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A Structural Equation of Leader-Member Exchange, Employee-Supervisor Relationship, Performance Appraisal, and Career Development

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This is to certify that the doctoral study by

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2017

Abstract

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by

William J. Henkel Jr.

MBA, Webster University, 2006

BS, Park University, 2004

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Business Administration

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October 2017

Abstract

Some employees perceive that supervisors do not accurately reflect employees' performance or effectively differentiate among employees' performances during performance appraisals (PAs). Other employees believe the performance feedback they receive is not valuable for supporting their career development (CD). Employing leader-member exchange (LMX) theory and the distributive and interactional justice dimensions of organizational justice theory as the theoretical framework, this correlational study examined the relationships among LMX and employee-supervisor relationships (ESRs) and the relationships' influence on employees' CD through the mediating effect of employees' perceived efficacy of the PA process. Participants consisted of 44 defense contractor employees in the United States who completed a combination of 4 validated survey instruments (LMX-7, Interactional Justice, Appraisal System Satisfaction, Perceived Career Opportunity) and 1 demographic instrument. Results from the structural equation model, using partial least squares analysis, indicated significant ($p < .001$) positive relationships between the independent variables of LMX and ESR, the dependent mediating variable PA, and the dependent variable CD. The results indicated that a positive relationship between LMX and ESR will influence employees' CD through the mediating effect of employees' PAs. The implications for positive social change include the potential to improve communications between employees and supervisors, increase organizational performance by increasing employees' job satisfaction, potential benefiting career development for improving employees' families' quality of life, and contributions to the communities.

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Dedication

I dedicate this doctoral study to the power of Jesus Christ. Without His power in my life, this doctoral study would not be possible. I also dedicate this doctoral study to my wife, Phyllis, who guided me back to Jesus and who has supported me throughout the process of completing this doctoral study.

Acknowledgments

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Section 1: Foundation of the Study

Effective employee-supervisor relationships (ESRs) promote (a) employees' trust in supervisors, (b) employees' career development (CD), (c) positive organizational relationships, and (d) organizational effectiveness (Boukis & Gounaris, 2014; Casimir, Ng, Wang, & Ooi, 2014; Cropanzano, Dasborough, & Weiss, 2017; Treadway, Witt, Stoner, Perry, & Shaughnessy, 2013). Managers' understanding that internal communications within their organization could be beneficial to organizational relationships helps managers develop internal communication strategies to ensure vertical and horizontal progression of information. Throughout this study, the term *manager* refers to the senior organizational policy and decision makers, and the term *supervisor* refers to the employee's immediate supervisor responsible for the employee's (a) day-to-day work activities, (b) training requirements, (c) work performance, and (d) performance appraisal (PA).

Managers need to understand what and how supervisors are communicating to their employees and the effects the communications can have on employees and organizational performance. Mazzei and Ravazzani (2015) noted that, during the 2008-2009 global financial crisis, a communication deficiency existed between supervisors and employees. Supervisors used evasive communications strategies resulting in miscommunications with employees (Mazzei & Ravazzani, 2015). Supervisors' miscommunications with employees resulted in employees' mistrust of their leadership and degraded company credibility (Mazzei & Ravazzani, 2015). Supervisors communicating effectively with employees could increase employees' confidence in

supervisors and create a positive working relationship that could catalyze organizational efficiency (Casimir et al., 2014).

Supervisors' efficient use of the PA process is one pathway that could lead to positive ESR within the organization. However, employees believe that PAs are an annual event that managers require, but employees also believe that supervisors do not recognize the PA to be of importance (Sumelius, Bjorkman, Ehrnrooth, Makela, & Smale, 2014). Furthermore, Dusterhoff, Cunningham, and MacGregor (2014) posited that managers and researchers also believe that PAs are of no importance because of the interpersonal relationship involved. In addition, some employees consider PAs as valueless because some employees believe supervisors focus on completing PAs rather than ensuring the accuracy of the evaluations (Sumelius et al., 2014). Rowland (2013) identified that employees mistrusted PAs and believed that supervisors were just going through the motions. However, Dusterhoff et al. posited that researchers have claimed that employees' satisfaction with their PA results is affected by the level of leader-member exchange (LMX) and ESRs the employees share with their supervisors.

Background of the Problem

In most for-profit organizations, leaders' primary purpose is to generate and grow profits for their organizations' shareholders. For managers to drive organizational performance improvements, they must develop and implement strategies for increasing and sustaining their organizations' competitive advantage (Zachary, Gianiodis, Payne, & Markman, 2015). A primary vehicle for senior managers to remain competitive is to create value for the organization and their stakeholders. Researchers identified employees

as *human capital* and *intangible assets* who create value for the organization (Tsai, Tsai, & Chang, 2013; Wei, 2015). Researchers have defined human capital as employees' attributes beneficial to the organization, such as experiences, skills, knowledge, and abilities (Tsai et al., 2013; Wei, 2015). Supervisors must develop these attributes of employees to catalyze and maintain organizational competitiveness. Supervisors promote positive interaction and trust with employees through communications and utilize effective communication to improve high-level LMX and ESR, and through the PA process, assist employees with CD.

LMX is the measure of employees' perceptions of their relationships with their supervisors as articulated through (a) trust, (b) respect, (c) competence, (d) commitment, and (e) professionalism (Casimir et al., 2014; Graen & Uhl-Bien, 1995). The primary objectives of the PA process are to (a) increase motivation, (b) develop trust, (c) establish goals, and (d) assist employees in their CD (Dusterhoff et al., 2014; Farndale & Kelliher, 2013). Lo, Lin, Tung-Hsing, and Tu (2014) defined CD as the integration of employees' career planning with the organization's career management program for developing employees for a long-term career within the organization. Throughout this study, I used the term *career development (CD)* to identify the dependent endogenous reflective variable that measures supervisors and employees' perceptions of their company's policies on CD through skills and knowledge training.

After conducting a review of the literature through Google Scholar, I determined that although there have been a plethora of studies on (a) LMX, (b) ESR, (c) PAs, and (d) CD, relatively few researchers have examined the relationship between (a) LMX, (b)

ESR, (c) PAs, and (d) CD. For this study, I applied LMX theory and organizational justice theory to examine the relationships of (a) LMX, (b) ESR, (c) PAs, and (d) CD, and the mediating effects of (a) LMX, (b) ESR, (c) PAs, and (d) CD via partial least squares–structural equation modeling (PLS-SEM; Hair, Hult, Ringle, & Sarstedt, 2014).

Problem Statement

The 2015 federal employee viewpoint survey results showed that 31% of federal employee respondents stated their PAs did not accurately reflect their performance, and 67% stated that differences in employee performance were not recognized (U.S. Office of Personnel Management, 2015). The 2015 federal employee viewpoint survey results also showed that 39% of respondents stated that the performance feedback they received from their supervisors was not worthwhile, and 36% stated that their supervisors did not support CD. The general business problem is some employees perceive that their supervisors are conducting PAs that do not represent their performance or address their CD (Dusterhoff et al., 2014). The specific business problem is that some defense contractor supervisors do not understand the influence of the relationship between LMX and ESR on employees' CD through the mediating effect of employees' perceived efficacy of the PA process.

Purpose Statement

The purpose of this quantitative correlation study was to examine the extent and nature of the influence of the relationship between LMX and ESR on employees' CD through the mediating effect of employees' perceived efficacy of the PA process. The independent variables were LMX and ESR, and the dependent variables were PA and

CD. The population for this study consisted of employees from federal defense contractor companies in the United States.

Findings from this study could provide supervisors with the means for developing positive LMX and ESR, which could facilitate employee CD and increase organizational performance through increased employee satisfaction and performance. Supervisors could also improve PA processes to catalyze the development of employees' technical and leadership skills and accelerate employees' CD. The implications for positive social change include the potential to contribute to the betterment of employees' CD through increasing employees' job satisfaction and affording employees the benefits for improving their families' quality of life and the betterment of their communities.

Nature of the Study

I employed a quantitative methodology to examine the extent and nature of the relational pathways among (a) LMX, (b) ESR, (c) PA, and (d) CD. Whereas employing a qualitative methodology would have involved exploring and identifying the meanings of the lived experiences of the participants, using the inductive method would not have produced statistical data to support the deductive hypotheses for examining the relational pathways among (a) LMX, (b) ESR, (c) PA, and (d) CD (Mayoh & Onwuegbuzie, 2015; Palinkas et al., 2015). Although I could have collected data in support of my hypotheses using a mixed method, it would be time-consuming to include a qualitative portion to my study to explore participants' lived experiences (Mayoh & Onwuegbuzie, 2015; Venkatesh, Brown, & Bala, 2013).

I used a correlational design to collect numeric data through surveys and examine the relationships among the variables. Researchers use experimental designs to examine *cause-and-effect* relationships through manipulating one or more variables simultaneously, which allow researchers to observe the effect of one or more dependent variables (F. R. Johnson et al., 2013). Employing an experimental design would have provided the desired data to address the research questions examining the attitude or behavior of the population (F. R. Johnson et al., 2013). However, for this study, assigning random treatment combinations of the independent variables to participants would not be feasible.

Quasi-experimental designs resemble the experimental design in that the researcher attempts to manipulate variables to test the effects of one variable on another variable (D'Onofrio, Lahey, Turkheimer, & Lichtenstein, 2013). Using a quasi-experimental design would require a pretest and posttest to examine the effects of the variable manipulations (D'Onofrio et al., 2013), which, for this study, would not have been feasible. Therefore, I employed a correlational design because I sought to examine the extent of the relationship, if any, among (a) LMX, (b) ESR, (c) PA, and (d) CD via structural equation modeling (SEM).

Research Question

To address the specific business problem, I formulated the following research questions and hypotheses for examining the potential application of LMX theory and influence of distributive and interactional justice dimensions of organizational justice

theory for examining LMX, ESR, PA, and CD. To address the specific business problem, the principal research question (PRQ) was this:

To what extent does the relationship between LMX and ESR influence employees' CD through the mediating effect of employees' perceived efficacy of the PA process?

To address my business problem and answer the PRQ, I used the SEM in Figure 1. The SEM consists of the two independent latent variables, LMX and ESR, and the two dependent latent variables, PA and CD. Madu (2014) examined via analyses of variance (ANOVA) employees' intentions to quit using six independent variables and one dependent variable. Lotfy (2015) examined factors influencing competitive advantage from users of enterprise resource planning tools. Lofty included eight independent variables and four dependent variables via SEM of his dissertation.

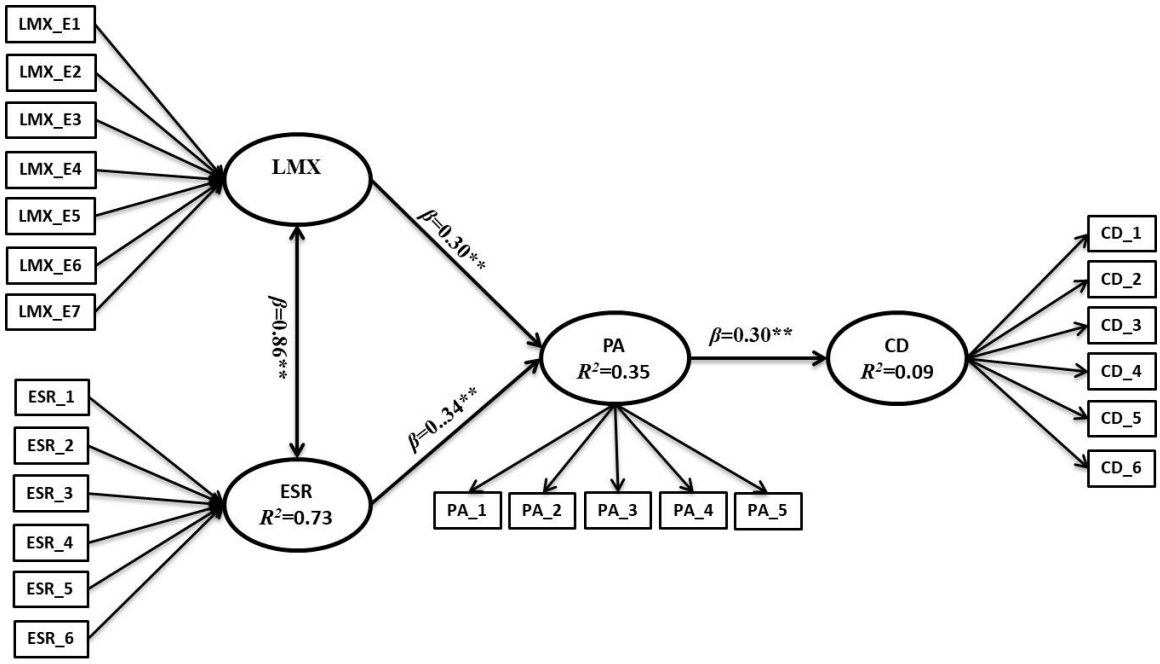

Figure 1. A conceptual model of LMX, ESR, PA, and CD.

As portrayed in Figure 1, the model reflects a direct pathway between the independent exogenous formative variable LMX and ESR. The model also reflects a direct pathway between the independent variables LMX and ESR and the dependent endogenous reflective variable PA. Furthermore, the model reflects a direct pathway between the dependent variable PA and the dependent endogenous reflective variable CD. The indicator variables LMX_E1 through LMX_E7 directly measure the independent variable LMX. The indicator variables ESR_1 through ESR_6 directly measure the independent variable ESR. The indicator variables PA_1 through PA_5 indirectly measure the dependent variable PA. The indicator variables CD_1 through CD_6 indirectly measure the dependent variable CD.

To address the PRQ via SEM modeling, I obtained answers to the following subsidiary research questions (SRQs).

SRQs

SRQ1: To what extent does a relationship exist between LMX and ESR?

SRQ2: To what extent does the relationship between LMX and ESR influence the employees' perceived efficacy of the PA process?

SRQ3: To what extent does the relationship between LMX and ESR influence employees' CD through the mediating effect of employees' perceived efficacy of the PA process?

Hypotheses

Cho and Abe (2013) posited that researchers use significance tests to support or not support their hypotheses. Furthermore, Cho and Abe stated that researchers should employ two-tailed significance testing when the proper directionality of the hypothesis is unknown or the researchers have developed a nondirectional hypothesis. Therefore, I employed two-tailed hypotheses because the purpose of this study was to determine if there were significant positive or negative relational pathways among independent and dependent variables (Cho & Abe, 2013; Kock, 2014b).

After reviewing Figure 1, the PRQ, and the SRQs, I formulated three two-tailed hypotheses to test the significance of the relationship between the independent variables (LMX, ESR) that influences employees' CD through the mediating effect of employees' perceived efficacy of the PA process.

$H1_0$: There is no significant relationship between LMX and ESR.

$H1_a$: There is a significant relationship between LMX and ESR.

$H2_0$: There is no significant relationship between LMX and ESR that influences employees' perceived efficacy of the PA process.

$H2_a$: There is a significant relationship between LMX and ESR that influences employees' perceived efficacy of the PA process.

$H3_0$: There is no significant relationship between LMX and ESR that influences employees' CD through the mediating effect of employees' perceived efficacy of the PA process.

$H3_a$: There is a significant relationship between LMX and ESR that influences employees' CD through the mediating effect of employees' perceived efficacy of the PA process.

Theoretical Framework

To gain a better understanding of the potential influence of management on (a) LMX, (b) ESR, (c) PA, and (d) CD, researchers (e.g., Cheng, 2014; Dusterhoff et al., 2014; Harris, Li, & Kirkman, 2014) examined management, LMX, and ESR through the composite lens of their theoretical frameworks. K. J. Mayer and Sparrowe (2013) stated that to gain a better understanding of the underlining aspects of management researchers examine management through multiple lenses of various theories. K. J. Mayer and Sparrowe commented that combining theories during management research enhances the relevance of the management field. Furthermore, examining management through multiple lenses enables researchers to expand their boundaries and widen their theoretical scope (K. J. Mayer & Sparrowe, 2013).

Researchers have used multiple theories to develop their theoretical or conceptional framework for their doctoral studies (K. J. Mayer & Sparrowe, 2013). Sinclair (2013) included social exchange theory and organizational citizenship behavior (OCB) theory in the theoretical framework of his doctoral study. Turner (2015) included systems theory, chaos theory, and complexity theory in the conceptual framework of her doctoral study. Therefore, I based my study on the conceptual framework combining LMX theory and organizational justice theory.

LMX Theory

Because of LMX's dyadic interaction properties, I used LMX theory to examine the relationships among (a) LMX, (b) ESR, (c) PA, and (d) CD. Homans (1958), the founder of social exchange theory, described human interaction as the process of exchanging material and nonmaterial goods, to elicit a material or nonmaterial response, such as information or reward. Homans' theory of interaction rewards, as integrated into Figure 1, portrays the potential mediating effects on (a) LMX, (b) ESR, (c) PA, and (d) CD.

Thibaut and Kelly (2009) stated that social exchange theory, based on human behavior interaction, motivated managers to maximize benefits and minimize losses. In 1959, Thibaut and Kelly published the first edition of their book *The Social Psychology of Groups* in which they elaborated on Homans' social exchange theory by introducing the concept of the dyadic relationship. Researchers continued to build on the dyadic relationship through the development of LMX traits and defining subordinates and leaders' roles during LMX (Dulebohn, Bommer, Liden, Brouer, & Ferris, 2012). For

example, Graen (1976) introduced the terminology *LMX theory* in his article "Role-Making Processes in Complex Organizations" and described the role development process between supervisors and employees.

I focused this study on LMX theory as LMX theory might explain the dyadic relationship, or the two-person relationship, between supervisors and employees (Thibaut & Kelley, 2009). I used LMX theory to examine LMX and ESR through the PA process to advocate the employee's CD and gain an understanding of the social phenomenon of interpersonal relationships (Thibaut & Kelley, 2009). Organizational justice theory is another aspect of the dyadic relationship and, by combining it with LMX theory; I gained a better understanding of the relationships of LMX and ESR with employees' PA and CD.

Organizational Justice Theory

Karakoc and Ozer (2016) postulated that organizational justice is a key component of the PA process. Karakoc and Ozer identified three dimensions of organizational justice: distributive, procedural, and interactional. Theorists subdivided interactional justice into interpersonal and informational justice affecting employees' perceptions of their supervisors' fairness during the PA process and supervisors' routine feedback on employees' job performance (Karakoc & Ozer, 2016). Employees' perception of their supervisors' procedural and distributive fairness directly affects employees' job performance and satisfaction (Karakoc & Ozer, 2016).

I used the distributive and interactional justice dimensions of organizational justice theory to examine employees' CD (fairness of achieved goals) through the PA

process (fairness of achieved process), and the relationship between LMX and ESR (Nicklin, McNall, Cerasoli, Strahan, & Cavanaugh, 2014; Strom, Sears, & Kelly, 2014). Byrne, Pitts, Wilson, and Steiner (2012) identified both employees' and supervisors' dissatisfaction with their organization's PA process. Furthermore, Abdulkadir, Isiaka, and Adedoyin (2012) accentuated supervisors' and managers' responsibilities for their employees' PA and CD. However, there has been little, if any, literature in which researchers have examined the relationship between LMX and ESR and the effects on employees' PA or CD.

Operational Definitions

This section contains the definitions of key terms relevant to this study. I included the literature definitions of the key terms in this study.

Career development (CD): CD is the integration of employees' career planning with the organization's career management program for developing employees' long-term career within the organization (Lo et al., 2014).

Dyadic relationship: Thibaut and Kelley (2009) described the dyadic relationship as the interaction between two individuals to obtain a self-serving reward.

Dyadic responses: Graen and Uhl-Bien (1995) described the development of LMX as the interaction between supervisors and employees to develop their working relationships through trust, respect, and mutual obligation. Dyadic responses to the survey instruments pose similar questions to both supervisors and their employees to gain an understanding of both supervisors' and their employees' perceptions of their relationships.

Employee-supervisor relationship (ESR): ESR is the relationship that supervisors develop with their employees to promote (a) employees' trust in supervisors, (b) employees' CD, (c) positive organizational relationships, and (d) organizational effectiveness (Boukis & Gounaris, 2014; Casimir et al., 2014; Cropanzano et al., 2017; Treadway et al., 2013).

Identification issues: Hair, Ringle, and Sarstedt (2011) used this term to explain the limitations of using covariance based–SEM (CB-SEM) to identify either prediction objectives or causal effects of latent variables.

Leader-member exchange (LMX): LMX is the measure of employees' perceptions of their relationships with their supervisors as articulated through (a) trust, (b) respect, (c) competence, (d) commitment, and (e) professionalism (Casimir et al., 2014; Graen & Uhl-Bien, 1995).

Performance appraisal (PA): Researchers defined PA as the process that supervisors use to mentor and develop employees to increase employees' value as an organizational asset and create value for the organization (Tsai et al., 2013; Wei, 2015). The primary objectives of the PA are to (a) increase motivation, (b) develop trust, (c) establish goals, and (d) assist employees in their CD (Dusterhoff et al., 2014).

Skewness assessment: Hair et al. (2014) defined assessing skewness by examining the extent that the distributions of participants' responses indicated a protracted left tail or right tail versus a normal distribution. Skewness is a nonnormal data distribution phenomenon.

Soft-modeling-technique: Researchers have used this term to describe how PLS-SEM lessens the demands on (a) measurement scales, (b) sample sizes, and (c) residual distributions of a quantitative correlational study using the SEM approach (Henseler & Sarstedt, 2013).

Straight lining: Hair et al. (2014) used this term to describe a phenomenon in which survey participants' response patterns consisting of selecting one response straight down the survey, such as choosing the middle selections (3s) out of five possible choices on a survey.

Assumptions, Limitations, and Delimitations

I will provide assumptions about the (a) participants, (b) population samples, (c) survey instruments, and (d) the statistical analysis. I will discuss the limitations within the study associated with (a) quantitative correlational methodology, (b) cross-sectional approach, (c) PLS-SEM, (d) self-reported surveys, (e) common method variance, and (f) external validity. Finally, I will discuss delimitations contained within my study relating to (a) the geographical location of the study, (b) the type of companies used for the study, and (c) the type of positions held by the surveyed participants.

Assumptions

Assumptions are beliefs that researchers expect to be true but are not verifiable. For this study, I assumed that the participants of this study would answer the survey questions with honesty and did not possess a personal agenda causing them to manipulate or skew their responses. I also assumed that the participants would be familiar with their company's (a) PA process, (b) human resource (HR) policies, and (c) CD programs. I

also assumed that the study's population sample contained participants who volunteered freely and not subjected to coercion by the company's leadership to participant in the study. Finally, because the participants comprised a purposeful sample, I assumed that nonparticipating employees could have possessed differences of opinions not reflective of the study's results. Although I have presented numerous assumptions, participants' honesty and potential coercion posed the largest threats to my study's validity results.

I used my survey instruments to measure my constructs for which previous researchers have designed and validated the instruments in peer-reviewed articles. Therefore, based upon the published results, I assumed that the survey instruments would be valid and reliable for my study. Also, I tested the internal consistency reliability of my study's instruments for my study's population using both Cronbach's α and composite reliability (ρ_c). Following Hair et al.'s (2014), Kock's (2015), and Sarstedt, Ringle, Smith, Reams, and Hair's (2014) guidelines in Table 4, the results of my analysis indicated that, for this study's population, my instruments' Cronbach's alphas (α) were > .90 and composite reliabilities (ρ_c) were also > .90, thereby demonstrating internal consistency reliability. Using PLS-SEM to analyze the data results from my survey instruments, I assumed that because PLS-SEM could identify latent variable relationships through the SEM approach, my analysis would explain variances of latent variables within SEM (Hair et al., 2011).

Limitations

Using the quantitative research approach provided data for examining the relationships among (a) LMX, (b) ESR, (c) PA, and (d) CD. However, employing the

qualitative and mixed methodology could have produced results that explored and examined the lived experiences of the surveyed participants. Whereas using a longitudinal experimental or quasi-experimental design could have explained the causal relationships among the variables, employing a cross-sectional quantitative correlational design might not have displayed any causal relationships.

Using a cross-sectional study through the administration of self-reported surveys to collect data at a single point in time could have induced common method variance within the study's results (Balkan & Kholod, 2015; Coenen & Van den Bulck, 2016). However, Fuller, Simmering, Atinc, Atinc, and Babin (2016) posited that self-report surveys could distort results, but Fuller et al. concluded that this was not the case. Therefore, by administering the survey to employees of several federal defense contractor companies within the United States, I was able to lessen common method variance errors within the study's results. In addition, by collecting data from employees of several federal defense contractor companies, I expected to decrease the effects of potential variables that could jeopardize the external validity of the study.

I also understood that limitations might have existed pertaining to numerous external stimuli that could have affected participants' responses, such as (a) economic constraints, (b) budget constraints, (c) competition, (d) political landscape, (e) social environment, and (f) customer requirements, which I did not address in this study.

Delimitations

The geographical location for my study was the United States. I solicited employees from federal defense contractor companies as my study participants. The

participants performed duties relating to (a) information technology operations and maintenance, (b) automotive and facilities maintenance and operations, (c) live fire range maintenance and operations, and (d) general services and support operations. Data from employees' responses were the only data available for my study's (a) analysis, (b) findings, (c) conclusions, and (d) recommendations.

Significance of the Study

Private individuals and organizational leaders fund research to benefit society and increase value for organizational shareholders (Bornmann, 2013; Dicks et al., 2014). The results of my study could provide organizational leaders with increased returns on investments from research funding marketable products and services by increasing a positive work environment through improving ESR (Bornmann, 2013; Dicks et al., 2014). The purpose of this quantitative correlation study was to examine the extent and nature of the influence of the relationship between LMX and ESR on employees' CD through the mediating effect of employees' perceived efficacy of the PA process.

Researchers have noted that there are initiatives to quantify the effect of research on society, which is the first step in evaluating the benefits of research for society and business ventures (Bornmann, 2013; Dicks et al., 2014). The results of this study could provide senior managers and supervisors with (a) findings, (b) conclusions, and (c) recommendations for reviewing and improving their HR policies to establish PA processes that could increase employee performance and develop employee CD. Supervisors and employees could also benefit from the findings of this study by developing a more positive working environment through increased LMX and ESR.

Increasing LMX and ESR could create value for the organization through improved (a) job satisfaction, (b) organizational commitment, (c) work performance, and (d) employee-organizational relationship (Casimir et al., 2014).

To benefit the organization and contribute to positive business practices, supervisors need to identify and promote leadership qualities and traits that will facilitate building cohesiveness with employees. Supervisors also need to know how to engage LMX and ESR to mentor their employees through the PA process to guide the employees in their CD (Abdulkadir et al., 2012). In the following subsections, I will explain how the results of this study could contribute to business practice and effect positive social changes.

