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The Development of a Behaviorally Based Mentoring Workplace Scale

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by

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Dedication

To my parents.
Thank you for all the love and support on this journey.
Dad, I wish you were here to see the conclusion.

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Table of Contents

List of Tables iv

List of Figures vi

Abstract vii

Chapter One: Introduction 1
- Defining Mentorship 3
- Current Mentoring Framework 5
- Antecedents of Mentoring 6
- Outcomes of Mentoring 7
- Current Mentoring Scales 7
  - Noe's Mentoring Function Scale 8
  - Dreher and Ash's Global Mentoring Scale 8
  - Ragins and McFarlin's Mentor Role Instrument Scale 8
  - Scandura's Mentoring Function Scale 9
  - Fleming's Mentoring Competency Assessment 10
  - Eby's Protégé Negative Mentoring Experiences Scale 10
  - Ensher and Murphy's Mentor Relationship Challenges Scale 11
- Overview of Mentoring Cuboid 11

Chapter Two: Pilot Study 1 – Item Development 14
- Method 14
  - Participants 14
  - Measures 15
    - Demographic 15
    - Mentoring Relationship 15
    - Action by Objective Importance Ratings 15
- Analysis 16
- Scale Coding 16
- Discussion 18

Chapter Three: Pilot Study 2 – Item Refinement 32
- Observability of Behaviors and the Factor Structure 32
- Convergent Validity 33

Method 34
Participants 34
Measures 35
Demographic 35
Mentoring Relationship 35
Behavioral Mentoring Items 36
Analyses 36
Screening 36
Factorability 37
Exploratory Factor Analysis 37
Factor Discussion 39
Convergent Validity 39
Supplemental Analyses 40
Discussion 41
Tables and Figures 42

Chapter Four: Primary Study – Factor Replication and Hypothesis Testing 54
Structure Replication, Criterion-Related Validity, and Hypotheses 54
Method 56
Participants 56
Measures 57
Demographic 57
Mentoring Relationship 57
Objective and Subjective Outcome Items 58
Promotion 58
Compensation 58
Salary Growth 58
Mentoring Relationship Quality 58
Job Satisfaction 58
Turnover Intentions 59
Career Satisfaction 59
Learning 59
Control Variables 59
Mentoring Measures 60
Noe Scale 60
Behavioral Effectiveness of Mentoring Scale 60
Analyses 60
Screening 60
Diagnostic Testing 61
Full Information Maximum Likelihood 61
Confirmatory Factor Analysis 62
Control Variables 63
Hypothesis Testing 63
Additional Analyses 68

Chapter Five: Discussion and Implications 89
Discussion 89
Future Directions 92
Theoretical Implications 94
Practical Implications 95
Limitations 96

References 98

Appendices 106
Appendix A: Noe's Mentoring Function Scale 107
Appendix B: Dreher and Ash's Global Mentoring Scale 108
Appendix C: Ragins and McFarlin's Mentor Role Instrument Scale 109
Appendix D: Scandura's Mentoring Function Scale 110
Appendix E: Fleming's Mentoring Competency Assessment 111
Appendix F: Eby's Protégé Negative Mentoring Experiences Scale 112
Appendix G: Ensher and Murphy's Mentor Relationship Challenges Scale 113
Appendix H: Behavioral Mentoring Scale Items 114
Appendix I: Demographic Items for Surveys 119
Appendix J: Mentoring Relationship Items 121
Appendix K: Measures for Final Study 122
Appendix L: Pilot Study 2 – Final Items 124
Appendix M: Pilot Study 1 IRB 126
Appendix N: Pilot Study 2 IRB 126
Appendix O: Primary Study IRB 127
Appendix P: Copyright Permissions for All Cited Measures 128
Kraiger et al., 2019 128
Noe, 1988 129
Dreher and Ash, 1990 130
Ragins and McFarlin, 1990 131
Scandura, 1992 132
Fleming et al., 2013 133
Eby et al., 2004 134
Ensher and Murphy, 2011 135
Allen and Eby, 2003 136
Michaels and Spector, 1982 136
Greenhaus, Parasuraman, and Wormley, 1990 137

List of Tables

Table 1: Pilot 1 – Sample Objective by Action Item 18

Table 2: Pilot 1 – Retained Item Source List 19

Table 3: Pilot 1 – Mean Importance Ratings by Objective 22

Table 4: Pilot 1– Highest Mean Importance Ratings by Objective 31

Table 5: Pilot 2 – Proposed Factor Structure by Action Observability 41

Table 6: Pilot 2 – Factor Analysis Variance Summary with All Item 43

Table 7: Pilot 2 – Factor Analysis Fit Statistics Summary with All Items 43

Table 8: Pilot 2 – Factor Loadings for Data with All Items 44

Table 9: Pilot 2 – Factor Analysis Variance Summary with Final Reduced Items 48

Table 10: Pilot 2 – Factor Analysis Fit Statistics Summary with Final Reduced Items 48

Table 11: Pilot 2 – Factor Loadings for Final Reduced Items 49

Table 12: Pilot Study 2 – Descriptive Statistics for Variables 52

Table 13: Pilot 2 – Means, Standard Deviations, and Correlations of Variables for Additional Insight 53

Table 14: Primary Study – Descriptive Statistics for Variables 70

Table 15: Primary Study – Correlations of Variables 71

Table 16: Primary Study – Means of Item Responses by Item Grouping for Competency Development Factor 72

Table 17: Primary Study – Means of Item Responses by Item Grouping for Relationship Building Factor 74

Table 18: Primary Study – Means of Item Responses by Item Grouping for Sponsorship Factor 76

Table 19: Primary Study – Confirmatory Factor Analysis Comparisons 77

Table 20: Primary Study – Factor Loadings for Final Items 77

Table 21: Primary Study – Means, Standard Deviations, and Correlations for Control Variables 80

Table 22: Primary Study – Hypothesis 1: Results of SEM for the BEMS and a Function Scale 81

Table 23: Primary Study – Hypothesis 2: Results of SEM for the BEMS and Subjective Protégé Outcomes 82

Table 24: Primary Study – Hypothesis 3: Results of SEM for the BEMS and Objective Protégé Outcomes 83

Table 25: Primary Study – Hypothesis 4: Results of SEM for the BEMS, Function Scale, and Subjective Protégé Outcomes 84

Table 26: Primary Study – Hypothesis 5: Results of SEM for the BEMS Factors and Subjective Protégé Outcomes 85

Table 27: Primary Study – Hypothesis 6: Results of SEM for the BEMS Factors and Objective Protégé Outcomes 86

Table 28: Primary Study – Additional Dominance Analysis Rankings 87

Table 29: Primary Study – Additional Dominance Analysis Conditional Statistics 88

List of Figures

Figure 1: Pilot 2 – Parallel Analysis Scree Plots with All Items.....42

Figure 2: Pilot 2 – Parallel Analysis Scree Plots with Final Reduced Items.....47

Abstract

The purpose of this research is to contribute to the mentoring literature by providing a new tool to measure mentoring behaviors and their effectiveness from the perspective of the protégé. To accomplish this, I used the specific mentoring behaviors outlined by previous research to develop a behaviorally based measure of mentorship. The items for this new behaviorally based mentoring effectiveness scale were developed to measure the same theoretical construct as previous mentoring scales, but with the intention of capturing effective behaviors instead of broader mentoring functions. This scale was developed through three main steps: a pilot study to narrow down behaviors to the most important behaviors for mentoring effectiveness, a second pilot study to refine items and determine the factor structure, and a final study which was used to replicate the factor structure as well as provide evidence of criterion-related validity with mentoring outcomes. The result of this work is the development of the Behavioral Effectiveness of Mentoring Scale, which is comprised of three factors: competency development, relationship building, and sponsorship. This scale and its factors are related to important subjective outcomes found in the mentoring literature and explain unique variance above and beyond traditional function-based mentoring scales.

Chapter One:

Introduction

Over the past forty years, thousands of articles have been dedicated to mentoring related topics (Eby et al. 2013; Eby, Allen, Evans, Ng, & DuBois, 2008). This research demonstrates that mentorship can provide many benefits including behavioral, attitudinal, health-related, relational, motivational, and career-related outcomes across several types of mentoring relationships – one of those types being workplace mentoring. The majority of workplace mentoring research has used a function approach to study this relationship (Kraiger, Finkelstein, & Varghese, 2019). The function approach of mentoring divides mentor functions into two specific categories: career-related functions and psychosocial functions (Kram, 1985). Career-related functions have been generally conceptualized as activities like providing coaching or assigning a challenging assignment to the protégé, whereas psychosocial functions are conceptualized by activities like providing empathy and concern to the protégé (Noe, 1988; Ragins & McFarlin, 1990). However, little has been done to build upon this traditional conceptualization of mentoring.

While using a function approach to measuring mentorship has garnered insight into the broader aspects of mentoring, a behaviorally based approach is needed to better facilitate insights into what it is that mentors actually do that has an impact on their protégés. Some researchers have been critical of the dearth of understanding regarding mentoring processes. For example, it has been noted that the mentoring literature's reliance on the function approach may be detracting from our understanding of specific mentoring behaviors that promote positive protégé

outcomes (Allen, Shockley, & Poteet, 2010). It has also been noted that drilling down on specific mentoring behaviors will help "open up" the black box of mentoring processes (Lankau & Scandura, 2007). Specifically, researchers need to study the explicit behaviors of mentors to better understand what precisely mentors do that enables positive outcomes for their protégés. To address the lack of behavioral measurement in the literature, Kraiger et al. (2019) authored a paper that began to disentangle distinct mentor behaviors, broken into specific objectives and actions, which are frequently performed by mentors. This research opens opportunities for looking at mentoring through a behavioral lens.

The main purpose of the current research is to contribute to the mentoring literature by providing a new tool to measure mentoring behaviors and their effectiveness from the perspective of the protégé. To accomplish this, I use the specific mentoring behaviors outlined by previous research to develop a behaviorally based measure of mentorship (Kraiger et al., 2019). This will help expand current research beyond the traditionally relied upon function approach of assessing mentorship by providing a resource to measure an alternative conceptualization of mentoring. Having an alternative, behaviorally based, conceptualization of mentoring should allow future researchers to drill down into specific processes to better understand the "black-box" of how mentors and protégés engage in learning and development. Currently, the mentoring literature focuses primarily on inputs and outcomes rather than the specific processes that occur within the relationship (Lankau & Scandura, 2007). Having the ability to measure and conceptualize mentoring at the behavioral level should allow for the opportunity to better understand what makes an effective mentor, what exactly is happening when a mentor is not being effective, and potentially illuminating what interventions might be the most effective at addressing poor mentoring relationships through behavioral changes.

Defining Mentorship

The concept of mentoring spans back to ancient Greece, when Odysseus leaves his son Telemachus in the care of Mentor while he goes on his quest (Homer, 1919). The conceptualization of a mentor as an individual who provides guidance and support is still used today. In more modern times, the interest in mentoring within the context of adult development can be traced back to seminal work conducted by Levinson (Levinson & Darrow, 1978). Levinson sought to understand the developmental stages of adulthood in men and thought that a mentor was an important transitional figure between early and middle adulthood. Moving forward to understanding mentoring relationships within the workplace, we can look to Kram's pioneering research. In 1983, "Phases of the Mentor Relationship" delved into biographical interviews of 18 developmental relationships in a corporate setting (Kram, 1983). This research is now a seminal work in the mentoring field that has operated as a cornerstone for the current mentoring literature.

The definition of what mentorship entails is a fairly contentious topic. Some of the frequent points of contention include age, emotional closeness, duration, and function (Eby, Rhodes, & Allen, 2007). However, one of the most comprehensive definitions of mentorship in the workplace, developed by O'Neil and Wrightsman, is as follows:

> "Mentoring exists when a professional person serves as a resource, sponsor, and transitional figure for another person (usually but not necessarily younger) who is entering that same profession. Effective mentors provide mentees with knowledge, advice, challenge, and support as mentees pursue the acquisition of professional competence and identity. The mentor welcomes the less experienced person into the

> profession and represents the values, skills, and success that the neophyte professional person intends to acquire someday" (2001, p. 113).

This definition is important because it encapsulates the idea that effective mentorship requires the mentor to take specific behaviors to support and instill knowledge so that the protégé can become successful in their professional career.

Other frequent conceptualizations capture several key components of mentorship. A review of mentoring definitions outlined three key components of mentoring: reciprocity, developmental benefits, and regular/consistent interaction over some period of time (Haggard, Dougherty, Turban, & Wilbanks, 2011). As mentioned, mentoring requires a reciprocal relationship, involving mutuality. This helps conceptually separate a mentor from a role model because it requires mutual interaction between the mentor and the protégé. The second component is developmental benefits. While the benefits of mentoring are mutual, they tend to be asymmetrical, disproportionately supporting the development and learning of the protégé (Jacobi, 1991; Kram, 1985; Levinson & Darrow, 1978). The third component discussed by Haggard is that there is a continued and consistent relationship over time (Haggard et al., 2011). Again, because mentoring tends to be a prolonged relationship, this helps distinguish mentoring from coaching or advising relationships. It is important to note that while there are many different definitions of mentoring, most are grounded in the core functions of mentoring based on Kram's mentoring framework, where mentoring is split between psychosocial and career-related functions (National Academies of Sciences, Engineering, and Medicine, 2019; Kram, 1985).

Current Mentoring Framework

In her seminal work on mentoring relationships, Kram developed the foundational framework for mentoring relationships in the workplace (1983). She dichotomized the functions of mentoring into two core support functions: psychosocial support and career-related support (also frequently referred to as instrumental support). The career-related function is defined as "aspects of the relationship that primarily enhance career advancement," whereas the psychosocial function is defined as "aspects of the relationship that primarily enhance the sense of competence, clarity of identity, and effectiveness in the managerial role" (Kram, 1985, p. 614). Career-related support includes the following mentoring behaviors: sponsorship, exposure and visibility, coaching, protection, and challenging assignments; psychosocial support includes role modeling, acceptance and confirmation, counseling, and friendship (Kram, 1985). In this mapping of mentoring, the more of these functions a mentor does, the more beneficial the relationship – therefore, a mentor may just provide some of these functions (Kram, 1985).

While Kram's two-dimensional framework is still used as one of the primary mappings of mentorship functions and has received empirical support (Noe, 1988; Ensher & Murphy, 1997) there are several other frameworks in use. One notable differentiation comes from the role modeling function. Kram's two-dimensional framework nests role modeling as a function under psychosocial support, but other researchers have found support for role modeling to be its own distinct function (Burke, 1984; Scandura & Ragins, 1993). Another function structure includes an 11-dimension conceptualization of mentoring functions that includes acceptance and confirmation, challenging assignments, coaching, counseling, exposure and visibility, friendship, role modeling, parent role, protection, social role, and sponsorship (Ragins & McFarlin, 1990). However, these dimensions are nested within the two broad functions described by Kram. Also,

this 11- dimension measure has received little support with regard to its concurrent validity (Castro & Scandura, 2004).

Antecedents of Mentoring

When thinking about workplace mentoring relationships, it is important to consider what leads to supportive mentoring relationships in the first place. Studies have demonstrated that there are many characteristics of the protégé, the mentor, the mentoring relationship itself, and organizational or structural qualities that lead to mentoring support. A meta-analysis conducted by Ghosh (2014) demonstrated that for the protégé, proactivity, emotional intelligence, self-monitoring, and learning goal orientation were related to higher levels of mentoring support. Mentors who reported higher levels of learning goal orientation and higher levels of transformational leadership were more likely to provide mentoring support to their protégés, as well. This indicates that there are a variety of individual characteristics that are working as important antecedents to mentoring. At the relationship level, gender similarity, perceived similarity, self-disclosure, and trust were all related to mentoring support (Ghosh, 2014). These findings are in line with other meta-analyses and research. For example, perceived similarity has been found to be an important antecedent for workplace mentoring in a multitude of studies, particularly deep-level similarities like personality, values, and beliefs (Eby et al., 2013; Mitchell, Eby, & Ragins, 2015). Finally, at the organizational level, the antecedent of organizational support for mentoring was related to higher levels of mentoring support (Gosh, 2014).

Outcomes of Mentoring

Research has demonstrated a plethora of outcomes that stem from mentoring relationships. For example, career-related and psychosocial mentoring have been positively related to both objective and subjective outcomes for protégés. In a meta-analysis, researchers found that career-related mentoring was related to greater compensation, greater salary growth, more promotions, career satisfaction, job satisfaction, and satisfaction with the mentor (Allen, Eby, Poteet, Lentz, & Lima, 2004). These same researchers also found that psychosocial-related mentoring was related to greater compensation, more promotions, greater career satisfaction, greater job satisfaction, stronger intentions to stay with the company, and satisfaction with the mentor (Allen et. al, 2004). Learning has also been demonstrated as an important outcome of mentoring for protégés (Lankau & Scandura, 2002). There are also findings that suggest when mentors and protégés are not a good match, there can be negative consequences for protégés as well. Some negative experiences that protégés have reported include mentor sabotage and mentors lacking technical expertise (Eby & Allen, 2002; Eby, Butts, Lockwood, & Simon, 2004; Eby, McManus, Simon, & Russell, 2000). Negative mentoring experiences have also been related to psychological stress and strain, negative work attitudes, and unfavorable mentoring attitudes about the mentoring relationship for the protégé (Eby & Allen, 2002; Eby et al., 2004).

Current Mentoring Scales

There are a multitude of existing mentoring scales that are frequently used in the literature – all with their own relative strengths and weaknesses. These scales primarily focus on the perspective of either the mentor or the protégé, with the exception of Fleming's Scale, which considers both the mentor and the protégé perspective (Fleming et al., 2013). A majority of these scales are based on the Kram (1985) framework rather than capturing mentoring effectiveness

through a behaviorally based approach. Below is a review of the primary scales used in the literature.

Noe's Mentoring Function Scale

One of the first mentoring scales was developed by Noe to study the extent to which mentors provide both career and psychosocial outcomes for their protégés (1988). This scale is a 21-item measure broken into two factors: psychosocial mentoring functions, which includes concepts of coaching, counseling and confirmation (14 items) and career mentoring functions which includes concepts of protection, exposure, and sponsorship (7 items). The researchers reported adequate reliability, with the psychosocial mentoring factor having an α=.92 and the career-related mentoring factor having an α=.89. Items on this scale range from 1- to a very light extent, to 5 - to a very large extent and are answered by protégés (see Appendix A for full scale).

Dreher and Ash's Global Mentoring Scale

Following Noe's mentoring scale, Dreher and Ash developed what they described as a "global measure of mentoring practices," (Dreher & Ash, 1990, p. 541). This scale incorporated items and concepts from both Noe's 1988 measure as well as a separate 10-item measure of mentorship developed by Whitely and colleagues (Whitely, Dougherty, & Dreher, 1988, 1991). Content was chosen to be reflective of both the psychosocial and career-related components described by Kram (1985). Dreher and Ash's global mentoring scale is an 18-item long measure with response options that range from 1- to a small extent, to 5- to a large extent. The reported internal consistency is α=.95 (see Appendix B for full scale).

Ragins and McFarlin's Mentor Role Instrument Scale

In 1990, Ragins and McFarlin developed the Mentor Role Instrument (MRI), to investigate the perceptions of mentor roles in cross-gender mentorship pairings. While the

authors note that Noe's 1988 scale provided significant improvements to the measurement of mentorship, they reported several problems with the measure including: "only one or two items are used to measure some of the mentor roles, thereby restricting reliability assessments" and several concerns over factor loadings (Ragins & McFarlin, 1990, p. 323). Again, the scale was based on the two components of Kram's mentoring work, being composed of two factors that encompass multiple mentoring roles: career development (sponsorship, coaching, protection, challenging assignments, and exposure) and psychosocial (friendship, role modeling, counseling, and acceptance; 1985). They also included two additional mentoring roles: parental and social. Each role was measured using three items. Therefore, this scale is 33-items long and measured on a seven-point Likert scale from strongly disagree to strongly agree. The length of this measure can make it difficult to include in survey research (see Appendix C for full scale).

Scandura's Mentoring Function Scale

Scandura's (1992) popular scale of mentoring functions was originally developed to measure the relationship between mentorship and career mobility. During the development of this 18-item scale, the items loaded on to three factors: vocational support (8 items), role modeling (7 items), and social support (3 items). Response options are on a five-point Likert scale that range from disagree to strongly agree. The items are used by the protégés to rate their mentors (Scandura, 1992, p. 171; see Appendix D for full scale). In 1993, this scale was reduced to a 15-item measure (Scandura & Ragins, 1993). In 2004, the scale was even further shortened to a 9-item measure with three items per factor, referred to as the MFQ-9 (Castro & Scandura, 2004).

Fleming's Mentoring Competency Assessment

The Mentoring Competency Scale, developed by Fleming and colleagues, is a unique approach to measuring mentoring skills (Fleming, et. al, 2013). This scale measures how skilled *both* the mentor *and* the protégé believe the mentor performs six specific competencies. The competencies included are: maintaining effective communication, aligning expectations, assessing understanding, addressing diversity, fostering independence, and promoting professional development. This scale was specifically designed for use by clinical and translational sciences – where a majority of mentors were faculty mentors. The scale includes 26 items, and the responses range from 1 – not at all skilled to 7 – extremely skilled. Protégés were also able to select an option of 0, representing that the competency had not been observed (full scale in Appendix E). What is important to note is that they found consistent differences between how mentors and protégés rated the mentoring skills of the mentor, where the mentors rated themselves lower relative to protégés' ratings across competencies. This is consistent with other research that shows mentors' self-ratings of commitment to the mentoring relationship are lower than protégés' ratings of mentor commitment (Allen & Eby, 2008).

