A quantitative review of mentoring research: Test of a model

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Abstract

Over the past 25 years, numerous researchers have studied the effects of mentoring on work outcomes. However, several reviewers have noted that many of the observed relationships between mentoring and its outcomes are potentially spurious. To summarize this widely dispersed literature, a quantitative research synthesis was conducted focused on estimating multivariate analytical paths between mentoring and several career outcomes, while holding constant correlates of mentoring including demographics, human capital, and core self-evaluations. The results demonstrate that mentoring does have substantial effects on job and career satisfaction after holding these covariates constant; yet factors such as core self-evaluations, tenure, and education have stronger effects on objective career outcomes. Potential future directions to enrich the study of mentoring and career success are described.

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1. Introduction

Although the concept of mentoring dates back to the earliest stages of human civilization, the pioneering qualitative work of Levinson, Darrow, Klein, Levinson, and McKee (1978) and Kram (1983) suggested that mentoring is a powerful influence on success in organizational environments. Despite promising theoretical propositions, several recent qualitative reviews of the literature note that there is considerable ambiguity regarding the outcomes of mentoring, with some studies reporting strong relationships between mentoring and career outcomes, while others find far less support (Noe, 1988a; Ragins, 1999a; Russell & Adams, 1997; Wanberg, Welsh, & Hezlett, 2003). In response to these concerns, a meta-analysis demonstrated that after aggregating across a variety of studies, there are reliable, but small, effects of mentoring on several career outcomes (Allen, Eby, Poteet, Lentz, & Lima, 2004).

However, as Shadish (1996) has argued, although meta-analysis is a valuable statistical technique, a limitation of univariate meta-analysis is that “the statistical models used in most meta-analyses have probably been very poor approximations to any reasonable theoretical models about the causal structures that give rise
to meta-analytic data” (p. 50). To remedy this substantive limitation, the use of causal modeling techniques based on meta-analytic data has been advocated (Viswesvaran & Ones, 1995). Such models are especially useful in fields where there is a question of the contribution of several related variables to a common outcome like performance or success, as demonstrated in the literatures on staffing (Schmidt & Hunter, 1998), self-efficacy (Judge, Jackson, Shaw, Scott, & Rich, 2007) and training (e.g., Colquitt, LePine, & Noe, 2000). The current study provides a quantitative synthesis of the mentoring literature in hopes of resolving issues related to: (a) the definition and functions of mentoring, (b) assessment of the effects of mentoring in multivariate models, and (c) an examination of the influence of mentoring on markers of career success relative to other related constructs. The structural model used in the study appears in Fig. 1.

1.1. Definition and dimensions

Consistent with previous meta-analytic work, we compare how various measures of mentoring might relate to career outcomes (Allen et al., 2004). Researchers often provide research participants with a definition of mentoring and then ask a single question about whether respondents have such a relationship. As an example, Allen, Poteet, Russell, and Dobbins (1997) told respondents that, “Mentors are persons usually considered as more experienced, who support, train, ‘teach the ropes to’ or sponsor others as they pursue their career goals. Although your boss, manager, and/or supervisor can be a mentor, usually a mentor does not have to involve a day-to-day formal supervisory relationship” (p. 9). Similar definitions for mentoring can be found in numerous other studies (e.g., Chao, 1997; Dreher & Cox, 1996; Ragins & Cotton, 1991). This measurement strategy allows for an examination of the effect of having a mentor, yet treats all mentors as equally effective.

To deal with the quality of mentoring, researchers also have employed continuous indices of mentoring quality. These indices answer a completely different research question involving whether different mentors are differentially effective—in other words, all participants have mentors, and the question for researchers involves which types of mentors are most effective. One of the most direct methods for achieving this end is the use of aggregated scales of mentoring quality (e.g., Dreher & Ash, 1990; *Feldman, Folks, & Turnley, 1999; Gilbert & Ivancevich, 1999; Hollingsworth & Fassinger, 2002; Kahn, 2001; Mullen, 1998). Mentoring relationships have also been described in terms of two broad categories of functions supposedly provided by mentors based on both qualitative and quantitative data (Kram, 1983; Noe, 1988a; *Tepper, Shaffer, & Tepper, 1996). Career functions include actions such as providing the protégé with human capital enhancement opportunities and links to powerful individuals in the organization. Psychosocial functions include counseling the protégé about anxieties and uncertainty, providing friendship and acceptance, and role modeling.