Contribution to Business Practice

The results of examining the combined relationships of the variables (LMX, ESR, PA, and CD) could provide senior managers and supervisors with the information they need to address the dissatisfaction of supervisors and employees with their organizations' PA and CD. Furthermore, the results could also provide senior managers and supervisors with an introductory impression of the combined effects of the variables on (a) job satisfaction, (b) organizational commitment, (c) work performance, and (d) employee-organizational relationship; thus increasing organizational value (Biswas & Varma, 2012; Byrne et al., 2012). The results could also provide senior managers and supervisors with an expanded view of the relationships among the variables (LMX, ESR, PA, and CD), which could provide senior managers and supervisors with guidance for reviewing and improving their organization's PA and CD HR practices and policies. Furthermore, these

improvements could also increase organizational value by increasing (a) job satisfaction, (b) organizational commitment, (c) work performance, and (d) employee-organizational relationship (Biswas & Varma, 2012; Byrne et al., 2012).

Implications for Social Change

The results of examining the combined relationships of the variables (LMX, ESR, PA, and CD) could influence positive social change by (a) improving communications between employees and supervisors, (b) increasing employees' job satisfaction, (c) improving employees' family's quality of life, and (d) contributing to the betterment of communities (Jokisaari, 2013; Mroz & Allen, 2015; Omilion-Hodges & Baker, 2013; Stephan, Patterson, Kelly, & Mair, 2016). Organizational leaders could indirectly increase and maintain organizational competitive advantages by increasing employee job satisfaction and promoting CD, which might lessen employees' voluntary attrition and thereby allow the organization to retain knowledgeable and skilled employees (Abdulkadir et al., 2012). Communities could also benefit from organizational leaders retaining satisfied and skilled employees through encouraging employees to become active community members and effect positive social changes to create a better living environment for their families (Casimir et al., 2014).

A Review of the Professional and Academic Literature

Managers encourage supervisors to develop positive working relationships with their employees through leader-member exchange (LMX). Positive interactions between employees and supervisors develop employee-supervisor relationship (ESR) through (a) increasing employees' trust in supervisors, (b) enhancing employees' career development

(CD), (c) promoting positive organizational relationships, and (d) enhancing organizational effectiveness (Boukis & Gounaris, 2014; Casimir et al., 2014; Cropanzano et al., 2017; Treadway et al., 2013). There has been a plethora of research and literature on the constructs of (a) LMX, (b) ESR, (c) performance appraisal (PA), and (d) CD. However, there has been little if any research examining the relationship between (a) LMX, (b) ESR, (c) PA, and (d) CD in one study. The purpose of this literature review was to (a) investigate gaps in literature; (b) review, summarize, and evaluate current literature; (c) compare and contrast previous researchers' findings and conclusions; (d) review, summarize, and evaluate related researchers' methodologies and designs; and (e) defend the choices for the proposed theoretical frameworks, variables, constructs, and instruments (Boell & Cecez-Kecmanovic, 2015).

Researchers use the Latin letter *b* to indicate estimated population samples' statistical results and the Greek letter β to indicate actual population parameter results (de Smith, 2014). However, Field (2014), and Jones and Waller (2015) noted that researchers will use the Latin letter *b* to indicate unstandardized regression coefficients' results and the Greek letter β to indicate standardized regression coefficients' results when conducting multiple regression analyses. Some researchers do not include explanations of the relationships or definitions of symbols within their studies. Therefore, throughout this study I use the symbols that the cited authors used to report the results of their variables' correlational significance.

The general business problem is some employees perceive that their supervisors are conducting PAs that neither represent their performance nor address their CD

(Dusterhoff et al., 2014). The specific business problem is that some defense contractor supervisors do not understand the influence of the relationship between LMX and ESR on employees' CD through the mediating effect of employees' perceived efficacy of the PA process. The focus for my business problem emerged from my experiences relating to (a) employee-supervisor interactions, (b) substandard PAs, and (c) supervisors' lack of focus on employees' CD.

Summary of the Professional and Academic Literature

The development of the literature review for this study began with a critical analysis of the professional and academic literature ranging from (a) theoretical and seminal books, (b) peer-reviewed and scholarly articles, and (c) professional and academic journals. I conducted an extensive web-based literature search and review using multiple databases that included (a) Google Scholar, (b) ProQuest Central, (c) ABI/INFORM Global, (d) Academic Search Complete, (e) Business Source Complete, and (f) PsycINFO. I searched for all related peer-reviewed articles and then refined my focus on research articles emerging within the past 5 years (2013 through 2017) of my expected 2017 year of graduation. I searched the databases, Google Scholar, and the Walden University Library using a combination of the following keywords: *leader-member exchange, employee-supervisor relationship, performance appraisal, performance review, career development, professional development, leader-member exchange theory, social-exchange theory*, and *organizational justice theory.*

Within this literature review, I address the theoretical justifications for (a) LMX, (b) ESR, (c) PA, and (d) CD constructs and the related SRQs and hypotheses.

Furthermore, I justify establishing the hypothesized relationships among the constructs included in Figure 1. I include both a summary of the types and percentages of total references by type in Table 1.

Table 1

Summaries of Types and Percentages of References

Reference type[a]	Recent references[b]	Older references[c]	Total	Percentage of total references[d]
Doctoral Study References				
Books	5	4	9	5%
Peer-reviewed articles	151	25	176	93%
Other resources	4	0	4	2%
Total	160	29	189	100%
100 x (Number of peer-reviewed references / total number of references)				93%
100 x (Total number of recent references / total number of references)				85%
Literature Review References				
Books	5	1	6	7%
Peer-reviewed articles	69	12	81	91%
Other resources	2	0	2	2%
Total	76	13	89	100%
100 x (Number of peer-reviewed references / total number of references)				91%
100 x (Total number of recent references / total number of references)				85%

[a]The reference type column identifies the particular type of reference. [b]The recent references column identifies the number of references that were published within 5 years of the expected 2017 date of the Chief Academic Officer's approval. [c]The older references column identifies the number of references that are older than 5 years old from the expected 2017 date of the Chief Academic Officer's approval. [d]The percentage of total references is the total number of a particular type of references divided by the total number of references, multiplied by 100.

This study comprises 189 references consisting of (a) five books less than 5 years old, (b) four books exceeding 5 years old, (c) 151 peer-reviewed articles less than 5 years old, (d) 24 peer-reviewed articles exceeding 5 years old, and (e) four other resources less than 5 years old (two websites, two personal communications). This study consists of 93% peer-reviewed references and 85% of the total references published within 5 years of the expected 2017 date of the Chief Academic Officer's approval. The literature review heading contains 89 references consisting of (a) five books less than 5 years old, (b) one book exceeding 5 years old, (c) 69 peer-reviewed articles less than 5 years old, (d) 12 peer-reviewed articles exceeding 5 years old, and (e) two other resources (personal communication) less than 5 years old. The literature review consists of 91% peer-reviewed references and 85% references that were published within 5 years of the expected 2017 date of the Chief Academic Officer's approval.

Table 2 contains the key component synchronization map for elements of the LMX theoretical framework for this literature review. Table 3 contains the key component synchronization map for elements of the organizational justice theoretical framework for this literature review. The key components included in Table 2 and Table 3 are (a) corresponding and rival theories, (b) variable, (c) measurement instrument, (d) purpose of the instrument, (e) related topics, and (f) alternative measurement instruments.

Table 2

LMX Theoretical Framework and Variable Synchronization Map

Corresponding and rival theories[a]	Variable[b]	Measurement instruments	Purpose of the instrument[c]	Related topics[d]	Alternative measurement instruments[e]
Leadership-motivated excellence theory (Graen & Schiemann, 2013); social exchange theory (Homans, 1958); equity & inequity theory (Adams, 1965); relative deprivation theory (Ren et al., 2013)	LMX (independent variable)	LMX-7 (Graen & Uhl-Bien, 1995)	Measures the interaction between employees and supervisors.	Dyadic relationship: trust, respect, competence, commitment, obligation.	LMX-7 (Scandura & Graen, 1987; Scandura, Graen, & Novak, 1986); UWES (Schaufeli, Taris, & Bakker, 2006); In-role performance (Podsakoff & Mackenzie, 1989);
	ESR (independent variable)	Interactional Justice (Moorman, 1991)	Measures employees' perceptions of their relationship with their supervisors.	Dyadic relationship: communications, fairness, feedback, civility, justice and equity, honesty.	Organizational Justice (Colquitt, 2001); Innovative behavior (Janssen, 2000); Affective organizational commitment (Meyer & Allen, 1990)

Note. LMX (Leader-Member Exchange), ESR (Employee-Supervisor Relationship), UWES (Utrecht Work Engagement Scale),
[a]The corresponding & Rival Theories column includes theories within the literature review other than LMX Theory. [b]The Variable column indicates each latent variable as indicated in Figure 1. [c]Purpose of the instrument column explains what the instrument listed in the Measurement instruments column measures. [d]Related topics column lists the individual items that the instruments in the Measurement instruments column measures. [e]The alternative measurement instruments column includes instruments within the literature review other than the instruments listed in the Measurement instruments column.

Table 3

Organizational Justice Theoretical Framework and Variable Synchronization Map

Corresponding and rival theories[a]	Variable[b]	Measurement instruments	Purpose of the instrument[c]	Related topics[d]	Alternative measurement instruments[e]
Organizational justice theory (Rupp et al, 2014); equity & inequity theory (Adams, 1965); relative deprivation theory (Ren et al., 2013);	PA (dependent variable)	Appraisal System Satisfaction (Waldman, 1997)	Measures employees' perceptions of their organization's PA system.	Performance Assessment: PA assessment accuracy, PA rating fairness, performance improvement, CD, PA satisfaction.	Accuracy component: Trust, Trustworthiness, and Performance Appraisal Perceptions Measure (R. C. Mayer & Davis, 1999); OCQ (Meyer & Allen, 1997)
Job characteristic theory (Parker, 2014); theory of purposeful work behavior (Barrick, Mount, & Li, 2013)	CD (dependent variable)	Perceived Career Opportunity (Kraimer, Seibert, Wayne, Liden, & Bravo, 2011)	Measures employees' perceptions of their organization's career opportunities.	CD: Career opportunities, career goal achievement, career aspiration satisfaction.	Continuous Improvement Measure (Robert et al., 2000); Career Development Scale (Lo et al., 2014)

Note. PA (Performance Appraisal), CD (Career Development). OCQ (Organizational Commitment Questionnaire),

[a]The corresponding & Rival Theories column includes theories within the literature review other than Organizational Justice Theory. [b]The Variable column indicates each latent variable as indicated in Figure 1. [c]Purpose of the instrument column explains what the instrument listed in the Measurement instruments column measures. [d]Related topics column lists the individual items that the instruments in the Measurement instruments column measures. [e]The alternative measurement instruments column includes instruments within the literature review other than the instruments listed in the Measurement instruments column.

The purpose of this quantitative correlation study was to examine the extent and nature of the influence of the relationship between LMX and ESR on employees' CD through the mediating effect of employees' perceived efficacy of the PA process. The principal hypothesis for this study was that there are significant relationships among the variables (a) LMX, (b) ESR, (c) PA, and (d) CD. I organized the literature review for this study to examine and discuss (a) the theories comprising the theoretical framework; (b) the variables LMX, ESR, PA, and CD; (c) the measurement instruments for each variable; (d) alternative measurement instruments included in key previous studies for each variable; and (e) the demographics focus of previous key studies.

Under the subheading Theories Comprising the Theoretical Framework, I discuss theories I used as a base for my theoretical framework and the corresponding and rival theories to my study's theoretical framework. Under the subheadings (a) LMX, (b) ESR, (c) PA, and (d) CD, I have continued to review and evaluate previous researchers' studies by comparing and contrasting the researchers' (a) theories for their studies, (b) purpose of their studies, and (c) researchers' results and findings.

Under the subheadings (a) LMX measurement instruments, (b) ESR measurement instruments, (c) PA systems' effectiveness measurement instruments, and (d) CD measurement instruments, I have continued to review and evaluate previous researchers' (a) survey instruments used, (b) purpose and/or hypotheses of the research, and (c) analysis method employed. Under the subheadings (a) alternative LMX measurement instruments, (b) alternative measurement instruments for measuring the ESR, (c) alternative measurement instruments to measure PA, and (d) alternative measurement

instruments to measure CD, I have continued to review and evaluate alternative measurement instruments in previous researchers' studies for each variable. Under the subheading Previous Studies' Demographics, I (a) restate previous researchers' purpose for their studies, (b) discuss the geographical location for the studies, (c) present the number of validated surveys from the number of invited participants (response rate), and (d) discuss previous studies' reliability.

Theories Comprising the Theoretical Framework

To gain a better understanding of management and ESR, researchers examined management, LMX, and ESR through the composite lens of their theoretical framework. K. J. Mayer and Sparrowe (2013) stated that to gain a better understanding of the underlining management constructs, the research of management encompasses a plethora of sciences. Therefore, to gain a deeper understanding of the science and mechanics of management, researchers examine management through multiple lenses of various theories (K. J. Mayer & Sparrowe, 2013). K. J. Mayer and Sparrowe commented that, by combining theories, researchers could enhance the relevance of the management field. Furthermore, K. J. Mayer and Sparrowe commented that examining management through a multiple-lens technique enables researchers to expand their boundaries and widen their theoretical scope.

Researchers use multiple theories to develop their theoretical or conceptional frameworks for their doctoral studies. Sinclair (2013) included social exchange theory and OCB theory in the Theoretical Framework heading of his doctoral study. Turner (2015) included systems theory, chaos theory, and complexity theory in the Conceptual

Framework heading of her doctoral study. Because LMX theory and organizational justice theory are both extensions of Homans' (1958) social exchange theory, I based this literature review on both LMX theory and organizational justice theory.

LMX theory. Researchers have examined employee-supervisor interactions through the lens of LMX theory. Homans (1958), founder of social exchange theory, described human interaction as the process of exchanging material and nonmaterial goods, to elicit a material or nonmaterial response, such as information or reward. Homans' theory of interaction rewards, as integrated into Figure 1, explained the significance of the effects among (a) LMX, (b) ESR, (c) PA, and (d) CD.

Thibaut and Kelly (2009) stated that social exchange theory, based on human behavior interaction, motivated managers to maximize benefits and minimize losses. In 1959, Thibaut and Kelly published the first edition of *The Social Psychology of Groups* in which they elaborated on Homans' social exchange theory by introducing the concept of the dyadic relationship. Researchers continued to build on the dyadic relationship through the development of LMX traits and defining subordinates' and leaders' roles during LMX (Dulebohn et al., 2012).

Dulebohn et al. (2012) noted that researchers identified two levels of LMX as (a) low-quality exchange, and (b) high-quality exchange. Dulebohn et al. noted that both the leader and the follower contribute to the quality of the exchange. Researchers (e.g., Harris et al., 2014; Runhaar, Konermann, & Sanders, 2013) defined *low-quality* exchanges as those in which supervisors restrict their employees' abilities to develop their roles during LMX by withholding feedback and rewards. Researchers (e.g., Harris et

al., 2014; Runhaar et al., 2013) defined *high-quality* exchanges as those in which supervisors allow employees to grow and influence their roles during LMX through mutual trust and respect. In contrast to Dulebohn et al., Dik et al. (2015) postulated that employees would decide what roles to adopt during LMX and with whom to develop personal and professional relationships in the organization. Since the conceptualization of LMX Theory, researchers have refined LMX Theory into leadership taxonomies that explain the role of the development process between supervisors and employees (Graen & Uhl-Bien, 1995).

Organizational justice theory. Researchers gauge the level of LMX and ESR by examining the results of employee-supervisor interactions through organizational justice theory. Rupp, Shao, Jones, and Liao (2014) described organizational justice as research on how individuals judge one another based off of attitudes and behaviors. Furthermore, Rupp et al. conceptualized organizational justice theory as an alternative theory grounded into the dyadic relationship that Homans (1958) expanded on from social exchange theory. Karakoc and Ozer (2016) postulated that organizational justice is a key component of the PA process. Furthermore, Karakoc and Ozer postulated that employees' perceptions of their supervisors' procedural and distributive fairness directly affected employees' job performance and satisfaction. Nasser and Zaitouni (2015) concluded that organizational justice is a key component of the psychological contract between employees and supervisors, and contributes to employees' perceptions of their supervisors' fairness during the PA process and subsequent allocation of rewards.

Byrne et al. (2012) identified employees' and supervisors' dissatisfaction with their organization's PA process. Furthermore, Abdulkadir et al. (2012) accentuated supervisors' and managers' responsibilities for their employees' PA and CD. However, there is little if any, literature reflecting previous researchers' examination of the relationship between LMX and ESR and the effects on employees' PA or CD.

Corresponding and rival theories to the theoretical framework. Over the past several decades, organizational leaders designed, developed, and implemented various leadership and management styles and programs. Furthermore, in contrast, and as an addendum to LMX theory and organizational justice theory, researchers examined and tested numerous theories in support of, and complementary to, emerging leadership and management styles and programs. In addition to LMX theory, Graen and Schiemann (2013) suggested that, when developing leadership and management styles and programs for an increasing modern organizational environment, managers incorporate leadership-motivated excellence theory with LMX theory. Graen and Schiemann postulated that leadership-motivated excellence theory characterized the responsibility of managing people as a privilege and not a right. Furthermore, professional and competent supervisors should manage employees (Graen & Schiemann, 2013).

In complement to Homan's (1958) social exchange theory, to gain a deeper understanding of LMX and ESR, Adams (1965) developed equity theory and inequity theory. Adams defined equity theory as employees' perceptions that their outcomes (i.e., pay, benefits, and promotions) equal their inputs (i.e., accomplishments, organizational contributions). Furthermore, Adams defined inequity theory as explaining employees'

perceptions that their outcomes do not reflect their inputs to the organization, and therefore as affecting employees' motivation to contribute to the organization. Adams also described levels of ESR, as correlating with employees' perceptions of what level of LMX (low LMX or high LMX) existed between the employee and the supervisor. Furthermore, Adams explained those employees' perceptions of inequality, affected employees' perceptions of their relationships with their supervisors.

Building on Homans' (1958) social exchange theory, Adams (1965) described that relative deprivation emerged from the theory of distributive justice; whereas employees perceived they deserved the same recognition and outcomes as their peers. In addition, Ren, Bolino, Shaffer, and Kraimer (2013) postulated that employees experience relative deprivation when employees perceive they are deprived of recognition and view their contributions to the organization as being unrecognized. Employees also experience relative deprivation when they perceive they are overcompensated and underemployed (Ren et al., 2013). Ren et al. explained that both underrecognition and overcompensation could result in employees' relative deprivation and affect job satisfaction. Supervisors could lessen employees' relative deprivation through positive work reinforcement through increased high LMX and ESR (Ren et al., 2013).

In contrast to employees' perceptions that high/low LMX affects employees' perceptions of input/output equality, Parker (2014) concluded that employees' reactions to their job design influence their (a) job satisfaction, (b) motivation, and (c) performance. Furthermore, to examine methods of increasing employees' work performance and productivity, Parker (2014) examined several theories (scientific

management theory, sociotechnical systems theory, self-determination theory) to complement the relative efficacy of job characteristics theory. By redesigning job characteristics to be more meaningful and challenging, organizational leaders could increase work quality and productivity (Parker, 2014). In addition, Barrick, Mount, and Li (2013) noted that the theory of purposeful work behavior facets that striving for purposefulness and meaningfulness are goal setting methods that employers use to increase the meaningfulness and challenges of jobs to promote job satisfaction, performances, and organizational commitment. Increasing the meaningfulness and challenges of employees' jobs through the inclusion of goal setting and feedback during employees' PAs, supervisors can assist employees' in the development of the employees' CD plans.

In the following subheadings, (a) LMX, (b) ESR, (c) PA, and (d) CD, I discuss the current literature pertaining to LMX theory, and LMX theory's relationship to the variables LMX and ESR. Furthermore, I discuss the current literature pertaining to the procedural, distributive, and interactional dimensions of organizational justice theory and the relationships of procedural, distributive, and interactional justice with PA and CD.

LMX

People conduct social exchanges for various reasons to acquire positive results and to obtain favorable benefits. Supervisors and employees incorporate personal strengths during LMXs to obtain positive results to accomplish personal and organizational goals (Dik et al., 2015). Thibaut and Kelley (2009) applied social exchange theory to large and small groups to understand the benefits of social interaction

and motivation created by maximizing benefits and minimizing losses. Leader and member role development is a critical element of LMX theory (Dulebohn et al., 2012). The leader's and member's roles emerge from the interaction between the leader and the member to establish the quality of the employee-supervisor interaction (Dulebohn et al., 2012).

Graen and Uhl-Bien (1995) noted that researchers had identified numerous dimensions in LMX to measure the quality of the ESR. The authors defined LMX quality as the level of the interpersonal exchange relationship between the employee and the supervisor, which the authors categorized as being either low LMX quality or high LMX quality. However, Graen and Uhl-Bien only identified three dimensions in their LMX-7 instrument to measure employee-supervisor interaction (trust, respect, obligation).

Dulebohn et al. (2012) identified competence and commitment as additional dimensions of LMX. Therefore, I base this subheading of the literature review on (a) LMX Theory, (b) Graen and Uhl-Bien's (1995) three dimensions of LMX (trust, respect, obligation), and (c) Dulebohn et al.'s additional two dimensions of LMX (competence, commitment). Furthermore, employing Graen and Uhl-Bien's LMX-7 instrument and Waldman's (1997) 5-item Appraisal System Satisfaction instrument (Table E3 in Appendix E) enabled me to address my business problem by examining the relationship between LMX and ESR.

Trust. Graen and Uhl-Bien (1995) identified trust as a dimension of the LMX-7 instrument and noted that for employees and supervisors to gain each other's respect requires trust during LMX and ESR. Dysvik, Buch, and Kuvaas (2015) employed social

exchange theory and LMX theory to examine the relationship between employees' knowledge sharing and managers' knowledge-collecting and how, if at all, social LMX and economic LMX moderated the relationship. Dysvik et al. noted that trust between employees and supervisors is the basis for high-levels of social and economic LMX, and therefore, paramount for the level of knowledge sharing between employees and supervisors.

Dysvik et al.'s (2015) results indicated a significant positive correlation between manager's knowledge collecting and employees' knowledge sharing ($\beta = .23$, $p < .001$). Furthermore, Dysvik et al.'s results indicated that social LMX moderated the relationship between managers' knowledge collecting and employees' knowledge sharing ($t = 1.83$, $p < .05$). However, Dysvik et al.'s results indicated that economic LMX did not moderate the relationship between managers' knowledge collecting and employees' knowledge sharing ($p > .05$). Dysvik et al.'s findings indicated that trusting relationships between employees and supervisors contributed to high-levels of social LMX. Furthermore, high-levels of social LMX influences the amount of knowledge shared by employees and supervisors. Therefore, Dysvik et al.'s results indicate that the trust dimension of LMX increases ESR, and catalyzes employees' knowledge sharing with their supervisors; thereby influencing employees' PAs.

Using social exchange theory Erturk and Vurgun (2015) identified a positive significant relationship between goal internalization with LMX ($\beta = .26$, $p < .01$) and perceived organizational support (POS; $\beta = .21$, $p < .01$). Furthermore, the authors' results indicated a positive significant relationship between perceived control and LMX

(β = .25, $p < .01$) and POS (β = .28, $p < .01$). However, the results indicated a negative significant relationship between turnover intentions and LMX (β = -.29, $p < .01$) and POS (β = -.33, $p < .01$). Erturk and Vurgun noted that supervisors who develop high-levels of LMX with their employees through a trusting relationship increased employees' POS, and therefore, lessened employees' turnover intentions. Furthermore, employees who share high LMX with their supervisors develop high ESR through trust and respect. Therefore, employee-supervisor high LMX and high ESR contribute to employees' higher levels of OCB (Erturk & Vurgun, 2015).

Moideenkutty and Schmidt (2016) identified trust and LMX as dimensions of social exchange. Therefore, supporting Erturk and Vurgun's (2015) hypothesis that employees who share high LMX with their supervisors, influence high ESR, Moideenkutty and Schmidt hypothesized a significant positive relationship of ESR with supervisor-directed OCB through the mediating effects of trust and LMX. Moideenkutty and Schmidt examined the relationship between ESR and supervisors-directed OCB through the potential mediating effects of trust and LMX. Moideenkutty and Schmidt's results indicated a significant positive relationship between ESR and supervisors-directed OCB through the mediating effects of trust (β = .423, $p < .001$) and LMX (β = .011, $p < .001$). Moideenkutty and Schmidt's results demonstrated that supervisors who develop high-ESR through trust and high-levels of LMX create positive employee behaviors and attitudes, and thereby, enhance OCB.

Similar to Moideenkutty and Schmidt (2016), Tandon and Ahmen (2015) examined the relationships among LMX, trust, self-efficacy, and service performance.

Tandon and Ahmen hypothesized a significant positive relationship between (a) LMX and trust, (b) LMX and self-efficacy, and (c) LMX and service performance. The author's results indicated a significant positive relationship of LMX with (a) trust ($r = .34$, $p < .05$), (b) self-efficacy ($r = .33$, $p < .05$), and (c) service performance ($r = .35$, $p < .05$). Therefore, supporting Moideenkutty and Schmidt's results that supervisors who develop high-LMX through trust and high-levels of LMX create positive employee behaviors and attitudes, Tandon and Ahmen's results demonstrated that high-LMX enhances high-ESR through trust and self-efficacy, thereby, influencing employees' service performances. Similar to Tandon and Ahmen, Fein, Tziner, Lusky, and Palachy (2013) used LMX theory to examine the mediating effect of LMX on (a) organizational justice, (b) LMX quality, and (c) ethical climate. Fein et al.'s results indicated a significant positive relationship between (a) interactional justice and LMX ($r = .57$, $p < .01$), and (b) ethical climate and LMX ($r = .19$, $p < .05$). Fein et al. postulated that high LMX increases trust between employees and supervisors, thereby, encouraging ethical behavior, increasing mutual respect, and developing high ESR.

Respect. Graen and Uhl-Bien (1995) identified respect as a second dimension of the LMX-7 instrument. Employees and supervisors need first to respect each other to promote positive ESR. Brown, Chen, and O'Donnell (2017) applied LMX theory to examine the relational pathways among four dimensions of LMX (LMX-affect, LMX-loyalty, LMX-professional respect, LMX-contribution) with supervisors' idealized influence and employees' POS. Brown et al. defined the LMX-affect as the personal relationship between the employee and the supervisor (ESR = linking and friendship).

Brown et al.'s results indicated significant positive relationships between supervisors' idealized influence and three dimensions of employee-supervisor LMX: (a) LMX-affect ($\beta = .08$, $p < .05$), (b) LMX-loyalty ($\beta = .12$, $p < .01$), and (c) LMX-professional respect ($\beta = .17$, $p < .001$). However, Brown et al.'s results indicated a nonsignificant positive relationship between supervisors' idealized influence and LMX-contribution ($\beta = .07$, $p > .05$), thereby, supporting their hypothesis that supervisors' idealized influence will not be positively related to LMX-contribution. Furthermore, The authors' results indicated a significant positive relationships of employees' POS with three dimensions of LMX: (a) LMX-affect ($\beta = .24$, $p < .001$), (b) LMX-loyalty ($\beta = .15$, $p < .01$), and (c) LMX-professional respect ($\beta = .15$, $p < .01$).