Eby's Protégé Negative Mentoring Experiences Scale

A conceptually distinct measure of mentoring experiences is the Protégé Negative Mentoring Experiences Scale (Eby, Butts, Lockwood, & Simon, 2004). This scale was developed to measure negative mentoring experiences from the perception of the protégé. The researchers found that negative experiences could be divided into five distinct constructs: Mismatch within the Dyad (9 items), Distancing Behavior (7 items), Manipulative Behavior (11 items), Lack of Mentor Expertise (7 items), and General Dysfunctionality (8 items; see Appendix F for items).

Ensher and Murphy's Mentor Relationship Challenges Scale

After completing a qualitative study in 2005, Ensher and Murphy (2011) sought to create a new mentoring scale measuring relationship challenges. They found three distinct factors: demonstrating commitment and resilience (11 items), measuring up to a mentor's standards (7 items), and career goal and risk orientation (5 items). All three scales demonstrated adequate reliability. Again, this scale is based on responses provided by the protégé. This scale is novel in that it deviates from Kram's original factors of career-related and psychosocial support (1985). In addition, it provides an interesting component of nuance by having items that are evaluating how a protégé perceives that their mentor would have reacted given a situation. The full scale is available in Appendix G.

Overview of Mentoring Cuboid

To expand beyond the current framework of mentoring, in 2019 Kraiger and colleagues sought to understand what effective workplace mentors try to do and how they accomplish it (Kraiger et al., 2019). They approached trying to understand these mentor behaviors by first conducting a qualitative study with individuals who were viewed as respected mentors who functioned as subject matter experts. After completing 28 interviews with the respected mentors, the authors proceeded to rigorously code the interviews - discovering that effective mentors expressed both *what* they do as mentors, and also *why* they do those particular actions. Through this approach, the researchers developed a "cuboid" of effective mentor behaviors broken down into actions, objectives, and enactments. Actions are conceptualized as the activities that mentors do. Some examples provided in the paper include provide feedback, ask questions, or give an assignment. Objectives are conceptualized as the purpose or the goal of what the mentor is trying to do, such as creating opportunities for their protégé, growing their protégé's competence,

instilling psychological safety, or removing obstacles for their protégé. Finally, enactments are defined as "statements of specific behaviors that clearly describe "the what" and "the how" of the behavior in a sufficiently nuanced way that it can be clearly visualized" (Kraiger et al., 2019, p. 407). Enactments can be conceptualized as the detailed descriptions that can accompany crossed action-objective pairings. The purpose of enactments is to distinguish the different ways in which mentors can carry out these action by objective pairings through specific examples. For example, a combination of all three using the objective of "protégé competency development" and the action of "asking questions" could manifest in the enactment of "I ask my mentee non-directive questions so they could assess their own strengths and weaknesses following a task in order to learn how to improve". The cuboid that the authors developed is available to view for free online (http://mentormatrix.colostate.edu/). The cuboid consists of 24 objectives by 33 actions with 758 enactments represented in at least one place in the matrix. More than one enactment was able to be in each objective by action pairing, so this resulted in 259 pairings represented by at least one enactment in the matrix.

It is important to note that the objectives and actions can be combined to demonstrate unique behaviors that may manifest or appear differently, even if an action or an objective is the same. For example, developing a protégé's competency (an objective) through giving an assignment (action) would be a separate behavior than the mentor useing a different action, like asking questions - therefore giving an assignment might manifest in an enactment like "I monitor their workload such that I give them incremental assignments that are challenging but achievable given their other demands." Conversely, the same action of providing advice would present differently if it was being used with different objectives like resolving an interpersonal conflict or helping a protégé with their career progression. However, objectives and actions are only

combined if they make logical sense – for example, a mentor likely would not help a protégé resolve interpersonal issues through giving them an assignment.

The current project builds from the cuboid dimensions by using action and objective pairings to create a scale that measures protégés' perceived effectiveness of mentor behaviors. The cuboid is used as a framework for developing the items of a new behaviorally based scale, allowing items to be grounded in very specific behavior groupings derived from qualitative interviews with mentors.

To achieve this, I conducted two pilot studies followed by the main study. The purpose of the first pilot study was to narrow down the objective and action pairings from the mentoring cuboid. This pilot study relied on experienced protégés to rate which pairings they believed were most important to successful mentoring relationships. The second pilot study was used to evaluate item quality, factor structure, and convergent validity. Finally, the third and main study was conducted to re-examine the factor structure and to use the retained items to test hypotheses intended to provide support for the validity of the scale.

Chapter Two:

Pilot Study 1 – Item Development

To begin studying the objective by action pairings in the Kraiger et al. (2019) study, there was a need to reduce the 259 combinations. This narrowing of items was accomplished in two parts. First, I collected protégé data with regards to which actions were most important for accomplishing each objective and retained the most highly rated items. This was also used to establish construct validity by only retaining the items that were deemed most critical for mentoring relationships. These data were then combined with items retained during item coding, where I mapped the action by objective pairings onto current mentoring scale items to select the final items to retain for the second pilot study. This process was used to retain items that were both quantitatively representative of what mentors deem important behaviors and theoretically representative of objectives and actions determined by previous research and mentoring scale development work.

Method

Participants

The sample was 30 protégés - a minimum of 30 participants for each sample is appropriate for a pilot study intended for a scale development project (Johanson & Brooks, 2010). The sample consisted of 15 women, 14 men, and one person who preferred to self-describe as non-binary. The sample was predominantly White or Caucasian: 63%, followed by Hispanic or Latino: 13%, then Black or African American: 10%, and Asian or Pacific Islander: 10%. The age breakdown was as follows: 13% (age 18-24), 80% (age 25-34), and 7% (age 45-

54). Job titles included firefighter, veterinary assistant, engineer, business consultant, amongst other professions. Forty of protégé mentoring relationships were identified as formal, and 60% were identified as informal. In the protégé sample, 87% had mentoring relationships that were established within the last two years, and 13% had been established for more than two years.

Participants were recruited through social media sites and snowball sampling. Facebook, Instagram, Twitter, and LinkedIn were all used as recruitment sources. The recruitment materials specified that participants should have been a current protégé at their organization for at least a year. A year is an appropriate minimal timeframe because individuals in mentoring relationships should have transitioned from the initiation stage of mentoring to the cultivation stage of mentoring (Kram, 1983). This would indicate that individuals are part of an established mentoring relationship in which initial interactions have already occurred and expectations of the relationship have been set. Recruitment materials also specified that individuals should be working full-time at their current job. This decision was made because research has demonstrated that individuals who work part-time differ significantly from full-time individuals in relation to job attitudes and behaviors (Conway & Briner, 2002).

Measures

Demographic. Several demographic items were included in the pilot study survey. They included participant age, gender, race, and job title.

Mentoring Relationship. Individuals were asked how long they have been a part of the mentoring relationship and whether the mentoring relationship was developed formally through the organization or if it developed informally.

Action by Objective Importance Ratings. The final set of items included 24 blocks of the objectives listed from the mentoring cuboid (Kraiger et al., 2019). Each objective block

consisted of some variation of the 33 actions that correspond to each objective as determined by Kraiger and colleagues (2019) for a total of 259 objective by action pairings. For example, resolving interpersonal conflict (objective) had four corresponding actions including: asking questions, listening, providing perspective, and providing advice (Table 1). Resolving interpersonal conflict would not include actions such as evaluating work or passing on opportunities because those actions do not support the objective of resolving an interpersonal conflict as determined by the qualitative coding conducted by Kraiger and colleagues (2019). Participants were asked how important each objective by action pairings are for someone to be an effective mentor. The 259 objective by action pairings were rated on a 1-5 scale that ranged from 1, not important at all to 5, very important.

Analysis

To determine which items to keep, the mean importance ratings for each objective by action pairing were calculated in R. Then, items were ranked from highest to lowest importance within each objective block. This information was then used with theoretical coding of existing scales to determine the pool of items to be used in the second pilot.

Scale Coding

Next, to reduce items I used a theoretical approach by coding existing mentoring scales onto the objective by action pairings from Kraiger et al. (2019). To accomplish this, I used existing mentoring scales in which protégés rate mentor career and psychosocial mentoring provided (e.g., Noe, 1988; Ragins & McFarlin, 1990; Scandura, 1992). From here, using the Kraiger et al. (2019) definitions of each action and objective, I coded whether the items could be mapped on to a specific action, objective, or neither. Because of the unique and descriptive

format of the Kraiger et al. (2019) action by objective pairings, most of the coded scale items from prior scales represented a single action, a single objective, or neither. Of 132 items from previous mentoring scales, only 19 could be coded with both an action and an objective. Of those 19, four were not represented in the Kraiger et al. (2019) pairings. This left 15 item pairings from scale coding to be incorporated into the list of retained items for the new scale (Table 2).

From here I created "combination" items that were based on both the coding from existing scales and the mean importance ratings from Pilot 1. To accomplish this, I used the actions and objectives as they appeared as singletons in the coding, meaning I used either an objective or an action that appeared separately and not as a pair in the scale coding. An example would be "I try to imitate the work behavior of my mentor" from Noe (1988). This item was coded with the action of "providing modeling" but did not map onto one specific objective. Using this information, I combined the actions from the scale coding with the highest rated protégé mean importance rating objective and the objectives from the scale coding with the highest rated mean importance rating action. This combination gave me the final item of "Developing my competencies that I have not fully mastered through providing me role modeling for different tasks and behaviors" using the singleton code of "providing modeling" from above. The mean importance ratings were sourced from my original pilot data. This provided another 15 item combinations that fell within the Kraiger et al. (2019) action by objective framework and ensured that all actions and objectives from the scale coding were represented in at least one retained item. The highest mean importance ratings combinations can be found in Table 3 and Table 4.

Finally, I incorporated the highest mean importance rated items, rated by protégés, from Pilot 1. I kept the top two highest rated actions for each objective and removed several pairings

that were already represented in the previous coding. This added an additional 45 items retained for a total of 75 items. See the final list of items in Appendix H.

Discussion

To summarize, through the steps of Pilot Study 1, I was able to reduce the number of objective by action combinations sourced from Kraiger's et al. (2019) from 259 to 75 items. The process of reducing items included finding the importance ratings of items through surveying mentors, theoretically coding existing mentoring effectiveness scales for overlapping objectives and actions, followed by combining those two discovery processes to select a total of 75 items to move forward to Pilot 2. Now that the items were selected, Pilot Study 2 was used to determine the number of factors, evaluate item quality, and establish convergent validity with an existing mentoring scale.

Table 1

Pilot 1 - Sample Objective by Action Item

Objective	Action	Importance Rating
Resolve interpersonal issues through	1. asking questions 2. listening 3. providing perspective 4. providing advice	(1) Not important at all (2) Slightly important (3) Somewhat important (4) Important (5) Very important

Table 2

Pilot 1 - Retained Item Source List

Objective	Action	Source
Build and expand professional network through	giving an assignment	Scale Coding
Build and expand professional network through	promoting mentee	Scale Coding
Career progression through	giving an assignment	Scale Coding
Career progression through	passing on opportunities	Scale Coding
Career progression through	promoting mentee	Scale Coding
Career progression through	providing advice	Scale Coding
Competency development through	giving an assignment	Scale Coding
Creating opportunities through	promoting mentee	Scale Coding
Garner knowledge and insight through	encouraging introspection	Scale Coding
Improve emotional state through	providing reassurance	Scale Coding
Improve mentee's efficiency through	assessing needs	Scale Coding
Instilling accountability through	setting expectations	Scale Coding
Making sound decisions through	asking questions	Scale Coding
Mentee expertise development through	giving an assignment	Scale Coding
Promoting adaptability through	giving an assignment	Scale Coding
Build and expand professional network through	providing advice	Mean Importance Rating
Build personal relationship through	listening	Mean Importance Rating
Building confidence or efficacy through	listening	Mean Importance Rating
Building confidence or efficacy through	providing reassurance	Mean Importance Rating
Building confidence or efficacy through	setting expectations	Mean Importance Rating
Career progression through	assessing interests	Mean Importance Rating
Clarifying career objectives through	asking questions	Mean Importance Rating
Clarifying career objectives through	collecting information	Mean Importance Rating
Competency development through	assessing current skills	Mean Importance Rating
Competency development through	giving feedback	Mean Importance Rating
Creating opportunities through	providing advice	Mean Importance Rating
Garner knowledge and insight through	providing advice	Mean Importance Rating

Table 2 (continued)

Garner knowledge and insight through	setting expectations	Mean Importance Rating
Garner knowledge and insight through	sharing inside knowledge	Mean Importance Rating
Getting mentee started through	asking questions	Mean Importance Rating
Getting mentee started through	setting expectations	Mean Importance Rating
Improve emotional state through	giving feedback	Mean Importance Rating
Improve emotional state through	listening	Mean Importance Rating
Improve mentee's efficiency through	analyzing issues	Mean Importance Rating
Improve mentee's efficiency through	giving feedback	Mean Importance Rating
Improve mentee's efficiency through	setting expectations	Mean Importance Rating
Improve overall quality of mentoring through	assessing current skills	Mean Importance Rating
Improve overall quality of mentoring through	assessing needs	Mean Importance Rating
Improve quality of work product through	giving feedback	Mean Importance Rating
Improve quality of work product through	providing advice	Mean Importance Rating
Instilling accountability through	analyzing issues	Mean Importance Rating
Instilling psychological safety through	providing reassurance	Mean Importance Rating
Instilling psychological safety through	setting expectations	Mean Importance Rating
Know more about mentee through	assessing needs	Mean Importance Rating
Know more about mentee through	listening	Mean Importance Rating
Making sound decisions through	collecting information	Mean Importance Rating
Making sound decisions through	giving feedback	Mean Importance Rating
Mentee expertise development through	evaluating work	Mean Importance Rating
Mentee expertise development through	setting expectations	Mean Importance Rating
Prepared for life through	providing advice	Mean Importance Rating
Prepared for life through	sharing stories	Mean Importance Rating
Promoting adaptability through	being flexible	Mean Importance Rating
Promoting adaptability through	setting expectations	Mean Importance Rating
Relationship maintenance through	listening	Mean Importance Rating
Remove obstacles through	analyzing issues	Mean Importance Rating
Remove obstacles through	setting expectations	Mean Importance Rating
Resolve interpersonal issues through	listening	Mean Importance Rating
Resolve interpersonal issues through	providing advice	Mean Importance Rating

Table 2 (continued)

Understanding steps through	asking questions	Mean Importance Rating
Understanding steps through	walking through a process	Mean Importance Rating
Build and expand professional network through	providing resources	Combination Item
Build personal relationship through	asking questions	Combination Item
Build personal relationship through	protecting mentee	Combination Item
Build personal relationship through	socializing with mentee	Combination Item
Building confidence or efficacy through	giving praise	Combination Item
Career progression through	connecting to others	Combination Item
Competency development through	assessing needs	Combination Item
Competency development through	providing advice	Combination Item
Competency development through	providing modeling	Combination Item
Promoting adaptability through	providing modeling	Combination Item
Relationship maintenance through	asking questions	Combination Item
Relationship maintenance through	assessing interests	Combination Item
Relationship maintenance through	being flexible	Combination Item
Relationship maintenance through	checking in	Combination Item
Relationship maintenance through	socializing with mentee	Combination Item

Table 3

Pilot 1 - Mean Importance Ratings by Objective

Objective	Action	Importance Ratings
Improve emotional state through	being flexible	4.40
	setting expectations	4.00
	asking questions	4.13
	assessing needs	4.30
	analyzing issues	4.19
	listening	4.64*
	checking in	4.55
	socializing with mentee	3.02
	giving praise	4.23
	providing reassurance	4.49
	sharing stories	3.53
	sharing inside knowledge	3.85
	giving feedback	4.45
	providing perspective	4.09
	providing advice	4.00
	persuading	2.62
	giving an assignment	2.91
	allowing to fail	3.55
	providing resources	4.28
	protecting mentee	3.90
Clarifying career objectives through	collecting information	4.33*
	asking questions	4.31
	providing perspective	3.92
	providing advice	3.88
	giving an assignment	3.14
	connecting to others	3.92
	passing on opportunities	3.53

Table 3 (continued)

Instilling psychological safety through	collecting information	3.67
	setting expectations	4.41
	asking questions	4.24
	having general conversations	3.92
	providing reassurance	4.55*
	sharing stories	3.88
	providing advice	4.10
	giving an assignment	3.14
	allowing to fail	4.10
Garner knowledge and insight through	setting expectations	4.16
	asking questions	4.35
	assessing needs	4.12
	encouraging introspection	4.33
	sharing stories	3.39
	sharing inside knowledge	4.23
	providing perspective	4.14
	providing advice	3.94
	allowing to fail	3.90
	providing resources	4.41*
	connecting to others	3.98
Competency development through	being flexible	4.06
	collecting information	4.27
	setting expectations	4.41
	asking questions	4.53
	assessing needs	4.59
	assessing interests	3.76
	assessing current skills	4.80*
	giving praise	3.98
	encouraging introspection	4.38
	sharing stories	3.41

Table 3 (continued)

	sharing inside knowledge	3.98
	evaluating work	4.33
	giving feedback	4.71*
	providing perspective	4.20
	providing advice	4.04
	walking through a process	4.10
	persuading	2.63
	giving an assignment	3.49
	providing modeling	4.24
	providing resources	4.41
	connecting to others	4.10
	passing on opportunities	3.77
Improve mentee's efficiency through	being flexible	3.98
	setting expectations	4.61*
	asking questions	4.33
	assessing needs	4.31
	assessing interests	3.27
	analyzing issues	4.35
	listening	4.51
	providing reassurance	4.06
	sharing stories	3.18
	sharing inside knowledge	3.94
	giving feedback	4.53
	providing perspective	4.08
	providing advice	4.10
	walking through a process	4.31
	giving an assignment	3.14
	providing resources	4.41
	connecting to others	3.92

Table 3 (continued)

Understanding steps through	asking questions	4.39*
	providing perspective	4.00
	providing advice	3.9
	walking through a process	4.33
Improve overall quality of mentoring through	self-awareness	4.57
	being flexible	4.37
	collecting information	4.45
	setting expectations	4.41
	asking questions	4.65*
	assessing needs	4.45
	assessing interests	4.08
	assessing current skills	4.47
	analyzing issues	4.38
	providing reassurance	3.86
	sharing stories	3.49
	giving an assignment	3.04
Resolve interpersonal issues through	asking questions	4.27
	listening	4.82*
	providing perspective	4.22
	providing advice	4.02
Remove obstacles through	setting expectations	4.02
	asking questions	4.35
	analyzing issues	4.47*
	providing perspective	4.08
	protecting mentee	3.65
	passing on opportunities	3.59
Mentee expertise development through	setting expectations	4.18
	asking questions	4.15
	assessing needs	4.26
	providing reassurance	4.23

Table 3 (continued)

	evaluating work	4.56*
	providing advice	4.00
	giving an assignment	3.75
	passing on opportunities	4.02
Know more about mentee through	collecting information	4.39
	asking questions	4.76
	assessing needs	4.39
	assessing interests	4.55
	listening	4.82*
	socializing with mentee	3.39
	evaluating work	3.80
	giving an assignment	2.82
Build personal relationship through	self-awareness	4.49
	collecting information	3.67
	setting expectations	4.12
	asking questions	4.55
	assessing needs	4.33
	assessing interests	4.24
	analyzing issues	3.85
	listening	4.84*
	checking in	4.45
	socializing with mentee	3.24
	having general conversations	4.14
	giving praise	4.06
	encouraging introspection	4.18
	sharing stories	4.06
	giving feedback	4.37
	providing perspective	4.04
	walking through a process	3.73
	giving an assignment	2.88

Table 3 (continued)

	providing modeling	4.00
	providing resources	4.16
	connecting to others	4.29
	protecting mentee	3.98
Relationship maintenance through	self-awareness	4.43
	being flexible	4.35
	setting expectations	4.20
	asking questions	4.55
	assessing needs	4.47
	assessing interests	4.24
	analyzing issues	4.04
	listening	4.76*
	checking in	4.51
	giving an assignment	2.88
Build and expand professional network through	collecting information	3.42
	sharing inside knowledge	3.50
	providing perspective	3.57
	providing advice	3.56
	walking through a process	2.97
	giving an assignment	2.51
	providing resources	3.55
	connecting to others	3.73*
	promoting mentee	3.52
Making sound decisions through	collecting information	4.48*
	asking questions	4.43
	sharing inside knowledge	4.18
	giving feedback	4.24
	providing perspective	4.19
	providing advice	4.04
	persuading	2.63

Table 3 (continued)

	giving an assignment	3.06
	providing resources	4.35
Getting mentee started through	setting expectations	4.51
	asking questions	4.49
	socializing with mentee	2.63
	providing perspective	3.88
	providing advice	3.94
	walking through a process	4.27
	persuading	2.82
	giving an assignment	3.59
	providing resources	4.53*
	connecting to others	4.06
Instilling accountability through	setting expectations	4.78*
	assessing needs	4.29
	assessing interests	3.55
	analyzing issues	4.24
	checking in	4.45
	evaluating work	4.39
	providing advice	3.90
	walking through a process	3.86
	giving an assignment	3.53
Prepared for life through	asking questions	4.41
	sharing stories	4.06
	providing advice	4.14*
	giving an assignment	2.96
Building confidence or efficacy through	self-awareness	4.59
	setting expectations	4.27
	asking questions	4.14
	assessing needs	4.31
	listening	4.67*