![Fig. 1. Structural model of the relationship between mentoring and outcomes.](image-url)
but all of the relationships were in the same direction and many were of similar magnitude (Allen et al., 2004). Unfortunately, the correlation between mentoring methods was not investigated, leaving the dimensionality of mentoring open to question, especially since confirmatory factor analysis has suggested the two-factor model explains the data little better than a single factor model (Tepper et al., 1996). Our model attempted to answer this question.

1.2. Antecedents of mentoring

At the same time that writers observed that mentors may serve important career functions for many protégés, it was recognized that some individuals are more likely to receive mentoring than others. One proposition is that women and minorities may encounter more barriers to obtaining a mentor than White men and may, therefore, be less likely to have a mentor or receive quality mentoring (Noe, 1988b; Ragins, 1999a, 1999b). Self-report data suggest that women perceive that there are more barriers to gaining a mentor than do men (Ragins & Cotton, 1991), but the empirical evidence that women and minorities end up with fewer mentors or receive less mentoring is inconclusive (Ragins, 1999a; Wanberg et al., 2003).

Another potential antecedent of mentoring is human capital, in the form of education and organizational tenure. There is considerable evidence that mentors select protégés based on their expected productivity. Allen, Poteet, and Burroughs (1997) found in their qualitative interviews with 27 mentors that mentors seek out competent, motivated individuals to serve as protégés. Similar findings have been reported in subsequent studies (Allen, 2004; Allen, Poteet, & Russell, 2000). Mentors deliberately seek capable individuals to act as protégés under the expectation that these protégés will be the best able to reciprocate the mentor’s assistance by giving information and providing the mentor with power in the organization (e.g., Mullen & Noe, 1999; Ragins, 1997; Ragins & Scandura, 1994). Individuals who are more educated and experienced therefore may be more likely to attract mentors.

Similar to education and tenure, a person’s self-image has dual effects by both leading to job performance and career rewards, and also making the individual more attractive to potential mentors. Evidence from studies of core self-evaluations show that these variables related significantly to motivation, job performance, and job satisfaction (Erez & Judge, 2001; Judge & Bono, 2001; Judge, Erez, Bono, & Thoresen, 2003). Since motivation and performance have been described as characteristics sought by mentors, and satisfaction and income are the proposed outcomes of mentoring, it appears that core self-evaluations might be the ideal dispositional trait as a control in studies of mentoring.

1.3. Correlates of mentoring

Because performance is associated with mentoring (Allen et al., 1997; Allen et al., 2000), and because it relates to extrinsic career success in the form of pay and promotions (see Gerhart & Milkovich, 1992; for a review), it is important that estimates of the effect of mentoring take performance into account. Because it is not possible to determine the extent to which productivity is a cause or an effect of mentoring, we treat these variables as having a noncausal association. Another possible confound in studies of mentoring is the fact that mentoring status may be the result of variables that are well-known antecedents of positive career outcomes such as tenure and education (Wanberg et al., 2003).

1.4. Outcomes of mentoring

Effectiveness in one’s career is traditionally assessed with a combination of subjective perceptions as well as attitudes towards one’s job and career progress (Hall, 2002; Judge, Higgins, Thoresen, & Barrick, 1999). Extrinsic success has generally been defined in terms of a person’s current salary and either the number of promotions one has received over a time period or in terms of a person’s rank in an organization’s hierarchy. The effect of mentoring on protégé intrinsic success should come through two distinct pathways. First, mentor effects on extrinsic career success should have a subsequent effect on protégé intrinsic success (Judge, Cable, Boudreau, & Bretz, 1995). This is shown in Fig. 1 as the paths between mentoring and salary and promotions, with additional paths from these extrinsic success factors and intrinsic outcomes. Because mentors also pro-
vide their protégés with psychological support and opportunities for development, it is likely that they will also
directly contribute to the general satisfaction of protégés above and beyond the extrinsic rewards they can
secure for their protégés (Russell & Adams, 1997).