Brown et al.'s (2012) findings also indicated that supervisors' idealized influence, characterized by supervisors' charisma and role modeling traits, influenced positive ESR through three dimensions of LMX (affect, loyalty, professional respect). Furthermore, the same study's findings demonstrated that the three dimensions of LMX (affect, loyalty, professional respect) influenced employees' POS. Therefore, the authors concluded that loyalty, affect, and respect among employees and supervisors increased high LMX and high ESR, thereby, increasing employees' POS and lessening employees' turnover intentions (Brown et al., 2017). Furthermore, Dusterhoff et al. (2014) noted that mutual respect among employees and supervisors enhanced communications during the PA sessions.

Similar to Brown et al. (2017), Salvaggio and Kent (2016) also applied LMX theory to examine the relational pathways between supervisors' charismatic leadership

and four dimensions of LMX (positive affect, loyalty, professional respect, contribution). Furthermore, Salvaggio and Kent also examined the relational pathways between supervisors' charismatic leadership and four dimensions of LMX (positive affect, loyalty, professional respect, contribution) through the moderating effect of communication frequency. Salvaggio and Kent's path coefficients' results indicated a significant relationship between supervisors' charismatic leadership and the four dimensions of LMX: (a) positive affect ($\beta = .56$, $p < .01$), (b) professional respect ($\beta = .72$, $p < .01$), (c) loyalty ($\beta = .58$, $p < .01$), and (d) contribution ($\beta = .46$, $p < .01$). Furthermore, the analysis of Salvaggio and Kent's path coefficients' indicated a significant relationship between supervisors' charismatic leadership and the four dimensions of LMX through the moderating effect of communication frequency: (a) positive affect ($\beta = .16$, $p < .01$), (b) professional respect ($\beta = .19$, $p < .01$), (c) loyalty ($\beta = .18$, $p < .01$), and (d) contribution ($\beta = .22$, $p < .01$).

In support of Brown et al.'s (2017) findings, Salvaggio and Kent's (2016) findings indicated a positive relationship between supervisors' charismatic leadership and (a) employees' positive affect (personal ESR), (b) professional respect (professional ESR), and (c) loyalty. However, in contrast to Brown et al.'s findings of a nonsignificant relationship between supervisors' idealized influence and employees' contribution, Salvaggio and Kent's findings indicated a positive relationship between supervisors' charismatic leadership and employees' contribution. Both Brown et al. and Salvaggio and Kent demonstrated that supervisors' leadership traits (charisma, idealized influence, role modeling) positively affected LMX and employees' POS.

Similar to Brown et al. (2017) and Salvaggio and Kent (2016), Rodwell, McWilliams, and Gulyas (2017) examined the relational pathways among (a) four dimensions of LMX (LMX-affect, LMX-loyalty, LMX-respect, LMX-contribution), (b) engagement, (c) trust, and (d) intent to quit. However, in contrast to Brown et al. and Salvaggio and Kent, who employed LMX theory, Rodwell et al. applied social exchange theory, an alternative dyadic relationship theory, to examine the relationship between LMX, work engagement, trust, and intent to quit. Rodwell et al.'s results indicated a significant positive relationship between engagement and the four dimensions of LMX: (a) LMX-affect ($\beta = .23$, $p < .01$), (b) LMX-loyalty ($\beta = .24$, $p < .01$), (c) LMX-respect ($\beta = .33$, $p < .01$), and (d) LMX-contribution ($\beta = .44$, $p < .01$). Furthermore, the authors' results indicated a significant positive relationship between trust and the four dimensions of LMX: (a) LMX-affect ($\beta = .51$, $p < .01$), (b) LMX-loyalty ($\beta = .49$, $p < .01$), (c) LMX-respect ($\beta = .54$, $p < .01$), and (d) LMX-contribution ($\beta = .30$, $p < .01$). Also, Rodwell et al.'s results indicated a significant negative relationship between intent to quit and (a) engagement ($\beta = -.22$, $p < .01$), (b) trust ($\beta = -.46$, $p < .01$), and (c) the four dimensions of LMX (LMX-affect [$\beta = -.45$, $p < .01$], LMX-loyalty [$\beta = -.42$, $p < .01$], LMX-respect [$\beta = -.41$, $p < .01$], LMX-contribution [$\beta = -.33$, $p < .01$]).

Supporting Brown et al.'s (2017) and Salvaggio and Kent's (2016) findings, Rodwell et al.'s (2017) findings indicated that employees exhibited higher in-role performance and lower intent-to-quit when employees share high LMX quality with their supervisors. Furthermore, employees who perceive that their supervisors exhibit high leadership traits (charisma, role modeling, idealized influence) possess high POS and low

turnover intentions, and therefore, experience high LMX and ESR with their supervisors (Brown et al., 2017; Rodwell et al., 2017; Salvaggio and Kent, 2016).

Competence. Dulebohn et al. (2012) identified competence as an additional dimension of LMX. Researchers noted that supervisors base their relationships with their employees on the employees' skills and competence (Dulebohn et al., 2012). Furthermore, supervisors use competence as a measure when conducting PAs and allocating training resources to enhance employees' CD. Dulebohn et al. also noted that high LMX and supervisors' support increases employees' competence. In addition, Hassan, Mahsud, Yukl, and Prussia (2013) noted that high LMX influences employees' perceptions of their supervisors' competence.

Hassan et al. (2013) employed LMX theory to examine the relationship between supervisors' ethical and empowering leadership with LMX and employees' perceptions of their supervisors' competence. Following Hair et al.'s (2014), Sarstedt et al. (2014), and Wong's (2013) coefficient of determination (R^2) criteria (Table 4, Row 7), Hassan et al.'s results indicated that there is a *moderate* predictive accuracy of LMX ($R^2 = .56$) with (a) ethical leadership, (b) empowering leadership, (c) subordinate affective commitment, and (d) perceived leader effectiveness. Furthermore, Hassan et al.'s results indicated a significant positive relationship between LMX and (a) ethical leadership ($r = .62$, $p < .05$), (b) empowering leadership ($r = .68$, $p < .05$), (c) employees' commitment ($r = .50$, $p < .05$), and (d) perceived leader effectiveness ($r = .83$, $p < .05$).

Hassan et al.'s (2013) results indicated that LMX mediates the positive relationship between the employees and the supervisors. Hassan et al.'s results also

indicated that supervisors demonstrated competence through their ethical and empowering leadership during LMX; thereby build positive and trusting relationships with their employees. Therefore, Hassan et al.'s findings indicated that positive employee-supervisor LMX and ESR resulted in 74% increase in employees' perceptions of their leaders' competence.

Table 4

Measurement Analysis Statistics and Criteria for Partial Least Squares–Structural Equation Models

Analysis	Explanation	Reference
1. Variance inflation factor (VIF), average block variance inflation factor (AVIF)	Measures collinearity issues of formative indicator variables by calculating tolerance. Potential collinearity issues exist if tolerance values are $\leq .20$ and VIF ≥ 5 (AVIF ≤ 3.3). VIF values are also used to measure collinearity issues within the structural model. (WarpPLS automatically tests for collinearity.)	(Hair et al., 2014; Kock, 2015; Sarstedt et al., 2014)
2. Significance and relevance of indicators	Assesses the significance and relevance of formative indicator variables. If outer weight is nonsignificant and outer loading value is $\geq .50$, then the variable is important. If outer loading value is $\leq .50$, then the variable is not important	(Hair et al., 2014; Kock, 2015; Sarstedt et al., 2014)
3. Internal consistency reliability (ICR) - Composite reliability (ρ_c); Cronbach's α	Measures internal consistency reliability of the reflective indicator variables by measuring the composite reliability (ρ_c). Composite reliability (ρ_c) values $\geq .60$ are acceptable. Researchers also use Cronbach's α: values $\geq .70$ are acceptable.	(Hair et al., 2014; Kock, 2015; Sarstedt et al., 2014)
4. Convergent validity: Indicator reliability (IR) and average variance extracted (AVE)	Measures the correlation between indicator variables and alternative indicator variables. Convergent validity of indicator variables established if outer loading value is $\geq .70$. Establish convergent validity of latent variables by calculating AVE: AVE values of $\geq .50$ establishes convergent validity. Equates to $R^2 \geq .50$. Kock stated that an outer loading value of $\geq .50$ as being adequate.	(Hair et al., 2014; Kock, 2015; Sarstedt et al., 2014)
5. Discriminant validity (DV): Cross loading and Fornell-Larcker criterion	Determines if constructs are distinct by examining the cross loading of reflective indicators. Discriminant validity established if indicator variables load higher on their construct than other constructs on the same path model. Fornell-Larcker criterion establishes discriminant validity by comparing AVE ($\geq .50$) with reflective variable correlation (shared variance). The latent variable should not exhibit shared variance with another latent variable that has a higher AVE value.	(Hair et al., 2014; Kock, 2015; Sarstedt et al., 2014)
6. Significance and relevance of SEM correlation – *p* value	Estimates path coefficients of the structural model relationship. A path coefficients estimate > 0 and ≤ 1 has a positive relationship and ≥ -1 and < 0 has a negative relationship indicating a statistically significant relationship. Value of 0 = nonsignificant relationship. A *p* value $\leq .05$ indicates a significant path coefficient.	(Hair et al., 2014; Kock, 2015)

(table continues)

Analysis	Explanation	Reference
7. R^2	The coefficient of determination used to evaluate the SEM model's predictive accuracy and the combined effects of the exogenous latent variables on the endogenous variables. Predictive accuracy values: Substantial ($\geq$ .75), Moderate (.25 to .75), Weak ($\leq$ .25).	(Hair et al., 2014; Kock, 2015; Wong, 2013)
8. Absolute effect size	Measures effect size between predictor exogenous latent variable on endogenous latent variable at the structural level. Recommended f^2 values and effect sizes: (a) *no noticeable effect (<.02)*, (b) *small [.02,.15)*, (c) *medium [.15,.35)*, and (d) *large* ($\geq$ *.35*). (WarpPLS calculates the absolute effect sizes similar to Cohen's f^2 but does not use *stepwise regression* procedures. The *stepwise regression* procedure removes predictor latent variables during the calculations, thereby biasing the effect size measures. WarpPLS does not remove predictor latent variables, thereby calculating the absolute effect size with all latent variables.)	(Hair et al., 2014; Kock, 2015; Wong, 2013)
9. Q^2 effect size	Measures effect size of predictor exogenous latent variables on endogenous latent variables. Values > 0 = predictive relevance, < 0 = lacking predictive relevance.	(Hair et al., 2014; Kock, 2015; Wong, 2013)

Note. Measurement analysis statistics and criteria for assessing the reliability, validity, and path coefficients of PLS - SEM. Adapted from "Suggested Reporting Guidelines for Structural Equation Modeling in Supply Chain Management Research," by B. T. Hazen, R. E. Overstreet, and C. A. Boone, 2015, *The International Journal of Logistics Management, 26*, 627-641. doi:10.1108/IJLM-08-2014-0133.

Commitment. Dulebohn et al. (2012) identified commitment as an additional dimension of LMX. The authors' noted that supervisors encourage positive commitment from their employees through high-level LMX and ESR. Fisk and Friesen (2012) employed LMX theory to examine the relationship between employees' perceptions of the authenticity of their supervisors' concerns with employees' job satisfaction and organizational commitment. Fisk and Friesen also examined the relationship between LMX quality (high, low) and employees' job satisfaction and organizational commitment. Fisk and Friesen's results indicated that high-level LMX and ESR between employees and supervisors increase employees' perceptions of supervisors' commitment thereby increasing employees' job satisfaction.

Supporting Dulebohn et al.'s (2012) hypothesis that a high level of LMX would have a positive effect on employees' work performance, Fisk and Friesen's (2012) results indicated that employees' LMX quality ($b = .21$, $p < .01$) significantly correlated with job satisfaction. Furthermore, Fisk and Friesen's results indicated a positive relationship between the quality of LMX (high, low) and job satisfaction. However, Fisk and Friesen's results indicated that although employees could identify when their supervisors are authentically concerned, employees' perceptions were not related to job satisfaction. Furthermore, in contrast to their hypotheses, Fisk and Friesen's results indicated no significant relationship between LMX and supervisors' concerns with employees' organizational commitment ($p > .10$).

Analogous to Fisk and Friesen (2012), Garg and Dhar (2016) postulated that high-level LMX influences high-level ESR, and therefore, increases employees' organizational commitment and performances. Using LMX, Garg and Dhar examined the relationship between LMX and employees' performances. Furthermore, using social exchange theory, Garg and Dhar examined the relationship between LMX and employees' performances through the mediating effect of affective commitment and the moderating effect of psychological empowerment. In addition, the authors' examined the mediating effect of affective commitment on the interactive influence of LMX and psychological empowerment on employees' performances.

Garg and Dhar's (2016) results indicated a significant positive relationship between LMX and employees' performances ($b = .24$, $p < .001$). Furthermore, Garg and Dhar's results indicated a significant positive relationship between LMX and affective

commitment ($b = .56$, $p < .001$). Garg and Dhar's results also indicated that LMX ($b = .24$, $p < .001$) and affective commitment ($b = .54$, $p < .001$) positively influenced employees' performances. However, once Garg and Dhar included affective commitment to the model, the relationship between LMX and employees' performances became nonsignificant ($b = .03$, $p > .10$), but affective commitment on employees' performances remained significant ($b = .52$, $p < .001$). Garg and Dhar's findings indicated that high-level LMX influenced employees' performance and enhanced employees' commitment to their organization and supervisors, and therefore, contributed to high-level ESR.

Obligation. Graen and Uhl-Bien (1995) identified obligation as a dimension of the LMX-7 instrument and noted that supervisors are obligated to know and understand employees' problems and needs. Furthermore, employees are obligated to ensure that their supervisors understand their problems and needs. To strengthen ESR, employees and supervisors should acknowledge their obligations to one another, and through the PA process, communicate their concerns and establish a mutual obligation to one another.

Organizational leaders must understand the importance of employees' and supervisors' obligations to one another to enhance LMX and ESR. To examine the obligations between employees and supervisors, Hanse, Harlin, Jarebrant, Ulin, and Winkel (2014) applied LMX theory to examine the relationships between LMX and four domains of psychosocial work environment: (a) demands at work (workload/work pace), (b) work organization and job contents (influence at work), (c) interpersonal relations (predictability, rewards/recognition, role clarity), and (d) values at workplace level (supervisors' trust, justice and respect, job satisfaction). The authors hypothesized that

there was a significant positive relationship between LMX and psychosocial work environment domains, thereby enhancing employee and supervisor trust, respect, and obligation to one another. The authors concluded that employees and supervisors utilize high-level LMX to enhance the psychosocial work environment, and thereby, increase job satisfaction and develop obligations between one another.

Hanse et al.'s (2014) results concluded that a significant positive relationship exists between *LMX-affect* and (a) rewards/recognition ($r = .51$, $p < .001$), (b) role clarity ($r = .47$, $p < .001$), (c) predictability ($r = .47$, $p < .001$) and (d) job satisfaction ($r = .45$, $p < .001$), and that a significant positive relationship between *LMX-loyalty* and (d) rewards/recognition ($r = .48$, $p < .001$). In support of Hanse et al.'s results, Dulebohn et al.'s (2012) hypothesized that employees' personality traits during LMX are positively related to the vertical dyadic relationship, Furthermore, Dulebohn et al. noted that researchers identified that a high level of LMX would have a positive effect on employees' work performance, and thereby have a positive effect on employees' performance reputations.

Supporting Hanse et al.'s (2014) hypotheses of a significant positive relationship between LMX and the domains of the psychosocial work environment, and the influence on job satisfaction and employee-supervisor obligations, Epitropaki and Martin (2013) recognized that supervisors demonstrate their obligations to their employees through their leadership styles. Furthermore, the authors noted that supervisors' obligations and leadership styles influence employees' performance and personality during LMX. Therefore, supervisors' should realize that employees will observe and evaluate their

supervisors' leadership style and develop perceptions of their supervisors' obligations to employees. Once employees understand their supervisors' leadership style and obligation, the employees will adopt personality traits during LMX to increase their roles during LMX (Epitropaki & Martin, 2013).

LMX measurement instruments. To examine employees' perceptions of the nature and quality of the employee-supervisor dyadic relationship, I measured five dimensions of LMX (trust, respect, competence, commitment, obligation) using Graen and Uhl-Bien's (1995) LMX-7 survey instrument (Table E1 in Appendix E). Graen and Uhl-Bien designed their LMX-7 instrument for supervisors' and employees' dyadic responses. However, since I only needed to measure employees' perceptions on LMX, ESR, PA, and CD to answer my research questions, I used only the employees' portion of Graen and Uhl-Bien's LMX-7 instrument (LMX-E). Graen and Uhl-Bien utilized a Likert-type 5-point scale to measure participants' responses to the seven items included in the LMX-7 instrument and reported Cronbach's alphas (αs) within the 80%-90% range.

Graen and Uhl-Bien (1995) examined employee-supervisor interaction using three dimensions of LMX (trust, respect, obligation) in their LMX-7 instrument. Dulebohn et al. (2012) noted that researchers examined additional dimensions (e.g. competence, commitment) of employee-supervisor interaction using Graen and Uhl-Bien's LMX-7 instrument. Graen and Uhl-Bien's LMX-7 survey instrument (Table E1 of Appendix E) consists of indicator variables measuring (a) trust (LMX_E6), (b) respect (LMX_E7), (c) competence (LMX_E1 and LMX_E3), (d) commitment (LMX_E4 and LMX_E5), and (e) obligation (LMX_E2). Therefore, I employed Graen and Uhl-Bien's LMX-7

instrument to measure five dimensions of LMX (trust, respect, competence, commitment, obligation) to test Hypothesis 1 and answer SRQ1 to address the business problem and determine the extent and nature of the relationship between LMX and ESR.

Shacklock, Brunetto, Teo, and Farr-Wharton (2013) employed Graen and Uhl-Bien's (1995) LMX-7 instrument to examine the quality of supervisor-nurse relationships throughout Australia. Furthermore, Shacklock et al. employed PLS-SEM to analyze their study's data. Hair et al. (2014) noted that Cronbach's alpha (α) results from PLS-SEM analysis tend to underestimate the internal consistency reliability. Therefore, Shacklock et al. did not report a Cronbach's alpha (α) result, but followed Hair et al.'s and Sarstedt et al.'s (2014) guideline in Row 3 of Table 4 and reported a composite reliability (ρ_c) coefficient result of 0.95. Similar to Shacklock et al. and in support of my using Graen and Uhl-Bien's LMX-7 instrument, Garg and Dhar (2016) employed Graen and Uhl-Bien's LMX-7 instrument (Cronbach's $\alpha = .92$/ $\rho_c = .92$) to examine the interaction between employees and supervisors. Garg and Dhar's factor loadings ranged between .72 to .81, and per Hair et al.'s (2014), Kock's (2015), and Sarstedt et al.'s (2014) guidelines (in Table 4), the authors' results provided support for convergent validity. Furthermore, Garg and Dhar's results indicated that the AVE value for the LMX construct is 0.61, and following the guidelines in Table 4 was > .50 and therefore, established discriminant validity.

Supporting my use of Graen and Uhl-Bien's (1995) LMX-7 instrument, Epitropaki and Martin (2013) employed Graen and Uhl-Bien's LMX-7 instrument (Cronbach's $\alpha = .91$) to examine the quality of employee-supervisor LMX. Epitropaki

and Martin's factor loadings of their measurement model ranged between .74 to .91, and per the guidelines in Row 4 of Table 4, the authors' results provided support for convergent validity. Casimir et al. (2014) also employed Graen and Uhl-Bien's (1995) LMX-7 instrument (Cronbach's α = .90) to examine the effect of LMX on employees' organizational commitment. In alignment with Epitropaki and Martin's factor loading results, Casimir et al.'s factor loading results ranged between .74 and .84, thereby also providing support for convergent validity.

Brown et al. (2017) measured the four dimensions of LMX (LMX-affect [Cronbach's α = .90], LMX-loyalty [Cronbach's α = .82], LMX-professional respect [Cronbach's α = .92], LMX-contribution [Cronbach's α = .81]) using Liden and Maslyn 12-item LMX-MDM instrument, and measured participants' responses using a 7-point Likert-type scale. Brown et al. employed SEM to examine the significance of the relational pathways of the four dimensions of LMX (LMX-affect, LMX-loyalty, LMX-professional respect, LMX-contribution) with supervisors' idealized influence and employees' POS. Following Hair et al.'s (2014), Kock's (2015), and Sarstedt et al.'s (2014) guidance (in Table 4), Brown et al.'s results indicated that their structural model constructs were reliable, with all latent variables' composite reliability > 0.70. Furthermore, Brown et al. established convergent validity since all composite reliability values greater than the latent variables' AVE values ($\geq$ .50), and established discriminant validity since all latent variables' AVE values greater than the latent variables' shared variance.

Similar to Brown et al. (2017), Salvaggio and Kent (2016) employed SEM to examine the significance of the relational pathways of the four dimensions of LMX (positive affect, loyalty, professional respect, contribution) with supervisors' charismatic leadership. Furthermore, Salvaggio and Kent examined the significance of the relational pathways between supervisors' charismatic leadership and four dimensions of LMX (positive affect, loyalty, professional respect, contribution) through the moderating effect of communication frequency. However, in contrast to Brown et al., who analyzed data using CB-SEM, Salvaggio and Kent employed PLS-SEM to test the relationships' significance. Similar to Brown et al., Salvaggio and Kent measured participants' responses using a 7-point Likert-type scale. However, unlike Brown et al., Salvaggio and Kent used Joseph, Newman, and Sin's 12-item LMX-MDM (multidimensional) instrument to measure the four dimensions of LMX (affect [Cronbach's $\alpha = .92$], loyalty [Cronbach's $\alpha = .85$], professional respect [Cronbach's $\alpha = .94$], contribution [Cronbach's $\alpha = .76$]). In contrast to Brown et al. and Salvaggio and Kent, Hassan et al. (2013) measured LMX using Scandura and Graen's 7-item LMX instrument (Cronbach's $\alpha = .91$, $p < .05$). In addition, Hassan et al., like Brown et al., employed SEM to examine the relational pathways among the variables. However, unlike Brown et al. and Salvaggio and Kent, Hassan et al. measured participants' responses using a 5-point Likert-type scale.

Similar to Brown et al. (2017), Rodwell et al. (2017) measured the four dimensions of LMX (LMX-affect [Cronbach's $\alpha = .94$], LMX-loyalty [Cronbach's $\alpha = .93$], LMX-professional respect [Cronbach's $\alpha = .97$], LMX-contribution [Cronbach's $\alpha =$

.89]) using Liden and Maslyn 12-item LMX-MDM instrument, and measured participants' responses using a 7-point Likert-type scale. Similar to Brown et al. and Salvaggio and Kent (2016), Rodwell et al. employed SEM to examine the significance of the relational pathways between (a) the four dimensions of LMX (LMX-affect, LMX-contribution, LMX-respect, LMX-loyalty), (b) engagement, (c) trust, and (d) intent to quit. In contrast to Salvaggio and Kent who employed PLS-SEM, and emulating Brown et al. and Rodwell et al., Erturk and Vurgun employed SEM to examine the relational pathways' significance among (a) goal internalization, (b) perceived competence, (c) perceived control, (d) POS, (e) LMX, (f) trust in organizations, (g) trust in supervisors, and (h) turnover intentions. However, in contrast to Garg and Dhar (2016), Erturk and Vurgun measured LMX using Scandura and Graen's LMX-7 instrument (Cronbach's α = .92).

In contrast to Brown et al.'s (2017), Rodwell et al.'s (2017), and Salvaggio and Kent's (2016) use of SEM, Hanse et al. (2014) employed hierarchical linear regression analysis to examine the relationships between LMX and four domains of psychosocial work environment (demands at work, work organization and job contents, interpersonal relations, values at workplace level). Similar to Brown et al. (2017) and Rodwell et al. (2017), Hanse et al. measured LMX using Liden and Maslyn 12-item LMX-MDM instrument (Cronbach's α = .87), and measured participants' responses using a 7-point Likert-type scale. Similar to Hanse et al., Fisk and Friesen (2012) employed hierarchical multiple regression analysis to examine the relationship between employees' perceptions of (a) the authenticity of supervisors' concerns, (b) LMX quality, (c) job satisfaction, and

(d) organizational commitment. In contrast to Hanse et al., Fisk and Friesen employed a 5-point Likert-type scale to measure participants' responses to Graen and Uhl-Bien's (1995) LMX-7 instrument's items (Cronbach's α = .92).

Alternative LMX measurement instruments. Researchers employ various survey instruments focused on the interaction between people, and between employees and supervisors. Researchers use a variety of LMX survey instruments to examine different social exchange methods and the results of the exchanges among people, employees, and supervisors. In addition to Liden and Maslyn 12-item LMX-MDM instrument, Brown et al. (2017) measured supervisors' idealized influence using six items from Avolio and Bass' instrument (Cronbach's α = .86) and POS using seven items from Eisenberger, Huntington, Hutchinson, and Sowa's instrument (Cronbach's α = .89).

Similar to Brown et al.'s (2017) use of additional instruments, Salvaggio and Kent (2016) measured supervisors' charismatic leadership using 12 items from Avolio, Bass, and Jung's Multifactor Leadership Questionnaire (MLQ-5x: Cronbach's α = .91) and communication frequency using Niedle's instrument (Cronbach's α = .76). Similarly, Hassan et al. (2013) used additional survey instruments to measure (a) ethical leadership, (b) empowering leadership, and (c) leader effectiveness. Hassan et al. measured (a) ethical leadership with ten items from Yukl, Mahsud, Hassan, and Prussia's Ethical Leadership Questionnaire (ELQ; Cronbach's α = .96); (b) empowering leadership with six items from Kim and Yukl's Managerial Practices Survey (MPS; Cronbach's α = .90), and (c) leader effectiveness using two items from Kim and Yukl's previous research (Cronbach's α = .96). Correspondingly, Rodwell et al. (2017) employed May, Gilson, and

Harter's 12-item instrument to measure employees' engagement (Cronbach's α = .83) and Robinson's 7-item instrument to measure trust (Cronbach's α = .90). Furthermore, Rodwell et al. used four items from Landau and Hammer's instrument and Chatman's instrument to measure intention to quit (Cronbach's α = .89).