Table 3 (continued)

	giving praise	4.31
	providing reassurance	4.37
	giving feedback	4.65
	providing perspective	4.20
	providing advice	4.02
	walking through a process	3.80
	persuading	2.67
	giving an assignment	3.08
Creating opportunities through	providing advice	4.10
	promoting mentee	4.35*
Improve quality of work product through	being flexible	3.85
	asking questions	4.31
	assessing needs	4.27
	assessing interests	3.50
	analyzing issues	4.54
	socializing with mentee	2.58
	giving praise	3.96
	encouraging introspection	4.38
	evaluating work	4.53
	giving feedback	4.79*
	providing perspective	4.17
	providing advice	4.04
	walking through a process	4.11
	giving an assignment	3.38
	providing resources	4.40
Promoting adaptability through	being flexible	4.63*
	setting expectations	4.16
	asking questions	4.43
	providing reassurance	4.00
	encouraging introspection	4.41

Table 3 (continued)

	sharing stories	3.47
	providing perspective	4.14
	providing advice	3.98
	walking through a process	3.88
	giving an assignment	3.08
	allowing to fail	3.86
	providing modeling	4.12
	providing resources	4.33
Career progression through	being flexible	4.12
	asking questions	4.39
	assessing needs	4.35
	assessing interests	4.45
	assessing current skills	4.65*
	analyzing issues	3.94
	sharing inside knowledge	4.00
	providing perspective	4.00
	providing advice	4.08
	walking through a process	3.59
	giving an assignment	3.00
	providing resources	4.33
	connecting to others	4.49
	promoting mentee	4.39
	passing on opportunities	4.12

Note. * Signifies highest mean importance rating among actions for each objective

Table 4

Pilot 1- Highest Mean Importance Ratings by Objective

Objective	Action	Importance Ratings
Relationship maintenance through	listening	4.80
Build personal relationship through	listening	4.77
Getting mentee started through	setting expectations	4.63
Improve quality of work product through	giving feedback	4.63
Improve mentee's efficiency through	analyzing issues	4.60
Resolve interpersonal issues through	listening	4.60
Know more about mentee through	listening	4.60
Improve overall quality of mentoring through	assessing needs	4.55
Instilling accountability through	setting expectations	4.53
Career progression through	assessing interests	4.53
Making sound decisions through	collecting information	4.52
Building confidence or efficacy through	listening	4.52
Competency development through	giving feedback	4.47
Competency development through	assessing current skills	4.47
Creating opportunities through	providing advice	4.47
Improve emotional state through	listening	4.43
Instilling psychological safety through	providing reassurance	4.40
Mentee expertise development through	setting expectations	4.40
Clarifying career objectives through	asking questions	4.33
Remove obstacles through	setting expectations	4.33
Garner knowledge and insight through	setting expectations	4.27
Understanding steps through	walking through a process	4.27
Prepared for life through	providing advice	4.27
Promoting adaptability through	being flexible	4.23
Build and expand professional network through	providing advice	3.47

Chapter Three:

Pilot Study 2 – Item Refinement

Pilot Study 2 built off the previous pilot study by implementing more rigorous testing of the behaviorally based mentoring items to reduce the scale length and determine the final items for the Behavioral Effectiveness of Mentoring Scale (BEMS), determine the appropriate factor structure, and establish convergent validity with an existing mentoring scale.

Observability of Behaviors and the Factor Structure

When considering the behaviors that mentors can exhibit that support their protégés, there is a high likelihood that some behaviors are not directly observable by their protégés. The idea of behavioral observability has been denoted in other areas of Industrial-Organizational psychology, particularly in assessment center research. For example, researchers have conducted studies regarding the best ways to elicit behaviors to make them more observable by raters (Lievens, Schollaert, & Keen, 2015; Schollaert & Lievens, 2012). Even the International Task Force on Assessment Center Guidelines places an emphasis on the importance of evoking relevant behaviors to help assessors more accurately rate candidates (International Task Force on Assessment Center Guidelines, 2009). This is a significant consideration in that raters cannot effectively rate assessment center candidates on behaviors they cannot directly observe. It is important to consider that in mentoring relationships there may be a difference between the behaviors mentors are doing and what their protégés are able to observe and accurately rate.

This idea has been noted in the mentoring literature as well. Brought forward by Kraiger and colleagues, “some of what mentors do will be outside the awareness of their mentees”

(Kraiger et al., 2019, p.413). Actions like providing advice or giving feedback to a protégé should be more salient than other actions like listening or analyzing issues, because there is a clear observable component of speaking and interacting. Therefore, some actions by objective pairings should be more observable and consequently more accurately rated by protégés than others. For example, if the mentor promoted their protégé at a meeting with their colleagues, the protégé may not be aware of the action and thus not include it when rating the mentor's behaviors. Accordingly, I theorized that my scale would demonstrate a two-factor structure between more observable and less observable behaviors. See Table 5 for the list of actions broken into two factors of more and less observable behaviors.

Proposed Factor Structure: Given the difference in the observability of behaviors, I predicted there is a two-factor structure for the scale based on the observability of mentor behaviors.

Convergent Validity

Convergent validity represents how closely a scale is related to other scales that measure the same construct. The items for the BEMS were developed to measure the same theoretical construct as previous mentoring scales, but with the intention of capturing effective behaviors instead of broader mentoring functions. Many items were also chosen to be included in the list of items due to their coded overlap between Kraiger's objective and action pairings and their presence in a previous mentoring effectiveness scale (Kraiger et al., 2019). Because the new scale is intended to measure mentoring behaviors which are used to enact functions, it should be positively related to a previously established measure of mentoring functions. The Noe (1988) scale was chosen for the establishment of convergent validity because it is a commonly used scale in the mentoring literature that has been used to empirically support Kram's mentoring function framework (Noe, 1988)

Hypothesis 1: The new measure of behaviorally based mentoring effectiveness will be positively related to an established mentoring functions scale.

Method

Prior to exploring the overall factor structure and the unique contribution of each item in the scale, I sought feedback on item clarity. Items were reviewed by a group of subject matter experts and undergraduate research assistants to optimize item clarity. Two individuals with their Ph.D. in behavioral sciences, two doctoral students with their M.A. in behavioral sciences, and three undergraduate research assistants provided individual feedback regarding item clarity. By seeking feedback from both subject matter experts (SMEs) and non-experts I was able to garner more insight about how items would be interpreted by the general population. Feedback consisted of suggested changes that involved simplifying word choices, editing grammatical structure for clarity, and shortening the length of items. After reviewing and implementing suggested changes, I moved forward with collecting pilot sample data and analyzing items.

Participants

For this study 100 protégés were recruited through Prolific, an online survey participant recruitment tool. The sample size for pilot research intended for scale development using Exploratory Factor Analysis (EFA) typically range from 50-100 people (Johanson & Brooks, 2010; Carpenter, 2018). I again recruited individuals based on whether they were over the age of 18, were currently in a mentoring relationship at work for at least a year as either a mentor or as a protégé, and were working full time. I prompted individuals in more than one mentoring relationship to focus on the most salient relationship, in which they interact with their mentor or their protégé the most frequently. For their participation, they received compensation comparable to $15 an hour relative to the length of the survey, which was less than 10 minutes in duration,

resulting in a payment of $2.50 for participation. Individuals were not paid if they did not fit the participation criteria (e.g.., reported that they were not a protégé), did not pass the captcha check point, or were unable to answer a question providing a written description of their job, with the last two qualifiers used as a method to identify and remove bots.

Participants were from a variety of occupations and demographic backgrounds. Protégés ages were as follows: 9% between the age range of 18-24, 47% between ages 25-34, 34% between ages 35-44, 6% between ages 45-54, and 4% ages 55 and above. Protégés were 50% women, 47% men, and 3% non-binary or genderqueer. Participants were 72% White or Caucasian, 14% Asian or Pacific Islander, followed by 6% Biracial or Multiracial, 7% Hispanic or Latino, and 1% Black or African American. A variety of jobs and occupations were represented in the sample, including jobs like educator, nurse, attorney, analyst, and mail carrier. Protégé job tenure was as follows: 9% - Less than a year, 29% - One year or more, but less than three years, 28% - Three years or more, but less than five years, 22% - Five years or more, but less than ten years, and 12% - Ten years or more. For their reported mentoring relationships, 62% were developed informally and 38% were developed formally. The average tenure of their reported mentoring relationship was 31.44 months, a little over two years and a half.

Measures

Demographic. Several demographic items were included in the pilot study survey. They included participant age, gender, race, job title, a short description of their job, and tenure at current job. These items and their coded values are available in Appendix I.

Mentoring Relationship. Individuals were asked whether they were a protégé in a mentoring relationship, how long they have been a part of the mentoring relationship, and whether the mentoring relationship was developed formally through the organization or if it

developed informally (items available in Appendix J). To help establish convergent validity, Noe's Mentoring Scale was also included, which had responses ranging from 2- to a very light extent to 6 – to a very large extent, with an option for don't know and ω = .94. (1988; Appendix A).

Behavioral Mentoring Items. Protégés were asked to rate how effective they believe their mentor is on the behavioral items formed and retained from the previous pilot study and the SME feedback. The responses for these items ranged from 2– *Not at all effective* to 6 – *Very effective,* and there was also an option to indicate that a behavior has not been performed by the mentor, which was represented with the value of 1(Appendix H). The "not performed" response option was included as a part of the ordinal measurement for the purpose of Pilot Study 2, meaning the scale was tested with the full range of items from 1 through 6, and not performed was not treated as missing. The meaning of "not performed" was explored more thoroughly in the Primary Study.

Analyses

Screening

The initial sample included 115 participants before screening. First, data were screened by checking whether any participant did not fully complete the survey – this removed seven participants. Next, participants who responded in an unreasonably short amount of time relative to other participants – outside of two standard deviations from the average time were to be removed but no participants fell into this category. Eight participants did not pass one or more of the three attention checks and therefore were removed. Finally, both a captcha checkpoint and a written response option about job title were used to identify and remove bots from the survey, but again, all participants passed these check points. This left a sample 100 protégés.

Factorability

Next, I checked for the factorability of the scale. I ran a Keiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy on the data to ensure that the data was suited for factor analysis by establishing the proportion of variance that may be common variance amongst variables. The test is used to make sure data meet an appropriate threshold of sampling adequacy, which is indicated by the MSA falling above .50, but ideally closer to 1.00. Running the KMO for the data resulted in an adequate measure of sampling: MSA = .71. I also used Bartlett's test of sphericity on the correlation matrix of the items to test whether there was a redundancy between the items on the scale, and therefore whether a factor analysis may be appropriate. The results for the data all suggested that a factor analysis would be appropriate.

Exploratory Factor Analysis

Next, I ran an exploratory factor analysis (EFA) using a direct oblimin rotation given that there would likely be correlations between the factors and used Maximum Likelihood as my extraction method. This analysis was conducted using the GPARotation package in R (Bernaards & Jennrich, 2005). Running the original parallel analysis with all items suggested six factors for the solution, however upon further investigation the six-factor solution did not converge (Figure 1). Next, the five-factor solution was examined, but did not have any items that loaded on the 5th factor. The four-factor model was also dismissed as it did not have a strong anchor item and retained an item with a negative loading therefore solutions with three or fewer factors were considered (Table 6, Table 7, and Table 8). To create a scale with better fit statistics and better scale properties, items were removed based on the results of the EFA. Specifically, items were removed if they had low factor loadings or high cross loadings - specifically, loadings below .4 or cross loadings between factors above .3 in two or more factors (Guadagnoli & Velicer, 1988).

Based on these criteria, 23 items were removed. At this point it appeared that three clear factors were forming: factor one – relationship building (Building a personal mentoring relationship characterized by mutual trust, respect, and open communication through active and attentive listening), factor two – competency development (Developing protégés' expertise in competencies through giving them an assignment or new project opportunity), and factor three – sponsorship (Assisting protégés with furthering career progression through promoting them in forums such as meetings in which they can talk positively about them).

During the next rounds of item removal, items were removed based on low loadings, cross loadings defined as below .4, theoretical coverage of each factor, and repetitiveness of the objectives or actions in each factor. This was an iterative process to ensure that the items retained best represented each factor. The fit statistics for the final factor solution in the data were ($\chi^2(100) = 231.19$, $p < .05$, RMSR = .05, RMSEA = .10, TLI = .82) indicating adequate fit (Figure 2, Table 9, Table 10). While the TLI is slightly below the recommended threshold, this could likely be attributed to the small sample size (Shi, Lee, & Maydeu-Olivares, 2019). The final items and loading are available in Table 13. To complete the item reduction and assessment of the factors, McDonald's omega was calculated to test reliability, with total $\omega = .93$. The final factor structure resulted in three factors and 19 items: factor one with seven items, factor two with seven items, and factor three with five items. The final items from this pilot can be found in Appendix L. Given the factor structure observed, with three factors relating to relationship building, competency development, and sponsorship, my hypothesis of finding a factor structure representing observable relative to less observable behaviors was not supported.

Factor Discussion

A reason why the factor structure did not manifest how I had originally anticipated is that the observability of behaviors seemed to fall on a continuous spectrum rather than form a dichotomy. While originally conceptualizing the hypothesis I believed that aspects of independent work by the mentor would not be perceived by the protégé, but this may not be the case. For example, "Developing my competencies that I have not fully mastered through assessing my current skills and evaluating my work on tasks or projects" was conceptualized as unobservable because a protégé would not necessarily observe their mentor assessing their skills. However, the time spent observing current skills may be perceived through other means such as the quality of feedback provided during a work evaluation. This lack of dichotomy would undermine a clear two-factor structure between more and less observable behaviors.

Convergent validity

Another purpose of Pilot Study 2 was to examine convergent validity. First, I ran the descriptive statistics of the variables measured in the study (see Table 12). Next, I examined the correlation between the BEMS and Noe's established mentoring scale (see Table 13 for the full correlation matrix). The correlation between the behaviorally based mentoring Scale and Noe's scale was $r(98) = .64$, $p < .05$, supporting the hypothesis that the two scales would be positively related. Next, I tested the correlations between factors of both scales. One would expect that the relationship building factor from the behaviorally based scale and the psychosocial support items from the Noe scale would be positively related because of the interpersonal nature of the two factors. The relationship building factor from the behaviorally based scale and the psychosocial support factor from Noe's scale were correlated $r(98) = .57$, $p < .05$. The relationship building factor and the career-related factor of the Noe scale were correlated $r(98) = .47$, $p < .05$. To

determine whether these correlations were significantly different from one another I used Pearson and Filon's z (Pearson & Filon, 1898). The correlation between the relationship building factor for the behaviorally based scale and the two Noe factors were not significantly different from one another, $z = 1.21$, $p = 0.11$. With similar foundations of career-related skill development, one would expect the competency development factor from the behaviorally based scale and the career-related factor of the Noe scale to be more highly correlated than the psychosocial support from the Noe scale. The correlation between the competency development factor and Noe's career-related factor was $r(98) = .56$, $p < .05$. The correlation between the competency development factor and Noe's psychosocial support was $r(98) = .34$, $p < .05$. These correlations are significantly different from one another $z = -2.51$, $p = 0.01$. The findings demonstrate convergent validity with an existing measure of mentoring. The third factor of sponsorship from the behaviorally based mentoring scale showed lower correlations with the Noe factors compared to relationship building or competency development, which aligns with the notion that the new scale is capturing something unique from that of Noe's measure.

Supplemental Analyses

For exploratory purposes, I also ran correlations between measured demographic and mentoring variables with both the Noe Scale and the BEMS. The tested variables included protégé age, gender, job tenure, mentoring relationship tenure, and mentoring formality. Interestingly, there were no significant correlations between the mentoring effectiveness scales and the demographic and mentoring related variables (see Table 15 for results). Some of these null results were anticipated because variables such as protégé age, gender, and job tenure are measuring protégé qualities while mentoring effectiveness is measuring mentor qualities, therefore correlating unrelated information about two different people.

Discussion

From this second pilot study I was able to make progress towards determining the final scale items and factors for my behaviorally based mentoring effectiveness scale. Firstly, I collected feedback on item clarity from subject matter experts and incorporated their feedback into the items. Next, I reduced the number of items in the scale and derived three factors from the items: relationship building, competency development, and sponsorship. Finally, I established convergent validity between the behaviorally based mentoring scale and its individual factors. The next steps to finalizing the scale were replicating the factor structure of the scale in a new sample and establishing criterion-related validity with mentoring related outcomes.

Tables and Figures

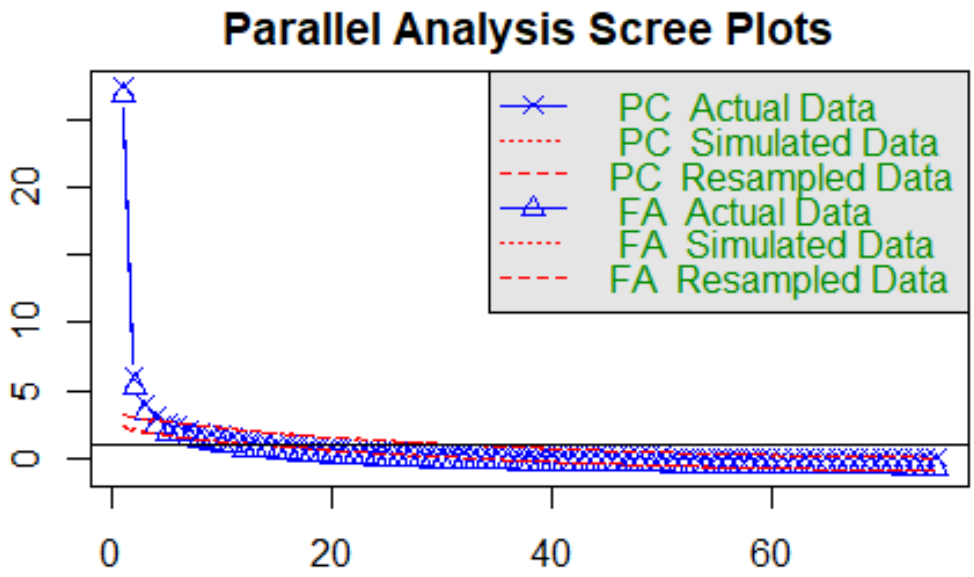
Table 5

Pilot 2 - Proposed Factor Structure by Action Observability

More Observable	Less Observable
Asking questions	Analyzing issues
Connecting to others	Assessing current skills
Evaluating work	Assessing interests
Giving feedback	Assessing needs
Providing advice	Being flexible
Providing reassurance	Collecting information
Providing resources	Listening
Setting expectations	Promoting mentee
Walking through a process	

Figure 1

Pilot 2 - Parallel Analysis Scree Plots with All Items



Note. Parallel analysis suggests the number of factors = 6, and the number of components = 4.

Table 6

Pilot 2 - Factor Analysis Variance Summary with All Items

Number of Factors	Variance	Factor 1	Factor 2	Factor 3	Factor 4
One	SS Loadings	26.84			
	Proportion Variance	0.36			
Two	SS Loadings	17.05	11.97		
	Proportion Variance	0.23	0.16		
	Cumulative Variance	0.23	0.39		
Three	SS Loadings	13.97	11.43	5.45	
	Proportion Variance	0.19	0.15	0.07	
	Cumulative Variance	0.19	0.34	0.41	
Four	SS Loadings	12.82	10.41	6.10	3.12
	Proportion Variance	0.17	0.14	0.08	0.04
	Cumulative Variance	0.17	0.31	0.39	0.43

Note. SS Loadings means Sum of Squared loadings.

Table 7

Pilot 2 - Factor Analysis Fit Statistics Summary with All Items

Number of Factors	Likelihood Chi Square	RMSR	RMSEA	TLI
One	6029.45*	0.11	0.11	0.37
Two	5433.14*	0.09	0.10	0.45
Three	5074.47*	0.08	0.10	0.48
Four	4779.37*	0.07	0.10	0.51

Note. * $p < .05$.