2. Method

2.1. Literature search

To identify all possible studies of mentoring, we searched the PsycINFO database (1887–2007) for studies
(articles, book chapters, dissertations, and unpublished reports) that referenced the terms “mentor”, “mentoring”,
or “mentorship”. Our search efforts resulted in the identification of 3174 abstracts. In reviewing the
abstracts, we eliminated studies that clearly did not include primary data (such as qualitative studies or
reviews) and studies that did not appear to measure mentoring or its functions. For the remaining 366 studies,
we examined each to determine whether it contained the information needed to calculate correlations among
variables included in this study. Additionally, we requested 111 unpublished doctoral dissertations and exam-
ined those that were made available to us for the same information; 14 of these dissertations contained data
relevant to our analyses that were not covered in published articles.

Studies that measured the variables of interest and contained a measure of association among variables
were included in the final analysis. For those articles that required a conversion of means, standard deviations,
t- or F-statistics into correlations, the authors collaborated to insure accurate translation. Numerous studies
were excluded because they reported percentages or proportions of means with no standard deviations, or
because they reported other measures of association that could not be converted to correlations. In total,
120 unique samples from 113 distinct publications and dissertations met the criteria for inclusion in the database. Because of the intervening time between articles, a broader scope for analyses, and different search tech-
niques, our analyses cover approximately three times the number of studies included in the previous Allen
et al. (2004) meta-analysis.

2.2. Meta-analytic procedures

We used psychometric meta-analysis (Hunter & Schmidt, 1990) to estimate the validity and predictors of
mentoring, as well as the correlations among the mentoring variables. We corrected each primary correlation
for attenuation due to unreliability in both the predictor and the criterion, and then we computed the sample-
weighted mean of these corrected correlations. To estimate parameters describing the variability of the meta-
analytical estimates and the confidence in these estimates, the variance of the observed individual estimates
was corrected for the effects of both sampling and measurement error as well. Both the unadjusted ( r) and
reliability corrected ( r̂) correlations are presented throughout the paper. In the majority of studies, authors
reported the internal consistency reliability for the measures. When reliabilities for the mentoring variables
or the outcomes were not reported, we created a sample size weighted average of the reliabilities reported
in the studies that did provide such estimates, and used these reliability values (denoted ̂) to correct the pri-
mary correlations.

Most studies provided correlations between mentoring and other variables without providing a correlation
with a composite of mentoring measures. In these cases, we took the mean of the measures of mentoring
within these studies and used this for the overall analysis. An important assumption in meta-analysis is that
correlations included in any analysis are independent (Hunter & Schmidt, 1990). Accordingly, we ensured that
each correlation included in the analysis had not been reported previously in another publication.

In addition to reporting point estimates for corrected correlations, the variability of these estimates deter-
mines the generalizability of observed effects after artifacts including sampling error variance and measure-
ment unreliability are taken into account. Accordingly, we report the standard deviation of the corrected correlation (SDr̂), as well as the standard error (SER̂). The standard deviation of the corrected correlation
(SDr̂) describes the variability of the individually corrected correlations across the population of studies,
whereas the standard error of the corrected correlation (SER̂) provides an estimate of the variability around
the estimated mean corrected correlation that is due to sampling error. Thus, \( SE_p \) estimates variability in the mean correlation while \( SD_p \) describes variability in the individual correlations across the studies.