In addition to Liden and Maslyn's 12-item LMX-MDM instrument, Hanse et al. (2014) measured the psychosocial work environment domains using Pejtersen, Kristensen, Borg, and Bjorner's version two of the Copenhagen Psychosocial Questionnaire (COPSOQ). Hanse et al. did not report the Cronbach's α for the COPSOQ but indicated that the reliability estimates and Cronbach's α met Thorsen and Bjorner's reliability criteria of the Copenhagen psychosocial questionnaire standards and guidelines with Cronbach's α's ranging between 0.70 and 0.89. Similar to Hanse et al., Erturk and Vurgun (2015) employed additional survey instruments. Erturk and Vurgun measured (a) psychological empowerment using Menon and Hartmann's 15-item scale (Cronbach's α for goal internalization = .88, perceived competence = .84, perceived control = .87); (b) POS using six items from Eisenberger, Huntington, Hutchinson, and Sowa's 36-item Survey of Perceived Organizational Support (Cronbach's α = .90); (c) organizational trust using twelve items adapted from Nyhan and Marlowe's scale (Cronbach's α for trust in supervisor = .90, and trust in organization = .88); and (d) turnover intentions using Abrams, Ando, and Hinkle's 4-item scale (Cronbach's α = .91).

In addition to Graen and Uhl-Bien's (1995) LMX-7 instrument, Fisk and Friesen (2012) used additional instruments to measure LMX attributes. Fisk and Friesen measured (a) employees' perceptions of the authenticity of their supervisors' concerns

using Grandey's 8-item emotion regulation scale (Cronbach's α = .92 & .89), (b) job satisfaction using Ironson, Smith, Brannick, Gibson and Paul's Job in General Scale (Cronbach's α = .91), and (c) organizational commitment using Podsakoff, MacKenzie, Moorman, and Fetter's 24-item Organizational Citizenship Behavior scale (Cronbach's α = .83).

Similar to previous authors, in addition to using Graen and Uhl-Bien's (1995) LMX-7 instrument to measure LMX, Garg and Dhar (2016) used additional instruments to measure affective commitment, psychological empowerment, and employees' performances. Garg and Dhar measured (a) affective commitment using Meyer, Allen, and Smith's 6-item scale (Cronbach's α = .89/ ρ_c = .89), (b) psychological empowerment using Spreitzer's 12-item scale (Cronbach's α = .95/ ρ_c = .95), and (c) employees' performances using Bettencourt and Brown's 5-item extra-role customer service scale (Cronbach's α = .96/ ρ_c = .96). Following Hair et al.'s (2014), Kock's (2015), and Sarstedt et al.'s (2014) guidelines for an acceptable Cronbach's alpha (α) values $\geq$ .70 and composite reliability (ρc) values > .60 in Row 3 of Table 4, Garg and Dhar's results indicated an *acceptable internal consistency* for all measures.

Dysvik et al. (2015) employed hierarchical moderated regression analysis to examine the relationship between *employees' knowledge sharing* and *managers' knowledge-collecting* and how the relationship is moderated by *social LMX* and *economic LMX*. However, in contrast to previous researchers, Dysvik et al. employed Buch, Kuvaas, and Dysvik's (2011) social and economic LMX scale to measure LMX between employees and supervisors (Cronbach's αs ranged between .78 and .89). Emulating

previous researchers, Dysvik et al. employed additional survey instruments to collect participants' responses for their study. Dysvik et al. measured employees' knowledge donating using four items derived from de Vries, van den Hooff, and de Ridder's instrument (Cronbach's $\alpha = .78$), and managers' knowledge collecting using four items adapted from de Vries et al.'s instrument (Cronbach's $\alpha = .86$).

ESR

Supervisors and employees develop relationships to increase opportunities for obtaining positive results to accomplish personal and professional goals. Researchers have postulated that supervisors and employees develop and maintain positive ESR to accomplish personal goals and to contribute to accomplishing organizational goals (Campbell, Perry, Maertz, Allen, & Griffeth, 2013; Gillet, Gagne, Sauvagere, & Fouquereau, 2013).

Moorman (1991) developed the Interactional Justice instrument to measure the six dimensions of ESR (*communications*, *fairness*, *feedback, civility, justice and equity*, *honesty*) that can influence employees' perceptions of their supervisors' character during the execution of organizational procedures. By employing Waldman's (1997) 5-item Appraisal System Satisfaction instrument in conjunction with Graen and Uhl-Bien's (1995) LMX-7 instrument and Moorman's 6-item Interactional Justice instrument, I determined that the relationship between LMX and ESR ($\beta = .86$, $p < .01$) predicted employees' perceptions of the efficacy of PA (LMX: $\beta = .30$, $p < .01$; ESR: $\beta = .34$, $p < .01$). Furthermore, I hypothesized that there is a significant relationship between LMX and ESR that improves employees' perceived efficacy of their PA by applying the

dimensions of ESR, (a) communications, (b) fairness, (c) feedback, (d) civility, (e) justice and equity, and (f) honesty (Campbell et al., 2013; Gillet et al., 2013, Moorman, 1991). Therefore, I based this subheading of my literature review on LMX theory and Moorman's 6-item Interactional Justice instrument (Table E2 of Appendix E).

Communications. Moorman (1991) postulated that to develop trust and fairness in the relationship, supervisors should communicate effectively with their employees. Biswas and Varma (2012) hypothesized that psychological climate and transformational leadership would have a significant effect on employees' job satisfaction, and noted that job satisfaction positively influenced employees' work performance. Furthermore, Biswas and Varma postulated that supervisors' effective communications with their employees enhance employees' performance. However, Tourish (2014) theorized that although both employees and supervisors can establish themselves as leaders in the organization, formal leadership roles will emerge through LMX that will produce the *leader-follower* relationships and affirm the ESR.

Using path-goal theory, Biswas and Varma (2012) examined the effect of the psychological climate between employees and supervisors during LMX, and on employees' performance and job satisfaction. Biswas and Varma's results supported their hypotheses that there was a positive significant relationship between (a) psychological climate with job satisfaction ($r = .63$, $p < .01$), (b) transformational leadership with job satisfaction ($r = .60$, $p < .01$), and (c) job satisfaction correlated significantly with employee performance ($r = .67$, $p < .01$). Biswas and Varma's results also supported their hypotheses that job satisfaction mediated the relationship between psychological climate

and employee performance (β = .21, $p \leq .01$), and between transformational leadership and employee performance (β = .22, $p \leq .01$). In addition, Biswas and Varma's results indicated a positive relationship of psychological climate (β = .21, $p \leq .01$) and transformational leadership (β = .22, $p \leq .01$) with employee performance through the mediating effects of job satisfaction.

To develop a better understanding of the functions and effects of leadership, business communications, and ESR, Tourish (2014) developed six propositions pertaining to leadership, communications, and the employee-supervisor dyadic relationships. Tourish's propositions encourage researchers to focus beyond established leadership theories and practices and examine the increasing roles of the follower within the dyadic relationship. Tourish encouraged organizational leaders to (a) focus on specific employee leadership development, (b) understand that leadership is complex and adaptable to all situations, (c) accept the follower as an integral component of the organization, and (d) accept that conflict is inclusive within LMX and cannot always be avoided.

Fairness. Moorman (1991) identified fairness as one of the dimensions of interactional justice. Supervisors should not only communicate the importance of fairness to their employees but also exhibit fairness in their behavior. Using social exchange theory, an earlier version of LMX theory and organizational support theory, Byrne et al. (2012) examined the relationship between (a) the dimensions of organizational justice (procedural, distributive, and interactional [interpersonal, informational]), (b) supervisory trust, and (c) perceived supervisor support (PSS) during the PA process.

Byrne et al.'s (2012) path coefficient results supported their hypotheses that there was a significant relationship among the four dimensions of organizational justice: (a) distributive and procedural justice ($\beta = .79$, $p < .01$), (b) distributive and interpersonal justice ($\beta = .54$, $p < .01$), (c) distributive and informational justice ($\beta = .59$, $p < .01$), (d) procedural and interpersonal ($\beta = .62$, $p < .01$), (e) procedural and informational ($\beta = .66$, $p < .01$), and (f) interpersonal and informational justice ($\beta = .71$, $p < .01$). Byrne et al.'s path coefficient results also supported their hypotheses that there is relationship between (a) interpersonal justice and PSS ($\beta = .38$, $p < .01$), (b) informational justice and PSS ($\beta = .43$, $p < .01$), and (c) PSS and supervisory trust ($\beta = .82$, $p < .01$).

Byrne et al.'s (2012) findings indicated that PSS served as a mechanism by which perceptions of interpersonal and informational justice (fairness) during the PA process increased trust in supervisors. Furthermore, Byrne et al. identified that the two dimensions of interactional justice (interpersonal, informational) are more critical than procedural and distributive justice during the performance process, and are drivers of employees' trust in their supervisors.

Feedback. Moorman (1991) postulated that supervisors would promote a positive relationship with their employees by communicating effectively and providing employees with objective feedback. Using social exchange theory, Gumusluoglu, Karakitapoglu-Aygun, and Hirst (2013) examined the relationship between transformational leadership and employees' commitment to their leaders through the mediating effect of interactional justice. Gumusluoglu et al.'s results supported their hypothesis that interactional justice mediated a positive relationship between transformational leadership ($\beta = .87$, $p < .05$)

and employees' commitment to their leaders (β = .36, $p < .05$), and procedural justice mediated a positive relationship between transformational leadership (β = .52, $p < .05$) and employees' organizational commitment (β = .53, $p < .05$). Gumusluoglu et al.'s findings indicated that supervisors who guide and mentor employees through positive transformational leadership enhance employees' commitment to their leaders and their organization. Gumusluoglu et al.'s results also indicated that supervisors who treat employees as individuals by providing feedback with *dignity*, *respect*, *kindness*, *honesty*, and genuine concern for employees' opinions, increase the levels of LMX and ESR.

Using social cognitive theory and self-determination theory, Gabriel, Frantz, Levy, and Hilliard (2014) examined the relationships of *supervisor feedback environment* and *feedback orientation* with four dimensions of overall empowerment (meaning, competence, self-determination, impact). Gabriel et al.'s unstandardized path coefficient results indicated a significant positive relationship of supervisor feedback environment and feedback orientation with (a) meaning ($b = .15$, $p < .05$), (b) competence ($b = .15$, $p < .05$), and (c) self-determination ($b = .23$, $p < .05$). However, Gabriel et al.'s unstandardized path coefficient results indicated a nonsignificant positive relationship of supervisor feedback environment and feedback orientation with an impact ($b = .06$, $p > .05$), Gabriel et al.'s findings indicated that supervisors who create a positive feedback environment and orientation influence employees' work performance, increase employees' self-efficacy, and increase employees' well-being.

Civility. Moorman (1991) postulated that supervisors could promote a positive relationship by exchanging civilities with their employees by communicating in a polite

and courteous manner. Kong (2013) examined the significance of the relationship between employees' perceptions of supervisors' support, job satisfaction, and organizational commitment. Kong postulated that civil and supportive supervisors influence employees' job satisfaction and organizational commitment. Kong's results indicated a significant and positive relationship between supportive supervisor and organizational commitment ($\beta = .52$, $p < .01$), and supportive supervisor and job satisfaction ($\beta = .56$, $p < .01$). Therefore, supervisors who are supportive and civil can influence employees' perceptions of their work environment and increase ESR.

Justice and equality. Moorman (1991) postulated that supervisors would promote ESR by demonstrating concern for employees' rights by demonstrating justice and equality in the relationship. Using social exchange theory, Agarwal (2014) examined the significance of the relationship between *work engagement* and *trust* with (a) *psychological contract fulfillment*, (b) *procedural justice*, and (c) *interactional justice*. Furthermore, Agarwal examined the relationships between *work engagement* and *innovative work behavior* and *trust*. Agarwal also examined the potential mediating effect of *trust* between *work engagement* and (a) *psychological contract fulfillment*, (b) *procedural justice*, and (c) *interactional justice*.

Agarwal's (2014) results indicated significant positve relational pathways between work engagement and (a) psychological contract fulfilment ($r = 0.40$, $p < .01$), (b) procedural justice ($r = 0.11$, $p < .01$), and (c) interactional justice ($r = 0.32$, $p < .01$). Furthermore, Agarwal's results indicated significant positive relational pathways between work engagement and (a) innovative work behaviour ($r = 0.340$, $p < .01$) and (b) trust (r

= 0.54, $p < .01$). Furthermore, Agarwal's results indicated significant positive relational pathways between trust and (a) psychological contract fulfilment ($r = 0.40$, $p < .01$), (b) procedural justice ($r = 0.32$, $p < .01$), and (c) interactional justice ($r = 0.13$, $p < .01$). Agarwal's findings indicated that employees' perceptions of their supervisors' trust and justice affects employees' levels of work engagement, work performance, and behaviour.

Honesty. Moorman (1991) postulated that honesty in communications would promote positive ESR. Using social learning theory and social exchange theory, Kacmar, Carlson, and Harris (2013) examined the relationship between employees' perceptions of supervisors' ethical leadership and their supervisors' dedicated behavior and the effect on the employees' performances. Kacmar et al. also examined the relationship between the employees' perceptions of supervisors' helplessness behavior and the effect on the employees' performances.

Kacmar et al.'s (2013) results indicated a positive relationship between (a) ethical leadership and work effort ($r = .19$, $p < .05$), (b) ethical leadership and helping ($r = .15$, $p < .05$), (c) helping and work effort ($r = .54$, $p < .001$), and (d) exemplification and supplication ($r = .33$, $p < .01$). Following Hair et al's (2014) path coefficients' significance guidelines for SEM in Row 6 of Table 4, Kacmar et al.'s path coefficients' results indicated a significant positive relationship between exemplification and work effort through high ethical leadership ($r = .28$, $p < .05$), and a negative relationship through low ethical leadership ($r = -.09$, $p < .05$). In addition, Kacmar et al.'s results indicated a significant positive relationship between supplication and helping behavior through low ethical leadership ($r = .36$, $p < .05$), and no significant relationship through

high ethical leadership ($p > .05$). Dawson (2014) noted that when analyzing three-way interaction, interpreting the sign of the coefficient can be challenging (J.R. Crawshaw, personal communications, February 19, 2016). Dawson explained that the coefficient sign indicates the positive or negative increases *in the degree of the slope* when examining the relationship between three independent variables and one dependent variable (J.R. Crawshaw, personal communications, February 19, 2016).

Kacmar et al.'s (2013) findings indicated that when employees perceived their supervisors as honest and ethical, the employees would exert additional effort in their performance. Furthermore, when employees perceive their supervisors as unethical, the employees would not exert effort to aid their supervisors when the supervisor demonstrated helplessness. Therefore, Kacmar et al. concluded that there is an increase in high ESR when employees perceive that their supervisors exhibit high ethical and honest leadership traits.

ESR measurement instruments. Moorman (1991) examined the nature and quality of employee-supervisor dyadic relationships using six dimensions of interactional justice (communications, fairness, feedback, civility, justice and equality, honesty). Moorman developed the 6-item Interactional Justice instrument (Table E2 in Appendix E) to measure participants' responses pertaining to ESR. Moorman utilized a 5-point Likert-type scale to measure participants' responses to each item. Moorman's Cronbach's α results of .93 for the interactional justice scale indicated strong internal consistency reliability.

Moorman's (1991) 6-item Interactional Justice survey instrument (Table E2 of Appendix E) consists of indicator variables measuring (a) communications - ESR_1, (b) fairness – ESR_2, (c) feedback – ESR_3, (d) civility – ESR_4, (e) justice and equity – ESR_5, and (f) honesty – ESR_6. I employed Moorman's 6-item Interactional Justice instrument to measure six dimensions of ESR (communications, fairness, feedback, civility, justice and equity, honesty) to test Hypothesis 1 and answer SRQ1 to determine the significance and nature of the relationship between LMX and ESR.

Gumusluoglu et al. (2013) used Moorman's 6-item Interactional Justice instrument to test their hypothesis that there is a relationship between transformational leadership and employees' commitment to their leaders through the mediating effect of interactional justice (Cronbach's $\alpha = .81$). Gumusluoglu et al. used SEM to examine the relationship between transformational leadership and employees' commitment to their leaders through the mediating effect of interactional justice.

In contrast to Gumusluoglu et al. (2013) and my study, Byrne et al. (2012) did not employ Moorman's (1991) 6-item Interactional Justice instrument, but used three alternative measurement instruments to measure (a) the dimensions of organizational justice (procedural, distributive, and interactional justice), (b) PSS, and (c) trust in supervisor. Utilizing a 7-point Likert-type scale to measure participants' responses, Byrne et al. employed SEM to examine the relationship between (a) organizational justice, (b) supervisory trust, and (c) PSS. Similar to Byrne et al., Biswas and Varma (2012) also employed SEM to examine the relational pathways between psychological climate and transformational leadership, and employee performance through the mediating effects of

job satisfaction. Using a 5-point Likert-type scale, Biswas and Varma analyzed participants' responses. Also in contrast to my study, Biswas and Varma used four alternative measurement instruments to measure (a) psychological climate, (b) transformational leadership, (c) job satisfaction, and (d) employee performance.

In contrast to Biswas and Varma (2012), Gabriel et al. (2014) used a 7-point rating scale to measure participants' responses. Furthermore, Gabriel et al. employed moderated linear regression to examine the relationship of supervisor feedback environment and feedback orientation with four dimensions of overall empowerment (meaning, competence, self-determination, impact). Reflective of Byrne et al. and in contrast to my study, Gabriel et al. did not employ Moorman's (1991) 6-item Interactional Justice instrument, but used three alternative measurement instruments to measure supervisor feedback environment, feedback orientation, and psychological empowerment. Similar to Biswas and Varma, Byrne et al., and Gabriel et al., Agarwal (2014) did not employ Moorman's 6-item Interactional Justice instrument, but used six alternative instruments to measure work engagement, psychological contract fulfillment, trust, procedural justice, interactional justice, and innovative work behavior. However, reflective of Byrne et al., Biswas and Varma, and Gumusluoglu et al. (2013), Agarwal used SEM to examine the significance of the relational pathways between work engagement, psychological contract fulfillment, trust, procedural justice, interactional justice, and innovative work behavior.

In contrast to my study, Kacmar et al. (2013) did not employ Moorman's (1991) 6-item Interactional Justice instrument but used four alternative measurement instruments

to measure the relationship between (a) ethical leadership, (b) work effort, (c) helping behaviors, and (d) *exemplification*. Furthermore, in contrast to Biswas and Varma's (2012), Byrne et al.'s (2012), Gumusluoglu et al.'s (2013), and Agarwal's (2014) use of SEM, Kacmar et al. employed hierarchical linear modeling to examine the relationship between employees' perceptions of supervisors' (a) ethical leadership, (b) dedicated behavior, and (c) helplessness behavior and the effect on the employees' performances.

Alternative measurement instruments for measuring the ESR. Researchers have used numerous survey instruments focused on employees and supervisors and their relationships within the organization. Researchers employ different ESR survey instruments focused on different aspects of ESR and the different dimensions of organizational justice (procedural, distributive, and interactional). In conjunction with Moorman's (1991) Interactional Justice instrument, Gumusluoglu et al. (2013) used 20 items from the Turkish version of Bass and Avolio's Multi-Factor Leadership Questionnaire (MLQ-Form 5X) to measure employees' perception of their supervisors' leadership style (Cronbach's $\alpha = .93$).

With the assistance of the HR director of a U.S. technology manufacturing firm, Byrne et al. (2012) modified Colquitt's 20-item organizational justice instrument to reflect the language of the organization. Byrne et al. used Colquitt's 20-item organizational justice instrument to measure the technological manufacturing employees' responses on four dimensions of organizational justice (informational [Cronbach's $\alpha = .88$], interpersonal [Cronbach's $\alpha = .96$], procedural [Cronbach's $\alpha = .91$], distributive [Cronbach's $\alpha = .97$]). Byrne et al. modified Eisenberger, Cummings, Armeli, and

Lynch's 8-item POS instrument to measure employees' perceptions of their supervisors' support instead of organizational support (Cronbach's α = .93). Byrne et al. measured employees' trust in supervisor using Nuhan and Marlowe's 7-item instrument in which Nuhan and Marlowe examined employees' perceptions of their supervisors' *character*, *competence*, and *judgment* (Cronbach's α = .95).

Reflective of Byrne et al. (2012) and in contrast to my study, Gabriel et al. (2014) did not employ Moorman's (1991) 6-item Interactional Justice instrument but used three alternative measurement instruments to measure the significance of the relationship of supervisor feedback environment and feedback orientation with four dimensions of overall empowerment (meaning, competence, self-determination, impact). Gabriel et al. measured supervisor feedback environment using 32 supervisor-focused items from Steelman, Levy, and Snell's Feedback Environment Scale (Cronbach's α = .96) and feedback orientation using Linderbaum and Levy's feedback orientation scale (Cronbach's α = .91). Furthermore, Gabriel et al. measured the four dimensions of psychological empowerment using Spreitzer's 12-item instrument: (a) meaning (Cronbach's α = .90), (b) competence (Cronbach's α = .78), (c) self-determination (Cronbach's α = .85), and (d) impact (Cronbach's α = .89).

Similar to Byrne et al. (2012) and Gabriel et al. (2014), and in contrast to my study, Biswas and Varma (2012) did not employ Moorman's (1991) 6-item Interactional Justice instrument but used four alternative measurement instruments to measure ESR. Biswas and Varma measured the employee-supervisor psychological climate using Brown and Leigh's 21-item Psychological Climate Measure (Cronbach's α = .83).

Biswas and Varma measured participants' responses on (a) transformational leadership using Bass and Avolio's 21-item multifactor leadership questionnaire (MLQ) form 5X (Cronbach's α = .93), (b) employees' job satisfaction using Schnake's 11-item Job Satisfaction Instrument (Cronbach's α = .85), and employees' performance using Lynch, Eisenberger, and Armeli's 16-item instrument Employee Performance Scale (Cronbach's α = .84).

Similar to Byrne et al. (2012), Gabriel et al. (2014), and Biswas and Varma (2012), Agarwal (2014) did not employ Moorman's (1991) 6-item Interactional Justice instrument but used six alternate instruments to measure ESR. Agarwal (2014) used Schaufeli, Bakker, and Salanova's 9-item version of the Utrecht Work Engagement Scale (UWES) to measure work engagement (Cronbach's α = .88). Furthermore, Agarwal measured (a) psychological contract fulfilment using Robinson and Morrison's 5-item scale (Cronbach's α = .92), (b) trust in the organization using Gabarro and Athos' 7-item scale (Cronbach's α = .92), and (c) innovative work behaviour using Janssen's 9-item scale (Cronbach's α = 92). The author used Niehoff and Moorman's abbreviated scale to measure procedural justice (7-items, Cronbach's α = .93) and interactional justice (6-items, Cronbach's α = .82).

In contrast to my study, and similar to Byrne et al. (2012), Gabriel et al. (2014), and Agarwal (2014), Kacmar et al. (2013) did not employ Moorman's (1991) 6-item Interactional Justice instrument, but used four alternative measurement instruments to measure the relationship between (a) ethical leadership, (b) work effort, (c) helping behaviors, and (d) *exemplification*. Kacmar et al. measured (a) ethical leadership using

Brown, Trevino, and Harrison's 10-item scale (Cronbach's α = .84) (b) employees' work effort using Brown and Leigh's 5-item scale (Cronbach's α = .93), (c) employees' helping behaviors using Settoon and Mossholder's 5-item scale (Cronbach's α = .92), (d) leaders' use of exemplification influence tactics using Bolino and Turnley's 4-item scale (Cronbach's α = .84), and (e) leaders' use of supplication influence tactics using Bolino and Turnley's 5-item scale (Cronbach's α = .95).

PA

Organizational leaders and business researchers have worked diligently to develop an appropriate, suitable, and effective PA system to measure their employees' performances. Organizational leaders use the PA process for numerous purposes including (a) measuring employees' performances, (b) identifying employees' goals, (c) identifying and correcting undesirable performances, (d) identifying and discussing employees' feedback, and (e) aligning employees' goals with organizational goals (Karkoulian, Assaker, & Hallak, 2016). However, there are stimuli that influence the accuracy of the PA, such as supervisors' (a) ability to rate objectively, (b) attempting to avoid conflict, (c) attempting to provide employees with helpful ratings, and (d) enhancing self-interest (Spence & Keeping, 2013).

Waldman (1997) examined five dimensions of employees' perceptions of their organization's PA program using a 5-item Appraisal System Satisfaction instrument (Table E3 of Appendix E): (a) PA assessment accuracy, (b) PA rating fairness, (c) performance improvement, (d) CD, and (e) PA satisfaction in their organization's PA system. By employing Waldman's (1997) 5-item Appraisal System Satisfaction

instrument in conjunction with Graen and Uhl-Bien's (1995) LMX-7 instrument and Moorman's (1991) 6-item Interactional Justice instrument, I determined that the relationship between LMX and ESR ($\beta = .86$, $p < .01$) predicted the perceived efficacy of employees' PA (LMX: $\beta = .30$, $p < .01$; ESR: $\beta = .34$, $p < .01$). Furthermore, I hypothesized that there is a significant relationship between LMX and ESR that improves employees' perceived efficacy of their PA by applying Waldman's dimensions of employees' perceptions of the efficacy of their organization's PA program. Therefore, I based this subheading of my literature review on the interactional justice dimension of organizational justice theory and Waldman's 5-item Appraisal System Satisfaction instrument.

PA assessment accuracy. Waldman (1997) postulated that researchers had changed their focus from assessing the accuracy and implementation of PAs to researching the frequency, purpose, and procedures of PAs. Employing HR management (HRM) theories, Bednall, Sanders, and Runhaar (2014) examined the relationship between (a) reflection on daily activities, (b) knowledge sharing with colleagues, (c) innovative behavior, (d) PA quality, and (e) HRM system strength. Bednall et al. administered two surveys to teachers of six Dutch vocational schools. Bednall et al. called the first survey administered *Wave 1* and the second survey administered 1 year later *Wave 2*. Bednall et al. analyzed three models. In Model 1, the analysis contained the informal learning activities and the control variables (*tenure*, *gender*, *hours worked per week*) at Wave 1. The regression analysis results of Model 1 indicated a significant correlation ($p < .001$) between each *informal learning activity.*

To test their hypotheses that PA quality and HRM system strengths influenced employees' involvement in informal learning activities, Bednall et al. (2014) regressed the Wave 2 measures of *informal learning activities* against the Wave 1 measures of *informal learning activities* in Model 2 and 3. Bednall et al.'s hierarchical regression analysis results for Model 2 indicated that PA quality has a positive significant relationship with knowledge sharing (β = .12, p = .035) and innovative behavior (β = .30, p = .001). However, PA quality had a positive, but *nonsignificant* relationship with reflection (β = .10, p = .090) and HRM system strength had a negative significant relationship with innovative behavior (β = -.21, p = .001). Bednall et al.'s hierarchical regression analysis results for Model 3 indicated that HRM system strength moderated the significant positive relationship between PA quality and reflection (β = .15, p = .001) and innovative behavior (β = .12, p = .002). However, HRM systems strength moderated a positive nonsignificant relationship between PA quality and knowledge sharing (β = .08, p = .055).