Table 8

Pilot 2 - Factor Loadings for Data with All Items

	One Factor	Two Factor		Three Factor			Four Factor			
Factor #	1	1	2	1	2	3	1	2	3	4
Item 1	0.65	0.84		0.85			0.82			
Item 2	0.52	0.62		0.47		0.33	0.43		0.37	
Item 3	0.66		0.83		0.84			0.84		
Item 4	0.57	0.50		0.42			0.40			
Item 5	0.61	0.50		0.32		0.41			0.41	
Item 6	0.56		0.38			0.62			0.65	
Item 7	0.70	0.82		0.83			0.81			
Item 8	0.71	0.71		0.70			0.69			
Item 9	0.62	0.60		0.56			0.54			
Item 10	0.48		0.83		0.78			0.69		
Item 11	0.62		0.60		0.58			0.59		
Item 12	0.54	0.33								
Item 13	0.59	0.56		0.46			0.43			-0.31
Item 14	0.54	0.53		0.36		0.39	0.33		0.42	
Item 15	0.55	0.75		0.65			0.62			
Item 16	0.67		0.80		0.82			0.85		
Item 17	0.40					0.33			0.33	0.35
Item 18	0.64		0.51		0.49					0.54
Item 19	0.54	0.61		0.50			0.46			
Item 20	0.64		0.81		0.77			0.60		0.46
Item 21	0.53		0.36		0.31				0.31	0.35
Item 22	0.61	0.42		0.39			0.39			0.54
Item 23	0.49		0.53		0.53			0.50		
Item 24	0.73	0.61		0.54			0.50			

Table 8 (continued)

Item 25	0.67	0.69		0.73			0.71		
Item 26	0.60		0.41		0.38			0.30	
Item 27	0.53		0.48		0.49			0.42	
Item 28	0.47		0.58		0.53			0.48	
Item 29	0.36					0.80			0.82
Item 30	0.50								
Item 31	0.49	0.44				0.67			0.73
Item 32	0.68	0.41	0.38	0.37	0.37		0.35	0.40	
Item 33	0.62		0.44		0.43			0.46	
Item 34	0.63	0.48		0.45			0.43		
Item 35	0.57		0.75		0.75			0.78	
Item 36	0.53	0.40				0.40			0.45
Item 37	0.54		0.34			0.63			0.65
Item 38	0.65	0.71		0.52		0.42	0.47		0.44
Item 39	0.61	0.77		0.70			0.66		
Item 40	0.74	0.72		0.66			0.64		
Item 41	0.44	0.61		0.47			0.43		0.32
Item 42	0.63		0.48		0.50			0.55	
Item 43	0.44		0.58		0.51	0.34		0.48	0.34
Item 44	0.58	0.69		0.67			0.63		
Item 45	0.63	0.51		0.56			0.55		
Item 46	0.62		0.55		0.58			0.63	
Item 47	0.63	0.50		0.31		0.43			0.48
Item 48	0.58	0.73		0.69			0.67		
Item 49	0.52		0.48		0.45			0.53	
Item 50	0.63	0.39	0.33	0.36	0.33		0.34	0.37	
Item 51	0.72	0.69		0.57			0.54		0.31
Item 52	0.48	0.63		0.60			0.58		

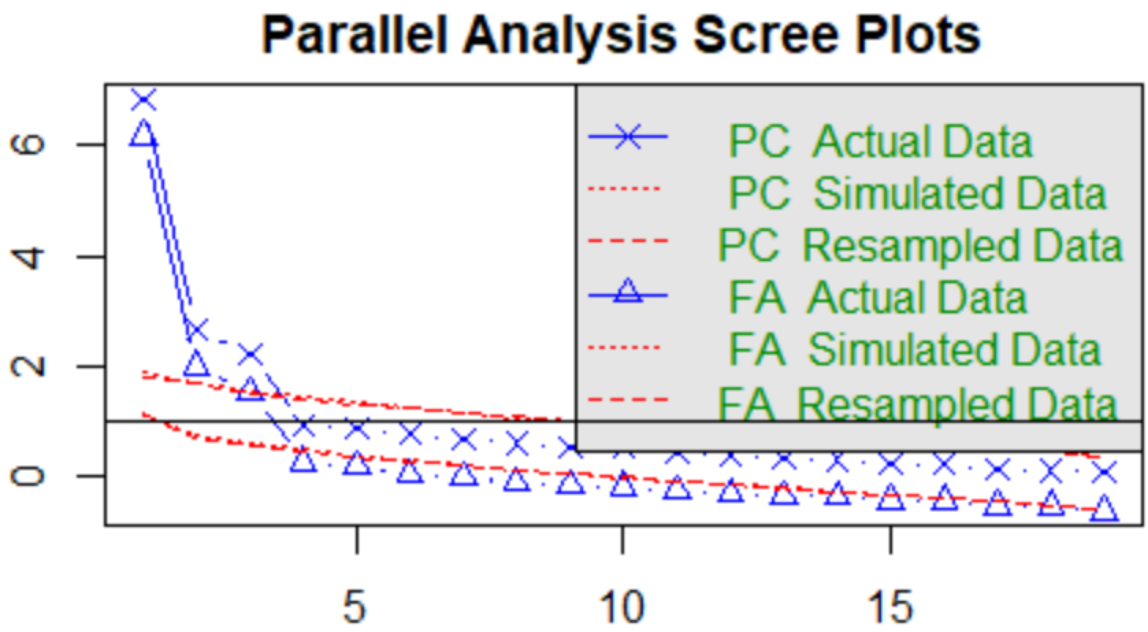
Table 8 (continued)

Item 53	0.40					0.72			0.73	
Item 54	0.57	0.61		0.40		0.49	0.35		0.50	
Item 55	0.60	0.31	0.39		0.36					
Item 56	0.69		0.75		0.74			0.84		
Item 57	0.66	0.35	0.42	0.38	0.45		0.38			0.48
Item 58	0.63		0.76		0.72			0.57		0.40
Item 59	0.61	0.41		0.45	0.33		0.44			
Item 60	0.68	0.53		0.44			0.41			
Item 61	0.67	0.45	0.32	0.53	0.37		0.53	0.39		
Item 62	0.55	0.48				0.61			0.66	
Item 63	0.79	0.40	0.53	0.41	0.54		0.37	0.49		
Item 64	0.72	0.49	0.33	0.51	0.35		0.49	0.35		
Item 65	0.49		0.92		0.88			0.82		
Item 66	0.62		0.71		0.75			0.69		
Item 67	0.64		0.77		0.76			0.74		
Item 68	0.44		0.37		0.34					0.35
Item 69	0.59	0.68		0.62			0.58			
Item 70	0.72	0.68		0.65			0.65			0.44
Item 71	0.68	0.81		0.84			0.83			
Item 72	0.43	0.61		0.51			0.47			
Item 73	0.71	0.41	0.42	0.47	0.46		0.44	0.45		
Item 74	0.68	0.75		0.83			0.81			
Item 75	0.58	0.61		0.59			0.58			

Note. Item numbers correspond to the item numbers and text in Appendix H.

Figure 2

Pilot 2 - Parallel Analysis Scree Plots with Final Reduced Items



Note. Parallel analysis suggests the number of factors = 3, and the number of components = 3

Table 9

Pilot 2 - Factor Analysis Variance Summary with Final Reduced Items

Number of Factors	Variance	Factor 1	Factor 2	Factor 3
Three	SS Loadings	3.704	3.328	2.886
	Proportion Variance	0.195	0.175	0.152
	Cumulative Variance	0.195	0.37	0.522

Note. SS Loadings means Sum of Squared loadings.

Table 10

Pilot 2 - Factor Analysis Fit Statistics Summary with Final Reduced Items

Model	Likelihood Chi Square	RMSR	RMSEA	TLI
Original (3F75I)	5074.47*	0.08	0.10	0.48
Reduced 1 (3F52I)	2418.68*	0.07	0.10	0.60
Reduced 2 (3F39I)	1356.26*	0.06	0.11	0.67
Reduced 3 (3F23I)	400.23*	0.06	0.11	0.77
Final 4 (3F19I)	231.19*	0.05	0.10	0.82

Note. * indicates $p < .05$; F represents number of factors and I represents the number of items.

Table 11

Pilot 2 - Factor Loadings for Final Reduced Items

Item	Wording	F1 Loading	F2 Loading	F3 Loading
Item 49	Instilling accountability for meeting my commitments and goals through analyzing problems or critical weaknesses that are stopping me from accomplishing my goals.	0.49		
Item 11	Improving the overall quality of our mentoring relationship through assessing my current skills and evaluating my work on tasks or projects.	0.57		
Item 58	Developing my expertise in competencies through evaluating the quality and quantity of my work.	0.63		
Item 10	Developing my expertise in competencies through giving me an assignment or new project opportunity.	0.72		
Item 16	Helping me obtain knowledge or insight on how to perform a task or make a decision through setting expectations of what is required of me.	0.82		
Item 65	Assisting me with furthering my career progression through giving me an assignment or new project opportunity.	0.84		
Item 3	Building my confidence in my skills through setting expectations of what is required of me.	0.87		

Table 11 (continued)

Item 71	Building a personal mentoring relationship characterized by mutual trust, respect, and open communication through asking questions that make me think more deeply about different situations.	0.85
Item 1	Maintaining a positive, open, and trusting relationship with me through active and attentive listening.	0.78
Item 48	Maintaining a positive, open, and trusting relationship with me through assessing my interests regarding the tasks I would like to perform, my goals for the future, or my personal interests.	0.65
Item 9	Helping me make sound and informed decisions through asking questions that make me think more deeply about different situations.	0.62
Item 75	Assisting me with furthering my career progression through providing me advice or suggestions regarding upcoming decisions or actions.	0.61
Item 52	Helping me resolve interpersonal issues at work through providing me advice or suggestions regarding upcoming decisions or actions.	0.60

Table 11 (continued)

Item 69	Improving my emotional state regarding challenging or flustering tasks through providing me reassurance when things are seemingly going wrong.	0.47	
Item 29	Assisting me with furthering my career progression through promoting me in forums such as meetings in which they can talk positively about me.		0.90
Item 31	Creating opportunities for me that might not have been previously available through promoting me in forums such as meetings in which they can talk positively about me.		0.77
Item 37	Building and expanding my professional network through promoting me in forums such as meetings in which they can talk positively about me.		0.71
Item 53	Assisting me with furthering my career progression through connecting me to their colleagues.		0.60
Item 62	Building a personal mentoring relationship characterized by mutual trust, respect, and open communication through promoting me in forums such as meetings in which they can talk positively about me.		0.68

Note. Item numbers correspond to the item numbers and text in Appendix H.

Table 12

Pilot Study 2 – Descriptive Statistics for Variables

Variables	Mean	SD	Min	Max	Skew	Kurtosis
Noe Overall Scale	4.69	0.86	2.00	6.00	-0.54	-0.16
Noe Psychosocial	4.74	0.85	2.00	6.00	-0.61	0.24
Noe Career	4.05	1.26	1.00	6.00	-0.35	-0.84
BEMS Overall Scale	4.92	0.70	3.11	6.00	-0.46	-0.41
BEMS Competency Development	5.01	0.90	1.57	6.00	-1.52	3.09
BEMS Relationship Building	5.05	0.76	2.00	6.00	-1.23	1.98
BEMS Sponsorship	4.63	1.14	1.00	6.00	-1.22	1.63
Age	2.50	0.93	1.00	6.00	0.98	1.72
Gender	1.53	0.56	1.00	3.00	0.40	-0.92
Job Tenure	3.02	1.23	1.00	6.00	0.35	-0.49
Mentoring Relationship Length	31.44	30.41	2.00	240.00	3.90	21.86
Mentoring Formality	1.38	0.49	1.00	2.00	0.49	-1.78

Note. SD, Min, and Max are used to represent standard deviation, minimum value, and maximum value, respectively. Noe represents the Noe (1988) scale and BEMS represents the Behavioral Effectiveness of Mentoring Scale.

Table 13

Pilot 2 - Means, Standard Deviations, and Correlations of Variables for Additional Insight

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11
1. Noe Overall Scale	4.69	0.86											
2. Noe Psychosocial	4.74	0.85	.91*										
3. Noe Career	4.04	1.26	.71*	.48*									
4. BEMS Overall Scale	4.92	0.70	.64*	.50*	.61*								
5. BEMS Competency Development	5.01	0.90	.53*	.34*	.56*	.79*							
6. BEMS Relationship Building	5.05	0.76	.61*	.57*	.47*	.74*	.36*						
7. BEMS Sponsorship	4.63	1.14	.34*	.26*	.37*	.78*	.40*	.41*					
8. Protégé Age	2.50	0.93	.08	.07	.04	.02	-.01	.11	-.05				
9. Protégé Gender	1.53	0.56	-.09	-.09	-.03	-.15	-.14	-.08	-.12	-.01			
10. Job Tenure	3.02	1.23	.04	-.02	.05	-.02	.01	.08	-.12	.45*	.12		
11. Relationship Length	31.44	30.41	.13	.12	.13	.01	-.12	.17	.01	.20	.00	.31*	
12. Mentoring Formality	1.38	0.49	-.06	-.11	.01	.09	.09	.01	.10	-.13	-.15	-.03	-.15

Note. *M* and *SD* are used to represent mean and standard deviation, respectively;
Noe represents the Noe (1988) scale and BEMS represents the Behavioral Effectiveness of Mentoring Scale;
N = 100 participants; * indicates $p < .05$.

Chapter Four:

Primary Study – Factor Replication and Hypothesis Testing

When developing a scale, it is important to provide evidence for criterion-related validity. To support the validity of the final scale, I tested the BEMS's relationship to an established mentoring functions measure as well as to common mentoring outcomes from the literature. I also posed several research questions unique to the BEMS.

Structure Replication, Criterion-Related Validity, and Hypotheses

To begin, I retested the factor structure of the scale to ensure that the structure holds in a new sample before testing hypotheses. Next, I established convergent validity by testing the correlation between the BEMS and a function mentoring scale. To accomplish this, I used Noe's (1988) scale again as a representative scale based on the function framework of mentoring, as it is a firmly established measure in the literature. The two measures of mentoring should be positively related, but not entirely overlapping in explained variance.

Hypothesis 1: The behaviorally based measure of mentoring effectiveness is positively related to an existing function mentoring scale.

To provide further evidence concerning the validity of the BEMS, I examined concurrent validity. This establishes that the newly developed mentoring scale relates to established outcomes, in this case both objective and subjective outcomes from the literature. This follows mentoring theory, where mentorship should be inherently linked to positive protégé career success (Kram, 1985; Levinson & Darrow, 1978). Some of the key outcomes continually linked to effective mentorship include subjective protégé outcomes like career satisfaction, job

satisfaction, intent to stay, satisfaction with mentor or relationship quality, and learning (Allen et al., 2004; Eby et al., 2013; Lankau & Scandura, 2002). Several key objective outcomes include protégé promotion, compensation, and salary growth (Allen et al., 2004). Therefore, I hypothesized that protégé ratings of mentor behavioral effectiveness are related to both objective and subjective protégé outcomes.

Hypothesis 2: Protégé ratings of mentor behaviorally based effectiveness are related to subjective protégé outcomes including a) career satisfaction, b) job satisfaction, c) turnover intentions, d) mentoring relationship quality, and e) learning.

Hypothesis 3: Protégé ratings of mentor behaviorally based effectiveness are related to objective protégé outcomes including a) promotion, b) compensation, and c) salary growth.

Building on *Hypothesis 1*, I hypothesized that using a behaviorally based scale to predict protégé outcomes should be positively related, but not entirely overlapping, in explained variance relative to a traditional function scale. That is, the BEMS explains unique variance associated with protégé outcomes above and beyond an established function mentoring scale.

Hypothesis 4: The behaviorally based measure of mentoring effectiveness accounts for unique variance associated with protégé outcomes above and beyond a function mentoring scale.

Finally, I predicted that that the three factors of the behaviorally based mentoring scale would differentially predict protégé outcomes dependent on their objectivity and subjectivity. Because the three factors target different aspects of a protégé's work and mentoring experiences, the relationship between the factors and objective and subjective protégé outcomes will differ. Relationship building should inherently be more related to subjective outcomes than sponsorship or competency development because mentors who excel at interpersonal connection and relationship building behaviors will enhance a protégé's self-esteem, confidence, and well-being

at work which will be associated with positive subjective outcomes. This relationship has been supported in the literature, with psychosocial support being positively related to the subjective mentoring outcomes (Allen et al., 2004; Eby et al., 2013). Conversely, both sponsorship and competency development are targeting growth in objective outcomes by capturing behaviors that should upskill protégés and push them towards opportunities for promotion and job growth. Both the behaviors surrounding sponsorship and competency development are directly related to the development of the networking and task-related aspects of work that enable objective career success. The stronger relationship between career-related support and objective career outcomes relative to psychosocial support is supported in the literature, specifically for the outcomes of compensation and promotion (Allen et al. 2004). Therefore, sponsorship and competency development will be more strongly related to objective outcomes than relationship building.

Hypothesis 5: Protégé ratings of relationship building are more highly related to subjective protégé outcomes including a) career satisfaction, b) job satisfaction, c) turnover intentions, d) mentoring relationship quality, and e) learning than to sponsorship and competency development.

Hypothesis 6: Protégé ratings of sponsorship and competency development are more highly related to objective protégé outcomes including a) promotion, b) compensation, and c) salary growth than to relationship building.

Methods

Participants

The sample for this data is 196 protégés who were working full time (40 hours or more) and who had been in a mentoring relationship for at least six months. Based on previous recommendations of sample sizes for confirmatory factor analyses, a sample of 200 is considered

fair (Comrey & Lee, 1992). I also conducted a power analysis with six predictors to account for control variables and found that assuming a medium effect size of .3, a sample of 200 participants is appropriate to achieve a power of .8. To collect this sample, I used Prolific and paid participants an average of $18 an hour for their participation.

Participants' ages were as follows: 13% between the age range of 18-24, 46% between ages 25-34, 27% between ages 35-44, 11% between ages 45-54, and 3% ages 55 and above. Protégés were 49% women, 50% men, and 1% non-binary or genderqueer. Participants were 69% White or Caucasian, 13% Asian or Pacific Islander, followed by 5% Biracial or Multiracial, 7% Hispanic or Latino, 2% Black or African American, and 1% Native American or Alaskan Native. A variety of jobs and occupations were represented in the sample including jobs like educator, nurse, attorney, analyst, and mechanic. Protégé job tenure was as follows: 13% - Less than a year, 28% - One year or more, but less than three years, 22% - Three years or more, but less than five years, 24% - Five years or more, but less than ten years, and 14% - Ten years or more. For their reported mentoring relationships, 60% were developed informally and 40% were developed formally. The average tenure of their reported mentoring relationship was 27 months, or a little over two years.

Measures

Demographic. Several demographic items were included in the study. These items included participant age, gender, race, job title, a short description of their job, and tenure at current job (see Appendix I). These items were the same demographic items used for Pilot 2.

Mentoring Relationship. Protégés were asked how long they had been part of the mentoring relationship, whether the mentoring relationship was developed formally through the organization or if it developed informally, and how many hours they spent with their mentor per

month on average. Directions clarified that if protégés had more than one mentor, they should select their most current mentoring relationship that had lasted over 6 months (Appendix J).

Objective and Subjective Outcome Items. Below are descriptions of the objective and subjective protégé outcome items. The items are available in Appendix K.

Promotion. Promotions were measured by asking the protégé the number of promotions they had received since becoming a protégé.

Compensation. As commonly assessed in previous mentoring studies, compensation was measured by asking protégés their total annual salary including all forms of compensation (Allen et al. 2004).

Salary Growth. Salary growth was measured by asking protégés what their salary was when they started as a protégé relative to what it is now. The original intention was to divide this value by their mentoring relationship tenure to establish an average salary change per year, however the near zero variance in the average salary growth prevented the ability to run several of the structural equation models, therefore I chose to use the total value of the salary growth instead of the average growth.

Mentoring Relationship Quality. Mentoring relationship quality was measured using Allen and Eby's five-item scale (2003). Responses were based on a 5-point Likert scale that ranged from strongly disagree to strongly agree. A sample item of this scale was "Both my mentor and I benefited from the mentoring relationship." The Cronbach's Alpha for the Mentoring Relationship Quality scale was $\alpha = .88$.

Job Satisfaction. To measure job satisfaction, I used the 3-item general job satisfaction scale from the Michigan Organizational Assessment Questionnaire (Cammann, Fichman, Jenkins, & Klesh, 1979). Items were rated on a 6-point scale that ranged from disagree very

much to agree very much. A sample item was "All in all I am satisfied with my job." The Cronbach's Alpha for job satisfaction was $\alpha = .92$.

Turnover Intentions. Turnover intentions were measured using the Michaels and Spector 1982 3-item scale (Michaels & Spector, 1982). This scale was measured on a 6-point scale that ranged from strongly agree to strongly disagree. A sample item was "I often seriously consider leaving my current job." The Cronbach's Alpha for turnover intentions was $\alpha = .94$.

Career Satisfaction. Career satisfaction was measured using the Career Satisfaction Scale (Greenhaus, Parasuraman, & Wormley, 1990). This was a 5-item scale that was measured on a 5-point scale ranging from strongly agree to strongly disagree. A sample item was "I am satisfied with the success I have achieved in my career." The Cronbach's Alpha for the Career Satisfaction Scale was $\alpha = .93$.

Learning. Learning was measured using Allen and Eby's Mentor Learning Scale (2003). This was a 5-item scale that was measured on a 5-point scale ranging from strongly agree to strongly disagree. A sample item was "I learned a lot from my mentor." The Cronbach's Alpha for the Mentor Learning Scale was $\alpha = .83$.

Control variables. Several variables were measured as potential covariates. Variables that were considered include protégé age, gender, organizational tenure, mentoring relationship length, mentoring relationship formality, and frequency of mentoring interactions as reported by the protégé. As used in previous research to help preserve power (Allen & Eby, 2003; Ragins & Cotton, 1999), covariates were chosen if they had significant correlations with the dependent variables and low intercorrelations.

Mentoring Measures.

Noe Scale. To support convergent validity and to determine how the BEMS performs relative to an established mentoring scale, Noe's mentoring scale was again included (Appendix A). This scale uses a traditional function framework and therefore offers insight into the convergent validity of the behaviorally based mentoring scale relative to a more conventional scale. The scale anchors ranged from 2 – *to a very light extent,* to 6 – *to a very large extent,* with an option for "Don't know" and using McDonald's Omega, the total ω for Noe's scale was .94.