2.3. Classification procedures

2.3.1. Definition and dimensions

We classified measures of mentoring into three categories: (1) a dichotomous variable representing whether the individual had received mentoring or not; (2) overall measures of mentoring quality or satisfaction with one’s mentor (e.g., Dreher & Ash, 1990); and (3) measures of career or psychosocial mentoring functions using established scales of mentor functions. Most measures of career or psychosocial functions came from either the scale developed by Noe (1988a) or Scandura (1992). Because the dichotomous indicators of mentoring are single items, no internal consistency reliability estimates can be provided for these constructs and it is necessary to assume they are measured without error. The overall measures of mentoring quality had \( \bar{z} = .86 \), the career function scales had \( \bar{z} = .84 \), and the psychosocial function scales had \( \bar{z} = .83 \). It should be noted that the dichotomous indicator and the continuous scales reflect completely different variables.

2.3.2. Antecedents of mentoring

We investigated five correlates of mentoring: (1) protégé gender; (2) protégé race; (3) protégé core self-evaluations; (4) protégé tenure; and (5) protégé education. The first two measures were primarily derived from self-report data on demographics and are assumed to be measured without error. Because core self-evaluations reflect a combination of self-esteem, neuroticism, locus of control, and trait self-efficacy (Judge, Erez, Bono, & Thoresen, 2002), relationships involving any of the variables were used as indicators of relationships with core self-evaluations. Across the measures of core self-evaluations, the average reliability was \( \bar{z} = .85 \). Protégé tenure and education were derived primarily from self-report data are assumed to be measured without error.

2.3.3. Performance

Performance was measured based on a variety of measures, including objective measures of performance, perceived competence of the protégé, and the mentor’s appraisal of the quantity of work provided by the protégé. Because protégé performance included several measures, we investigated whether these different measures affected the correlation of mentoring with performance. Using the WLS method of analyzing meta-analytic moderator effects (Steel & Kammeyer-Mueller, 2002), the results revealed that the correlations of mentoring with performance did not significantly vary by the way in which performance was measured. Across the measures of performance, the average reliability was \( \bar{z} = .86 \).

2.3.4. Outcomes of mentoring

Four outcomes of mentoring were examined: (1) promotions; (2) salary; (3) job satisfaction; and (4) career satisfaction. The first two measures were assumed to be measured without error because they generally were from single item measures of either counts or wages, while measures of job satisfaction had \( \bar{z} = .85 \) and measures of career satisfaction had \( \bar{z} = .82 \).

2.4. Structural equations analyses

As described earlier, we conducted a structural equations analysis using LISREL 8.52 (Jöreskog & Sörbom, 2002), based on a meta-analytically derived correlation matrix among the variables. An overall model testing the multivariate effects of three mentoring variables (career function, psychosocial function, and overall) on the outcomes was tested using the theory-testing approach described by Viswesvaran and Ones (1995).

Meta-analytic structural equations analysis requires estimates for all elements in the relevant correlation matrix. For the intercorrelations among most of the variables, we used the studies included in the meta-analysis to perform bivariate meta-analyses among the variables. Where there were very few existing studies we could locate in the mentoring literature, we used existing meta-analytic correlations. For example, only one study reported a correlation between job satisfaction and job performance, so we used Judge, Thoresen, Bono, and Patton’s (2001) meta-analytic estimate of the job satisfaction–job performance relationship. The meta-
analytic correlation between education and job performance was taken from Hunter and Hunter (1984). Additionally, when there were few correlations for the relationships among other variables (e.g., the correlation between performance and salary, the correlation between age and promotions, etc.), we conducted a search of PsycINFO for these pairs of variables and performed meta-analyses of these bivariate relationships. In all cases, at least five correlations available between the variables were obtained. The $\hat{r}$ estimates were entered into LISREL with coefficients linking each manifest correlation to its latent indicator set to $\sqrt{1 - \hat{r}}$ (Jöreskog & Sörbom, 1996).