Therefore, Bednall et al.'s (2014) hypotheses of a positive association of PA quality with informal learning activities, and HRM system strength moderates the relationship between PA quality and changes in learning activity participation were only partially supported by the results. Bednall et al. concluded that PA quality and HRM system strength influenced employees to participate in informal learning activities leading to long-term CD. Bednall et al.'s findings also indicated that high-quality PA's encourage employees to participate in (a) reflection on daily activities, (b) knowledge sharing, and (c) innovative behavior, thereby increasing high levels of ESR.

Resembling Bednall et al.'s (2014) study but using industrial relations theory and exit-voice theory, Krats and Brown (2013) examined PA quality and the relationships between (a) PA satisfaction, (b) CD, (c) PA fairness, (d) goal setting, and (e) job satisfaction. Krats and Browns' results indicated a significant positive relationship between PA satisfaction and (a) CD ($r = .77$, $p < .01$), (b) PA fairness ($r = .80$, $p < .01$), (c) goal setting ($r = .65$, $p < .01$), and (d) job satisfaction ($r = .79$, $p < .01$). Krats and Brown's findings demonstrated to managers and supervisors that PA accuracy influences employees' job satisfaction and organizational commitment. Therefore, managers and supervisors should periodically evaluate their organization's PA process to ensure employees are receiving fair and accurate appraisals (Kats & Brown, 2013).

PA rating fairness. Waldman (1997) postulated that a common purpose for PA's is to enable supervisors to evaluate employees' performance and apportion rewards fairly. Employing social exchange theory, Harrington and Lee (2015) examined federal employees' perceptions of fairness in U.S. federal agencies' PA systems through supervisors' psychological contract fulfillments. Harrington and Lee noted that researchers identified three dimensions of social exchange as (a) psychological contract (expectant returns in ESR), (b) POS (employees' perceptions of support from organizational leadership), and (c) LMX (emotional and professional support during the employee-supervisor interaction). Harrington and Lee's results indicated a significant positive relationship between employees' perceptions of PA fairness and (a) relational contract ($\beta = .226$, $p < .001$), (b) transactional contracts ($\beta = .269$, $p < .001$), and (c) supervisory support ($\beta = .373$, $p < .001$). Harrington and Lee concluded that there were

positive relationships between employees' perceptions of PA fairness and the dimensions of social exchange (psychological contract, POS, LMX).

In contrast to Harrington and Lee's (2015) use of social exchange theory, Pichler et al. (2016) employed LMX theory and procedural justice theory to examine the relationships' significance between LMX and PA satisfaction through the mediating effects of (a) procedural justice (ratee), (b) performance rating (rater), and task performance (ratee). Pichler et al.'s results indicated a significant positive relationship between LMX and (a) procedural justice (ratee; $\beta = .49$, $p < .001$) and (b) task performance (ratee; $\beta = .23$, $p < .05$). However, Pichler et al.'s results indicated a nonsignificant positive relationship between LMX and performance rating (rater; $\beta = .17$, $p > .05$). Therefore, Pichler et al.'s findings indicated that LMX is not related to supervisors' performance ratings of their employees. However, LMX influences employees' perceptions of their supervisors' fairness during the PA process (Pichler et al., 2016).

Furthermore, Pichler et al.'s (2016) results indicated a significant positive indirect relationship between LMX and PA satisfaction through the mediating effect of procedural justice ($\beta = .38$, $p < .05$, 95% CI [.23, .54]). However, Pichler et al's results indicated a nonsignificant negative indirect relationship between LMX and PA satisfaction through the mediating effect of performance rating ($\beta = -.02$, $p > .05$, 95% CI [-.07, .01]), and a nonsignificant positive indirect relationship between LMX and PA satisfaction through the mediating effect of task performance ($\beta = .00$, $p > .05$, 95% CI [-.05, .06]). Therefore, Pichler et al.'s findings indicated that LMX affects employees'

satisfaction with their organizations' PA processes whenever employees perceive that their supervisors are fair during the PA process. Furthermore, supervisors' ratings of their employees and the employees' self-evaluations of their performance do not affect the employees' perceptions of their organizations' PA processes (Pichler et al., 2016).

Complementary to Harrington and Lee's (2015) and Pichler et al.'s (2016) studies on the relationships between employees' perceptions of PA fairness and the dimensions of social exchange (psychological contract, POS, LMX), Raemdonck and Strijbos (2013) examined the significance of the relationships between employees' perceptions of feedback on the content of the PA and the status of the feedback provider (supervisor or coworker). Supporting Pichler et al.'s (2016) findings, Raemdonck and Strijbos results indicated that if employees' perceived that their supervisors' PA ratings were fair and their supervisors' feedback focused on (a) the specificity of their performances, (b) areas for improvement, and (c) CD, then employees' would have a positive view of their supervisors' ratings and feedback. Contributing to Raemdonck and Strijbos' results, Cheng (2014) concluded that supervisors' fairness in distributive justice (rewards) during the PA process influenced employees' organizational commitment and commitment to supervisors.

Comparable to Harrington and Lee's (2015) study, and employing social exchange theory, Farndale and Kelliher (2013) examined the relationship between employees' perception of PA fairness and organizational commitment. Farndale and Kelliher hypothesized that employees' positive PA experiences increased employees level of organizational commitment. Farndale and Kelliher's results indicated a

significant positive relationship between PA justice and employees' organizational commitment ($r = .224$, $p < .01$). Supporting Farndale and Kelliher's results, Sumelius et al. (2014) postulated that employees' perception of PA fairness affects employees' organizational commitment. Furthermore, Sumelius et al. noted that researchers had demonstrated that numerous stimuli affect employees' perceptions of their organizations' PA process, such as (a) job satisfaction, (b) organizational commitment, (c) turnover intentions, (d) trust in supervisors, and (e) work performances.

Similar to Farndale and Kelliher (2013), but using organizational justice theory, Salleh, Aziz, Muda, and Halim (2013) examined the relationship between employees' perception of PA fairness and organizational commitment. Salleh et al. hypothesized a significant positive relationship between (a) PA fairness and PA satisfaction, and (b) PA fairness and organizational commitment. Salleh et al.'s results indicated a significant positive relationship between PA fairness and PA satisfaction ($r = .696$, $p < .01$), and Pa fairness and organizational commitment ($r = .331$, $p < .01$). Therefore, to increase employees' PA satisfaction and organizational commitment, supervisors should ensure the fairness of employees' PAs (Salleh et al., 2013).

Performance improvement. Waldman (1997) postulated that PA's are a strategic tool managers can use to guide and improve employees' performances; thereby improving their organizations' performance. Based on Meyer's and Allen's (1993) components of organizational commitment (*affective, continuance, normative*), Abdulkadir et al. (2012) examined the relationships among (a) organizational commitment, (b) PA, (c) career planning, and (d) employee participation. Following Hair

et al's (2014) and Wong's (2013) guidelines on Row 7 of Table 4, Abdulkadir et al.'s multiple correlation coefficient of 0.84 and the corresponding coefficient of determination (R^2) value of .63 indicated a moderate significant effect of (a) PA (r = .57, p < .01), (b) career planning (r = .59, p < .01), and (c) employee participation (r = .63, p < .01) on organizational commitment.

Abdulkadir et al.'s (2012) findings indicated that (a) PA, (b) career planning, and (c) employee participation affected organizational commitment. Abdulkadir et al.'s findings also demonstrated that an organization's commitment to their employees' (a) PA, (b) career planning, and (c) employee participation in the organization has a positive effect on employees' commitment to all three components of organizational commitment (affective, continuance, normative). Supporting Abdulkadir et al.'s results, Karkoulian et al. (2016) postulated that supervisors' goals for conducting employees' PAs are to provide employees with feedback to increase employees' performance and organizational commitment to facilitate the accomplishment of organizational goals.

CD. Waldman (1997) postulated supervisors use PAs not only to gather information on employees' performances but also to evaluate employees' CD goals. Using PA data from 61 lawyers' assessment center evaluations from a large Portuguese law firm, Lopes, Sarraguca, Lopes, and Duarte (2015) examined 13 dimensions of the PA. Lopes et al. separated the 13 dimensions into three categories: (a) *hard skills* (evaluating issues, finding solutions, knowledge), (b) *soft skills* (persuasion, client orientation, business development, firm focus, leadership, resource management, achievement focus), and (c) productivity (billable hours, efficiency). Lopes et al's results

indicated the importance of the PA process for lawyers to gauge their hard skills, soft skills and productivity to showcase their talents to their managers and to demonstrate their value to increase organizations' competitive advantage. Furthermore, and supporting Dysvik et al.'s (2015) results that high LMX influences the working environment, Lopes et al.'s findings indicated that employees' perceptions of supervisors' trust during the PA process increased employees' perceptions of the fairness and efficacy of their organizations' PA systems.

PA satisfaction. Waldman (1997) postulated that employees with high achievement aspirations are not satisfied with their organization's PA systems. Jayawardana, O'Donnell, and Jayakody (2013) postulated that feedback is an important aspect of the PA process and contributes to employees' job satisfaction and turnover intentions. Using social exchange theory, Jayawardana et al. examined the relationship between (a) social exchange, (b) economic exchange, (c) job satisfaction, and (d) turnover intentions. Jayawardana et al. described long-term social exchanges (feedback) as resulting in high LMX and ESR, and described short-term economic exchanges as focusing on monetary rewards for task accomplishment resulting in low LMX and ESR.

Jayawardana et al.'s (2013) results supported their hypotheses that high-performers exhibit a significant positive relationship of social exchange (feedback) with job satisfaction ($\beta = .602$, $p < .001$), and exhibit a significant negative relationship of social exchange with turnover intentions ($\beta = -.263$, $p < .01$). Furthermore, Jayawardana et al.'s results indicated that low-performers exhibit a significant positive relationship of social exchange with job satisfaction ($\beta = .551$, $p < .001$), and exhibit no significant

relationship of social exchange with turnover intentions ($\beta = .014$, $p > .05$). Therefore, Jayawardana et al. concluded that middle managers' PA results contributed to high LMX and ESR, managers' job satisfaction, and organizational commitment.

Similar to Jayawardana et al. (2013), Culberston, Henning, and Payne (2013) examined the relationship between positive and negative feedback and the level of PA satisfaction. Culberston et al. hypothesized that positive feedback, during the PA process, would lead to employees' satisfaction with the PA results. Furthermore, Culberston et al. hypothesized that negative feedback would lead to employee's dissatisfaction with the PA results. Culberston et al.'s results indicated a significant positive relationship between positive PA feedback and PA satisfaction ($r = .48$, $p < .01$). Furthermore, Culberston et al.'s results indicated a significant negative relationship between negative PA feedback and PA satisfaction ($r = -.21$, $p \leq .01$). Therefore, Culberston et al.'s results supported their hypotheses that positive PA feedback is positively related to PA satisfaction, and negative PA feedback is negatively related to PA satisfaction. However, Culberston et al.'s results did not reveal a significant relationship between positive or negative PA feedback and job performance ($p > .01$).

Supporting Pichler et al.'s (2016) conclusion that supervisors' fairness in procedural justice during the PA process affected employees' attitudes and performances, Culbertson et al.' (2013) results indicated a significant relationship between PA feedback and PA satisfaction. However, Culberston et al.'s results indicated no significant influence of positive or negative PA feedback on employees' job performance. In contrast to Culberston et al.'s results, Jayawardana et al.'s (2013) results indicated a

significant positive relationship of social exchange (feedback) during the PA process with job satisfaction and turnover intentions. In addition, Jayawardana e al.'s results indicated a significant negative relationship of economic exchange (task assignment) with job satisfaction and turnover intentions. Therefore, employees who experience high LMX and high ESR with their supervisors perceive their PA feedback as objective, which contributes to increasing employees' job satisfaction and lowering turnover intentions.

PA systems' effectiveness measurement instruments. Waldman (1997) examined the nature and quality of employees' and supervisors' perceptions of their organization's PA process using five dimensions of the PA process (PA assessment accuracy, PA rating fairness, performance improvement, CD, PA satisfaction). Waldman utilized a 5-point Likert-type scale to measure employees' and supervisors' responses pertaining to their organization's PA program. Waldman's Cronbach's α results of .81 indicated acceptable internal consistency reliability.

Waldman's (1997) 5-item Appraisal System Satisfaction instrument (Table E3 of Appendix E) consists of indicator variables measuring (a) PA assessment accuracy – PA_1, (b) PA rating fairness – PA_2, (c) performance improvement – PA_3, (d) CD – PA_4, and (e) PA satisfaction – PA_5. I employed Waldman's 5-item Appraisal System Satisfaction instrument in conjunction with Graen and Uhl-Bien's (1995) LMX-7 instrument and Moorman's (1991) 6-item Interactional Justice instrument to test Hypothesis 2 and answer SRQ2 to determine if the relationship between LMX and ESR can predict the efficacy of employees' PAs.

Abdulkadir et al. (2012) did not specify what instruments they used to measure (a) PA, (b) career planning, and (c) employee participation, but noted that they used previously validated instruments. Abdulkadir et al. employed SPSS to analyze *Item-to-total Correlation* to assess internal consistency reliability. Following Hair et al.'s (2014) and Sarstedt et al.'s (2014) internal consistency guidelines on Row 3 of Table 4, Abdulkadir et al.'s results indicated high internal consistency of the scales: (a) PA (.885), (b) career planning (.906), (c) employee participation (.707) and (d) organizational commitment (.830). Abdulkadir et al. used a 5-point Likert-type scale to measure participants' responses, and employed multiple regression analysis to examine the predictive effects of (a) PA, (b) career planning, and (c) employee participation on organizational commitment. Abdulkadir et al. also employed multiple correlation analysis to examine relationships between (a) PA, (b) career planning, (c) employee participation, and (d) organizational commitment.

In contrast to my study, Bednall et al. (2014) did not employ Waldman's (1997) 5-item Appraisal System Satisfaction instrument but used five alternative measurement instruments to collect participants' responses. Similar to Abdulkadir et al., Bednall et al. utilized a 5-point Likert-type scale to measure participants' responses. However, in contrast to Abdulkadir et al., Bednall et al. employed maximum likelihood with robust standard errors (MLR) estimator of the Mplus 7.0 program to examine the relationship between (a) reflection on daily activities, (b) knowledge sharing with colleagues, (c) innovative behavior, (d) PA quality, and (e) HRM system strength.

Alternative measurement instruments to measure PA. Researchers use numerous survey instruments to examine the efficacy of PAs. Researchers employ different PA survey instruments to focus on different aspects of employees' perceptions of their organization's PA process. Abdulkadir et al. (2012) used Meyer and Allen's 15 item Organizational Commitment Questionnaire (OCQ), to measure organizational commitment. Abdulkadir et al.'s Cronbach alpha result of 0.92 is above 0.70; Nunally and Bernstein's recommended minimum, which indicated the satisfactory internal consistency of the instrument.

In contrast to my study, Bednall et al. (2014) did not employ Waldman's (1997) 5-item Appraisal System Satisfaction instrument, but used five alternative measurement instruments to examine if PA quality and HRM system strengths influenced employees' involvement in informal learning activities (reflection on daily activities, knowledge sharing with colleagues, innovative behavior). Bednall et al. measured (a) reflection on daily activities using the 4-item reflection scale from Van Woerkom's instrument (Wave 1: Cronbach's $\alpha = .66$; Wave 2: Cronbach's $\alpha = .75$), (b) knowledge sharing using additional 4-items from Van Woerkom's instrument (Wave 1: Cronbach's $\alpha = .80$; Wave 2: Cronbach's $\alpha = .81$), (c) innovative behavior using De Jong and Den Hartog's 5-item scale (Wave 1: Cronbach's $\alpha = .81$; Wave 2: Cronbach's $\alpha = .86$), (d) PA quality using a 3-item scale developed from Sanders, Dorenbosch, and De Reuver's instrument (Cronbach's $\alpha = .76$), and (e) HRM system strength using Bowen and Ostroff's 16-item composite scale (distinctiveness, consistency, consensus; Cronbach's $\alpha = .92$).

Culberston et al. (2013) measured three dimensions of employees' work performance, (a) learning goal orientation (Cronbach's α = .88), (b) performance-proven goal orientation (Cronbach's α = .80), and (c) performance-avoid goal orientation (Cronbach's α = .81) using VandeWalle's 9-item Goal Orientation Inventory. Culberston et al. measured PA satisfaction using five items from Greller's instrument (Cronbach's α = .88). To measure positive or negative feedback, Culberston et al. requested that participants annotate if they received positive or negative PA feedback or their last PA. Culberston et al. employed regression analysis to examine the relationship between positive and negative PA feedback and PA satisfaction.

Similar to Culberston et al. (2013), Jayawardana et al. (2013) identified middle managers' performance levels from their 2006 PA's and apportioned the middle managers into two dimensions (high performers, low performers) to examine the relationship between social exchange, economic exchange, job satisfaction, and turnover intentions. Jayawardana et al. measured job satisfaction using a 5-item scale that included (a) two items from Cook and Wall's instrument, (b) two items from Hackman and Lawler's instrument, and (c) one item from Warr, Cook, and Wall's instrument (composite reliability [ρ_c] = .81; Cronbach's α = 0.70). Similar to my study, Jayardana et al. employed PLS-SEM to test their hypotheses using the SmartPLS software program.

CD

Organizational leadership's adoption of a CD plan encourages employees to learn and contribute to organizational success. When employees believe that their leadership is genuine about employees' value to the organization and employees' career advancement,

then employees' level of organizational commitment should increase (Bravo, Seibert, Kraimer, Wayne, & Liden, 2015). In addition, Kraimer, Seibert, Wayne, Liden, and Bravo (2011) hypothesized that when employees experience high levels of organizational support for professional development, then employees' organizational commitment increases. Furthermore, Kraimer et al. noted that employees' performances increased while employees' intention to leave decreased. Bednall et al. (2014) supported Kraimer et al.'s hypothesis by noting that both employees and the organization benefit from the organizational leadership's CD plan. Bednall et al. noted that a professional CD plan assisted employees to integrate into the organization's *complex* and *changing work environment*.

Using the Perceived Career Opportunity (PCO) Scale, Kraimer et al. (2011) examined participants' perceptions of their organizations' career opportunities pertaining to (a) career opportunities, (b) career goal achievement, and (c) career aspiration satisfaction. Furthermore, Nasser and Zaitouni (2015) postulated that PA rewards distribution (e.g., promotion, pay raises) affects employees' performance and their perceptions of their relationship with their supervisors. Therefore, I based this subheading of my literature review on the distributive justice dimension of organizational justice theory and Kraimer et al.'s 6-item PCO Scale (Table E4 of Appendix E).

Career opportunities. Kraimer et al. (2011) concluded that employees participating in organizational training, positive LMX, and professional mentoring perceive that their organizational leaders support employees' CD and opportunities. Using (a) the theory of work adjustment, (b) expectancy theory, and (c) the theory of

organizational socialization, Kim, Kang, Lee, and McLean (2016) examined the relationships among (a) *career commitment*, (b) *motivation to participate in training*, and (c) *turnover intentions*. Kim et al.'s results indicated a significant positive relationship between career commitment and motivation to participate in training ($\beta = .85$, $p < .001$). However, Kim et al.'s results indicated a significant negative relationship between career commitment and turnover intentions ($\beta = -.61$, $p < .001$). Kim et al. noted that employees who experienced high CD opportunities in their organization also possessed high organizational commitment. Furthermore, the authors concluded that low employee turnover intentions are more likely to exist when employees possess high organizational commitment.

Breevaart, Bakker, Demerouti, and van den Heuvel (2015) postulated that high levels of LMX promote high levels of ESR, which influences employees' job performance. Furthermore, employees who share high-level LMX with their supervisors have access to additional job resources and are more likely to engage in assignments, and therefore, have a better chance for career opportunities (Breevaart, 2015). Using LMX theory, conservation of resources theory, and job demands-resources theory, Breevaart et al. examined the significance of the relationship between LMX and job performance through the mediating effect of job resources (autonomy, developmental opportunities, social support) and work engagement.

Breevaart et al.'s results indicated a significantly positive relational pathway between LMX and work engagement ($\beta = .46$, $p < .001$, 95% CI [0.41, 0.51]), and work engagement and job performance ($\beta = .34$, $p < .001$, 95% CI [0.26, 0.41]). Furthermore,

work engagement significantly mediated the relationship between LMX and job performance ($\beta = .15$, $p < .001$, 95% CI [0.12, 0.20]). Breevaart et al.'s findings indicated that employees' work responsibilities and career opportunities influence the level of LMX the employee shares with their supervisor and the employee's job performance.

Furthermore, Breevaart et al.'s results indicated significantly positive relational pathways between LMX and (a) autonomy ($\beta = .40$, $p < .001$, 95% CI [0.35, 0.45]), (b) social support ($\beta = .39$, $p < .001$, 95% CI [0.34, 0.45]), and (c) developmental opportunities ($\beta = .51$, $p < .001$, 95% CI [0.47, 0.56]). Breevaart et al.'s results also indicated positive relational pathways between (a) autonomy ($\beta = .12$, $p < .05$, 95% CI [0.03, 0.20]), (b) social support ($\beta = .29$, $p < .001$, 95% CI [0.24, 0.34]), and (c) developmental opportunities ($\beta = .41$, $p < .001$, 95% CI [0.33, 0.49]) with work engagement. Finally, Breevaart et al.'s results indicated a significant relational pathway between work engagement and job performance ($\beta = .34$, $p < .001$, 95% CI [0.26, 0.41]). Therefore, Breevaart's findings demonstrated that high-level LMX relationships can catalyze employees' motivation and work engagement, Furthermore, high-level ESR provides employees access to job resources (developmental opportunities and social support) that can increase employees' career opportunities.

Similar to Breevaart et al. (2015), Craig, Allen, Reid, Riemenschneider, and Armstrong (2013) hypothesized that there is a positive relationship between leaders' support of employees' CD and employees' job satisfaction. Using affective events theory, Craig et al. examined the relationship between (a) leaders' support of employees' CD, (b) leaders' psychosocial mentoring support, (c) organizational commitment, (d) job

involvement, and (e) employees' turnover intentions. Craig et al.'s results indicated a significant positive relationship between leaders' psychosocial mentoring and organizational commitment ($\beta = .38$, $p < .01$). However, Craig et al.'s results indicated no significant positive relationship between psychosocial mentoring, CD mentoring, and job satisfaction ($p > .05$). Furthermore, Craig et al.'s results indicated a significant negative relationship between psychosocial mentoring and turnover intentions ($\beta = -.25$, $p < .05$). However, Craig et al.'s results indicated no significant negative relationship between CD mentoring and turnover intentions ($p > .05$). Therefore, Craig et al.'s findings indicated that leaders' psychosocial mentoring and not objective mentoring influences employees' organizational commitment and turnover intentions. Supporting Breevaart et al.'s results, Craig et al. identified that leaders' psychosocial mentoring support of employees' CD contributed to high levels of LMX and ESR leading to reductions in employees' turnover intentions.

Career goal achievement. Kraimer et al.'s (2011) results indicated that employees who perceived that their organizational leaders supported CD were more likely to achieve individual goals. In support of Breevaart et al.'s (2015) findings of a positive relationship between leaders' support for employee CD and job performance, Dill, Morgan, and Weiner (2014) postulated a significant relationship between *organizational high-performance work practices* (HPWP) and (a) employees' career opportunity achievement, (b) job satisfaction, and (c) employees' intentions to remain with the organization. Focused primarily on the HR and management practices of Garman, McAlearney, Harrison, Song, and McHugh's HPWP theoretical framework, and

Bartlett's theory on the relationship between employees' perceptions of CD support and organizational commitment, Dill et al. examined the influence of HPWP on (a) job satisfaction, (b) employment intentions, and (c) CD.

Supporting Craig et al.'s (2013) results, Dill et al.'s (2014) results indicated a significant positive relationship ($\beta = .13$, $p < .001$) between leaders' support of employees' CD and employees' perceptions of career goal achievement. Dill et al.'s coefficient results indicated a significant positive relationship between supervisor CD support and career goal achievement ($\beta = .13$, $p < .001$) and employees' career goal achievement and job satisfaction ($\beta = 1.01$, $p < .001$). Dill et al.'s findings indicated that when supervisors support employees' CD, employees' perceptions of career goal achievement is high; therefore, employees' job satisfaction is high. Furthermore, Dill et al.'s findings indicated a significant relationship between employees' perceptions of career goal achievement, job satisfaction, and employees' intentions to remain with the organization.

Career aspiration satisfaction. Kraimer et al.'s (2011) results indicated that employees who perceive that their organizational leaders supported their CD were satisfied with their organizations' CD program and with their career aspiration achievement. Seibert, Kraimer, Holtom, and Pierotti (2013) applied goal setting theory, and theories of motivation, to examine the relationship between (a) intentions to pursue graduate school, (b) career goals, (c) career planning, and (d) career satisfaction. Seibert et al. used Gamma (Γ) to represent the *standardized* beta coefficient between exogenous (independent) variables and endogenous (dependent) variables (M.L. Kraimer, personal

communication, March 1, 2016). However, for this literature review, I used the standardized beta coefficient symbol (b^*) to identify Seibert et al.'s SEM results.

Seibert et al.'s (2013) SEM results indicated a significant positive relationship between (a) intrinsic career goals and intention to pursue graduate school ($b^* = .15$, $p < .05$); (b) three-way interaction of extrinsic career goals, career satisfaction, and intention to pursue graduate school ($b^* = -.16$, $p < .05$); and (c) career planning and intentions to pursue graduate school ($b^* = .14$, $p < .05$). Seibert et al.' SEM results also indicated a significant negative relationship between extrinsic career goals and intention to pursue graduate school when career satisfaction was high ($b^* = -.29$, $p < .05$), but no significant relationship when career satisfaction was low ($b^* = .12$, $p > .05$). Furthermore, Seibert et al.'s SEM results also indicated a significant negative relationship between career satisfaction and intention to pursue graduate school ($b^* = -.17$, $p < .05$). Seibert et al.'s findings indicated that career goals, career planning, and career satisfaction influenced employees' aspirations to pursue graduate school ($p < .05$). Therefore, employees' dissatisfaction with obtaining career aspirations contributed to employees' decisions to pursue higher education.

Similar to Seibert et al. (2013), Lo et al. (2014) examined the relationship between (a) education, (b) career planning, (c) CD, and (d) career satisfaction. Lo et al. hypothesized a significant positive relationship between CD, personality traits, and organizational commitment. In addition, Lo et al. hypothesized that CD mediated the relationship between personality traits and organizational commitment.