Behavioral Effectiveness of Mentoring Scale. The BEMS scale was also re-collected in order to be able to reevaluate and attempt to replicate the factor structure of the scale found in Pilot 2. This scale was a 19-item scale comprised of three factors: relationship building (seven items), competency development (seven items) and sponsorship (five items) and the responses for these items ranged from 2– *Not at all effective,* to 6 – *Very effective,* along with an option to indicate that a behavior has not been performed by the mentor, which was represented with the value of 1. These items can be found in Appendix L. Using McDonald's Omega, the total ω for the BEMS was .94.

Analyses

Screening

Stringent inclusion criteria were used for data cleaning because data were collected via a convenience sample. Originally, I started with 266 participants and retained 238 participants after dropping those who did not complete items for the protégé behavioral competency development scale. Data from a total of 28 individuals did not pass one or both attention check items and were therefore dropped. Participants were then removed if they took too short of a time completing the survey, defined as less than four minutes on a survey that took on average

around 14 minutes to complete, which was over two standard deviations from the mean. Four minutes was used as a compensation qualifier in Prolific and therefore the three participants who took less than four minutes were removed from the dataset and were not compensated for their participation in the study. Finally, 196 participants were left after dropping 11 participants for missingness in critical outcome variables for testing hypotheses. This included both the choice to not respond to items (i.e., writing "prefer not to respond" in the compensation field) as well as providing no response (leaving an item blank).

Diagnostic Testing

Before running analyses on the data, I ran diagnostic tests were run on the BEMS data to determine normality. Running both a histogram and a density plot on the overall BEMS data, I determined that the data are not normally distributed but instead, negatively skewed. This was confirmed with a Shapiro Wilk Test for Normality, where $W = 0.93$, $p < .05$. The results of the data being negatively skewed is likely due to the self-selection of the sample. The individuals who chose to participate in a mentoring study and had been actively engaged in a mentoring relationship for over six months of time are inherently more likely to view their mentor as effective, otherwise the relationship would have been more likely to be terminated by the protégé, particularly in informal mentoring relationships, which comprised 60% of the sample. Descriptive statistics and correlations among the study variables are available in Table 14 and 15.

Full Information Maximum Likelihood

When reviewing the item response options of the BEMS, further analyses needed to be conducted regarding the response option of 1 – "my mentor does not do this behavior." The two primary options considered for handling the data included either treating this response as the

lowest score on the continuous scale of mentoring effectiveness or treating these responses as missing and using Full Information Maximum Likelihood (FIML) to fill in the missing parameters. FIML is an estimation strategy that can be completed using the Lavaan package in R that provides parameter estimates for missing data (Rosseel, 2012). To determine which strategy to use, I calculated response distributions and item level mean by response option for every item on the BEMS (see Tables 16, 17, and 18). This was used to examine whether individuals who selected "does not do this behavior" had lower means across other items within each factor on average compared to those who elected other response options. Individuals who elected "does not do this behavior" did have lower scores across items for 74% response averages, suggesting that "does not do this behavior" indicates overall low effectiveness. However, when looking at the distribution of responses, more individuals selected "does not do this behavior" at a higher rate than either of the next two lowest response options demonstrating that it may not be on a continuous scale. Using these considerations, I decided to use FIML and treat the "does not do this behavior" response option as missing and estimate the missing parameters for the factor analyses. Treating these data as missing is theoretically more accurate, as not doing a behavior cannot accurately be coded as more or less effective behavior given that it did not happen.

Confirmatory Factor Analysis

Next, a confirmatory factor analysis (CFA) using Maximum Likelihood was conducted. This was used to examine the generalizability of the factor structure previously determined from the EFA conducted in the second pilot study with a new sample. To conduct this analysis, I used the Lavaan package in R with the item and factor structure found in the previous data collection (Rosseel, 2012). I compared the fit statistic of three different possible models including a single factor model, a three correlated factors model, and a bifactor model – I was unable to run a

higher order model because there were no free parameters and therefore the model was "just identified" (Rindskopf & Rose, 1988). While the bifactor model provided slightly better goodness of fit indices, the model required more information and provided a small but negative eigen value, which implied that the model is not a good fit (Table 19). Thus, I proceeded with the three correlated factors model. This factor structure included the three factors of competency development, relationship building, and sponsorship. The fit statistics for the CFA in the new sample suggested the three-factor solution held, and therefore the three-factor solution and all items were retained. Results indicated adequate fit ($\chi^2(149) = 358.49$, $p < .05$, RMSEA = .09, TLI = .86, CFI =.88) and adequate reliability where ω total = .94, and the ω by factor for competency development, relationship building, and sponsorship were as follows: .88, .86, and .75, respectively (Viladrich, Angulo-Brunet, & Doval, 2017; item loadings can be found in Table 20).

Control Variables

To determine which controls to include in my hypothesis testing, I ran correlations between all potential control items collected and the protégé outcomes. The potential control items included: protégé age, gender, job tenure, mentoring relationship tenure, mentoring formality, and time spent with their mentor. Given its significant correlation with both job tenure and mentoring relationship tenure, age was removed as a control variable in hypothesis testing. All other variables remained due to significant correlations to outcome variables or low correlations with other control variables (Table 21).

Hypothesis Testing

For hypothesis testing, I tested all hypothesis two ways: both including and excluding control variables using structural equation modeling (SEM) in Lavaan. The SEM function was

chosen over the linear regression function in this package to be able to incorporate the use of FIML in the model. For most hypotheses, the inclusion of control variables did not change the significance of the predictor variables and therefore the following results report the findings sans the controls unless the significance of the primary predictor variable changed with their inclusion. However, both versions of results can be found in the appendix for relevant hypotheses.

Hypothesis 1 stated "The behaviorally based measure of mentoring effectiveness is positively related to an existing function mentoring scale." This hypothesis was tested using SEM to determine whether the behaviorally based measure of mentoring effectiveness is positively related to the Noe function mentoring scale. This hypothesis was supported, with the behaviorally based measure of mentoring effectiveness positively related to a function mentoring scale $R^2 = .49$, $z = 13.03$, $p < .05$. These findings demonstrate convergent validity with an existing measure of mentoring (Table 22).

Hypothesis 2 stated "Protégé ratings of mentor behaviorally based effectiveness are related to subjective protégé outcomes including a) career satisfaction, b) job satisfaction, c) turnover intentions, d) mentoring relationship quality, and e) learning." The second hypothesis tested whether protégé ratings of mentor behaviorally based effectiveness would be related to subjective protégé outcomes. This hypothesis was tested using SEM. This hypothesis was supported across all subjective outcomes tested. This includes a) career satisfaction, $R^2 = .17$, $z = 5.82$, $p < .05$; b) job satisfaction, $R^2 = .20$, $z = 6.34$, $p < .05$; c) turnover intentions, $R^2 = .14$, $z = -5.29$, $p < .05$; d) mentoring relationship quality, $R^2 = .42$, $z = 11.42$, $p < .05$; and e) learning, $R^2 = .35$, $z = 9.74$, $p < .05$ (Table 23). This supports concurrent validity of the new behaviorally based scale with subjective outcomes frequently related to mentoring in the literature.

Hypothesis 3 stated "Protégé ratings of mentor behaviorally based effectiveness are related to objective protégé outcomes including a) promotion, b) compensation, and c) salary growth." The third hypothesis tested whether protégé ratings of behaviorally based mentor effectiveness would be related to objective protégé outcomes. I tested this hypothesis using SEM, and the hypothesis was not supported across all three outcomes. The results for the objective outcome of promotion were: $R^2 = .02$, $z = 1.67$, $p > .05$. The relationship between compensation and behaviorally based mentor effectiveness was significant on its own – albeit the relationship was negative; $R^2 = .04$, $z = -2.67$, $p < .05$, which was not the hypothesized direction. However, this relationship became non-significant when the control variables were included. Finally, the relationship between behaviorally based mentoring effectiveness and salary growth was nonsignificant: $R^2 = .01$, $z = -1.27$, $p > .05$). These results do not provide support for concurrent validity with established objective outcomes found in previous studies (Table 24).

Hypothesis 4 stated that "The behaviorally based measure of mentoring effectiveness accounts for unique variance associated with protégé outcomes above and beyond a function mentoring scale." I only tested the relationships for outcomes that were significant in Hypotheses 2 and 3, meaning that I only tested whether the behaviorally based measure accounted for unique variance above and beyond a function scale for subjective protégé outcomes. Hypothesis 4 was tested using SEM, where the function scale score was first entered into the model as a predictor, then the behavioral scale score was added as a predictor to the second model, and finally a Likelihood Ratio Test (LRT) was used to determine if adding the behaviorally based scale explained unique variance in the model. The hypothesis was supported across all subjective protégé outcomes, where adding the behaviorally based scale explained unique variance above the function scale alone. The behaviorally based scale added a significant increment in variance

toward the prediction of career satisfaction, $\Delta R^2 = .03$, $\chi^2 = 165.36$, $p < .05$; job satisfaction, $\Delta R^2 = .05$, $\chi^2 = 160.85$, $p < .05$; turnover intentions, $\Delta R^2 = .03$, $\chi^2 = 162.16$, $p < .05$; mentoring relationship quality, $\Delta R^2 = .07$, $\chi^2 = 147.96$, $p < .05$; and learning, $\Delta R^2 = .04$, $\chi^2 = 158.85$, $p < .05$. These results suggest that there is unique variance in the behaviorally based mentoring scale that is not captured in a traditional function mentoring scale (Table 25).

Hypothesis 5 stated "Protégé ratings of relationship building are more highly related to subjective protégé outcomes including a) career satisfaction, b) job satisfaction, c) turnover intentions, d) mentoring relationship quality, and e) learning when compared to sponsorship or competency development." This hypothesis was tested by analyzing the ΔR^2 between the model that contained all three factors and the models with one factor removed. This was used to determine which variable explained the most unique variance in the model. A dominance analysis was also calculated using linear modeling without FIML to demonstrate each variables' relative importance in the model using the "domir" package in r (Luchman, 2022). FIML was not used for the dominance analysis because the "domir" package does not support SEM, therefore 165 responses were tested. Dominance analysis works by comparing pairs of variables from all possible pair combinations in the model to determine the contribution that each variable makes towards explaining the dependent variable. All variables were then ranked by the contribution they make towards predicting the outcome. Hypothesis 5 was only partially supported, meaning that ratings of relationship building were only found to explain more unique variance in the subjective outcomes of mentoring relationship quality and learning when compared to sponsorship and competency development. For career satisfaction, sponsorship explained the most unique variance and had an $\Delta R^2 = .06$. Relationship building and competency development had ΔR^2 of .03 and .01 respectively, therefore relationship building did not explain the most

variance in the model. For job satisfaction, the hypothesis was also rejected with competency development adding the most unique variance to the model: relationship building $\Delta R^2 = .02$, sponsorship $\Delta R^2 = .02$, and competency development $\Delta R^2 = .03$. Turnover intentions followed a similar pattern to career satisfaction, with sponsorship adding the most unique variance to the model: relationship building $\Delta R^2 = .01$, sponsorship $\Delta R^2 = .03$, and competency development $\Delta R^2 = .02$. However, when using linear regression for the dominance analysis and not utilizing FIML for missingness, competency development was rated as the most important variable. For mentoring relationship quality and learning, relationship building provided the most unique variance to the model for both subjective outcomes, supporting the hypothesis. For mentoring quality, results were as follows: relationship building $\Delta R^2 = .11$, sponsorship $\Delta R^2 = .02$, and competency development $\Delta R^2 = .02$. For learning, the results were: relationship building $\Delta R^2 = .12$, sponsorship $\Delta R^2 = .01$, and competency development $\Delta R^2 = .02$. Given these results, the prediction about the relationship was partially supported, with relationship building providing the most unique variance explained for only two of the subjective protégé outcomes tested: mentoring relationship quality and learning (Table 26).

Finally, Hypothesis 6 stated "Protégé ratings of sponsorship and competency development are more highly related to objective protégé outcomes including a) promotion, b) compensation, and c) salary growth when compared to relationship building." Relationships between each factor and the objective outcomes were tested using the same method as Hypothesis 5. I began by running the SEM model with all three factors included (relationship building, competency development, and sponsorship) for each objective outcome. None of the three factors significantly predicted promotions or salary growth and therefore these relationships were not further explored. For compensation, competency development was a

significant predictor and did explain the most variance in the model: $\Delta R^2 = .03$, compared to relationship development $\Delta R^2 = .01$ and sponsorship $\Delta R^2 = .01$. However, the relationship between competency development and compensation was negative, where higher competency development quality was related to lower compensation. Therefore, this hypothesis was not supported (Table 27).

Additional Analysis

Outside of the initially proposed hypotheses, I also ran two additional analyses to provide supplementary insights into the differentiation between the BEMS and Noe's function scale. This was to offer additional context, particularly around Hypothesis 4, which was establishing that the BEMS explained unique variance above the Noe scale alone. As an additional analysis, I ran dominance analyses with both the three BEMS factors and the two factors from the Noe function scale to establish which explained the most variance for the subjective protégé outcomes. Dominance analysis rankings showed that overall, the Noe psychosocial factor was the most dominant factor for explaining subjective outcomes. Noe's psychosocial factor was rated as the number one factor for four out of five subjective outcomes in the dominance analysis. However, the BEMS competency development factor had the highest rating for turnover intentions, and the factors from the BEMS had the second highest rated factor across all subjective outcomes. The overall rankings as well as the standardized dominance scores, or what percent of variance explained in the outcome was accounted for by each predictor, are available in Table 28 and Table 29.

I also ran a CFA using the three factors from the BEMS and the two factors from the Noe scale to see whether viewing all five factors as unique would demonstrate good fit indices, providing evidence that the factors in the two scales are unique. While the chi square was

significant in the CFA, I found adequate fit for a five factor CFA using the three factors from the BEMS and the two factors from Noe across the other goodness of fit indices: ($\chi^2(730) = 1555.31$, $p < .05$, RMSEA = .08, TLI = .80, CFI =.81). Results demonstrated high factors loadings across all five factors, with the lowest loading of .49. This provides evidence to support that the two scales and their factors are distinct.

Table 14

Primary Study – Descriptive Statistics for Variables

Variable	Mean	SD	Min	Max	Skew	Kurtosis
BEMS Overall Scale	5.25	0.54	3.58	6.00	-0.65	-0.11
BEMS Competency Development	5.27	0.63	3.43	6.00	-0.75	-0.28
BEMS Relationship Building	5.31	0.60	3.00	6.00	-1.13	1.47
BEMS Sponsorship	5.09	0.76	2.40	6.00	-0.87	0.46
Noe Overall Scale	4.68	0.81	1.90	6.00	-0.80	0.61
Noe Career Related	4.28	1.09	1.29	6.00	-0.58	-0.28
Noe Psychosocial	4.88	0.80	1.93	6.00	-1.12	1.38
Career Satisfaction	3.85	0.99	1.00	5.00	-0.81	-0.12
Job Satisfaction	4.85	1.17	1.33	6.00	-1.07	0.44
Turnover Intentions	2.35	1.49	1.00	6.00	0.86	-0.47
Mentoring Relationship Quality	4.44	0.63	2.00	5.00	-1.28	1.48
Learning	4.20	0.70	1.40	5.00	-1.07	1.39
Promotion	0.92	0.82	0.00	4.00	0.82	0.64
Compensation	74465.93	56091.64	9000.00	550000.00	3.88	25.78
Salary Growth	12579.59	17789.34	0.00	130000.00	3.15	13.28

Note. SD, Min, and Max are used to represent standard deviation, minimum value, and maximum value, respectively. Noe represents the Noe (1988) scale and BEMS represents the Behavioral Effectiveness of Mentoring Scale.

Table 15

Primary Study - Correlations of Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. BEMS Overall Scale																				
2. BEMS Competency	.88*																			
3. BEMS Relationship	.85*	.64*																		
4. BEMS Sponsorship	.83*	.59*	.49*																	
5. Noe Overall Scale	.67*	.55*	.62*	.53*																
6. Noe Career	.54*	.47*	.40*	.45*	.85*															
7. Noe Psychosocial	.64*	.51*	.66*	.49*	.93*	.60*														
8. Career Sat	.39*	.32*	.35*	.40*	.44*	.39*	.40*													
9. Job Sat	.43*	.41*	.37*	.36*	.42*	.35*	.39*	.53*												
10. Turnover Intentions	-.37*	-.34*	-.29*	-.34*	-.34*	-.29*	-.32*	-.51*	-.80*											
11. Rel Quality	.62*	.54*	.62*	.47*	.67*	.46*	.70*	.46*	.51*	-.40*										
12. Learning	.55*	.48*	.58*	.40*	.66*	.47*	.67*	.39*	.44*	-.28*	.67*									
13. Promotion	.13	.18*	.00	.15*	.23*	.24*	.18*	.10	.05	-.02	.16*	.16*								
14. Compensation	-.20*	-.21*	-.18*	-.06	-.17*	-.11	-.18*	-.01	-.14	.15*	-.33*	-.15*	-.06							
15. Salary Growth	-.10	-.11	-.10	.06	-.01	.03	-.04	.07	-.08	.11	-.16*	-.03	.24*	.62*						
16. Age	.02	-.05	.01	.10	-.09	-.04	-.11	.10	.10	-.06	.00	-.00	.01	.20*	.14					
17. Gender	-.26*	-.20*	-.25*	-.15*	-.11	-.03	-.14	-.03	-.03	-.01	-.05	-.10	-.06	.17*	.13	-.04				
18. Tenure	.06	.03	.02	.09	.01	.02	-.01	.12	.03	.02	.04	.06	.25*	.02	.16*	.50*	-.07			
19. Rel Length	-.02	.03	-.01	.03	-.03	-.03	-.02	.10	-.03	.01	.02	.05	.19*	.04	.24*	.21*	-.05	.35*		
20. Formality	.11	.06	.12	.08	.10	.06	.11	.14	.08	-.05	.02	.02	-.07	-.02	-.04	-.09	-.02	-.03	-.08	
21. Hours Spent with Mentor	.10	.17*	.08	.00	.07	.02	.09	-.02	.05	-.07	.13	.06	.09	-.29*	-.12	-.10	-.05	-.02	.04	-.12

Note. N = 196; * indicates $p < .05$; Noe represents the Noe (1988) scale, BEMS represents Behavioral Effectiveness of Mentoring Scale; Rel is Relationship and Sat is Satisfaction.

Table 16

Primary Study - Means of Item Responses by Item Grouping for Competency Development Factor

Grouping Variable	Score	N	Comp 1 Mean	Comp 2 Mean	Comp 3 Mean	Comp 4 Mean	Comp 5 Mean	Comp 6 Mean	Comp 7 Mean
Comp 1	1	6		4.33	4.33	2.50	4.00	3.17	3.17
Comp 1	2	0							
Comp 1	3	7		4.14	4.43	4.86	4.43	4.00	4.43
Comp 1	4	25		4.76	4.72	4.60	4.64	4.44	4.80
Comp 1	5	89		5.27	5.10	4.88	5.11	4.81	5.02
Comp 1	6	69		5.78	5.74	5.62	5.70	5.42	5.80
Comp 2	1	2	3.00		2.50	3.50	3.50	3.50	1.00
Comp 2	2	0							
Comp 2	3	6	4.33		3.67	3.83	3.83	3.50	4.17
Comp 2	4	18	4.11		4.17	3.94	3.94	4.28	4.61
Comp 2	5	70	4.74		5.01	4.91	5.09	4.47	4.94
Comp 2	6	100	5.48		5.72	5.41	5.62	5.42	5.61
Comp 3	1	4	4.00	3.25		2.00	3.00	2.00	2.25
Comp 3	2	0							
Comp 3	3	4	4.00	4.00		4.25	3.50	4.25	4.25
Comp 3	4	22	4.41	4.41		4.00	4.36	4.18	4.59
Comp 3	5	75	4.76	5.16		5.03	5.05	4.76	5.04
Comp 3	6	91	5.49	5.81		5.45	5.69	5.34	5.63
Comp 4	1	10	3.90	5.00	4.10		4.50	2.20	3.70
Comp 4	2	2	3.00	2.00	4.00		3.50	2.00	3.00
Comp 4	3	9	4.44	4.56	4.33		4.11	4.11	4.33
Comp 4	4	21	4.62	5.14	4.76		4.67	4.19	4.95
Comp 4	5	63	4.89	5.10	5.14		5.10	4.84	5.06
Comp 4	6	91	5.45	5.69	5.64		5.62	5.54	5.63
Comp 5	1	2	3.00	3.50	1.00	1.00		1.00	3.50
Comp 5	2	1	1.00	1.00	4.00	2.00		2.00	1.00
Comp 5	3	8	4.63	4.25	4.63	4.75		4.50	4.13
Comp 5	4	27	4.56	4.78	4.59	4.41		4.30	4.67
Comp 5	5	65	4.78	5.25	4.98	4.82		4.82	4.95
Comp 5	6	93	5.46	5.70	5.74	5.51		5.28	5.68
Comp 6	1	11	4.45	5.00	4.09	2.55	4.55		4.00
Comp 6	2	3	4.00	3.33	4.67	3.33	4.33		4.00
Comp 6	3	8	4.38	4.75	5.00	4.25	4.63		4.13
Comp 6	4	32	4.56	4.94	4.78	4.47	4.63		4.94

Table 16 (continued)

Comp 6	5	61	4.84	5.11	5.16	5.02	5.18		5.07
Comp 6	6	81	5.54	5.79	5.65	5.74	5.62		5.69
Comp 7	1	7	3.29	3.71	3.29	2.43	4.14	2.29	
Comp 7	2	0							
Comp 7	3	6	4.50	5.00	4.83	4.50	3.67	4.17	
Comp 7	4	19	4.32	4.63	4.74	4.58	4.47	4.53	
Comp 7	5	68	4.84	5.16	5.03	4.81	5.04	4.75	
Comp 7	6	96	5.47	5.70	5.64	5.50	5.63	5.31	

Note. Score represents each item response anchor, N represents the number of individuals who responded to each item response anchor, and Comp represents the Competency Development factor and its corresponding item number.