Once we constructed the meta-analytic correlation matrix, we used the correlations as input into the LISREL model. To compute the standard errors associated with the structural coefficients, following Viswesvaran and Ones (1995), we used the harmonic mean of the sample sizes for each meta-analytic correlation. Only sample sizes for correlations with mentoring were used to avoid artificially inflating the meta-analytic sample sizes based on the large $N$ in most of the correlations between control variables. None of the cells in the meta-analytic correlation matrix have a sample size below $N = 341$. Even with the conservative exclusion of the control variables from estimating the harmonic means, the sample sizes are large, making almost all path coefficients significant even if the magnitude is of questionable practical significance. Because the primary purpose of the current study was to estimate multivariate effect sizes rather than estimating different mediating causal structures, minimal analytical constraints were imposed on the path models. The resulting models were fully saturated, and as such all models fit perfectly with 1 model degree of freedom. Because the goal was to test the effect of mentoring net of possible confounding influences, the saturation of the model is to be expected.

3. Results

Tables 1 and 2 present the meta-analytic estimates of the zero-order correlations between mentoring and several outcomes. Two separate measures of the distribution of these estimates are presented (Whitener, 1990). First, the 90% credibility intervals based on the standard deviation of $\hat{p}$ are shown, which indicate the range of (corrected) correlations which were observed in individual samples. Second, the 95% confidence intervals based on the standard error of $\hat{p}$ are shown, which indicate the range of possible true population correlations which could be expected to generate the observed estimate of $\hat{p}$. We additionally meta-analyzed the relationships between mentoring and salary, promotions, job satisfaction, and career satisfaction, but because

<table>
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<tr>
<th>Table 1</th>
<th>Relationships among mentoring, mentoring indices, and demographic/personality variables</th>
</tr>
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<tbody>
<tr>
<td>Mentoring measures</td>
<td>$k$</td>
</tr>
<tr>
<td>Career-psychosocial</td>
<td>41</td>
</tr>
<tr>
<td>Protégé gender</td>
<td>Mentor vs. not</td>
</tr>
<tr>
<td>Mentoring overall</td>
<td>27</td>
</tr>
<tr>
<td>Career function</td>
<td>24</td>
</tr>
<tr>
<td>Psychosocial function</td>
<td>21</td>
</tr>
<tr>
<td>Protégé race</td>
<td>Mentor vs. not</td>
</tr>
<tr>
<td>Mentoring overall</td>
<td>10</td>
</tr>
<tr>
<td>Career function</td>
<td>9</td>
</tr>
<tr>
<td>Psychosocial function</td>
<td>8</td>
</tr>
<tr>
<td>Protégé core self-evaluations</td>
<td>Mentor vs. not</td>
</tr>
<tr>
<td>Mentoring overall</td>
<td>9</td>
</tr>
<tr>
<td>Career function</td>
<td>4</td>
</tr>
<tr>
<td>Psychosocial function</td>
<td>5</td>
</tr>
</tbody>
</table>

Notes: gender was coded such that male = 1 and female = 0. Race was coded such that white = 1, non-white = 0.
these analyses reached essentially the same point estimates as the uncorrected estimates from Allen et al. (2004), and our focus is on multivariate models, we omit a detailed reporting of these analyses.

The existence of moderators is assessed by comparing the credibility and confidence intervals across moderator categories. The comparison of moderators via subgrouping has been criticized for making statistical inference difficult by reducing the count of observations for each conditions, so as an additional check for moderators, a weighted least squares (WLS) regression analysis was conducted to determine if there were significant relationships between mentoring measures and observed effect sizes (Steel & Kammeyer-Mueller, 2002). This allows for a simultaneous statistical test for whether a combined set of hypothesized moderators is predictive of variance in observed effect sizes while holding potential confounds (reliability of predictors and outcomes) statistically constant.