Lo et al. (2014) used stepwise regression to examine if, and if so, how personality traits correlated with CD and organizational commitment. Lo et al.'s results of the stepwise regression analysis indicated a significant positive relationship between CD and personality traits, (a) agreeableness ($\beta = .21$, $p < .05$), (b) neuroticism ($\beta = .32$, $p < .05$), (c) conscientiousness ($\beta = .27$, $p < .05$), and (d) extraversion ($\beta = .12$, $p < .05$), and organizational commitment and personality traits, (a) openness to experience ($\beta = .41$, $p < .05$), (b) neuroticism ($\beta = .27$, $p < .05$), and (c) extraversion ($\beta = .18$, $p < .05$). Lo et al.'s findings indicate that employees with higher personality traits possessed higher commitments for CD and career planning. Therefore, employees possessing higher personality traits are expected to possess higher levels of organizational commitment (Lo et al., 2014). Lo et al. concluded that employees possessing higher personality traits tend to focus on CD and career planning to achieve career goal aspirations.

CD measurement instruments. Kraimer et al. (2011) examined the nature and quality of employees' and supervisors' perceptions of their organization's CD program by developing a 6-item PCO instrument. Kraimer et al.'s PCO instrument consist of six items pertaining to employees' perceptions of the extent to which their organizational leadership provides career enhancement opportunities, and supports employees' career goals. Kraimer et al. utilized a 7-point scale to measure participants' responses to each item of their PCO instrument. I measured employees' perceptions of the nature and quality of their organization's CD program using the PCO Scale questions (Table E4 of Appendix E): (a) career opportunities – CD_1, CD_4, and CD_5; (b) career goal achievement – CD_2 and CD_3; and (c) Career aspiration satisfaction – CD_6.

During their pilot study, Kraimer et al. (2011) validated 156 surveys through the HR department of a *Fortune 100* insurance company. Kraimer et al.'s resultant Cronbach's α of .91 indicated strong internal consistency reliability for three items of their PCO instrument from their pilot study. Since Kraimer et al. sought to assure their 3-item instrument would measure their PCO construct sufficiently they developed three additional items. Kraimer et al. validated the newly developed *six-item* PCO instrument by testing the PCO instrument with 160 masters of business administration (MBA) students. Kraimer et al.'s resultant Cronbach's α of .91 indicated strong internal consistency reliability for their 6-item PCO instrument. Similar to Kraimer et al., using Hall's CD theory, Lo et al. (2014) developed a Career Development Scale to measure Organizational Career Management (Cronbach's α = .83) and Individual Career Planning (Cronbach's α = .84). Lo et al. employed Costa and McCrae's Personality Trait scale to examine how personality traits correlated with CD and organizational commitment.

Alternative measurement instruments to measure CD. Researchers employ a variety of CD instruments to examine different dimensions of CD and employees' perceptions of their organizations' CD opportunities. In contrast to my use of Kraimer et al.'s (2011) PCO instrument to measure CD, but similar to other researchers in this study (e.g. Dulebohn et al., 2012; Garg & Dhar, 2016; Shacklock et al, 2013), Breevaart et al. (2015) employed Graen and Uhl-Bien's (1995) LMX-7 instrument to measure levels of employee-supervisor interaction (Cronbach's α = .91). However, in contrast to my use of Kraimer et al.'s (2011) PCO instrument to measure CD, Breevaart et al. used Bakker, Demerouti, Taris, Schaufeli, and Schreurs' job resources instrument to measure three

dimensions of job resources: (a) autonomy (Cronbach's α = .81), (b) social support (Cronbach's α = .87), and (c) developmental opportunities (Cronbach's α = .89). Similar to Agarwal (2014), the authors used Schaufeli, Bakker, and Salanova's 9-item version of the Utrecht Work Engagement Scale (UWES) to measure work engagement (Cronbach's α = .95), and job performance using three items from Goodman and Svyantek's task performance instrument (Cronbach's α = .86).

Although Kim et al. (2016) did not employ Kraimer et al.'s (2011) PCO instrument, the authors used alternate instruments to measure employees' perceptions of their organizations' career opportunities. Kim et al. measured (a) career commitment using Carson and Bedeian's 12-item Career Commitment scale (Cronbach's α = .80), (b) motivation to participate in training using 8 items from Bartlett's 11-item scale (Cronbach's α = .93), and (c) turnover intention using Moore's 4-item scale (Cronbach's α = .70).

In contrast to Breevaart et al.'s (2015) use of SEM, Craig et al. (2012) employed hierarchical linear regression analysis to test their hypotheses. Although Breevaart et al.'s and Craig et al.'s studies are similar in that neither researcher employed Kraimer et al.'s (2011) PCO instrument to measure CD, Craig et al. used different measurement instruments to test their hypotheses. Craig et al. measured (a) career mentoring using six items from Dreher and Ash's scale (Cronbach's α = .94), (b) psychosocial mentoring using seven items from Dreher and Ash's scale (Cronbach's α = .96), (c) affective organizational commitment using eight items modified from Mowday, Steers, and Porter's scale (Cronbach's α = .89), (d) job involvement using four items from the Blau

scale (Cronbach's α = .69), and (e) turnover intentions using three items from the Moore scale (Cronbach's α = .86).

Similar to Kim et al. (2016), Seibert et al. (2013) did not employ Kraimer et al.'s (2011) PCO instrument to measure CD. Seibert et al. used alternative instruments to measure CD attributes. Seibert et al. measured (a) intention to pursue graduate school using two items from Hom, Griffeth, and Sellaro's turnover intention scale (Cronbach's α = .89), (b) intrinsic career goals using five items developed for their study (Cronbach's α = .65), (c) extrinsic career goals using four items developed for their study (Cronbach's α = .74), (d) career planning using three items from Gould's Career Planning scale (Cronbach's α = .93), and (e) career satisfaction using 12 items developed for their study (Cronbach's α = .90). Seibert et al. used SEM to test their hypotheses that there is a significant relationship between (a) intentions to pursue graduate school, (b) career goals, (c) career planning, and (d) career satisfaction.

Dill et al. (2014) did not identify the authors of the measurement items they used during their survey, but the results indicated a good fit of the data to the measurement model: (a) job satisfaction (Cronbach's α = .87), (b) career opportunity achievement (Cronbach's α = .75), and (c) supervisor support of CD (Cronbach's α = .91). Reflective of Seibert et al.'s (2013) use of SEM, Dill et al. used SEM to test their hypotheses that there is a significant positive relationship of HPWP with (a) employees' career opportunity achievement, (b) job satisfaction, and (c) employees' intentions to remain with the organization.

Previous Studies' Demographics

Researchers collect demographic data to (a) define their population samples, (b) aid in answering their research questions, and (c) identify the geographical location of the population samples. Social science researchers collect demographic data to compare the effect of phenomena on demographic differences within the population (e.g., comparisons between races, gender, and age). Bijak, Courgeau, Silverman, and Franck (2014) postulated researchers increase their understanding and knowledge of their study's population by analyzing demographic paradigms, terms, and ideas. It is not feasible for researchers to collect data from 100% of the population due to time and cost constraints. Therefore, researchers collect data from a sample of the geographical population to obtain information to study a phenomena occurrence reflected within the geographical population (Gavrielov-Yusim & Friger, 2014).

A complete analysis of demographic data of previous researchers is beyond the scope of my study. However, in this subheading, I included researchers' demographic data to illustrate the diversity of the studies within this literature review. I also included researchers' confirmatory factor analysis results in this literature review to demonstrate the extent to which the researchers' data fit their models. Furthermore, I included researchers' methods for collecting data to expound on the variety of ways to collect data.

Demographic focus of previous LMX studies. Brown et al. (2017) validated 646 surveys from 851 university students and private sector employees (76% response rate) from various organizations located in Georgia, Alabama, Texas, and Florida to examine the relationship of four dimensions of LMX (LMX-affect, LMX-loyalty, LMX-

professional respect, LMX-contribution) with supervisors' idealized influence and employees' POS. Brown et al.'s confirmatory factor analysis results indicated that their *nine-factor model* provided adequate fit to the data (χ^2 = 870.24, df = 562; χ^2/df = 1.55; CFI = 0.98; RMSEA = 0.03; GFI = 0.93; AGFI = 0.92; NFI = 0.94). Brown et al. followed Hair, Black, Babin, and Anderson's (2010) guidelines for the *rule of thumb* for CB-SEM studies' goodness-of-fit in Table 5.

Similar to Brown et al. (2017), Salvaggio and Kent (2016) surveyed participants from the USA and validated 208 surveys received from 221 workers who responded to an announcement on the Mechanical Turk website to examine the relationship between *supervisors' charismatic leadership*, communication frequency, and four dimensions of LMX (*positive affect*, *loyalty*, *professional respect*, *contribution*). In contrast to Brown et al., Salvaggio and Kent used PLS-SEM, which does not have any global fit indices (Hair et al., 2014), Salvaggio and Kent did not report a goodness-of-fit for their study. However, Salvaggio and Kent followed Hair et al.'s (2014), Kock's (2015), and Sarstedt et al.'s (2014) guidance in Table 4 and reported good convergent validity with *significant and substantial loadings* (*range of* 0.75-0.95) on their constructs, and discriminate validity with no significant cross-loadings (range of 0-0.51).

Table 5

Goodness-of-fit Indices for Covariance Based–Structural Equation Models

Fit statistic	Explanation	Reference
1. χ^2	A nonsignificant χ^2 indicates the model fits the data and can reproduce the population results. χ^2 distribution occurs only for large samples ($N \geq 200$).	(Kelloway, 2015)
2. Goodness of fit index (GFI)	An absolute fit index with values ranging between 0.0 and 1.0. Values $\geq$ .90 to < .95 indicate an adequate fit and $\geq$ .95 indicate a good fit.	(Hu & Bentler, 1999); (Kelloway, 2015)
3. Adjusted goodness-of-fit index (AGFI)	An absolute fit index with values ranging between 0.0 and 1.0 with values $\geq$ .90 indicating adequate fit.	(Hu & Bentler, 1999); (Kelloway, 2015)
4. Comparative fit index (CFI)	An incremental fit index with values ranging between 0.0 and 1.0. Values $\geq$ .90 to < .95 indicate an adequate fit and $\geq$ .95 indicate a good fit.	(Hu & Bentler, 1999); (Kelloway, 2015); (Marsh et al., 2013)
5. Root mean square error of approximation (RMSEA)	An absolute fit index is indicating a bad fit in which values closer to zero indicating the best fit. Values < .05 indicates a good fit, .05 to < .08 indicates an adequate or close fit, and .08 to .10 indicates a medium or not-close fit.	(Hu & Bentler, 1999); (Kelloway, 2015); (Marsh et al., 2013)
6. Root mean squared residual (RMR); Standardized root mean squared residual (SRMR)	An absolute fit index is indicating a bad fit in which values closer to zero indicate the best fit. Values $\leq$ .05 indicates a good fit, > .05 to $\leq$ .08 indicates an adequate fit.	(Hu & Bentler, 1999); (Kelloway, 2015)
7. Gamma Hat (CAK)	An absolute fit index. Values $\geq$ .95 indicate an adequate fit.	(Hu & Bentler, 1999)
8. McDonald's (1989) centrality index (Mc)	An absolute fit index. Values $\geq$ .80 indicate an adequate fit.	(Hu & Bentler, 1999)
9. Tucker-Lewis index (TLI) also known as nonnormed fit index (NNFI)	An incremental fit index that could fall outside the 0 to 1 range due to sampling fluctuations. Values $\geq$ .90 to < .95 indicate an adequate fit and $\geq$ .95 indicating a good fit.	(Hu & Bentler, 1999); (Kelloway, 2015); (Marsh et al., 2013)
10. Normed fit index (NFI)	An incremental fit index. Values $\geq$ .95 indicate a good fit.	(Hu & Bentler, 1999); (Kelloway, 2015)
11. Bollen's (1986, BL86) index	An incremental fit index. Values $\geq$ .95 indicate an adequate fit.	(Hu & Bentler, 1999)
12. Bollen's (1989, BL89) Incremental fit index (IFI)	An incremental fit index. Values $\geq$ .95 indicate an adequate fit.	(Hu & Bentler, 1999); (Kelloway, 2015)
13. Relative noncentrality index (RNI)	An incremental fit index. Values $\geq$ .90 to < .95 indicate an adequate fit and $\geq$ .95 indicate a good fit.	(Hu & Bentler, 1999)

Note. Adapted from "Suggested Reporting Guidelines for Structural Equation Modeling in Supply Chain Management Research," by B. T. Hazen, R. E. Overstreet, and C. A. Boone, 2015, *The International Journal of Logistics Management, 26*, 627-641. doi:10.1108/IJLM-08-2014-0133.

In contrast to Brown et al. (2017) and Salvaggio and Kent (2016), Rodwell et al.'s (2017) participants were from Australia. Rodwell et al. reported that their study consisted of 459 nurses, but did not report the number of invited participants or the number of participants that actually responded. Rodwell et al. surveyed the nurses to examine the relationships between (a) four dimensions of LMX (LMX-affect, LMX-loyalty, LMX-respect, LMX-contribution), (b) engagement, (c) trust, and (d) intent to quit. Rodwell et al.'s results indicated that the final model provided a good fit to the data (χ^2/df = 1.785; SRMR = 0.0247; RMSEA = 0.043; GFI = 0.981; CFI = 0.992). In contrast to Brown et al., Salvaggio and Kent, and Rodwell et al., Hanse et al. (2014) surveyed participants from two not-for-profit hospitals in southwestern Sweden. Hanse et al. validated 240 questionnaires to measure the relationship between LMX and the domains of psychosocial work environment.

Fisk and Friesen (2012) validated 126 online surveys from 198 potential participants who accessed the online survey (64% response rate) to examine the relationship between employees' perceptions of the authenticity of their supervisors' concerns with employees' job satisfaction and organizational commitment. Fisk and Friesen's results indicated acceptable internal consistency reliability ($\alpha = .82$) and data fit to the model ($\Delta\chi^2 = 41.73$, $df = 21$, $p < .01$). Similar to Fisk and Friesen's online survey, Dysvik et al. (2015) validated 227 dyadic responses from 613 web-based surveys. Dysvik et al. collected web-based surveys from employee-supervisor dyadic pairs of four Norwegian organizations to examine the relationship between employees' knowledge sharing and managers' knowledge-collecting and if the relationship was moderated

significantly by social LMX and economic LMX. Dysvik et al. established satisfactory levels of convergent and discriminant validity (cross loadings > 0.50) based off Hair et al.'s (2014), Kock's (2015), and Sarstedt et al.'s (2014) guidelines in Table 4.

Hassan et al. (2013) validated 259 questionnaires out of 324 (80% response rate) from graduate students enrolled in an evening Master of Business Administration (MBA) course located at a US Northwest private university and a US Midwest public university to examine the relationship between supervisors' leadership, LMX, and employees' perceptions of their supervisors' competence. Hassan et al. administered two questionnaires at two times. At Time 1, Hassan et al. collected data from the participants on ethical and empowering leadership. Two weeks later at Time 2, Hassan et al. collected data in which the participants rated the quality of LMX and leaders' effectiveness. Following the guidelines in Table 5, Hassan et al.'s confirmatory factor analysis results indicated a *satisfactory* fit of the data to the measurement model (χ^2/df = 1.98; CFI = .94, IFI = .94, RMSEA = .06), and a *satisfactory* fit to the data for the structural model (χ^2/df = 2.0; CFI = .94, IFI = .94, RMSEA = .06).

Erturk and Vurgun (2015) validated 172 questionnaires out of 492 distributed questionnaires (35% response rate) from employees of 20 Turkish companies to examine the relationships among (a) goal internalization, (b) perceived competence, (c) perceived control, (d) POS, (e) LMX, (f) trust in organizationa, (g) trust in supervisors, and (h) turnover intentions. Following the rule-of-thumb in Table 5, Erturk and Vurgun reported a *suitable* fit of the data to the model (χ2 = 1168.51, $p < 0.01$, df = 426, χ^2/df = 2.74, CFI = 0.94; GFI = 0.92; NNFI = 0.89; RMSEA =0.06). Garg and Dhar (2016) validated 318

questionnaires out of 416 distributed questionnaires (76% response rate) from dyadic pairs of employees and supervisors of 64 tourist hotels in Uttarakhand, India to examine the relationships between (a) LMX, (b) affective commitment, (c) psychological empowerment, and (d) employees' performances. Following the rule-of-thumb in Table 5, Garg and Dhar reported a *good* fit of the data to the model (χ^2 = 520.30, *df* = 399, χ^2/df = 1.30; *p* = 0.000, GFI = 0.90; AGFI = 0.89; NFI = 0.93; IFI = 0.98; CFI = 0.98; RMSEA = 0.03; 95% CI [0.04, 0.06]). Reflective of Erturk and Vurgun, Fein et al. (2013) validated 105 surveys out of 112 employees (94% response rate) of a cell phone company in Israel to examine the mediating effect of LMX on the relationship between organizational justice and ESR.

Demographic focus of previous ESR studies. Biswas and Varma (2012) validated 357 questionnaires out of 400 distributed questionnaires from nine manufacturing organizations in India to examine the relational pathways between psychological climate and transformational leadership, and employee performance through the mediating effects of job satisfaction. Biswas and Varma's maximum likelihood estimation (MLE) algorithm results indicated an adequate fit to the data (χ^2/df = 2.69, GFI = 0.91, TLI = 0.95, NFI = 0.93, CFI = 0.96, RMSEA = 0.07, AGFI = 0.86, PGFI = 0.73). In contrast to Biswas and Varma's decision to collect data in India, but similar to Biswas and Varma's method of collecting data from manufacturing organizations, Byrne et al. (2012) validated 248 surveys out of 526 volunteers from 1,074 employees (49% response rate) of a U.S. technology manufacturing firm to examine the relationship between the dimensions of organizational justice, supervisory trust, and PSS.

Byrne et al. followed Hu and Bentler's (1999) goodness-of-fit criteria for SEM in Table 5 that indicated an adequate fit to the data (χ^2 = 1,646.32; df = 497; NFI = 0.96; CFI = 0.97; RMSEA = 0.09-0.10).

Gumusluoglu et al. (2013) validated 445 surveys from Turkish research and design workers in 65 Turkish high-technology companies to examine the relationship between interactional justice, transformational leadership, and employees' commitment to their leaders. Gumusluoglu et al.'s results indicated an acceptable fit for the data to the measurement model (χ^2/df = 2.91, RMSR = .038, NNFI = .9), and a satisfactory fit for the data to the structural model (χ^2/df = 2.89, RMSR = .04, NNFI = .95). Similar to Biswas and Varma's (2012), Byrne et al.'s (2012), and Gumusluoglu et al.'s method of collecting data from one organization, Gabriel et al. (2014) validated 212 out of 252 surveys (response rate of 84%) from employees of a Midwestern United States correctional facility to examine the relationship of supervisor feedback environment and feedback orientation with four dimensions of overall empowerment (meaning, competence, self-determination, impact).

Agarwal (2014) validated 323 surveys out of 450 participating employee surveys (71.1% response rate) from manufacturing and pharmaceutical companies in India to examine the the relationship among (a) work engagement, (b) trust, (c) psychological contract fulfilment, (d) procedural justice, (e) interactional justice, and (f) innovative work behaviour. Agarwal's test of their measurement model indicated a *significant* fit to the data (χ^2 = 10,000, *df* = 3,489; CFI = 0.93, SRMR = 0.09, RMSEA = 0.04), and the test of their mediating model also indicated a *significant* fit to the data (χ^2 = 504.2, *df* =

246, $\chi 2/df = 2$; SRMR = 0.05; GFI = 0.82; NFI = 0.96; CFI = 0.99; RMSEA = 0.03). In contrast to Agarwal's decision to collect data in India, Kacmar et al. (2013) validated 175 out of 208 employee responses (84%) from a US state government agency to examine the relationship between employees' perceptions of supervisors' ethical leadership, dedicated behavior, and helplessness behavior and the effect on the employees' performances.

Demographic focus of previous PA studies. Jayawardana et al. (2013) validated the questionnaires of 155 middle managers of Sri Lanka garment manufacturers and identified the performance levels of the 155 middle managers and apportioned the performance levels into two dimensions (98 high-performers, 57 low-performers). Using the performance levels of the middle managers, Jayawardana et al. examined the relationship between social exchange, *economic exchange*, job satisfaction, and turnover intentions.

Abdulkadir et al. (2012) validated 34 of 57 questionnaires distributed to the HR department heads and two other employees of 19 Nigerian banking companies to examine the relationship between organizational commitment, PA, career planning, and employee participation. Bednall et al. (2014) validated 238 responses from six Dutch vocational education training (VET) schools with a 53.5% response rate for Wave 1 and 54.8% response rate for Wave 2 to examine the relationship between reflection on daily activities, knowledge sharing, innovative behavior, PA quality, and HRM system strength. Bednall et al.'s MLR estimator results indicated an adequate fit to the data ($\chi^2[142] = 195.643$, CFI = 0.97, RMSEA = 0.04, SRMR = 0.5).

Culberston et al. (2013) validated 234 out of 316 surveys from staff employees of a large southwestern US university (35% response rate) to examine the relationship between positive and negative feedback and the level of PA satisfaction. Although Raemdonck and Strijbos's (2013) study is similar to Culberston et al.'s in the examination of employees' perception of feedback and PA satisfaction, Raemdonck and Strijbos conducted an experimental study using 173 secretarial employees from 12 Dutch organizations to examine the relationship between supervisors' PA rating fairness and employees' perceptions of their supervisors' feedback and the content of the PA.

Demographic focus of previous CD studies. Kim et al. (2016) validated 389 out of 600 questionnaires (64.8% response rate) from employees and supervisors of 12 Korean firms. Kim et al. used SEM to examine the relationships between (a) career commitment, (b) motivation to participate in training, and (c) turnover intentions. The authors' confirmatory factor analysis results indicated a good fit of the data to their hypothesized full-mediation model ($\chi^2 = 212.54$, *df* = 59, NNFI = .95, CFI = .96, IFI = .96, RMR = .05). Similar to Kim et al.'s research to examine the relationship between career commitment, motivation to participate in training, and organizational commitment, Craig et al. (2012) validated 109 responses out of 297 informational technology (IT) employees (36.7% response rate) in an Information Services Division of a corporation located in a south-central state to examine the relationship between leaders' support of employees' CD, leaders' psychosocial mentoring support, organizational commitment, job involvement, and employees' turnover intentions.

Similar to Kim et al.'s (2016) and Craig et al.'s (2012) studies to examine the relationship between CD and organizational commitment, Lo et al. (2014) validated 275 out of 300 questionnaires (91.06% response rate) received from Taiwanese sport information communications employees to examine the relationship between CD, personality traits, and organizational commitment, and the mediating effect of CD between personality traits and organizational commitment. Lo et al. noted that employees possessing higher personality traits tend to focus on CD and career planning to achieve career goal aspirations.

Breevaart et al. (2015) validated 847 surveys out of 950 survey responses (89% response rate) from Dutch police officers working in one Dutch police district to examine the significance of the relationship between LMX and job performance through the mediating effect of job resources (autonomy, developmental opportunities, social support) and work engagement. In contrast to Breevaart et al's survey of Dutch police officers, Seibert et al. (2013) conducted a longitudinal study to examine the relationship between intentions to pursue graduate school, career goals, career planning, and career satisfaction. Seibert et al. collected data at Time 1 (T1) and then 16 months later at Time 2 (T2). Seibert et al. invited 9,256 alumni from a mid-Atlantic private university and a midwestern public university. At T1, Seibert et al. validated 828 surveys out of the 1,333 participants (62% response rate) who responded to the initial online survey. At T2, Seibert et al. validated 337 surveys out of the 828 participants from T1 (41% response rate). Similar to Seibert et al.'s method of collecting data from various organizations, Dill et al. (2014) validated 933 out of 947 surveys collected (98% response rate) from nine

hospitals, two behavioral health centers, three community health centers, and eight long-term care facilities located across the United States to examine the relationship between employees' career opportunity achievement, job satisfaction, and employees' intentions to remain with the organization. Similar to Seibert et al., Dill et al. used SEM from the Plus 6 program to measure the structural model coefficients and test the data fit to the model. Dill et al.'s structural model results indicated that the data fit the model (χ^2 = 1502.5, *df* = 885, CFI = 0.959, TLI + 0.956, RMSEA = 0.027).

Summary

In this literature review, I examined peer-reviewed articles pertaining to (a) LMX, (b) ESR, (c) PA, and (d) CD. I identified that there is a plethora of research and literature on (a) LMX, (b) ESR, (c) PA, and (d) CD. However, I did not identify any previous research on examining the relationship between (a) LMX, (b) ESR, (c) PA, and (d) CD in one study. I reviewed and evaluated previous researchers' studies by comparing and contrasting the researchers' results, findings, and conclusions, and from my examination of previous researchers' studies, I did not identify one correlational study in which the researcher examined the relationships among all four variables in one study. Furthermore, I justified using LMX theory as a theoretical framework to examine the independent variables LMX and ESR, and organizational theory as a theoretical framework to examine the dependent variables PA and CR. I also justified using the instruments that I propose for collecting data for my study. In conclusion, the findings from the literature review support my conducting the study for addressing the specific business problem.

Transition

Section 1 contains a discussion of the background of the business problem and a presentation of the general and specific business problem. The discussion continued with an explanation of the purpose of the study, along with the nature of the study. Defining (a) the general business problem, (b) the specific business problem, and (c) the purpose of the study enabled me to formulate the PRQ from the specific business problem. Section 1 continued with a discussion of the theoretical framework as it applied to the business problem and with a discussion of several limitations and delimitations. Section 1 concluded with an explanation of the significance of the study and a review of the professional and academic literature.

Section 2 contains a restatement of the purpose of the study and defines my role as a researcher. Section 2 also contains a description of the strategies for (a) gaining access to the participants; (b) the methods to establish a relationship with the participants; (c) assuring the participants' anonymity; and (d) explain the research method and design, the sample population, and address potential ethical issues. Section 2 continues with an outline of (a) the data collection process, (b) the data analysis instruments, (c) the data collection technique, (d) the data organization technique, and (e) the data analysis method. Section 2 concludes with a discussion of the means for assuring the study's external and internal validity.

Section 3 contains a restatement of the purpose of the study and summarizes the findings from my study. Section 3 also contains a description of the data analysis results of the PLS-SEM statistical tests. Section 3 continues with a description of the statistical

tests, which contains an explanation of the (a) variables, (b) purpose of the tests, and (c) relation to the hypotheses. Section 3 also contains (a) a restatement of the research questions, (b) a discussion of the assessment results from testing the hypotheses, (c) a discussion of the results of the study in relation to the research questions, and (d) a discussion of the relationship of the findings of the study with the theoretical framework and existing literature. Section 3 continues with a discussion of the (a) application of the findings to the professional and business practices; (b) implications of the findings for social change; (c) recommendations for actions and future research from the conclusions; and (d) my experiences, biases, ideas, and effects because of my study. Section 3 concludes with a closing statement addressing conclusions from examining the (a) research questions, (b) the hypotheses, (c) the theoretical framework, and (d) the analysis of the relationships between the latent variables LMX, ESR, PA, and CD, and the problem statement.