Table 17

Primary Study - Means of Item Responses by Item Grouping for Relationship Building Factor

Grouping Variable	Score	N	Rel 1 Mean	Rel 2 Mean	Rel 3 Mean	Rel 4 Mean	Rel 5 Mean	Rel 6 Mean	Rel 7 Mean
Rel 1	1	3		1.67	2.33	2.33	3.67	1.67	2.33
Rel 1	2	1		3.00	3.00	4.00	4.00	3.00	2.00
Rel 1	3	6		5.17	4.67	3.00	4.67	4.33	4.83
Rel 1	4	13		4.46	4.77	4.54	4.69	4.31	4.31
Rel 1	5	65		5.28	5.18	5.08	5.00	4.83	4.92
Rel 1	6	108		5.81	5.69	5.73	5.44	5.29	5.18
Rel 2	1	2	1.00		1.00	3.00	3.00	1.00	1.00
Rel 2	2	0							
Rel 2	3	5	3.40		4.20	4.20	4.20	3.60	4.00
Rel 2	4	17	4.53		4.35	4.12	4.24	4.06	4.35
Rel 2	5	49	5.18		5.08	5.08	4.84	4.82	4.86
Rel 2	6	123	5.67		5.73	5.62	5.54	5.28	5.20
Rel 3	1	2	1.00	1.00		3.00	3.00	1.00	1.00
Rel 3	2	1	3.00	4.00		2.00	3.00	4.00	4.00
Rel 3	3	2	3.00	3.00		4.00	3.50	3.00	3.00
Rel 3	4	21	4.95	4.76		4.67	4.33	4.33	4.81
Rel 3	5	63	5.17	5.21		5.14	4.95	4.78	4.92
Rel 3	6	107	5.67	5.87		5.60	5.59	5.34	5.14
Rel 4	1	4	2.50	3.25	4.00		5.25	3.25	4.25
Rel 4	2	1	3.00	4.00	2.00		3.00	4.00	4.00
Rel 4	3	3	3.33	5.00	5.00		5.00	4.67	4.67
Rel 4	4	20	4.65	4.70	4.80		4.50	4.60	4.25
Rel 4	5	66	5.17	5.36	5.17		4.89	4.71	4.89
Rel 4	6	102	5.79	5.76	5.70		5.54	5.30	5.20
Rel 5	1	3	4.00	3.33	3.33	5.33		1.00	3.67
Rel 5	2	2	5.00	5.50	5.50	4.50		5.50	5.50
Rel 5	3	9	4.89	4.67	4.33	4.67		3.89	4.22
Rel 5	4	22	5.05	4.95	4.86	5.00		4.27	4.27
Rel 5	5	65	5.14	5.26	5.17	4.97		4.85	4.88
Rel 5	6	95	5.65	5.83	5.77	5.65		5.44	5.28
Rel 6	1	5	3.60	3.40	3.40	4.40	2.60		2.60
Rel 6	2	1	4.00	5.00	5.00	5.00	6.00		3.00
Rel 6	3	13	4.38	4.54	4.77	4.38	4.15		3.54
Rel 6	4	31	5.13	5.16	5.00	5.03	4.68		4.55
Rel 6	5	71	5.41	5.55	5.38	5.31	5.32		5.06

Table 17 (continued)

Rel 6	6	75	5.68	5.77	5.73	5.60	5.61		5.48
Rel 7	1	6	4.17	4.33	4.33	4.83	4.33	3.33	
Rel 7	2	3	4.33	4.67	4.67	4.33	4.00	3.67	
Rel 7	3	10	4.70	4.80	5.10	4.80	4.70	3.40	
Rel 7	4	31	5.32	5.23	5.13	5.19	4.84	4.35	
Rel 7	5	69	5.28	5.39	5.32	5.17	5.26	5.10	
Rel 7	6	77	5.64	5.79	5.64	5.57	5.44	5.49	

Note. Score represents each item response anchor, N represents the number of individuals who responded to each item response anchor, and Rel represents the Relationship Building factor and its corresponding item number.

Table 18

Primary Study - Means of Item Responses by Item Grouping for Sponsorship Factor

Grouping Variable	Score	N	Sponsorship 1 Mean	Sponsorship 2 Mean	Sponsorship 3 Mean	Sponsorship 4 Mean	Sponsorship 5 Mean
Sponsorship 1	1	15		1.93	1.27	3.00	3.20
Sponsorship 1	2	4		2.50	3.50	3.75	4.75
Sponsorship 1	3	14		3.86	3.50	4.07	4.07
Sponsorship 1	4	23		4.35	4.30	4.57	4.43
Sponsorship 1	5	71		4.86	4.82	4.92	5.18
Sponsorship 1	6	69		5.59	5.59	5.52	5.74
Sponsorship 2	1	14	1.64		1.07	2.93	2.93
Sponsorship 2	2	2	2.00		3.50	3.50	4.50
Sponsorship 2	3	12	3.75		3.25	4.25	4.08
Sponsorship 2	4	26	4.04		3.58	4.15	4.65
Sponsorship 2	5	86	4.98		5.08	4.97	5.19
Sponsorship 2	6	56	5.73		5.68	5.68	5.79
Sponsorship 3	1	18	1.78	1.89		2.72	3.06
Sponsorship 3	2	4	2.75	2.25		3.25	4.00
Sponsorship 3	3	9	3.67	3.33		3.89	4.00
Sponsorship 3	4	35	4.63	4.51		4.63	4.83
Sponsorship 3	5	64	4.89	5.02		4.92	5.27
Sponsorship 3	6	66	5.68	5.64		5.73	5.71
Sponsorship 4	1	12	2.25	2.42	1.33		2.92
Sponsorship 4	2	6	4.17	4.33	4.33		4.50
Sponsorship 4	3	7	3.57	3.43	3.00		3.71
Sponsorship 4	4	24	4.33	4.08	4.13		4.63
Sponsorship 4	5	71	4.80	4.85	4.76		5.07
Sponsorship 4	6	76	5.32	5.30	5.38		5.67
Sponsorship 5	1	9	1.67	1.78	1.00	2.44	
Sponsorship 5	2	0					
Sponsorship 5	3	7	3.43	3.29	3.14	3.14	
Sponsorship 5	4	27	3.93	4.04	3.93	4.15	
Sponsorship 5	5	66	4.79	4.74	4.74	4.77	
Sponsorship 5	6	87	5.34	5.32	5.28	5.53	

Note. Score represents each item response anchor and N represents the number of individuals who responded to each item response anchor.

Table 19

Primary Study – Confirmatory Factor Analysis Comparisons

Model	Chi Square	*df*	p	CFI	TLI	RMSEA
Single Factor	664.29	152	$p < .05$	.71	.68	.13
Three Correlated Factors	358.49	149	$p < .05$	.88	.86	.09
Bifactor Model	325.60	130	$p < .05$	.89	.85	.09

Table 20

Primary Study - Factor Loadings for Final Items

Item	Wording	F1 Loading	F2 Loading	F3 Loading
Item 49	Instilling accountability for meeting my commitments and goals through analyzing problems or critical weaknesses that are stopping me from accomplishing my goals.	0.69		
Item 11	Improving the overall quality of our mentoring relationship through assessing my current skills and evaluating my work on tasks or projects.	0.74		
Item 58	Developing my expertise in competencies through evaluating the quality and quantity of my work.	0.74		
Item 10	Developing my expertise in competencies through giving me an assignment or new project opportunity.	0.67		
Item 16	Helping me obtain knowledge or insight on how to perform a task or make a decision through setting expectations of what is required of me.	0.73		

Table 20 (continued)

Item 65	Assisting me with furthering my career progression through giving me an assignment or new project opportunity.	0.65	
Item 3	Building my confidence in my skills through setting expectations of what is required of me.	0.70	
Item 71	Building a personal mentoring relationship characterized by mutual trust, respect, and open communication through asking questions that make me think more deeply about different situations.		0.67
Item 1	Maintaining a positive, open, and trusting relationship with me through active and attentive listening.		0.75
Item 48	Maintaining a positive, open, and trusting relationship with me through assessing my interests regarding the tasks I would like to perform, my goals for the future, or my personal interests.		0.75
Item 9	Helping me make sound and informed decisions through asking questions that make me think more deeply about different situations.		0.67
Item 75	Assisting me with furthering my career progression through providing me advice or suggestions regarding upcoming decisions or actions.		0.63

Table 20 (continued)

Item 52	Helping me resolve interpersonal issues at work through providing me advice or suggestions regarding upcoming decisions or actions.	0.57	
Item 69	Improving my emotional state regarding challenging or flustering tasks through providing me reassurance when things are seemingly going wrong.	0.48	
Item 29	Assisting me with furthering my career progression through promoting me in forums such as meetings in which they can talk positively about me.		.76
Item 31	Creating opportunities for me that might not have been previously available through promoting me in forums such as meetings in which they can talk positively about me.		.82
Item 37	Building and expanding my professional network through promoting me in forums such as meetings in which they can talk positively about me.		.84
Item 53	Assisting me with furthering my career progression through connecting me to their colleagues.		.68
Item 62	Building a personal mentoring relationship characterized by mutual trust, respect, and open communication through promoting me in forums such as meetings in which they can talk positively about me.		0.70

Note. Item numbers correspond to the item numbers and text in Appendix H.

Table 21

Primary Study - Means, Standard Deviations, and Correlations for Control Variables

Variable	*M*	*SD*	1	2	3	4	5
1. Age	2.43	0.94					
2. Gender	1.53	0.57	-.04				
3. Job Tenure	2.98	1.31	.50*	-.07			
4. Relationship Length	27.00	29.78	.21*	-.05	.35*		
5. Mentoring Formality	1.40	0.49	-.09	-.02	-.03	-.08	
6. Hours Spent with Mentor	28.31	26.17	-.10	-.05	-.02	.04	-.12

Note. M and *SD* are used to represent mean and standard deviation, respectively.
* Indicates $p < .05$.

Table 22

Primary Study – Hypothesis 1: Results of SEM for the BEMS and a Function Scale

	Model 1	Model 2
Predictors	*Function Mentoring*	*Function Mentoring*
Behavioral Scale β	1.00*	1.02*
Controls		
Gender β		.08
Job Tenure β		-0.02
Relationship Length β		0.00
Mentoring Formality β		0.08
Hours Spent with Mentor β		0.00
Results		
R^2	0.49	0.50
ΔR^2		0.01

Note. * Indicates $p < .05$; β indicates the regression estimates.

Table 23

Primary Study – Hypothesis 2: Results of SEM for the BEMS and Subjective Protégé Outcomes

	Career Satisfaction	Job Satisfaction	Turnover Intentions	Relationship Quality	Learning
Model 1					
Predictor					
Behavioral Scale β	.75*	.94*	-1.04*	.73*	.74*
R^2	.17	.20	.14	.42	.35
Model 2					
Predictor with Controls					
Behavioral Scale β	.76*	.95*	-1.09*	.76*	.75*
Controls					
Gender β	.14	.15	-.28	.13*	.05
Job Tenure β	.05	.03	.04	.01	.01
Relationship Length β	.00	.00	.00	.00	.00
Mentoring Formality β	.20	.08	-.05	-.03	-.03
Hours Spent with Mentor β	.00	.00	.00	.00	.00
Results					
R^2	.20	.20	.15	.44	.35
ΔR^2	.03	.00	.01	.02	.00

Note. * Indicates $p < .05$; β indicates the regression estimates.

Table 24

Primary Study – Hypothesis 3: Results of SEM for the BEMS and Objective Protégé Outcomes

	Promotions	Compensation	Salary Growth
Model 1			
Predictor			
Behavioral Scale β	.21	-21890.60*	-3367.10
R^2	.02	.04	.01
Model 2			
Predictor with Controls			
Behavioral Scale β	.21	-15895.93	-1931.661
Controls			
Gender β	-.01	10392.47	4054.20
Job Tenure β	.13*	-248.29	1266.39
Relationship Length β	.00	127.05	110.46*
Mentoring Formality β	-.11	-6865.92	-2230.46
Hours Spent with Mentor β	.00	-626.87*	-128.91
Results			
R^2	.10	.13	.11
ΔR^2	.08	.09	.10

Note. * Indicates $p < .05$; β indicates the regression estimates.

Table 25

Primary Study – Hypothesis 4: Results of SEM for the BEMS, Function Scale, and Subjective Protégé Outcomes

	Career Satisfaction	Job Satisfaction	Turnover Intentions	Relationship Quality	Learning
Model 1					
Predictor					
Function Scale β	.54*	.60*	-.64*	.53*	.57*
R^2	.19	.17	.12	.45	.43
Model 2					
Predictors					
Function Scale β	.37*	.31*	-.31	.32*	.40*
Behavioral Scale β	.35*	.60*	-.67*	.41*	.34*
R^2	.21	.22	.15	.52	.47
ΔR^2	.03	.05	.03	.07	.04
Model 3					
Predictor with Controls					
Function Scale. β	.37*	.31*	-.29	.32*	.41*
Behavioral Scale β	.35	.61*	-.73*	.43*	.33*
Controls					
Gender β	.11	.12	-.24	.10	.02
Job Tenure β	.06	.03	.04	.01	.01
Relationship Length β	.00	.00	.00	.00	.00
Mentoring Formality β	.20	.09	-.06	-.04	-.05
Hours Spent with Mentor β	.00	.00	.00	.00	.00
Results					
R^2	.25	.22	.16	.53	.47
ΔR^2	.06	.05	.04	.08	.04

Note. * Indicates $p < .05$; β indicates the regression estimates.

Table 26

Primary Study – Hypothesis 5: Results of SEM for the BEMS Factors and Subjective Protégé Outcomes

	Career Satisfaction	Job Satisfaction	Turnover Intentions	Relationship Quality	Learning
Model 1 - Baseline					
Competency Development β	.07	.42*	-.41	.15	.11
Sponsorship β	.40*	.29*	-.42*	.15*	.12
Relationship Building β	.28	.25	-.18	.46*	.53*
R^2	.21	.22	.16	.45	.38
Model 2					
Competency Development β	.13	.52*	-.47*	.37*	.37*
Sponsorship β	.49*	.33*	-.46*	.23*	.22*
R^2	.19	.20	.15	.34	.26
ΔR^2 from Baseline	-.03	-.02	-.01	-.11	-.12
Model 3					
Competency Development β	.34*	.59*	-.65*	.24*	.21*
Relationship Building β	.34*	.31	-.27	.49*	.54*
R^2	.15	.20	.13	.43	.37
ΔR^2 from Baseline	-.06	-.02	-.03	-.02	-.01
Model 4					
Sponsorship β	.42*	.40*	-.54*	.19*	.14*
Relationship Building β	.33*	.47*	-.39*	.54*	.59*
R^2	.20	.19	.14	.43	.36
ΔR^2 from Baseline	-.01	-.03	-.02	-.02	-.02
Dominance Analysis Ranking					
Competency Development	3	1	1	2	2
Sponsorship	1	3	2	3	3
Relationship Building	2	2	3	1	1

Note. * Indicates $p < .05$; β indicates the regression estimates.

Table 27

Primary Study – Hypothesis 6: Results of SEM for the BEMS Factors and Objective Protégé Outcomes

	Promotions	Compensation	Salary Growth
Model 1 - Baseline			
Competency Development β	.28*	-22073.10*	-6999.62*
Sponsorship β	.14	10034.95	5687.5*
Relationship Building β	-.27*	-13539.39	-3594.02*
R^2	.06	.07	.06
Model 2			
Competency Development β	.18	-27343.94*	-8214.52*
Sponsorship β	.09	7315.219	4906.26*
R^2	.04	.06	.05
ΔR^2 from Baseline	-.02	-.01	-.01
Model 3			
Competency Development β	.34*	-14355.83	-2876.73
Relationship Building β	-.23	-10335.32	-1276.38
R^2	.04	.06	.02
ΔR^2 from Baseline	-.02	-.01	-.04
Model 4			
Sponsorship β	.21*	2262.54	3615.10
Relationship Building β	-.13	-19100.06*	-5851.76*
R^2	.03	.04	.03
ΔR^2 from Baseline	-.03	-.03	-.03
Dominance Analysis Ranking			
Competency Development	1	1	2
Sponsorship	2	3	1
Relationship Building	3	2	3

Note. * Indicates $p < .05$; β indicates the regression estimates.

Table 28

Primary Study – Additional Dominance Analysis Rankings

	BEMS Competency Development	BEMS Relationship Building	BEMS Sponsorship	Noe Career Related	Noe Psychosocial
Subjective Rankings					
Career Satisfaction	5	4	2	3	1
Job Satisfaction	2	3	5	4	1
Turnover Intentions	1	5	2	4	3
Relationship Quality	3	2	5	4	1
Learning	4	2	5	3	1
Average Ranking	3.2	3.2	3.8	3.6	1.4
Standardized Dominance					
Career Satisfaction	.10	.15	.26	.22	.27
Job Satisfaction	.26	.19	.12	.15	.27
Turnover Intentions	.25	.15	.23	.17	.21
Relationship Quality	.14	.24	.09	.10	.44
Learning	.09	.26	.07	.13	.46

Note. N = 195, Values in the "Subjective Ranking" section indicate each predictor variables' relative ranking relative to the others for predicting the outcome variable on the left; values in the "Standardized Dominance" section represent the proportion of variance explained in the outcome variable explained by the predictors above.

Table 20

Primary Study – Additional Dominance Analysis Conditional Statistics

Variables	IVs:1	IVs: 2	IVs:3	IVs:4	IVs:5
Career Satisfaction					
BEMS Competency Development	0.11	0.02	0.00	0.00	-0.01
BEMS Relationship Building	0.12	0.04	0.02	0.01	0.01
BEMS Sponsorship	0.16	0.07	0.04	0.03	0.02
Noe Career Support	0.15	0.06	0.03	0.01	0.00
Noe Psychosocial Support	0.16	0.07	0.05	0.03	0.03
Job Satisfaction					
BEMS Competency Development	0.17	0.06	0.03	0.02	0.02
BEMS Relationship Building	0.13	0.04	0.02	0.02	0.01
BEMS Sponsorship	0.13	0.03	0.01	-0.01	-0.02
Noe Career Support	0.12	0.03	0.01	0.00	0.00
Noe Psychosocial Support	0.15	0.06	0.04	0.03	0.03
Turnover Intentions					
BEMS Competency Development	0.11	0.04	0.03	0.02	0.01
BEMS Relationship Building	0.09	0.02	0.01	0.01	0.01
BEMS Sponsorship	0.11	0.04	0.02	0.01	0.00
Noe Career Support	0.09	0.03	0.02	0.01	0.01
Noe Psychosocial Support	0.10	0.04	0.02	0.01	0.01
Relationship Quality					
BEMS Competency Development	0.29	0.07	0.02	0.00	-0.01
BEMS Relationship Building	0.39	0.14	0.07	0.04	0.01
BEMS Sponsorship	0.22	0.04	0.00	-0.01	-0.01
Noe Career Support	0.21	0.03	0.01	0.01	0.01
Noe Psychosocial Support	0.49	0.25	0.18	0.15	0.14
Learning					
BEMS Competency Development	0.23	0.04	-0.01	-0.02	-0.03
BEMS Relationship Building	0.34	0.13	0.07	0.04	0.03
BEMS Sponsorship	0.16	0.02	-0.01	-0.01	-0.01
Noe Career Support	0.22	0.05	0.02	0.01	0.00
Noe Psychosocial Support	0.45	0.23	0.16	0.12	0.11

Note. N = 165

Chapter Five:

Discussion and Implications

Discussion

The present research both develops and attempts to demonstrate the validity of a new behaviorally based measure of mentoring effectiveness based on previous research conducted by Kraiger and colleagues (2019). The results suggest that this scale, the BEMS, offers unique value for predicting subjective protégé outcomes beyond a traditional function mentoring scale.

Pilot 1 and Pilot 2 served to develop scale items from previous qualitative work that captured effective mentoring behaviors in the workplace. These items were specifically developed to measure behaviors by combining both the objective, or the specific intent of the mentor, as well as the behavior or action that they took to meet that objective. In terms of the final scale, results from both the Pilot 2 study and the Primary study indicated that the behaviorally based items divide into three clear factors: relationship building, competency development, and sponsorship. These findings are in line with O'Neil and Wrightsman's (2001) mentoring definition, which emphasizes sponsorship as a key component of mentoring, one which is frequently excluded or subsumed by other factors in current measures. While the factors of relationship building and competency development map to Kram's (1985) original function factors of psychosocial support and career related support, this new scale offers sponsorship as a unique factor as well as a different approach to mentoring measurement through behaviorally based items.

With regards to validity, both Pilot 2 and the Primary study established convergent validity with an existing function scale, specifically Noe's function scale that measures psychosocial support and career-related support (Noe, 1988). A CFA was also run that established that the three factors from the BEMS (competency development, relationship building, and sponsorship) were distinct from the two primary factors used in function-based mentoring.

