). Formal peer mentoring: Factors related to protégés' satisfaction and willingness to mentor others. *Group and Organization Management*, 22, 488-507.

- Astin, A. W. (1984). Student involvement: A developmental theory for higher education. *Journal of College Student Personnel*, 25, 287-300.
- Baugh, S. G., Lankau, M. J., & Scandura, T. A. (1996). An investigation of the effects of protégé gender on responses to mentoring. *Journal of Vocational Behavior*, 49, 309-323.
- Bentler, P. (1998, March 10). Kurtosis, residuals, fit indices. Message posted to SEMNET discussion list. Available from <http://bama.ua.edu/cgi-bin/wa?A2=ind9803&L=semnet&T=0&O=D&P=20612>
- Burke, R. J. (1984). Mentors in organizations. *Group and Organization Studies*, 9, 353-372.
- Byrne, B. M. (1989). Multigroup comparisons and the assumption of equivalent construct validity across groups: Methodological and substantive issues. *Multivariate Behavioral Research*, 24, 503-523.
- Byrne, B. M., Shavelson, R. J., & Muthen, B. (1989). Testing for the equivalence of factor covariance and mean structures: The issue of partial measurement invariance. *Psychological Bulletin*, 105, 456-466.
- Castro, S. L., & Scandura, T. A. (2004, November 3-6). *The tale of two measures: Evaluation and comparison of Scandura's (1992) and Ragins and McFarlin's (1990) mentoring measures*. Paper presented at the Southern Management Association Meeting, San Antonio, TX.
- Cheung, G. W., & Rensvold, R. B. (2000). Assessing extreme and acquiescence response sets in cross-cultural research using structural equations modeling. *Journal of Cross-Cultural Psychology*, 31, 187-212.
- Cronbach, L. J., & Meehl, P. E. (1955). Construct validity in psychological tests. *Psychological Bulletin*, 52, 281-302.
- Dreher, G. F., & Ash, R. A. (1990). A comparative study of mentoring among men and women in managerial, professional, and technical positions. *Journal of Applied Psychology*, 75, 539-546.
- Eby, L. T., Lockwood, A., Butts, M., & Simon, S. (2002, November 6-9). *The development of a measure of negative mentoring experiences from the protege's perspective*. Paper presented at the annual Southern Management Association meeting, Atlanta, GA.
- Johnson, C. S. (1989). Mentoring programs. In M. L. Upcraft & J. Gardner (Eds.), *The freshman year experience: Helping students survive and succeed in college* (pp. 118-128). San Francisco: Jossey-Bass.
- Jöreskog, K. G., & Sörbom, D. (1993). *LISREL 8 user's reference guide*. Chicago: Scientific Software International.
- Kline, R. B. (1998). *Principles and practice of structural equation modeling*. New York: Guilford.
- Kram, K. E. (1983). Phases of the mentoring relationship. *Academy of Management Journal*, 26, 608-625.
- Kram, K. E. (1985). *Mentoring at work: Developmental relationships in organizational life*. Glenview, IL: Scott, Foresman.
- Lankau, M. J., & Scandura, T. A. (2002). An investigation of personal learning in mentoring relationships: Content, antecedents and consequences. *Academy of Management Journal*, 45, 779-791.
- Levinson, D. J., Darrow, C. N., Klein, E. B., Levinson, M. A., & McKee, B. (1978). *Seasons of a man's life*. New York: Knopf.
- Little, T. D. (2000). On the comparability of constructs in cross-cultural research. *Journal of Cross-Cultural Psychology*, 31, 213-219.
- Nielson, T. R., Carlson, D. S., & Lankau, M. J. (2001). The supportive mentor as a means of reducing work-family conflict. *Journal of Vocational Behavior*, 59, 364-381.
- Ragins, B. R., & Cotton, J. L. (1999). Mentoring functions and outcomes: A comparison of men and women in formal and informal relationships. *Journal of Applied Psychology*, 84, 529-550.

- Ragins, B. R., Cotton, J. L., & Miller, J. S. (2000). Marginal mentoring: The effects of type of mentor, quality of relationship, and program design on work and career attitudes. *Academy of Management Journal*, *43*, 1177-1194.
- Rensvold, R. B. (2002, August 11-14). *Metric equivalence/invariance across multiple groups: Comparing apples with apples with apples etc.* Paper presented at the annual meeting of the Academy of Management, Denver, CO.
- Riordan, C. M., & Vandenberg, R. J. (1994). A central question in cross-cultural research: Do employees of different cultures interpret work-related measures in an equivalent manner? *Journal of Management*, *20*, 643-671.
- Scandura, T. A. (1992). Mentorship and career mobility: An empirical investigation. *Journal of Organizational Behavior*, *13*, 169-174.
- Scandura, T. A. (1998). Dysfunctional mentoring relationships and outcomes. *Journal of Management*, *24*, 449-467.
- Scandura, T. A., & Ragins, B. R. (1993). The effects of sex and gender role orientation on mentorship in male-dominated occupations. *Journal of Vocational Behavior*, *43*, 251-265.
- Scandura, T. A., & Williams, E. A. (2001). An investigation of the moderating effects of gender on the relationships between mentorship initiation and mentoring functions: Protégé perceptions of mentoring. *Journal of Vocational Behavior*, *59*, 342-363.
- Ugbah, S., & Williams, S. A. (1989). The mentor-protégé relationship: Its impact on Blacks in predominantly White institutions. In J. C. Elam (Ed.), *Blacks in higher education: Overcoming the odds*. Lanham, MD: University Press of America.
- Whiteside-Mansell, L., & Corwyn, R. F. (2003). Mean and covariance structures analyses: An examination of the Rosenberg self-esteem scale among adolescents and adults. *Educational and Psychological Measurement*, *63*, 1.
- Williams, E. A., Scandura, T. A. & Hamilton, B. A. (2001, November 7-10). *Dysfunctional mentoring relationships and negative social exchange: Uncovering some unpleasant realities in mentoring relationships*. Paper presented at the annual Southern Management Association meeting, New Orleans, LA.
- Young, A. M., & Perrewé, P. L. (2000). What did you expect? An examination of career-related support and social support among mentors and protégés. *Journal of Management*, *26*, 611-632.