Section 2: The Project

Purpose Statement

The purpose of this quantitative correlation study was to examine the extent and nature of the influence of the relationship between leader-member exchange (LMX) and employee-supervisor relationship (ESR) on employees' career development (CD) through the mediating effect of employees' perceived efficacy of the performance appraisal (PA) process. The independent variables were LMX and ESR, and the dependent variables were PA and CD. The population for this study consisted of employees from federal defense contractor companies in the United States.

Findings from this study could provide supervisors with the means for developing positive LMX and ESR, which could facilitate employee CD and increase organizational performance through increased employee satisfaction and performance. Supervisors could also improve PA processes to catalyze the development of employees' technical and leadership skills and accelerate employees' CD. The implications for positive social change include the potential to contribute to the betterment of employees' CD through increasing employees' job satisfaction and affording employees the benefits for improving their families' quality of life and the betterment of their communities.

Role of the Researcher

In this quantitative correlational study, I collected data using SurveyMonkey by administering surveys to participants through the Internet. I analyzed the data by examining the relationships among (a) LMX, (b) ESR, (c) PA, and (d) CD through testing the statistical significance of the research hypotheses (Cho & Abe, 2013). Prior to

receiving Walden University's Institutional Review Board (IRB) approval, I made initial contact with site managers or HR directors of defense contractor companies and requested their support for conducting my study.

I e-mailed the Initial Invitation Letter to Site Managers and HR Directors (Appendix A) to the defense contractor companies' site managers and HR directors and outlined the benefits that their organization can receive from the results of participating in my study. Within the letter, I requested support for conducting my study from the site managers and HR directors and defined the support that I requested from them, such as assistance in contacting potential participants by forwarding the Employee Invitation to Participate in Research letter (Appendix C) to their employees. Within the e-mail to the site managers and HR directors, I also attached copies of the Informed Consent to Participate in Research form and the survey instruments (Appendix E) along with a Microsoft PowerPoint presentation outlining

- the business problem;
- the purpose of my study;
- the nature of my study;
- my research questions;
- my hypotheses;
- the significance of my study; and
- potential benefits for the organization.

Biswas and Varma (2012) made initial contact with several organizations before receiving permission to conduct data collection for their research. Kong (2013) selected

several organizations in China and surveyed employees at various educational levels in various job positions. After receiving Walden University's IRB approval, I e-mailed a follow-up letter to the site managers and HR directors (Appendix B), informed them that I received permission to administer the surveys, and requested that the managers and HR directors forward the Employee Invitation to Participate in Research letter (Appendix C) to their employees. I also included a summary of the information that I provided initially to the managers and HR directors, which consisted of (a) a statement of the purpose of the study, (b) a statement that the employees' participation in the study was voluntary and anonymous, and (c) statement of the expected benefits of the study for the employees, supervisors, managers, and the organization.

My relationship with the subject organizations consists of 20 years of military service with the United States Army and 18 years of service with defense contractor companies in which I worked in the positions of employee, supervisor, and manager. I adhered to all ethical principles defined in the *Belmont Report*: (a) respect for persons, (b) beneficence (maximize benefits and minimize harm), and (c) justice (fairness in distribution of benefits and burdens; U.S. Department of Health & Human Services, Department of Health, Education, and Welfare, 1979). By surveying participants in several defense contractor companies throughout the United States, I lessened common method variance within the results of my study.

Participants

The population for this study consisted of employees from seven of the 20 largest defense contractor companies that employ a combined estimated workforce of 2,000,000

employees throughout the world. I invited employees from federal defense contractor companies to participate in the study by accessing the SurveyMonkey.com website. However, I first requested through the HR directors and site managers that only defense contractor companies' employees who work in the United States complete the survey. Once the anonymous participants accessed the SurveyMonkey website, I requested the participants to select the *Consent* radio button of the Informed Consent to Participate in Research form. Once the participants selected the *Consent* radio button, I requested that the participants complete a survey that consisted of a demographic section (Appendix D) and a composite survey section consisting of four subsections that measured (a) LMX, (b) ESR, (c) PA, and (d) CD (Appendix E). Clay (2014) and Madu (2014) collected demographic data from their participants and also had their participants annotate consent to participate in their research on the SurveyMonkey website.

Once the participants indicated that they had received a PA or performed a PA within 1 year prior to participating in the survey, they gained access to the surveys on the SurveyMonkey website. If the participant answered *No* to the question of receiving or conducting a PA within 1 year, they were unable to access the surveys. Gupta and Kumar (2013) invited professionals of Indian multinational corporations and the public sector to participate in the authors' study. Gupta and Kumar requested that only those professionals who had received at least one PA complete the questionnaire. However, Gupta and Kumar did not specify how current professionals' PAs needed to be. Clarke, Harcourt, and Flynn (2013) included participants in their study who had worked for their organization for at least 3 years and who had conducted at least one performance

evaluation. However, Clarke et al. did not specify that employees' performance evaluations needed to be conducted within the 3-year period. Therefore, I included only participants who received or performed a PA within 1 year of conducting the survey.

Prior to receiving Walden University's IRB approval, I made initial contact via e-mail with the defense contractor companies' managers or HR directors. I informed the site managers and HR directors of the purpose of my doctoral study, outlined what support I needed from them to complete my doctoral study, and outlined the benefits that their organizational leaders might obtain from agreeing to participate in my doctoral study. Sinclair (2013) explained the benefit from his doctoral study by providing the organizational leadership with useful information that would promote organizational development.

After I received Walden University's IRB approval, I e-mailed the site managers and HR directors of the defense contractor companies and requested that they forward the Employee Invitation to Participate in Research letter (Appendix C) to their employees. I also explained to the site managers and HR directors that their employees' participation in the survey is anonymous and voluntary, and participation was not mandatory. Furthermore, I explained that participants could discontinue the survey at any time.

Research Method

I used a quantitative methodology to examine the extent and nature of the relational pathways among (a) LMX, (b) ESR, (c) PA, and (d) employees' CD. Whereas a qualitative methodology would explore and identify the meanings of the lived experiences of the participants, the inductive method would not produce statistical data to

test the hypotheses for examining the relational pathways among (a) LMX, (b) ESR, (c) PA, and (d) CD (Mayoh & Onwuegbuzie, 2015; Palinkas et al., 2015). Although I would have been able to collect data in support of my hypotheses using a mixed method, the additional time required for the qualitative portion would not have been feasible.

Mostafa and Gould-Williams (2014) conducted a quantitative study to examine the mediating effect of person-organization fit on the relationships between (a) high-performance HR practices, (b) job satisfaction, and (c) OCBs. Mostafa and Gould-Williams validated 671 questionnaires from 1,000 questionnaires distributed to health and higher education professionals in Egypt. The authors' findings indicated that managers' adoption of high-performance HR practices would (a) enhance employees' abilities, (b) increase employees' motivation, and (c) develop opportunities in the workplace for employees.

Hornung, Rousseau, Weigl, Muller, and Glaser (2014) conducted a quantitative study to examine the relationships among (a) LMX, (b) task idiosyncratic deals (I-deals), (c) career I-deals, (d) flexibility I-deals, (e) job autonomy, (f) skill acquisition, (g) work overload, (h) job performance, (i) occupational self-efficacy, (j) emotional irritation, and (k) cognitive irritation. Hornung et al. validated 187 employee-supervisor dyadic responses from 210 returned surveys of 331 the authors distributed. Hornung et al.'s findings indicated a direct differential effect of I-deals on work characteristics and outcomes. Hornung et al.'s findings also indicated a positive relationship between employees' work motivation, job satisfaction, and job autonomy.

Research Design

I used a correlational design to collect data through surveys and to examine the relationships among the variables. McMahon and Ford (2013) conducted a quantitative correlation study to examine the relationship between leader heuristic transfer and employee creativity. The authors used regression analysis and SEM to analyze the data. The results from the authors' regression analysis indicated a positive significant relationship between (a) leader heuristic transfer and employee creativity ($\beta = .19$, $p < .01$), (b) innovation as a job requirement and employee creativity ($\beta = .18$, $p < .01$), and (c) intellectual stimulation and employee creativity ($\beta = .13$, $p < .05$). McMahon and Ford's SEM results indicated a positive significant relationship between (a) leader heuristic transfer and intrinsic motivation ($\beta = .16$, $p < .05$), (b) intrinsic motivation and employee creativity ($\beta = .17$, $p < .01$), and (c) leader heuristic transfer and employee creativity ($\beta = .16$, $p < .01$). The findings indicated that supervisors transferring their experiences to their employees develop a creative environment.

Researchers employ experimental designs to examine cause-and-effect relationships by manipulating one or more variables simultaneously, which enables researchers to observe the independent variables' effect on one or more dependent variables (F. R. Johnson, et al., 2013). The results of an experimental design would have provided the data to address cause-and-effect of the variables in my study. However, as it was not feasible for me to manipulate my study's variables or assign random treatment combinations of the independent variables to the participants, I chose not to employ an experimental design (F. R. Johnson, et al., 2013). Quasi-experimental designs resemble

experimental designs in that researchers manipulate variables to test the effects of one variable on another variable (D'Onofrio et al., 2013). However, researchers using quasi-experimental designs would have required pretest and posttest groups to examine the effects of the variable manipulations (D'Onofrio et al., 2013), which, for this study, would not have been feasible. Therefore, I employed a correlational design to examine the extent and nature of the relationship among (a) LMX, (b) ESR, (c) PA, and (d) CD via SEM.

Using SEM enabled me to examine all relational pathways within my model simultaneously (Lowry & Gaskin, 2014). I based my decision to use partial least squares - structural equation modeling (PLS-SEM) instead of covariance based - structural equation modeling (CB-SEM) because of the need to examine the significance and nature of the relationship between the independent variables (LMX and ESR) and the dependent variables (PA and CD). In contrast, the objective of CB-SEM is to replicate covariance without explaining variance (Hair et al., 2011). Furthermore, I used PLS-SEM versus CB-SEM because PLS-SEM: (a) minimizes residual variance, (b) is more robust with fewer identification issues, (d) works well with small and large samples, and (d) incorporates multidimensional (formative and reflective) constructs (Hair et al., 2011). Researchers have described PLS-SEM as a soft modeling technique that lessens demands on (a) measurement scales, (b) sample sizes, and (c) residual distributions (Henseler & Sarstedt, 2013).

Population and Sampling

Within this heading, I discuss the population from which I obtained samples and demonstrate the alignment of the population with my principal research question (PRQ). I also discuss the sampling typologies I used to obtain participants for my study. In addition, I compare the strengths and weaknesses of each method. I also discuss the criteria for the participants to ensure the population sample is appropriate for my study. In addition, I explain the power analysis I conducted to attain the recommended sample size.

Population

The specific business problem is that some defense contractor supervisors do not understand the influence of the relationship between LMX and ESR on employees' CD through the mediating effect of employees' perceived efficacy of the PA process. Therefore, I surveyed employees from seven of the 20 largest defense contractor companies that employ a combined estimated workforce of 2,000,000 employees throughout the world. However, I first requested through the HR directors and site managers, that only defense contractor companies' employees, who work in the United States, complete the survey.

Researchers would prefer to obtain data from all members of the population. However, because researchers' ability to survey all members of the population is not feasible, researchers will only sample a portion of the population (Field, 2014, p. 42). Bell, Morgan, Schoeneberger, Kromrey, and Ferron (2014) noted that some researchers' attempt to adhere to established sample size guidelines were not feasible. Time

constraints can make it difficult for researchers to meet established sample size guidelines (Bell et al., 2014). Furthermore, Bell et al. noted that insufficient sampling results could induce inaccurate results affecting (a) convergence rates, (b) nonpositive definite G-matrix rates, (c) point estimates, (d) interval estimates, and (e) Type I errors.

Sampling

I collected samples from employees reflecting participants who have received or conducted PAs within the past year. By selecting employees who received or conducted PAs within the past year, I was able to examine the extent that a relationship existed between (a) LMX, (b) ESR, (c) PA, and (d) CD.

Researchers noted that PLS-SEM is robust and works well with small sample sizes, and that there is no standard sample size calculator to determine the sample size for PLS-SEM (Hair et al., 2014; Kock & Hadaya, 2016). Therefore, as summarized in Table 6, I conducted several sample size calculations. I followed researchers' recommendations and used the conventionally accepted statistical power level of .80, the conventionally accepted anticipated effect size of .15, a probability alpha value of .01, four latent variables, and 24 observed variables (Adachi & Willoughby, 2015; Field, 2014; Fritz, Cox, & MacKinnon, 2015; Sham & Purcell, 2014).

Table 6

Minimum Sample Size Calculations: Methods, Results, Remarks, and References

Sample size method	Calculations	Results	Remarks	References
10-Times Rule - 10 times the maximum number of predictor variables pointing into a latent (dependent) variable.	The maximum number of predictor variables pointing into a dependent latent variable in the model (Figure 1) is 2.	10 * 2 = 20. The results of a sample size of 20 is too small of a sample size to adequately identify an effect.	The 10-times rule does not take the strength of the path coefficients into consideration. Therefore, the 10-times rule produces inaccurate estimations.	(Hair et al., 2014); (Kock & Hadaya, 2016)
10-Times Rule - 10 times the maximum number of indicator variables pointing into any latent variable.	The maximum number of indicator variables pointing into one latent variable in the model (Figure 1) is 7.	10 * 7 = 70. The results of a sample size of 70 should be adequately to identify an effect.	The 10-times rule does not take the strength of the path coefficients into consideration. Therefore, the 10-times rule produces inaccurate estimations.	(Hair et al., 2014); (Kock & Hadaya, 2016)
Cohen's Minimum R^2 Calculation Table	Accepted statistical power level of .80, R^2 of .25, probability alpha values of .01 and .05, and 2 predictor variables.	Using α of .01 to calculate the minimum samples size resulted in 47 samples. Using α of .05 to calculate the minimum sample size resulted in 33 samples.	Since PLS-SEM works well with small sample sizes, by acquiring a sample size between 33 and 47 should be adequate to identify an effect.	(Cohen, 1992); (Hair et al., 2014); (Kock & Hadaya, 2016)
Gamma-Exponential Method	More complicated in its applications than the inverse square root method. The method requires a computer program and methodological expertise.	NA	The Gamma-Exponential method is complicated, requires strong technical methodological expertise, and a powerful computer program.	(Kock & Hadaya, 2016)

(table continues)

Sample size method	Calculations	Results	Remarks	References
Inverse Square Root Method	$N > (Z_{.95} + Z_{.8} / \|\beta\|/min)^2$	Substituting .43 (APC) into the $\|\beta\|/min$ portion of the Inverse Square Root Method formula resulted in 34 samples. The APC (.43) is the average of the 4 path coefficients in Figure 1. Substituting .30 (MPC) into the $\|\beta\|/min$ portion of the formula resulted in 69 samples. The MPC (.30) is the minimum path coefficient of the 4 path coefficients in Figure 1.	Since PLS-SEM works well with small sample sizes, by acquiring a sample size between 34 and 69 should be adequate to identify an effect. The WarpPLS results for all of the *p* values for each path were $\leq .001$.	(Kock & Hadaya, 2016)
Monte Carlo Simulations Method	Was not feasible to calculate due to not having a access to the proprietary computer program.	NA	The most precise method to determine minimum sample size. However, using the Monte Carlo Simulations method requires proprietary computer software to which I did not have access.	(Kock & Hadaya, 2016)

Note. APC (Average Path Coefficient), MPC (Minimum Path Coefficient).

Because my study included three sets of research questions and null hypotheses, I followed Cohen's (1992) guideline and used an α of .01 for studies testing multiple null hypotheses (H_0). Therefore, following Cohen's criteria and using a minimum R^2 value of .50 from *Exhibit 1.7: Minimum R^2 Calculation Table* in Hair et al.'s (2014) book, I calculated the minimum sample size using both αs of .01 and .05. My minimum sample size calculation results using a minimum R^2 value of .50 and an α of .01 was 47 samples,

and the results for an α of .05 was 33 samples. Therefore, based upon Cohen's criteria, my sample size of 44 participants was adequate to detect a minimum R^2 value of .50 at a significance level of .05. To support the adequacy of my survey's response rate of 44 participants for my study, I also calculated the a priori minimum sample size using Kock and Hadaya's (2016) Inverse Square Root formula in Table 6. The Inverse Square Root formula consisted of calculating the Average Path Coefficient by averaging the four path coefficient results (.43) from this study's WarpPLS analysis results (Figure 1). As noted in Table 6, the result of the calculation was 34 samples. Furthermore, in support of my decision to proceed to use 44 participants' responses to test the hypotheses, the results from my WarpPLS data analysis indicated *p* values for each structural path in my model were $\leq$ .001 (Kock, 2017).

I conducted cross-sectional research by collecting data from participants at a single point in time by having employees answer anonymous survey questions (Field, 2014, p. 13). I choose a cross-sectional design instead of a longitudinal design because I will not have the opportunity to observe the participants over an extended period (Field, 2014, p. 13). However, all of the participants received a PA or performed a PA within 1 year prior to participating in the survey.

I used a combination of nonprobabilistic sampling typologies consisting of (a) availability, (b) purposive, and (c) snowball sampling. Uprichard (2013) stated that probabilistic sampling requires extensive knowledge of the population in which the researcher is sampling. The population that I surveyed contains employees from seven of the 20 largest defense contractor companies within the United States. I possess limited

knowledge of potential participants working at the defense contractor companies; therefore, I was unable to develop particular groups within the targeted population. Barros, Dias, and Martins (2015) noted that researchers recruit hard-to-reach population samples using nonprobabilistic sampling methods. However, Barros et al. noted that nonprobabilistic sampling induces biases in the samples due to the casual selection of research participants from the population. Although probabilistic samples are more accurate and produce reliable estimates and inferences to the general population, nonprobabilistic sampling has value whenever researchers survey the population to examine correlations among variables and to generalize results to the relevant population (Barros et al., 2015).

I used the availability sampling typology because participants were employees who have participated in their organizations' PAs in the past year at a defense contractor company. To obtain access to the potential population, I also used snowball sampling to seek referrals from the defense contractors' site managers and HR department directors or representatives. To obtain additional participants, I requested that site managers and HR directors of the defense contractor companies forward the Employee Invitation to Participate in Research letter (Appendix C) to their employees. I also requested that site managers and HR directors forward the Follow-up Letter to Site Managers and HR Directors and the Employee Invitation to Participate in Research letter to site managers and HR directors of additional divisions within their company.

Ethical Research

I collected data using SurveyMonkey.com, a web-based survey solutions website. Since I collected data via the Internet, gathering signatures on a physical Informed Consent to Participate in Research form would not be feasible. Therefore, I obtained participants' agreement to participate in the research by having the participants select the Consent radio button of the Informed Consent to Participate in Research form which was located on the SurveyMonkey website. Clay (2014) and Madu (2014) requested participants annotate consent to participate in their research on the SurveyMonkey website before participants could continue to the survey section of the website. The Informed Consent to Participate in Research form appeared once participants selected *Yes* to the question of receiving or performing a PA within the past year. Gupta and Kumar (2013) requested that only those professionals who had received at least one PA complete the questionnaire. However, Gupta and Kumar did not specify how current employees' PAs should be. Clarke et al. (2013) included participants in their study who had worked for their organization for at least 3 years and conducted at least one performance evaluation. However, Clarke et al. did not specify that supervisors conducted the employees' performance evaluations within the 3-year period.

I e-mailed a copy of the Informed Consent to Participate in Research form to the organizational leadership and HR directors. Within the Informed Consent to Participate in Research form, I included an explanation of the voluntary nature of participating in my study and that the participants may discontinue the survey at any time without any repercussions. I kept all personal identity information confidential, and I did not, and will

not, use any personal identity information for any purpose outside of this research project.

The Informed Consent to Participate in Research form contained an outline of the potential risks of participating in the research. I explained that this type of research might involve some risk of minor discomfort that a person might encounter in daily life, such as stress, becoming upset, or frustration. I also explained that participating in this research would not pose any risk to their safety or well-being. I also explained that participants would not receive compensation. However, I explained that the results of my research might influence social change within organizations by contributing to the ESR through communications and interaction, and provide an understanding of how the organizational leadership can maintain organizational sustainability by increasing efficiency.

The participants' information from the Informed Consent to Participate in Research form will remain confidential. Furthermore, I did not include any of the defense contractor companies' names in this study, but only referred to the companies as Company 1, Company 2, etc. I entered participants' demographic information and responses in an Excel spreadsheet. Furthermore, I transferred the results of my analysis and the Excel spreadsheet to a DVD. I then deleted all traces of information from all media devices, and I will keep (a) completed surveys, (b) a copy of the Excel spreadsheet, and (c) a DVD with the raw data, in a secure location for 5 years.

To assure that I adhered to ethical standards within my study, I completed the National Institutes of Health (NIH) Office of Extramural Research training course titled *Protecting Human Research Participants* (National Institutes of Health, 2013). A copy of

my NIH completion certificate is in Appendix G. Furthermore, with permission from the instruments' developers, I employed valid and reliable survey instruments from previous studies published in peer-reviewed journals (Appendix E). I obtained permission to use the instruments from the authors of each survey instrument and provided a copy of the author's e-mail granting me approval to use the instruments (Appendix F). I received Walden University's IRB approval to conduct my study and to collect data. The Walden University IRB approval number is 02-13-17-0122032 and expires on February 12, 2018 (Appendix H).

Data Collection Instruments

The specific business problem is that some defense contractor supervisors do not understand the influence of the relationship between LMX and ESR on employees' CD through the mediating effect of employees' perceived efficacy of the PA process. Therefore, I examined the business problem by using four survey instruments to determine if, and if so, how the relationship between LMX and ESR influences employees' perceived efficacy of the PA for guiding employees' CD. Etheridge (2016) employed four survey instruments to examine the relationships between safety climate and employee job satisfaction to aid railroad managers in the improvement of safety, productivity, and profitability. The four survey instruments that Etheridge used were (a) a self-developed Demographic Questionnaire; (b) Sexton, Helmreich, Pronovost, and Thomas' (2003) Safety Climate Survey; (c) Sims, Szilagyi, and Keller's (1976) Job Characteristics Inventory; and (d) Spector's (1997) Job Satisfaction Survey.

The four survey instruments I used to measure the relationships between LMX, ESR, PA, and CD were (a) Graen and Uhl-Bien's (1995) 7-item Leader-Member Exchange (LMX-7) instrument, (b) Moorman's (1991) 6-item Interactional Justice instrument, (c) Waldman's (1997) 5-item Appraisal System Satisfaction instrument, and (d) Kraimer et al.'s (2011) 6-item Perceived Career Opportunity (PCO) instrument. Using Graen and Uhl-Bien's 7-item LMX-7 instrument provided employees' responses pertaining to LMX between supervisors and employees. Using Moorman's 6-item Interactional Justice instrument provided employees' responses pertaining to ESR. Using Waldman's 5-item Appraisal System Satisfaction instrument provided employees' responses pertaining to their organization's PA system. Using Kraimer et al.'s 6-item PCO instrument provided employees' responses pertaining to their company's CD policies. Graen and Uhl-Bien designed their LMX-7 instrument to measure both supervisors' and employees' dyadic responses. However, since I only measured employees' perceptions on LMX, ESR, PA, and CD to answer my research questions, I used only the employees' portion of Graen and Uhl-Bien's LMX-7 instrument (LMX-E). Furthermore, I did not make any material modifications to any of the instruments.

Copies of the instruments for this study are in Appendix E, and copies of the instrument authors' permissions are in Appendix F. Copies of raw data from the surveys are available upon request from participants and/or other researchers. Participants indicated their responses to the instruments based on an ordinal Likert-type 5-point scale ranging from 1 (*lowest degree of agreement*) to 5 (*highest degree of agreement*) to measure each item. I collected data using four instruments on the SurveyMonkey website,

and I analyzed data descriptive statistics using IBM's SPSS 23 software package. I also analyzed the survey data using the WarpPLS software package (Kock, 2017). Table 7 contains a summary of (a) the instruments, (b) the theories, and (c) variables for this study. A detailed discussion of the survey instruments follows under the following subheadings: (a) LMX-7 Instrument, (b) Interactional Justice Instrument, (c) Appraisal System Satisfaction Instrument, and (d) PCO Instrument.

Table 7

Summary of Study's Instruments

Variable[a]	Instrument	Author(s)	Date	Theory	Measured variables[b]
LMX	LMX-7	Graen & Uhl-Bien	1995	LMX theory, Social Exchange theory	Measures employees' and supervisors' interaction. Dyadic relationship. Trust, respect, competence, commitment, obligation.
ESR	Interactional Justice	Moorman	1991	LMX theory, Social Exchange theory	Measures employees' perceptions of their relationship with their supervisors. Dyadic relationship. Communications, fairness, feedback, civility, justice and equity, honesty.
PA	Appraisal System Satisfaction	Waldman	1997	Organizational Justice theory	Measures employees' perceptions of their organization's PA system. PA assessment accuracy, PA rating fairness, performance improvement, CD, PA satisfaction.
CD	PCO	Kraimer, Seibert, Wayne, Liden, & Bravo	2011	Organizational Justice theory	Measures employees' perceptions of their organization's career opportunities. Career opportunities, career goal achievement, career aspiration satisfaction.

Note. LMX (Leader-Member Exchange), ESR (Employee-Supervisor Relationship), PA (Performance Appraisal), CD (Career Development), PCO (Perceived Career Opportunity).
[a]The Variable column indicates each latent variable as indicated in Figure 1. [b]Measured variables represent attributes identified through the synchronization of theories, instruments, and professional literature.

One method that researchers use to address potential threats to external validity is to employ standardized ordinal scales of validated survey instruments to collect data via random sampling (Robinson et al., 2016; Uprichard, 2013). Under the following subheadings (a) LMX-7 instrument, (b) Interactional justice instrument, (c) Appraisal system satisfaction instrument, and (d) PCO instrument, I will discuss the previous researchers' processes for, and results of, examining the reliability and validity of their survey instruments. The discussion includes the reasons for my choosing the survey instruments for this study. The discussion will also include a detailed descriptions of the constructs and data related to each instrument. Furthermore, the discussions will identify the (a) scale of measurement for each instrument, (b) description of the calculated scores, (c) previous researchers' use of the instruments, (d) the instruments' reliability, and (e) the instruments' validity.

Researchers ensure their sample size is sufficient to address the (a) approximate relevant population size, (b) assure the study's reliability, and (c) achieve the statistical power for detecting relationships by testing hypotheses (Bell et al., 2014; Fritz et al., 2015; Sham & Purcell, 2014). Field (2014) noted that researchers reported that a Cronbach's α value (split-half reliability) between .70 and .80 was an *acceptable* measure of the internal consistency reliability of a scale, and a Cronbach's α value above .90 was a *strong* internal consistency reliability value (p. 709). However, Field also noted that in the early stages of research, Cronbach's α value as low as .50 could suffice depending on the number of tested items within the scale. The results of my analysis indicated that the

Cronbach's α for my study's instruments were > .90, thereby demonstrating strong internal consistency reliability.