The Primary study was used to test concurrent validity with established outcomes in the literature including subjective and objective protégé outcomes. The analyses resulted in mixed findings regarding concurrent validity. The BEMS was related to a variety of subjective protégé outcomes including career satisfaction, job satisfaction, turnover intention, mentoring relationship quality, and learning which align with previous research linking mentoring effectiveness to subjective protégé outcomes (Allen et al., 2004; Lankau & Scandura, 2002). However, the BEMS was not related to protégé outcomes including promotions, compensation, or salary growth, contrary to findings in previous research (Allen et al., 2004). In fact, although the competency development factor was significantly related to compensation, the relationship was negative. This finding is surprising, as one might think that having an effective mentor, particularly one who is effective at providing competency development and sponsorship, would be a predictor objective outcomes like promotion, compensation, and salary growth through enhanced protégé performance at work. Although the relationship between the BEMS and objective protégé outcomes was not supported, using established guidance on building a nomological network from the literature, the results show support for concurrent validity with subjective protégé outcomes while also demonstrating uniqueness from an existing scale (Cortina et al., 2020).

Beyond a positive relationship with subjective protégé outcomes, this research suggests that the BEMS offers unique explanation of variance into the prediction of subjective outcomes beyond a function mentoring scale alone. I tested whether adding the BEMS to the structural equation model as a predictor would explain significant additional variance above the Noe scale and found significant unique variance explained by the BEMS across all subjective outcomes.

I also predicted that relationship building would be the factor most highly related to subjective protégé outcomes, but this relationship was only partially supported. The variance explained by relationship building was only higher than competency development and sponsorship for the outcomes of relationship quality and learning but not for job satisfaction, career satisfaction, or turnover intentions. Reflecting on the items of both the relationship quality and learning scales used in the Primary study, the ability for relationship building to explain more variance in these outcomes relative to the other subjective outcomes is reasonable. This is because the items for relationship quality and learning are both directly assessing satisfaction with elements of the mentoring relationship while the other subjective outcomes are more distal aspects of work such as career and job satisfaction. The more distal satisfaction ratings are likely to be more equally influenced by each of the three factors as they all contribute to holistic work perceptions, which is reflected in their similar ΔR^2. However, because relationship quality and learning involve spending time with one's mentor, they are more directly impacted by a mentor who is effective at relationship building and is reflected in its higher ΔR^2 for both outcomes.

Finally, I ran additional analyses, specifically dominance analyses, to gather further insights about the relative importance of the BEMS and the Noe scale for predicting subjective protégé outcomes. Noe's psychosocial scale was the best predictor across all subjective outcomes except for turnover intentions. Noe's psychosocial factor is comprised of twice as

many items as both its career-related support factor and the three separate BEMS factors, providing it the opportunity to have more information about the mentoring relationship relative to the other factors. Interestingly, the BEMS competency development factor was the single factor that outperformed Noe's psychosocial support factor as the dominant predictor for turnover intent. I believe this occurred because several of the competency development items include content about future projects and accomplishing work goals. Mentors who are effective, as captured by these specific items, may be helping their protégés envision themselves within their current jobs long term. This future envisioning thereby may reduce protégé turnover intentions. The other subjective scales also measured more general perceptions of satisfaction and reflections on past experiences with their mentors, whereas turnover intentions represent considerations for a future behavior. Therefore, a behaviorally based scale may be better at predicting future behaviors than general satisfaction.

Future Directions

The development of a behaviorally based mentoring effectiveness scale opens the opportunity for a plethora of future research avenues. One potential avenue could be the expansion of the scale to include ratings of mentor effectiveness from the mentor perspective as well as that of the protégé, to help establish a more holistic understanding of the mentoring relationship (Kraiger et al., 2019). Mentoring is inherently dyadic and therefore having a better understanding of how both parties are similarly or differentially interpreting mentor behavior would be an interesting extension to this initial scale, as some of what the mentor does will be unknown to the protégé and therefore inaccurately rated. This approach would also open opportunities for research questions about whether the mentor or the protégé perspective is a stronger predictor of workplace outcomes. For example, a mentor's rating of their own sponsorship effectiveness may be more related to their protégé's number of promotions when

compared to a protégé's rating of their mentor's sponsorship effectiveness. This would likely occur because the mentor is more aware of their sponsorship efficacy relative to their protégé and therefore more accurately able to rate it.

Another potential research avenue could be building on our current understanding of the antecedents to effective mentoring (Eby et al., 2013; Gosh, 2014; Mitchell, Eby, & Ragins, 2015). In particular, it would be interesting to explore whether there are surface level traits like race and gender or deep level traits like personality and values that are related to higher behaviorally based mentoring scores. Intriguingly, the correlations between gender and the BEMS showed that men rated their mentors significantly lower across all factors than did women. Future research exploring whether this gendered relationship difference holds in another sample, whether men receive less effective mentor behaviors, or if men are perceiving the same behaviors as less effective than are women, could be helpful in parsing apart the nuanced relationship between mentoring and gender. In a similar vein, whether similarity or matching on these surface level or other deep level traits between the mentor and the protégé lead to higher behavioral effectiveness ratings would be a future avenue to explore. For example, researchers could investigate whether personality matches or mismatches on traits such as extraversion differentially predict perceptions of relationship building effectiveness.

Another future direction for this research could be exploring alternative measurements of objective protégé outcomes that do not rely on memory or recall such as utilizing an HR management software system that should more accurately measure promotions, compensation, and salary growth over time. The results suggesting that sponsorship and competency development measured using a behaviorally based scale were not related to objective outcomes were surprising. Further research using other conceptualizations of these outcome variables

could help parse apart why no relationships were found. Another option for further exploring this relationship would be utilizing a longitudinal design. Mentoring is inherently a long-term relationship with the relationship cultivation occurring between years two and five (Kram, 1985). In the Primary study, mentoring relationship tenure was slightly over two years long suggesting that the participants in this study and the cross-sectional design may preclude the ability to accurately capture the long-term impact effective mentoring behaviors have on objective protégé outcomes. Using both an HR management system to capture more accurate data and a longitudinal design that can capture the full length of the mentoring relationship may uncover a clearer relationship between mentoring effectiveness and objective protégé outcomes.

Theoretical Implications

The intention of this research was to expand mentoring measurement options beyond the traditional function approach by providing a tool to measure an alternative, behaviorally based conceptualization of mentoring. The theoretical implication of having a behaviorally based measure of mentoring effectiveness lies in the ability of future researchers to drill down into the specific processes effective mentors engage in that support protégé learning and development. From this study, 19 distinct behaviors representing factors of relationship building, competency development, and sponsorship emerged as critical components of effective mentoring. The behaviors span a variety of specific actions that mentors can do to be effective including promoting their protégé in meetings, providing advice, and setting expectations. Understanding mentoring processes is a research avenue that may currently be hindered by the sole reliance on a function measurement approach (Allen, Shockley, & Poteet, 2010). The BEMS allows for the ability to measure and conceptualize mentoring at the behavioral level and should enable a better understanding of what makes an effective mentor, essentially opening the “black box” of the mentoring process (Lankau & Scandura, 2007).

This research supports the hypothesis that this scale provides unique explained variance above and beyond a function mentoring scale for predicting subjective protégé outcomes and therefore can be used to capture unique information about mentoring effectiveness. However, it is important to note that results suggested that, overall, the psychosocial support factor from Noe's mentoring scale was the dominant predictor across most of the subjective outcomes, except for turnover intentions. Therefore, this scale may not be the best choice if one is solely trying to predict protégé outcomes. In such situations, using a function scale may be more effective. However, future research into the relationship between the BEMS and predicting behaviors or behavioral intentions may uncover that, similarly to what was found for turnover intentions, a behaviorally based scale is better at predicting behaviors relative to a function scale.

Practical Implications

In an organizational or applied context, this research could be used to facilitate better mentoring relationships between mentors and protégés. If results are shared with the mentor surrounding what behaviors are viewed as effective or ineffective from the perspective of the protégé, it may allow for behavioral changes or open dialogue about motivations behind behaviors. For example, a protégé may feel like their mentor is not effective at evaluating their work. Information from this scale could allow for a discussion about what might be a more effective approach for the protégé's development or allowing for a better understanding of the intentions behind the mentor's current evaluation style. Behaviorally based feedback may also offer an opportunity for mentors to share information with their protégé about sponsorship or other potentially less visible mentoring behaviors that the protégé may not be able to perceive, and the protégé feeling more supported. Fostering better dialogue and transparency should support healthier and more effective mentoring relationships.

Limitations

One of the first limitations of this research is the use of cross-sectional data. Measuring mentoring efficacy data and protégé outcomes at the same time point does not allow causal inferences and therefore limits the conclusions that can be drawn from this data. It is possible that individuals who are satisfied with their job and gearing for a promotion are also those likely to seek out effective mentors. There is also potential for reciprocal relationships, where effective mentoring makes the protégé perceive a higher mentoring relationship quality, thus causing the protégé to be more invested in the mentoring relationship, and in turn encourages the mentor to increase their high-quality mentoring behaviors. A longitudinal design that captures the full length of the mentoring relationship at multiple timepoints would be the ideal solution to overcome this limitation.

Along a similar vein, a limitation of this sample is the nature of the data collection. Both Pilot 2 and the Primary Study were collected via Prolific and Pilot 1 was collected via social media and snowball sampling. While Prolific does conduct their own participant screening and require fair payment for participation to ensure high quality responses, there is still likely generalizability issues within the sample. While the samples collected were relatively diverse, roughly mirroring the age and racial breakdowns of the broader American workforce, the sample is inherently going to have issues with external validity since the participants are all on a survey platform and self-selected to participate in this mentoring based survey. Because of the niche population measured, their mentoring experiences may not generalize to the average American worker.

Another limitation is the use of single source perceptual data for a dyadic relationship. Protégé perceptions of mentoring effectiveness may not capture actual mentor behavior and may be prone to biases or misremembering. Kraiger's (2019) work establishes behaviors as being

comprised of both an objective and an action. Because the protégé cannot know for certain what the mentor's objective for an action was, there may be misinterpretations of behavioral intentions with protégé only reporting. Similarly, because the data were collected using a single source, at a single time, and using the same style of items, there is concern for common method variance. Using this scale in a longitudinal context with both protégé and mentor ratings of mentoring effectiveness would provide additional insight into this relationship.

One final limitation is that, although this scale measures many effective mentoring behaviors grounded in Kraiger's cuboid work (2019), it is unlikely that it covers every effective mentoring behavior. This scale was developed through qualitative work from Kraiger's team, theoretical coding, and quantitative ratings of importance, but there is the possibility that critical behaviors may not have been captured through this process since the initial behavioral cuboid is only based on 28 interviews and is therefore not representative of all workplace mentoring relationships. In particular, the sample they interviewed was predominantly white and comprised of mid-level managers or higher and thus, might not generalize. However, the core behaviors of relationship building, competency development, and sponsorship that were developed from their interviews should hold importance in mentoring relationships across most job types and industries, particularly since these behaviors were found important or relevant to mentoring outcomes across three sets of protégés with a variety of job types.

To conclude, there is growing consensus that moving beyond the function approach to mentoring and focusing more on explicit mentoring behaviors is needed to better understand the mentoring process. By developing and validating a measure of behaviorally based mentoring, the present study offers an alternative approach to the current mentoring framework and proposes a new measurement tool to be used in research.

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Appendices

Appendix A: Noe's Mentoring Function Scale

Note. [] indicate removed school specific wording, *italics* indicate added workplace specific wording

Psychosocial

1. Mentor has shared history of his/her career with you
2. Mentor has encouraged you to prepare for advancement
3. Mentor has encouraged me to try new ways of behaving in my job
4. I try to imitate the work behavior of my mentor
5. I agree with my mentor's attitudes and values regarding [education] *work*
6. I respect and admire my mentor
7. I will try to be like my mentor when I reach a similar position in my career
8. My mentor has demonstrated good listening skills in our conversations
9. My mentor has discussed my questions or concerns regarding feelings of competence, commitment to advancement, relationships with peers and supervisors or work/family conflicts
10. My mentor has shared personal experiences as an alternative perspective to my problems
11. My mentor has encouraged me to talk openly about anxiety and fears that detract from my work
12. My mentor has conveyed empathy for the concerns and feelings I have discussed with him/her
13. My mentor has kept feelings and doubts I shared with him/her in strict confidence
14. My mentor has conveyed feelings of respect for me as an individual

Career-related functions

1. Mentor reduced unnecessary risks that could threaten the possibility of [becoming a school principal or] receiving a promotion
2. Mentor helped you finish assignments/tasks or meet deadlines that otherwise would have been difficult to complete
3. Mentor helped you meet new colleagues
4. Mentor gave you assignments that increased written and personal contact with [school administrators] *higher level management*
5. Mentor assigned responsibilities to you that have increased your contact with people [in the district] *at work* who may judge your potential for future advancement
6. Mentor gave you assignments or tasks in your work that prepare you for [an administrative] *a higher* position
7. Mentor gave you assignments that present opportunities to learn new skills

Appendix B: Dreher and Ash's Global Mentoring Scale

To what extent has a mentor...

1. Given or recommended you for challenging assignments that present opportunities to learn new skills?
2. Given or recommended you for assignments that required personal contact with managers in different parts of the company?
3. Given or recommended you for assignments that increased your contact with higher level managers?
4. Given or recommended you for assignments that helped you meet new colleagues?
5. Helped you finish assignments/tasks or meet deadlines that otherwise would have been difficult to complete?
6. Protected you from working with other managers or work units before you knew about their likes/dislikes, opinions on controversial topics, and the nature of the political environment?
7. Gone out of his/her way to promote your career interests?
8. Kept you informed about what is going on at higher levels in the company or how external conditions are influencing the company?
9. Conveyed feelings of respect for you as an individual?
10. Conveyed empathy for the concerns and feelings you have discussed with him/her?
11. Encouraged you to talk openly about anxiety and fears that detract from your work?
12. Shared personal experiences as an alternative perspective to your problems?
13. Discussed your questions or concerns regarding feelings of competence, commitment to advancement, relationships with peers and supervisors or work/family conflicts?
14. Shared history of his/her career with you?
15. Encouraged you to prepare for advancement?
16. Encouraged you to try new ways of behaving on the job?
17. Served as a role model?
18. Displayed attitudes and values similar to your own?

Appendix C: Ragins and McFarlin's Mentor Role Instrument Scale

My mentor:

Sponsor

1. helped me attain desirable positions.
2. used his/her influence to support my advancement in the organization.
3. used his/her influence in the organization for my benefit.

Coach

4. helped me learn about other parts of the organization.
5. gave me advice on how to attain recognition in the organization.
6. suggested specific strategies for achieving career aspirations.

Protect

7. protected me from those who may be out to get me.
8. "ran interference" for me in the organization.
9. shielded me from damaging contact with important people in the organization.

Challenge

10. gave me tasks that required me to learn new skills.
11. provided me with challenging assignments.
12. assigned me tasks that pushed me into developing new skills.

Exposure

13. helped me be more visible in the organization.
14. created opportunities for me to impress important people in the organization.
15. brought my accomplishments to the attention of important people in the organization.

Friendship

16. is someone I can confide in.
17. provided support and encouragement.
18. was someone I could trust

Social

19. and I frequently got together informally after work by ourselves.
20. and I frequently socialized one-on-one outside the work setting.
21. and I frequently had one-on-one, informal social interactions.

Role model

22. served as a role-model for me.
23. is someone I identified with.
24. represented who I wanted to be.

Counsel

25. served as a sounding board for me to develop and understand myself.
26. guided my professional development.
27. guided my personal development.

Accept

28. accepted me as a competent professional.
29. saw me as competent.
30. thought highly of me.

Appendix D: Scandura's Mentoring Function Scale

Career-related functions:

1. Mentor takes a personal interest in my career
2. Mentor has placed me in important assignments
3. Mentor gives me special coaching on the job
4. Mentor advised me about promotional opportunities
5. Mentor helps me coordinate professional goals
6. Mentor has devoted special time and consideration to my career

Psychosocial functions:

1. I often go to lunch with mentor
2. I share personal problems with mentor
3. I socialize with mentor after work
4. I exchange confidences with mentor
5. I consider mentor to be a friend

Role modeling:

1. I respect mentor's ability to teach others
2. I try to model my behavior after mentor
3. I admire mentor's ability to motivate others
4. I respect mentor's knowledge of the profession

Appendix E: Fleming's Mentoring Competency Assessment

Mentor phrasing: "please rate how skilled you feel you are in the following areas"
Protégé phrasing: "please rate how skilled your mentor is in the following areas."

Maintaining effective communication

1. Active listening
2. Providing constructive feedback
3. Developing a trusting relationship
4. Accommodating communication styles
5. Pursuing strategies to improve communication
6. Coordinating with other mentors

Aligning expectations

1. Setting clear relationship expectations
2. Aligning expectations
3. Considering mentor–mentee differences
4. Setting research goals
5. Developing strategies to meet goals

Assessing understanding

1. Assessing mentee knowledge
2. Estimating mentee ability
3. Enhancing mentee skills

Fostering independence

1. Motivating mentees
2. Building confidence
3. Simulating creativity
4. Acknowledging mentees' professional contributions
5. Negotiating path to independence

Addressing diversity

1. Accounting for biases and prejudices
2. Accounting for different backgrounds of mentors and mentees

Promoting professional development

1. Helping network effectively
2. Setting career goals
3. Helping establish a work/life balance
4. Understanding impact as role model
5. Helping mentees acquire resources

Appendix F: Eby's Protégé Negative Mentoring Experiences Scale

Mismatch Within the Dyad

1. The personal values of my mentor are different from my own.
2. My mentor and I have different life priorities.
3. My mentor and I have different work habits.
4. My work strategies are different from my mentor's.
5. My mentor and I have a different understanding of effective work performance.
6. My mentor and I have different personal dispositions.
7. Comparing myself to my mentor, I would say our temperaments are different.
8. My mentor and I have dissimilar personalities.
9. My mentor and I are different from one another.

Distancing Behavior

1. My mentor is reluctant to talk about things that are important to me.
2. My mentor seems to have "more important things to do" than to meet with me.
3. When I interact with my mentor he/she does not give me his/her full attention.
4. My mentor is more concerned about his/her own career than helping me develop mine.
5. My mentor is preoccupied with his/her own advancement.
6. My mentor does not include me in important meetings.
7. My mentor keeps me "out of the loop" on important issues.

Manipulative Behavior

1. My mentor "pulls rank" on me.
2. I am intimidated by my mentor.
3. My mentor is unwilling to delegate responsibility to protégés .
4. My mentor asks me to do his/her "busy work."
5. My mentor has intentionally hindered my professional development.
6. My mentor has lied to me.
7. My mentor has undermined my performance on tasks or assignments.
8. My mentor has deliberately misled me.
9. When I am successful, my mentor takes more credit than he/she deserves.
10. My mentor takes credit for my hard work.
11. My mentor has taken credit for work that I have done.

Lack of Mentor Expertise

1. My mentor lacks expertise in areas that are important for the type of work he/she does.
2. I have my doubts about my mentor's job-related skills.
3. My mentor can't teach me anything I don't already know.
4. My mentor does not know much about the organization.
5. My mentor is not a high performer on the job.
6. My mentor lacks the interpersonal skills necessary to display sensitivity when appropriate
7. My mentor does not communicate well.

General Dysfunctionality

1. My mentor has a bad attitude.
2. My mentor is bitter toward the organization.
3. My mentor has personal problems (e.g., drinking problem, marital problems).
4. My mentor tends to bring his/her personal problems to work.
5. My mentor approaches tasks with a negative attitude.
6. My mentor complains a lot about the organization
7. My mentor has a pessimistic attitude.
8. My mentor allows nonbusiness related issues to interfere with his/her work.

Appendix G: Ensher and Murphy's Mentor Relationship Challenges Scale

Requiring Commitment and Resilience

1. Challenged me to reach a difficult, specific goal.
2. Encourages me to improve certain aspects of my personality.
3. Has challenged me to think clearly about my career aspirations.
4. Made it clear that I needed to put in the work for my job, rather than just expecting to take the easy road to advance my career.
5. Thinks it is important for me to be very dedicated to my job or my career.
6. Challenges me to think in ways I have never thought of before.
7. Expects that he or she can trust me.
8. May give me critical feedback.
9. Expects me to take critical feedback without being defensive.
10. Questions me and makes me justify the decisions I make.
11. Will ask me to work in situations where I can expect my performance to be under scrutiny.

Measuring Up to Mentor's Standards

1. Seemed to expect that I would overcome particular hurdles before he or she would establish our mentoring relationship.
2. Put me under initial scrutiny.
3. Seemed to be interested in whether I was a competent individual before investing a great deal of time in developing our relationship.
4. Strongly suggests I take his or her advice.
5. Feels it is important for me to see the world similarly to the way he or she sees it.
6. Tested me specifically on my skill level and I felt if I did not have those skills I might run afoul of my mentor.
7. Pressures me in my performance by telling me not to mess up.

Career Goal and Risk Orientation

1. Has suggested that I take risks in my career.
2. Asks me to get involved in additional projects that I would not normally do.
3. Waits for me to take the initiative to set up meetings.
4. Expects me to know what I need to do to accomplish my career goals.
5. Is willing to go out on a limb for me in exchange for my loyalty.