The first analyses presented in Table 1 give the correlations among measures of mentoring. The results are consistent across the three primary measures of mentoring, with career and psychosocial mentoring measures correlated at $r = .69$. The results from Table 1 show that across all moderator categories there is, at best, a very small relationship between mentoring and gender or race, with the exception of race and the career function, where there is evidence that Whites receive more mentoring. There was almost complete overlap in confidence intervals across all moderator categories with the exception of this last relationship. Core self-evaluations related significantly to all the mentoring measures, with especially strong relationships between core self-evaluations and psychosocial mentoring, and especially weak relationships between core self-evaluations and the mentoring indicator.

With regard to the human capital variables and performance, shown in Table 2, the results were mixed. Mentoring did not show substantial relationships with education or tenure, with small effect sizes and credibility intervals and confidence intervals that either overlapped with or came extremely close to zero. The results are somewhat different for performance. First, none of the 90% credibility intervals or 95% confidence intervals include zero. However, all the confidence intervals for observed effect sizes overlapped considerably. None of the moderator categories was significantly predictive of observed effect sizes in the WLS models, with all $t$-statistics for individual coefficients being below 1.0, suggesting that the various conceptualizations of mentoring have similar relationships with the human capital variables and performance.

As noted earlier, because of the possible correlations between mentoring and other variables that are related to several outcomes of mentoring, it would be informative to see how strongly mentoring is related to several key outcomes in multivariate models. The multivariate models also facilitate a comparison of the magnitude of mentoring’s relationship to these outcomes relative to other predictors. Table 3 presents the meta-analytic correlation matrix that was used to estimate the path models for this study. The portion of the matrix below the diagonal gives the raw correlations which were used as inputs into the path model, while
the portion above the diagonal shows the correlations which were corrected for unreliability through the LISREL procedure for path analysis described earlier. Estimates of the internal consistency of each measure are presented on the diagonal in italics.

Table 4 shows results from three distinct path models: in the first model the dichotomous indicator of mentoring is used; in the second model the aggregate “overall” quality of mentoring is used; and in the third model the two primary mentor functions are used. Across all analyses, receiving mentoring is a more significant predictor of affective or subjective outcomes than objective outcomes whether the indicator of mentoring reflected

Table 4

<table>
<thead>
<tr>
<th>Antecedents</th>
<th>Mentor indicator model</th>
<th>Overall mentor rating model</th>
<th>Mentor functions model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>.08**</td>
<td>.10**</td>
<td>.06**</td>
</tr>
<tr>
<td>Race</td>
<td>.05**</td>
<td>-.08*</td>
<td>.03</td>
</tr>
<tr>
<td>Core self-evaluations</td>
<td>.15**</td>
<td>-.05*</td>
<td>.42**</td>
</tr>
<tr>
<td>Tenure</td>
<td>.04*</td>
<td>.26**</td>
<td>.04</td>
</tr>
<tr>
<td>Education</td>
<td>.06**</td>
<td>.25**</td>
<td>-.05</td>
</tr>
<tr>
<td>Performance</td>
<td>.03</td>
<td>.22**</td>
<td>.14**</td>
</tr>
<tr>
<td>Mentoring</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Career mentoring</td>
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<tr>
<td>Psychosocial mentoring</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Objective outcomes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salary</td>
<td>.02</td>
<td>.30**</td>
<td>.00</td>
</tr>
<tr>
<td>Promotions</td>
<td>.45**</td>
<td>.12**</td>
<td>.00</td>
</tr>
<tr>
<td>Full model R²</td>
<td>.06</td>
<td>.44</td>
<td>.28</td>
</tr>
</tbody>
</table>

Notes: Prom., promotions; Job sat., job satisfaction; Car. sat., career satisfaction. n = 3135 for mentor indicator model. n = 2485 for the overall mentor rating model. n = 1654 for the mentor functions model. All n based on the harmonic mean of the sample sizes.

* p < .05.
** p < .01.
simply having or not having a mentor, or if the comparison was among mentored individuals with the quality of the mentoring provided acting as the explanatory variable. Second, mentoring remains a significant predictor of several outcomes after accounting for human capital and individual differences variables. The indicator for whether one had a mentor and the continuous measure of career mentoring among those who had mentors were both positively related to promotions, while the overall mentoring quality variable was not significantly related to promotions, and, paradoxically, psychosocial mentoring was negatively related to promotions. Only the overall mentoring variable and career mentoring were significantly related to salary levels. Whereas having a mentor was significantly related to job and career satisfaction, among those who had mentors, overall mentoring and career mentoring were strong predictors of affective measures of career success. Of all the variables in the model, only core self-evaluations and salary were comparable predictors of job and career satisfaction. Again, paradoxically, psychosocial mentoring was significantly negatively related to career satisfaction although the relationship is small in magnitude.

One additional issue that can be addressed with these data is the extent to which mentoring mediates the relationship between antecedents of mentoring (e.g., gender, race, core self-evaluations, tenure, and education) and career outcomes. The relatively weak zero-order correlations between demographics and the mentoring functions, coupled with the significant relationships between gender and race and the outcomes of mentoring, suggests that mentoring does not explain why women and non-Whites receive fewer promotions, lower salaries (for women) or are less satisfied with their jobs (for women) or their careers (for non-Whites). Similarly, the weak relationships between mentoring and tenure and education, and the remaining positive effects of these variables on objective measures of career success, coupled with weak negative effects on career and job satisfaction, suggests that mentoring is also not a mediating variable in this case.

4. Discussion

The current research provides an opportunity to consider what we have learned from the study of one of the most focal work relationships—the mentoring relationship—to date. Our analyses included numerous potential antecedents and covariates of mentoring, including gender, race, core self-evaluations, tenure, education, and job performance which were not included in Allen et al. (2004) meta-analysis. Because of the examination of these correlates, we also determined how the purported effects of mentoring are modified once these variables were taken into consideration. This strengthens our appreciation of mentoring, because even with personality and other career related variables held constant, mentoring remains an important predictor of many career outcomes. However, when assessed relative to the effect sizes for variables like tenure and education (in predicting salary) and core self-evaluations (in predicting performance, job satisfaction, and career satisfaction), it appears that the benefits of mentoring are modest. Our structural model allows us to assess the distinct contribution of career and psychosocial mentoring when both are taken into account. The finding that career mentoring is considerably more important in a multivariate model was not previously demonstrated.

4.1. Implications for mentoring

Overall, the results suggest that the effects on mentoring on career outcomes range from moderate to weak. When the effect of the mentoring variables was studied in the context of a path analysis, the results did not change appreciably, although the effects of mentoring tended to be considerably smaller than the effects of the covariates. Thus, although mentoring may not be properly labeled a useless concept to careers, neither can it be argued to be as important as the main effects of other influences on career success such as ability and personality (Judge et al., 1999), human capital (Judge et al., 1995), networks (Marini & Fan, 1997), or even the demographic variables included here.

Several alternative explanations for the relatively small effect sizes for mentoring can be offered. First, there is evidence to suggest that individuals who do not have mentors will seek out more information from their coworkers than individuals who do have mentors (Ostroff & Kozlowski, 1993). Thus, the advantage conveyed by mentors may be offset by the use of alternative information sources by those who do not have mentors as resources. Second, it may be that the effect of mentoring on career success is moderated by other such as mentor gender, and gender similarity (e.g., Scandura & Williams, 2001). Other moderating influences, such as the
ability and motivation of the protégé to implement whatever benefits the mentor bestows, may be operative. This last possibility seems especially worth examining, because mentors prefer protégés they perceive to be higher in willingness and ability to learn (Allen, 2004).