Appendix H: Behavioral Mentoring Scale Items

Using the following rating scale, please rate how effective your mentor is at the following behaviors.

My mentor is effective at:
0 – My mentor does not do this behavior
1 – Not at all effective
2 – Not very effective
3 – Neither effective or ineffective
4 – Somewhat effective
5 – Very effective

1. Maintaining a positive, open, and trusting relationship with me through active and attentive listening.
2. Preparing me for life with well-rounded experiences through sharing personal stories about their own past experiences.
3. Building my confidence in my skills through setting expectations of what is required of me.

4. Maintaining a positive, open, and trusting relationship with me through being flexible with me regarding rules and processes and by taking extraneous factors into consideration.
5. Building and expanding my professional network through providing me advice or suggestions regarding upcoming decisions or actions.
6. Assisting me with furthering my career progression through passing on opportunities that will help me grow.
7. Knowing and learning more about me and my preferences and work style through active and attentive listening.
8. Knowing and learning more about me and my preferences and work style through assessing my needs regarding the knowledge, skills, or competencies in which I need help.
9. Helping me make sound and informed decisions through asking questions that make me think more deeply about different situations.
10. Developing my expertise in competencies through giving me an assignment or new project opportunity.
11. Improving the overall quality of our mentoring relationship through assessing my current skills and evaluating my work on tasks or projects.
12. Helping me make sound and informed decisions through collecting information from personal and written sources.
13. Helping me obtain knowledge or insight on how to perform a task or make a decision through encouraging introspection by reflecting on my current situation.
14. Assisting me with furthering my career progression through assessing my interests regarding the tasks I would like to perform, my goals for the future, or my personal interests.
15. Building a personal mentoring relationship characterized by mutual trust, respect, and open communication through active and attentive listening.
16. Helping me obtain knowledge or insight on how to perform a task or make a decision through setting expectations of what is required of me.
17. Building and expanding my professional network through providing me resources like books, websites, or technology.
18. Improving my efficiency at completing tasks through assessing my needs regarding the knowledge, skills, or competencies in which I need help.
19. Instilling psychological safety, meaning I feel secure and do not fear repercussions from failing through providing me reassurance when things are seemingly going wrong.
20. Developing my competencies that I have not fully mastered through giving me an assignment or new project opportunity.
21. Removing obstacles that would prevent me from accomplishing a task or assignment through setting expectations of what is required of me.

22. Developing my competencies that I have not fully mastered through providing me advice or suggestions regarding upcoming decisions or actions.
23. Promoting adaptability when I am facing a challenge at work through setting expectations of what is required of me.
24. Helping me improve the quality of my work through giving feedback and noting areas where I can improve.
25. Maintaining a positive, open, and trusting relationship with me through asking questions that make me think more deeply about different situations.
26. Improving my efficiency at completing tasks through analyzing problems or critical weaknesses that are stopping me from accomplishing my goals.
27. Helping me get started on a project with preliminary knowledge and confidence through setting expectations of what is required of me.
28. Improving my efficiency at completing tasks through setting expectations of what is required of me.
29. Assisting me with furthering my career progression through promoting me in forums such as meetings in which they can talk positively about me.
30. Helping me understand the steps to complete a task through walking me through the process in a hands-on way and showing me the various steps.
31. Creating opportunities for me that might not have been previously available through promoting me in forums such as meetings in which they can talk positively about me.
32. Promoting adaptability when I am facing a challenge at work through providing me role modeling for different tasks and behaviors.
33. Improving my efficiency at completing tasks through giving feedback and noting areas where I can improve.
34. Helping me obtain knowledge or insight on how to perform a task or make a decision through sharing inside knowledge about how things work behind the scenes at work.
35. Promoting adaptability when I am facing a challenge at work through giving me an assignment or new project opportunity.
36. Creating opportunities for me that might not have been previously available through providing me advice or suggestions regarding upcoming decisions or actions.
37. Building and expanding my professional network through promoting me in forums such as meetings in which they can talk positively about me.
38. Instilling psychological safety, meaning I feel secure and do not fear repercussions from failing through setting expectations of what is required of me.
39. Improving my emotional state regarding challenging or flustering tasks through active and attentive listening.
40. Maintaining a positive, open, and trusting relationship with me through checking in on me by calling, emailing, or visiting.
41. Maintaining a positive, open, and trusting relationship with me through socializing with me outside of our work environment.

42. Helping me get started on a project with preliminary knowledge and confidence through asking questions that make me think more deeply about different situations.
43. Building and expanding my professional network through giving me an assignment or new project opportunity.
44. Helping me resolve interpersonal issues at work through active and attentive listening.
45. Developing my competencies that I have not fully mastered through assessing my needs regarding the knowledge, skills, or competencies in which I need help.
46. Promoting adaptability when I am facing a challenge at work through being flexible with me regarding rules and processes and by taking extraneous factors into consideration.
47. Helping me clarify my career objectives, like setting personal goals and planning for the future through asking questions that make me think more deeply about different situations.
48. Maintaining a positive, open, and trusting relationship with me through assessing my interests regarding the tasks I would like to perform, my goals for the future, or my personal interests.
49. Instilling accountability for meeting my commitments and goals through analyzing problems or critical weaknesses that are stopping me from accomplishing my goals.
50. Preparing me for life with well-rounded experiences through providing me advice or suggestions regarding upcoming decisions or actions.
51. Improving my emotional state regarding challenging or flustering tasks through giving feedback and noting areas where I can improve.
52. Helping me resolve interpersonal issues at work through providing me advice or suggestions regarding upcoming decisions or actions.
53. Assisting me with furthering my career progression through connecting me to their colleagues.
54. Helping me clarify my career objectives, like setting personal goals and planning for the future through collecting information from personal and written sources.
55. Developing my competencies that I have not fully mastered through providing me role modeling for different tasks and behaviors.
56. Developing my expertise in competencies through setting expectations of what is required of me.
57. Developing my competencies that I have not fully mastered through giving feedback and noting areas where I can improve.
58. Developing my expertise in competencies through evaluating the quality and quantity of my work.
59. Building my confidence in my skills through providing me reassurance when things are seemingly going wrong.
60. Building my confidence in my skills through giving me praise by commending my success or efforts.

61. Helping me make sound and informed decisions through giving feedback and noting areas where I can improve.
62. Building a personal mentoring relationship characterized by mutual trust, respect, and open communication through promoting me in forums such as meetings in which they can talk positively about me.
63. Helping me improve the quality of my work through providing me advice or suggestions regarding upcoming decisions or actions.
64. Helping me understand the steps to complete a task through asking questions that make me think more deeply about different situations.
65. Assisting me with furthering my career progression through giving me an assignment or new project opportunity.
66. Developing my competencies that I have not fully mastered through assessing my current skills and evaluating my work on tasks or projects.
67. Instilling accountability for meeting my commitments and goals through setting expectations of what is required of me.
68. Removing obstacles that would prevent me from accomplishing a task or assignment through analyzing problems or critical weaknesses that are stopping me from accomplishing my goals.
69. Improving my emotional state regarding challenging or flustering tasks through providing me reassurance when things are seemingly going wrong.
70. Improving the overall quality of our mentoring relationship through assessing my needs regarding the knowledge, skills, or competencies in which I need help.
71. Building a personal mentoring relationship characterized by mutual trust, respect, and open communication through asking questions that make me think more deeply about different situations.
72. Building a personal mentoring relationship characterized by mutual trust, respect, and open communication through socializing with me outside of our work environment.
73. Helping me obtain knowledge or insight on how to perform a task or make a decision through providing me advice or suggestions regarding upcoming decisions or actions.
74. Building my confidence in my skills through active and attentive listening.
75. Assisting me with furthering my career progression through providing me advice or suggestions regarding upcoming decisions or actions.

Appendix I: Demographic Items for Surveys

What is your age?

1; 18-24

2; 25-34

3; 35-44

4; 45-54

5; 55-64

6; 65-75

7; 75 and older

What best describes your gender?

1; Woman

2; Man

3; Non-binary or genderqueer

4; Prefer to self-describe _____

5; Prefer not to answer

Which of the following best describes your race?

1; Asian or Pacific Islander

2; Black or African American

3; Hispanic or Latino

4; Native American or Alaskan Native

5; White or Caucasian

6; Multiracial or Biracial

7; Some other race (please specify)

What is your job title?

_____

Which of the following best describes your occupation?

1; Management Occupation

2; Business and Financial Operations Occupation

3; Computer and Mathematical Occupation

4; Architecture and Engineering Occupation

5; Life, Physical, and Social Science Occupation

6; Community and Social Service Occupation

7; Legal Occupation

8; Educational Instruction and Library Occupation

9; Arts, Design, Entertainment, Sports, and Media Occupation

10; Healthcare Practitioners and Technical Occupation

11; Healthcare Support Occupation

12; Protective Service Occupation

13; Food Preparation and Serving Related Occupation

14; Building and Grounds Cleaning and Maintenance Occupation

15; Personal Care and Service Occupation

16; Sales and Related Occupation

17; Office and Administrative Support Occupation

18; Farming, Fishing, and Forestry Occupation

19; Construction and Extraction Occupation

20; Installation, Maintenance, and Repair Occupation

21; Production Occupation

22; Transportation and Material Moving Occupation

23; Other

How long have you been at your current job?

1; Less than a year

2; One year or more, but less than three years

3; Three years or more, but less than five years

4; Five years or more, but less than ten years

5; Ten years or more, but less than twenty years

6; Twenty or more years

Which of the following categories best describes your employment status?

1; Employed, working 1-39 hours per week

2; Employed, working 40 or more hours per week

3; Not employed, looking for work

4; Not employed, NOT looking for work

5; Retired

Appendix J: Mentoring Relationship Items

This section is concerned with your mentoring experience. One type of work relationship is a mentoring relationship. A mentor is generally defined as a higher-ranking, influential individual in the protégé's work environment who has advanced experience and knowledge and is committed to providing support in the protégé's career. A mentor may or may not be in the same department or unit as the protégé, and the mentor may or may not be the protégé's immediate supervisor.

Considering the above definition of a mentoring relationship, are you currently a protégé to someone? (If you are currently a protégé to more than one person, please answer the following items referencing your most current mentoring relationship that has lasted over 6 months).

Yes

No

How long have you been in your current mentoring relationship?

Years _____ Months _____

In order to assist individuals in their career development and advancement, some organizations have established formal mentoring programs, where protégés and mentors are linked in some way. This may be accomplished by assigning mentors or by just providing formal opportunities aimed at developing a relationship. To recap: formal mentoring relationships are developed with outside assistance. Informal mentoring relationships are developed spontaneously, without outside assistance.

Was your mentorship:

Initiated informally (spontaneously developed)

Initiated formally (based on formal assignment)

Appendix K: Measures for Primary Study

Promotion

1. How many promotions at work have you received since becoming a protégé?

Compensation

1. What is your total annual salary including all forms of compensation (your base salary plus any additional benefits you may receive from your employer including bonuses, commission, insurance, tuition assistance, etc.)?

Salary Growth

1. What was your annual salary when you started at your current employer?
2. What was your annual salary when you first became a protégé?

Allen and Eby's Adapted Mentor Relationship Quality (2003)

1. The mentoring relationship between my mentor and I was very effective.
2. I am very satisfied with the mentoring relationship my mentor and I developed.
3. I effectively utilized my mentor as a protégé.
4. My mentor and I enjoyed a high-quality relationship.
5. Both my mentor and I benefited from the mentoring relationship.

Michigan's Organizational Assessment Questionnaire for Job Satisfaction (1979)

1. In general, I don't like my job. (reverse scored)
2. All in all, I am satisfied with my job.
3. In general, I like working here.

Michaels and Spector Turnover Intentions Scale (1982)

1. I often seriously consider leaving my current job.
2. I intend to quit my current job.
3. I have started to look for other jobs.

Greenhaus, Parasuraman, and Wormley's Career Satisfaction Scale (1990)

1. I am satisfied with the success I have achieved in my career.
2. I am satisfied with the progress I have made towards meeting my overall career goals.
3. I am satisfied with the progress I have made towards meeting my goals for income.
4. I am satisfied with the progress I have made towards meeting my goals for advancement.
5. I am satisfied with the progress I have made towards meeting my goals for the development of new skills.

Allen and Eby's Mentor Learning Scale (2003) – Adapted for Protégés

1. I learned a lot from my mentor.
2. My mentor gave me a new perspective on many things.
3. My mentor and I were "co-learners" in the mentoring relationship.
4. There was reciprocal learning that took place between my mentor and I.
5. My mentor shared a lot of information with me that helped my own professional development.

How many hours do you spend with your mentor per month on average?

Hours _____

Was your mentoring relationship impacted by COVID 19 (i.e. meeting frequency, meeting format, etc.)? If yes, please describe how your mentoring relationship was impacted.

Yes, my mentoring relationship was impacted by COVID 19 _____
No, my mentoring relationship was not impacted by COVID 19

Appendix L: Pilot Study 2 – Final Items

Using the following rating scale, please rate how effective your mentor is at the following behaviors.

My mentor is effective at:
0 – My mentor does not do this behavior
1 – Not at all effective
2 – Not very effective
3 – Neither effective or ineffective
4 – Somewhat effective
5 – Very effective

Item Number	Item Wording	Factor
Item 49	Instilling accountability for meeting my commitments and goals through analyzing problems or critical weaknesses that are stopping me from accomplishing my goals.	Competency Development
Item 11	Improving the overall quality of our mentoring relationship through assessing my current skills and evaluating my work on tasks or projects.	Competency Development
Item 58	Developing my expertise in competencies through evaluating the quality and quantity of my work.	Competency Development
Item 10	Developing my expertise in competencies through giving me an assignment or new project opportunity.	Competency Development
Item 16	Helping me obtain knowledge or insight on how to perform a task or make a decision through setting expectations of what is required of me.	Competency Development
Item 65	Assisting me with furthering my career progression through giving me an assignment or new project opportunity.	Competency Development
Item 3	Building my confidence in my skills through setting expectations of what is required of me.	Competency Development
Item 71	Building a personal mentoring relationship characterized by mutual trust, respect, and open communication through asking questions that make me think more deeply about different situations.	Relationship Building

Item 1	Maintaining a positive, open, and trusting relationship with me through active and attentive listening.	Relationship Building
Item 48	Maintaining a positive, open, and trusting relationship with me through assessing my interests regarding the tasks I would like to perform, my goals for the future, or my personal interests.	Relationship Building
Item 9	Helping me make sound and informed decisions through asking questions that make me think more deeply about different situations.	Relationship Building
Item 75	Assisting me with furthering my career progression through providing me advice or suggestions regarding upcoming decisions or actions.	Relationship Building
Item 52	Helping me resolve interpersonal issues at work through providing me advice or suggestions regarding upcoming decisions or actions.	Relationship Building
Item 69	Improving my emotional state regarding challenging or flustering tasks through providing me reassurance when things are seemingly going wrong.	Relationship Building
Item 29	Assisting me with furthering my career progression through promoting me in forums such as meetings in which they can talk positively about me.	Sponsorship
Item 31	Creating opportunities for me that might not have been previously available through promoting me in forums such as meetings in which they can talk positively about me.	Sponsorship
Item 37	Building and expanding my professional network through promoting me in forums such as meetings in which they can talk positively about me.	Sponsorship
Item 53	Assisting me with furthering my career progression through connecting me to their colleagues.	Sponsorship
Item 62	Building a personal mentoring relationship characterized by mutual trust, respect, and open communication through promoting me in forums such as meetings in which they can talk positively about me.	Sponsorship

Note. Item numbers correspond to the item numbers and text in Appendix H.

Appendix M: Pilot Study 1 IRB

EXEMPT DETERMINATION

January 4, 2021

Christina[redacted]

Dear Ms[redacted]

On 12/28/2020, the IRB reviewed and approved the following protocol:

Application Type:	Initial Study
IRB ID:	STUDY001855
Review Type:	Exempt 2
Title:	The Development of a Behaviorally Based Mentoring Workplace Scale
Funding:	None
Protocol:	• Falcon - Protocol - Version 1 - 12.18.2020;

Appendix N: Pilot Study 2 IRB

July 2, 2021

Christina[redacted]

Dear Ms. Christina[redacted]

On 7/2/2021, the IRB reviewed and approved the following protocol:

Application Type:	Initial Study
IRB ID:	STUDY002864
Review Type:	Exempt (2)
Title:	Development of a Behaviorally Based Workplace Mentoring Scale
Funding:	None
Protocol:	• Falcon - Pilot 2 Protocol - Clean;

The IRB determined that this protocol meets the criteria for exemption from IRB review.

Appendix O: Primary Study IRB

EXEMPT DETERMINATION

August 29, 2022

Christina [redacted]

Dear Ms [redacted]

On 8/26/2022, the IRB reviewed and approved the following protocol:

Application Type:	Initial Study
IRB ID:	STUDY004640
Review Type:	Exempt 2
Title:	The Development of a Behaviorally Based Mentoring Workplace Scale
Protocol:	• Falcon - Study Protocol

The IRB determined that this protocol meets the criteria for exemption from IRB review.

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Kraiger et al., 2019

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Dreher and Ash, 1990

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Ragins and McFarlin, 1990

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Scandura, 1992

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Fleming et al., 2013

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Eby et al., 2004

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Licensed Content Author	LILLIAN EBY, MARCUS BUITS, ANGIE LOCKWOOD, et al
Licensed Content Date	Jul 30, 2007
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Ensher and Murphy, 2011

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Licensed Content Author	Ellen A. Ensher,Susan E. Murphy
Licensed Content Date	Aug 1, 2011
Licensed Content Volume	79
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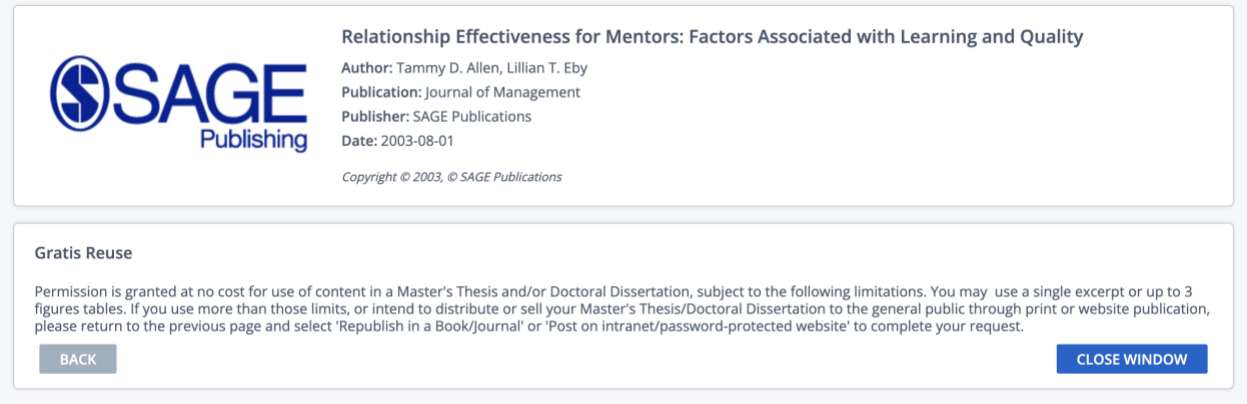
Start Page	253
End Page	266

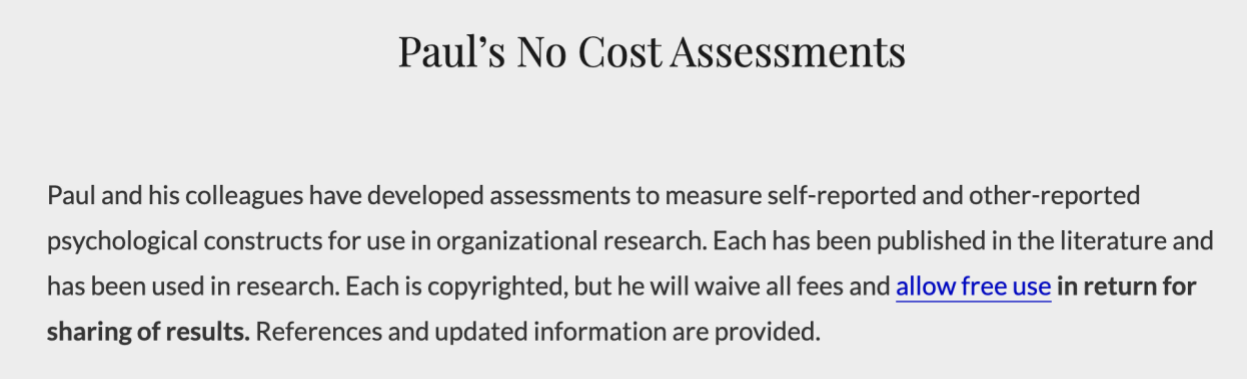
Allen and Eby, 2003



Relationship Effectiveness for Mentors: Factors Associated with Learning and Quality

Author: Tammy D. Allen, Lillian T. Eby
Publication: Journal of Management
Publisher: SAGE Publications
Date: 2003-08-01

Michaels and Spector, 1982



Paul's No Cost Assessments

Paul and his colleagues have developed assessments to measure self-reported and other-reported psychological constructs for use in organizational research. Each has been published in the literature and has been used in research. Each is copyrighted, but he will waive all fees and allow free use **in return for sharing of results.** References and updated information are provided.

Greenhaus, Parasuraman, and Wormley, 1990

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