In addition to the modest nature of the average relationships, surprisingly, there was not much variability in effect sizes by the definition of mentoring. Regarding how mentoring was defined, the results demonstrated few substantial differences in observed effect sizes. In the multivariate models, career mentoring related significantly and positively to every single outcome, but psychosocial mentoring is either not significantly related, or negatively related to the outcomes. One possible interpretation is that multicollinearity between the mentor functions influenced the results (Cohen, Cohen, West, & Aiken, 2003). The lack of distinction between mentoring forms corresponds to the high correlations among the mentoring measures (r = .59–.73—see Table 1). In considering the implications of these strong correlations, it is worth noting that the correlations among the mentoring measures is quite similar to the average intercorrelation among the dimensions of organizational citizenship behavior (r = .67) (LePine, Erez, & Johnson, 2002). Given the intercorrelations observed here with respect to the different conceptualizations of mentoring, like OCBs, the different conceptions of mentoring may be less distinct than has been assumed. Future research should investigate more explicitly whether it makes sense to distinguish among these various conceptions and measures of mentoring.

Another noteworthy finding was the weak relationship between mentoring and demographic variables. Our results are inconsistent with the assertion that a primary reason for gender-based earnings disparities is the differential availability of mentoring (e.g., Glass Ceiling Commission, 1995). The correlational data show that men are not more likely to report having mentors, and that both men and women find that their mentors provide similar mentoring. This coincides with prior research demonstrating few differences between outcomes for male and female protégés (Ragins, 1999a). Additionally, the multivariate results show that race and gender are substantial correlates of career outcomes even after mentoring is held statistically constant. This however, does not discount the possibility that there are different variables in men’s and women’s mentoring relationships that may explain differences in career outcomes.

Some might wonder if placing performance in our structural model eliminates the primary mechanism through which mentoring has its effects. Our goal in including performance in the structural model was not to pit performance versus mentoring as leading to specific outcomes, but rather, to show the influence of mentoring after performance as a potential mediator was taken into account. Additionally, because there is good reason to suspect that mentoring is more likely to be provided to individuals who are higher performers, it is not possible to attribute a relationship between mentoring and career outcomes unambiguously to mentoring without taking performance into account. There are reasons to suspect that mentoring might have performance-independent influences that should be examined in future research, as shown in our data. Ragins (1999b) notes that mentoring relationships provide resource and power for the protégé, and this is reflected in career enhancing measures that discuss factors like “protection” and “running interference” that would seem to enhance mentor work outcomes without necessarily improving their task performance.

4.2. Implications for future research

The strongest correlations found in the current study were between attitudinal descriptions of mentoring and attitudinal measures of satisfaction with one’s job or career. The lack of correspondence between objective and subjective measures highlights a need for studies that obtain measures of mentoring from other sources. Wanberg et al. (2003) noted that individuals with high negative affectivity may be more likely to report that they have not been helped with their careers and that they dislike their jobs, which would artificially generate a positive correlation between mentoring and job satisfaction. An analysis that combines more objective indicators of career success (promotions and salary) with more affective, subjective indicators (job and career satisfaction) might help to explain this result. Research starting from a classical training approach, with pre- and post-mentoring measures of work outcomes would be very instructive in this regard (e.g., Goldstein, 1993; Hellervik, Hazucha, & Schneider, 1992). Because mentoring is a dynamic process that unfolds in time (Wanberg et al., 2003), growth curve modeling studies would be especially instructive in this regard.

Given the fairly weak relationships between mentoring and most career outcomes, the time may have passed for research that investigates mentor functions as a primary determinant of the success of mentoring.
Several observers suggest that it may be more profitable to consider the mentor’s position within the organization as an explanatory variable or by examining the social network that makes up the organization (Podolny & Baron, 1997; Siebert, Kraimer, & Liden, 2001; Wanberg et al., 2003). In short, it may not be especially helpful to one’s career success if a relatively powerless or naïve mentor comes to one’s assistance, no matter how helpful he or she may try to be. It is also possible that research will benefit from considering developmental relationships with multiple mentors simultaneously rather than concentrating on the behavior of a single influential individual (Higgins & Kram, 2001). In either event, it appears that if researchers wish to explain career success, they may increasingly have to turn away from mentor functions scales and towards a more detailed understanding of the mentor process as organizationally embedded.

References

Note: Studies included in the meta-analysis are preceded by an asterisk (*)