There are two measurement scales for this study: nominal and ordinal variables (Burns & Kho, 2015; Osborn, Batterham, Elsworth, Hawkins, & Buchbinder, 2013; Weigold, Weigold, & Russell, 2013). In the initial section of the survey, participants provided their demographic information in sections provided for the following nominal variables: (a) gender: 1 = Female and 2 = Male; (b) age: 1 = 18 to 30, 2 = 31 to 40, 3 = 41 to 50, 4 = 51 to 60, and 5 = 61 or older; (c) race: 1 = American Indian or Alaskan Native, 2 = Asian / Pacific Islander, 3 = Black or African American, 4 = Hispanic, 5 = White / Caucasian, and 6 = Mixed / Other; (d) time employed with your current company: 1 = less than 5 Years, 2 = 5 to 10 Years, 3 = 11 to 15 Years, 4 = 16 to 20 Years, 5 = 21 to 25 Years, 6 = 26 to 30 Years, and 7 = 31 or more Years; and (e) months since last PA: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12. Participants responded to the survey questions using the ordinal variables' values based on a Likert-type 5-point scale ranging from 1 (*lowest degree of agreement*) to 5 (*highest degree of agreement*) to measure each item (Burns & Kho, 2015; Osborn et al., 2013; Weigold et al., 2013). Although I did not examine possible effects of race, age, gender, and company tenure, I did analyze descriptive statistics to identify my sample's distribution of demographic characteristics.

LMX-7 Instrument

To examine employees' perceptions of LMX with their supervisors, participants completed Graen and Uhl-Bien's (1995) seven-item LMX instrument. Graen and Uhl-Bien designed their LMX-7 instrument for supervisor and employee's dyadic responses.

However, since I only measured employees' perceptions on LMX, ESR, PA, and CD to answer my research questions, I used only the employees' portion of Graen and Uhl-Bien's LMX-7 instrument (LMX-E; Table E1 of Appendix E). A summary of the items in Graen and Uhl-Bien's LMX-7 instrument is located in Table 7. Dr. Uhl-Bien's permission to use the LMX-7 instrument is in Appendix F. Graen and Uhl-Bien utilized an ordinal Likert-type 5-point scale ranging from 1 (*lowest degree of agreement*) to 5 (*highest degree of agreement*) to score the seven items included in the LMX-7 instrument.

Graen and Schiemann's (1978) Cronbach's α results of .91 for the LMX-7 scale indicated a strong internal consistency reliability value. Graen and Cashman (1975) first validated the leader-member vertical dyadic linkage via a longitudinal study using a multimethod-multisource analysis. Graen and Schiemann validated a refined LMX measure by analyzing 109 employee-supervisor dyads at three quarterly periods. Graen and Schiemann's results indicated that the refined LMX measure was internally consistent during the three intervals (.76, .80, and .84) and the three test-retest stable (.90, .89, and .80).

Fisk and Friesen (2012) included Graen and Uhl-Bien's (1995) LMX-7 instrument within their online survey. Fisk and Friesen validated 126 online surveys out of 198 potential participants who accessed the online survey and who met the requirements of being (a) at least 18 years old, (b) employed at least part-time, and (c) evaluated by a supervisor. Fisk and Friesen's results indicated a correlation between employees' LMX and job satisfaction ($b = .21$, $p < .01$). In addition, Fisk and Friesen's

Cronbach's α results of .82 for the LMX-7 items indicated acceptable internal consistency reliability.

Shacklock et al. (2013) employed Graen and Uhl-Bien's (1995) LMX-7 instrument to examine the quality of supervisor-nurse relationships throughout Australia. Shacklock et al. validated 510 surveys out of 1600 surveys, and employed PLS-SEM to analyze their study's data. Hair et al. (2014) noted that Cronbach's alpha (α) results from PLS-SEM analysis have a tendency to *underestimate* the internal consistency reliability. Therefore, Shacklock et al. did not report a Cronbach's alpha (α) result, but followed Hair et al.'s and Sarstedt et al.'s (2014) guideline in Row 3 of Table 4, and reported a composite reliability (ρ_c) coefficient result of 0.95. Shacklock et al.'s results indicated a positive correlation between LMX and job satisfaction ($\beta = .48$, $p < .001$).

Interactional Justice Instrument

Participants provided their scores for Moorman's (1991) 6-item Interactional Justice instrument to measure employees' perceptions of ESR (Table E2 of Appendix E). Moorman (1991) developed the Interactional Justice instrument to measure six dimensions of ESR (communications, fairness, feedback, civility, justice and equity, honesty) potentially influencing employees' perceptions of their supervisor's character during the execution of organizational procedures. By employing Waldman's (1997) 5-item Appraisal System Satisfaction instrument in conjunction with Graen and Uhl-Bien's (1995) LMX-7 instrument and Moorman's 6-item Interactional Justice instrument, I examined the relationship between LMX, ESR, and employees' perceptions of their organizations' PA program's efficacy.

A summary of Moorman's Interactional Justice instrument items is in Table 7. Dr. Moorman's permission, to use the Interactional Justice instrument, is in Appendix F. Moorman utilized an ordinal Likert-type 5-point scale ranging from 1 (*Disagree Strongly*) to 5 (*Agree Strongly*) to measure responses to each item. Moorman's Cronbach's α results of .93 for the interactional justice scale indicated strong internal consistency reliability.

Moorman (1991) validated the interactional justice instrument by following Anderson and Gerbing's (1988) two-step approach. Moorman first analyzed participants from two companies to compare the covariance matrix of each company. Moorman then conducted the two-step approach by conducting a confirmatory factor analysis of the measurement model and then analyzing the structural paths between latent variables. Moorman's results indicated that the analysis of each company did not produce a chi-square statistic that was large enough to reject the null hypothesis. Therefore, following Hu and Bentler's (1999) *rule of thumb* in Table 5, Moorman combined the two groups and validated 225 samples, which produced a comparative fit index (CFI) of .97, and a Tucker-Lewis index (TLI) of .96 indicating a useful goodness-of-fit index of the data to the measurement model.

Gumusluoglu et al. (2013) validated 445 surveys from Turkish research and design workers of 65 high-technology Turkish companies. Gumusluoglu et al. incorporated Moorman's (1991) 6-item Interactional Justice instrument within the survey. Gumusluoglu et al.'s results indicated a high correlation between transformational leadership, interactional justice, and employees' commitment to supervisors (between

0.67 and 0.76). In addition, Gumusluoglu et al.'s Cronbach's α results of .81 indicated acceptable internal consistency reliability.

Campbell et al. (2013) validated 343 surveys out of 375 distributed to social workers in the Southeastern United States. Campbell et al. incorporated Moorman's (1991) interactional justice instrument within the survey, and Campbell et al.'s results indicated a positive correlation (.37) between interactional justice and perceived supervisor support. In addition, Campbell et al.'s Cronbach's α results of .74 indicated acceptable internal consistency reliability.

Carter, Mossholder, Field, and Armenakis (2014) validated 230 supervisors-employees dyadic responses out of 391 alumni of a large Southeastern university. Carter et al. incorporated Moorman's (1991) interactional justice instrument within their survey and identified that the mediating effect of interactional justice between transformational leadership and employee performance varied depending on ESR. In addition, Carter et al.'s Cronbach's α results of .84 indicated acceptable internal consistency reliability.

Appraisal System Satisfaction Instrument

Participants completed Waldman's (1997) 5-item Appraisal System Satisfaction instrument to measure employees' perceptions of their organization's PA system's efficacy (Table E3 of Appendix E). Waldman measured five dimensions of employees' perceptions of their organization's PA program using a 5-item Appraisal System Satisfaction instrument. Waldman's five dimensions of his Appraisal System Satisfaction instrument are (a) PA assessment accuracy, (b) PA rating fairness, (c) performance improvement, (d) CD, and (e) PA satisfaction in their organization's PA system. By

employing Waldman's Appraisal System Satisfaction instrument in conjunction with Graen and Uhl-Bien's (1995) LMX-7 instrument, Moorman's (1991) Interactional Justice instrument, and Kraimer et al.'s (2011) PCO instrument, I examined the relationship between LMX, ESR, employees' perceptions of their organizations' PA program, and employees' perceptions of their organizations' CD program's efficacy.

A summary of Waldman's Appraisal System Satisfaction instrument items is in Table 7. Dr. Waldman's permission, to use the Appraisal System Satisfaction Survey instrument, is in Appendix F. I chose not to use the Accuracy component of R. C. Mayer and Davis' (1999) Measures of Trust, Trustworthiness, and Performance Appraisal Perceptions instrument because the items reflect the employees' personal PA rating and not their perceptions of their organization's PA system. In addition, R. C. Mayer and Davis' instrument does not identify a connection between employees' PA and employees' CD.

Waldman's (1997) instrument consists of five items pertaining to the employee's perception that (a) their rating was fair and accurate; (b) the PA system aided them in their CD, and (c) their satisfaction with the PA system. Waldman's Appraisal System Satisfaction instrument utilizes an ordinal 5-point scale ranging from 1 (*Disagree Strongly*) to 5 (*Agree Strongly*) to measure responses to each item. Waldman's Cronbach's α results of .81 indicated acceptable internal consistency reliability.

Waldman (1997) conducted a pilot study involving 155 participants with two companies (company 1, $N = 80$, company 2, $N = 75$). Waldman's results of comparing the two companies indicated acceptable internal consistency reliability and validity.

Waldman utilized the PA measure during two more studies. Waldman validated 76 returned surveys from 160 surveys distributed during Study 1 resulting in Cronbach's α result of .81 for the Appraisal System Satisfaction measure, indicating acceptable internal consistency reliability. Waldman validated 200 returned surveys from 460 invited participants from Study 2 resulting in Cronbach's α result of .82 for the Appraisal System Satisfaction measure, indicating acceptable internal consistency reliability.

Bewley (2002) surveyed two groups of senior managers of a diversified financial services company in the southeast United States. Bewley used the first group to develop the *ratee accountability scale*. Bewley validated 83 of 87 participants from the first group who responded to the questionnaire. Bewley validated 204 surveys out of the 206 who participated from the second group who responded to the ratee accountability instrument. Bewley included three modified items from Waldman's (1997) 5-item Performance Appraisal Satisfaction instrument within the ratee accountability instrument to measure perceived feedback value. Bewley added Waldman's modified instrument into the ratee accountability instrument after surveying the first group of senior managers. Bewley's Cronbach's α results of .84 indicated acceptable internal consistency reliability. However, Bewley's results indicated a nonsignificant relationship between perceived feedback value and ratee perceptions of accountability ($\beta = .14$, $p > .05$). Bewley's nonsignificant results could have been the result of surveying only senior managers; whereas, I surveyed employees.

PCO Instrument

Participants completed Kraimer et al.'s (2011) 6-item PCO instrument to measure their responses pertaining to their companies' CD opportunities (Table E4 of Appendix E). Kraimer et al. examined participants' perceptions of their organizations' career opportunities by measuring participants' responses pertaining to (a) career opportunities, (b) career goal achievement, and (c) career aspiration satisfaction. By employing Kraimer et al's PCO instrument in conjunction with Graen and Uhl-Bien's (1995) LMX-7 instrument, Moorman's (1991) Interactional Justice instrument, and Waldman's (1997) Appraisal System Satisfaction instrument, I examined the extent to which the relationship between LMX and ESR explained the employees' perceived efficacy of PAs for guiding employees' CD.

A summary of Kraimer et al.'s (2011) PCO instrument items is in Table 7. Dr. Kraimer's permission to use the PCO Scale instrument is in Appendix F. I chose not to use Robert, Probst, Martocchio, Drasgow, & Lawler's (2000) 8-item Continuous Improvement Measure instrument because the instruments' items reflect employees' perceptions of their organizations' *training opportunities* to improve skills and knowledge, and *not* employees' perceptions of their organizational leaders' policies on enhancing and developing careers.

Kraimer et al.'s (2011) PCO instrument consists of six items pertaining to the employees' perceptions that their organizational leadership provides employees with career enhancement opportunities and their organizational leaders' support of employees' career goals. Kraimer et al. utilized an ordinal 7-point scale ranging from 1 (*Disagree*

Strongly) to 7 (*Agree Strongly*) to measure responses to each item of their PCO instrument. To align Kraimer et al.'s PCO instrument with Graen and Uhl-Bien's (1995) LMX-7 instrument, Moorman's (1991) 6-item Interactional Justice instrument, and Waldman's (1997) 5-item Appraisal System Satisfaction instrument, I used a 5-point scale ranging from 1 *(Disagree Strongly)* to 5 *(Agree Strongly)*.

During their pilot study, Kraimer et al. (2011) validated 156 surveys through the HR department of a *Fortune 100* insurance company (Kraimer et al. reported a 70% response rate from their pilot study). Kraimer et al.'s Cronbach's α result of .91 indicated strong internal consistency reliability for three items of their PCO instrument during their pilot study. Since Kraimer et al. sought to assure their 3-item instrument would measure their PCO construct sufficiently the authors developed three additional items. Kraimer et al. validated the newly developed *six-item* PCO instrument by testing the PCO instrument using 160 masters of business administration (MBA) students. Kraimer et al.'s Cronbach α of .91, from analyzing the MBA students' surveys, indicated strong internal consistency reliability for their 6-item PCO instrument.

For their subsequent primary study, Kraimer et al. (2011) randomly selected 512 employees from a *Fortune 500* manufacturing company located in a U.S. northeast city. Kraimer et al. validated 264 of the employees' responses to test hypotheses 1, 2, 3, and 5 that pertained to employees' perceptions of organizational support for development (OSD). In addition, Kraimer et al. validated 198 employee-supervisor dyadic pairs, from the same company, to test hypothesis 4 that pertained to the relationship between employees' perceptions of OSD and job performance.

Using Google Scholar, I searched the 68 references that cited Kraimer et al.'s (2011) article referencing their 6-item PCO instrument, but could not locate any studies in which the authors used Kraimer et al.'s PCO instrument. I posit the reason I could not locate any studies in which researchers used Kraimer et al.'s instrument is the instrument is new, and few researchers have conducted correlational studies involving CD.

Hoobler, Lemmon, and Wayne (2014) adapted or modified *five* survey instruments to test three hypotheses examining (a) managers' perception of gender and career motivation, (b) managers' perception of gender during assignments of work, training, and career encouragement, and (c) subordinates' gender when accepting assignments of work, training, and career encouragement. Although, items from each instrument Hoobler used would have provided me with data pertaining to employees' perceptions of their organizations' CD programs; using Kraimer et al.'s (2011) 6-item PCO instrument enabled me to test my hypotheses without having to combine multiple instruments.

Lo et al. (2014) developed a CD scale for their research to measure organizational career management and individual career planning. Lo et al. validated 275 out of 300 surveyed sports information communication talents to examine the relationships among (a) CD, (b) organizational commitment, and (c) personality traits. Lo et al.'s results indicated that there is a positive relationship between CD, organizational commitment, and four distinct personality traits (Agreeableness, Neuroticism, Conscientiousness, and Extraversion). Lo et al.'s Cronbach's α results of .83 indicated acceptable internal consistency reliability. However, I was unsuccessful locating a copy of Lo et al.'s CD

scale; for this reason, I chose to use Kraimer et al.'s (2011) PCO instrument. The only e-mail address that I was able to locate from Lo et al.'s article was Peng-Fei Tu, the corresponding author. I e-mailed Peng-Fei Tu and requested a copy of their instrument, but have not received any response. Therefore, I used Kraimer et al.'s PCO instrument because their instrument is readily available, and the instruments' six items addressed employees' perceptions on their organizations' CD opportunities.

Data Collection Technique

I collected data using SurveyMonkey, an Internet online software program to prepare, format, and administer the following instruments (a) Graen and Uhl-Bien's (1995) LMX-7 instrument, (b) Moorman's (1991) Interactional Justice instrument, (c) Waldman's (1997) Appraisal System Satisfaction instrument, and (d) Kraimer et al.'s (2011) PCO. Researchers noted that web-based (WB) surveys are a convenient means of collecting data and have grown in popularity among researchers (Hohwu et al., 2013; Sanchez-Fernandez, Munoz-Leiva, & Montoro-Rios, 2012). Researchers have also noted that WB surveys are an easy, inexpensive method for researchers to gather data from their subject population (Hohwu et al., 2013; Sanchez-Fernandez et al., 2012).

Although Wang, Liu, Cheng, and Cheng (2013) noted that, paper-and-pencil (PP) surveys were time-consuming and more expensive than WB, the results of their study indicated little difference in participants' responses. I used a quantitative methodology correlational design for my study. In contrast, interviews, which are a means of collecting data using a qualitative methodology, are difficult because trust between the interviewer and the interviewee is necessary for the participant to answer honestly (Gale, Heath,

Cameron, Rashid, & Redwood, 2013; Robinson, 2014). Knapp and Kirk (2003) noted that participants during face-to-face interviews might provide answers that they feel the interviewer would find to be *acceptable*. Knapp and Kirk also noted that participants might refrain from providing honest answers to the interviewer's questions because they might feel *embarrassed*.

Following Walden University's IRB approval, I e-mailed the Follow-up Letter to Site Managers and HR Directors (Appendix B) to the site managers and HR directors, of the defense contractor companies, and provided them with a copy of the Employee Invitation to Participate in Research (Appendix C) letter to forward to their employees. The invitation letter consisted of (a) statement of the purpose of the study, (b) instructions for accessing the online survey through SurveyMonkey, (c) a statement that participation in the survey is anonymous and voluntary, (d) explanation that they may discontinue the survey at any time, (e) a statement explaining that participants will have 2 weeks to access and complete the surveys, (f) a description of the components of the survey website, and (g) the SurveyMonkey URL for the survey website. Each participant had 2 weeks to access the website and participate in the survey. Although I determined through a priori power analysis the minimum sample size to be 200 employee participants, I did not place a limit on the number of participants who accessed the surveys.

Once the participants accessed the SurveyMonkey website, to proceed the participants had to respond if they have received or performed a PA within 1 year of participating in the survey. If the participants answer *Yes*, they were directed to the *Informed Consent to Participate in Research* form of the survey. If the participants

answered *No*, then they were directed to a disqualification page with the message "*Thank you for your interest in the survey. However, unfortunately you do not meet the requirements to participate in the survey*."

At the bottom of the second page of the *Informed Consent to Participate in Research* page, the participants were required to select 1 of 2 radio bottoms. If the participants selected the *I do not Consent* radio button, then they were directed to a disqualification page with the message "*Thank you for your interest in the survey. However, unfortunately you do not meet the requirements to participate in the survey*." If the participants selected the *I Consent* radio button, then they were directed to the demographic section of the survey where they were required to complete a demographic portion of the survey. I collected demographic information by requesting the participants complete the demographic section by supplying the appropriate information for the following: (a) gender, (b) age, (c) race, (d) employment tenure, and (e) estimated time since last PA.

Once the participants completed the demographic portion of the survey, they were requested to select the *Continue* radio button at the bottom of the page. If the participants did not complete all items on a page, they were asked to review the page and ensure that they have answered all of the numbered items. Once the participants ensured that they had completed all of the requested items on the page, and they selected the *Continue* radio button, they were then directed to the survey.

The participants completed one survey comprising four sections. Each section contained all of the related survey items on one page. I scored participants' responses to

the survey questions based on a Likert-type 5-point scale ranging from 1 (*lowest degree of agreement*) to 5 (*highest degree of agreement*) to score each item. At the bottom of the page were two radio buttons labeled *Continue* and *Previous* that directed the participants to the next page of survey questions or return to the previous page. If the participants did not complete all items on one page, and they select the radio button *Continue*, they were asked to review their answers to ensure they have completed all survey items. Once the participants had selected scores for all items, and selected the radio button *Continue,* the web page changed to the next page of survey questions. Once the participants completed the final survey, they had the option to select either the *Finished* radio button or the *Previous* radio button at the bottom of the page. If the participants had selected a score for all items on the final page, and the participant selected the *Finished* radio button, then a message appeared thanking them for participating in the study.

While completing the survey, the participants had the option of returning to the previous page to review or change their answers. Bauermeister et al. (2012) designed their web-based survey so that participants could return to the Web site to enable the participants to start and complete the survey over one or more time periods. By allowing participants access to the Website through their personal e-mail address, Bauermeister et al. enabled the participants to review and correct the surveys prior to the end of the survey time-frame. To mirror *Pen-and-Paper* surveys, I designed my survey so that participants must complete all items before moving forward, and provide them the opportunity to go back to change their responses. I wanted to ensure that participants

completed all items before moving forward but had the opportunity to go back to change their responses before selecting the *Finished* radio button.

I did not conduct a pilot study since my instruments' authors had already validated the instruments that I employed. Graen and Uhl-Bien (1995) validated their LMX-7 instrument through a series of studies. Graen and Schiemann's (1978) Cronbach's α result of .91 indicated a strong internal consistency reliability value. Moorman's (1991) Cronbach's α results of .93 for the interactional justice scale indicated strong internal consistency reliability. Waldman's (1997) Cronbach's α results of .81 for their first study using the Appraisal System Satisfaction measure indicated acceptable internal consistency reliability. Waldman's second study resulted in a Cronbach's α result of .82 for the Appraisal System Satisfaction measure, indicating acceptable internal consistency reliability. Kraimer et al.'s (2011) Cronbach's α of .91 indicated strong internal consistency reliability for their PCO instrument. Therefore, I did not conduct a pilot study on the population of my study since my instruments' authors had previously validated the proposed instruments' use for several types of populations. However, I tested the internal consistency reliability of my study's instruments for my study's population using both Cronbach's α and composite reliability (ρ_c). The results of my analysis indicated that my instruments' Cronbach's' alphas (αs) were > .90 and composite reliabilities were also > .90, thereby demonstrating internal consistency reliability (Hair et al., 2014; Sarstedt et al., 2014).

Data Analysis

The general business problem is some employees perceive that their supervisors are conducting PAs that do not represent their performance, nor address their CD (Dusterhoff et al., 2014). The specific business problem is that some defense contractor supervisors do not understand the influence of the relationship between LMX and ESR on employees' CD through the mediating effect of employees' perceived efficacy of the PA process. The purpose of this quantitative correlation study is to examine the extent and nature of the influence of the relationship between LMX and ESR on employees' CD through the mediating effect of employees' perceived efficacy of the PA process. The PRQ for this doctoral study was as follows: To what extent does the relationship between LMX and ESR influence employees' CD through the mediating effect of employees' perceived efficacy of the PA process? Table 8 contains the data analysis plan I propose consisting of (a) subsidiary research questions, (b) null hypotheses, (c) variables, (d) measurement instrument, and (e) PLS-SEM validity assessment criteria.

Table 8

Data Analysis Plan for Addressing the Principal and Subsidiary Research Questions

SRQ	Null hypothesis	Variables	Measurement instrument	PLS-SEM validity assessment criteria
SRQ1. To what extent does a relationship exist between LMX and ESR?	$H1_0$: There is no significant relationship between LMX and ESR.	LMX: Independent exogenous formative variable.	LMX-7 Instrument.	Convergent Validity. Collinearity issues of indicators – Tolerance/VIF. Significance & relevance of indicators - outer weights & outer loadings (Bootstrapping).
		ESR: Independent exogenous formative variable.	Interactional Justice Instrument.	
SRQ2. To what extent does the relationship between LMX and ESR influence the employees' perceived efficacy of the PA process?	$H2_0$: There is no significant relationship between LMX and ESR that influences the employees' perceived efficacy of the PA process.	LMX: Independent exogenous formative variable.	LMX-7 Instrument.	Convergent Validity. Collinearity issues of indicators – Tolerance/VIF. Significance & relevance of indicators - outer weights & outer loadings (Bootstrapping).
		ESR: Independent exogenous formative variable.	Interactional Justice Instrument.	
		PA: Dependent endogenous reflective variable.	Appraisal System Satisfaction Instrument.	Composite reliability (ρ_c). Convergent validity – indicator reliability/AVE. Discriminant validity - cross loading/Fornell-Larcker criterion.

(table continues)

SRQ	Null hypothesis	Variables	Measurement instrument	PLS-SEM validity assessment criteria
SRQ3. To what extent does the relationship between LMX and ESR influence employees' CD through the mediating effect of employees' perceived efficacy of the PA process?	$H3_0$: There is no significant relationship between LMX and ESR that influences employees' CD through the mediating effect of employees' perceived efficacy of the PA process.	LMX: Independent exogenous formative variable. ESR: Independent exogenous formative variable. PA: Dependent endogenous reflective variable. CD: Dependent endogenous reflective variable.	LMX-7 Instrument. Interactional Justice Instrument. Appraisal System Satisfaction Instrument. PCO Instrument.	Convergent Validity. Collinearity issues of indicators – Tolerance/VIF. Significance & relevance of indicators - outer weights & outer loadings (Bootstrapping). Composite reliability (ρ_c). Convergent validity – indicator reliability/AVE. Discriminant validity - cross loading/Fornell-Larcker criterion.

Note. SRQ (Subsidiary Research Question), LMX (Leader-Member Exchange), ESR (Employee-Supervisor Relationship), VIF (Tolerance - variance inflation factor), PA (Performance Appraisal), AVE (Average variance extracted), CD (Career Development), PCO (Perceived Career Opportunity).

I used a correlational design to (a) survey participants, (b) collect data using the SurveyMonkey web-based survey program, and (c) examine the relationships among the variables. After collecting participants' responses, I (a) compiled the data using Microsoft Excel, (b) analyzed descriptive statistics using IBM SPSS 23, and (c) analyzed the data using the WarpPLS program (Kock, 2017). Some researchers use software programs such as AMOS, EQS, and Mplus to analyze CB-SEM. However, Kock (2017) developed the WarpPLS program to focus on analyzing PLS-SEM path models to accommodate potential nonnormal data distributions.

I used SEM because SEM enabled me to examine all relational pathways within my model simultaneously (Lowry & Gaskin, 2014). Lowry and Gaskin (2014) stated that SEM is a second-generation multivariate technique, whereas multiple linear regression (MLR) modeling is a first-generation technique. Hair et al. (2014) noted that researchers are unable to recognize errors within the data using MLR. However, researchers could identify data errors using SEM and process data to remove errors from the analysis (Hair et al., 2014). Both SEM and MLR modeling have the capabilities to examine relational pathways (Lowry & Gaskin, 2014). However, researchers using MLR to examine the relational pathways in sequential steps, whereas researchers using SEM examines all of the relational pathways simultaneously (Lowry & Gaskin, 2014). Both SEM and MLR are beneficial to researchers for examining the relationships among variables pertaining to participants' attitudes and satisfaction (Lowry & Gaskin, 2014). However, SEM can produce more parsimonious pathway results with fewer errors and biases (Lowry & Gaskin, 2014). Researchers also utilize SEM to examine the relationship between latent variables at both the observation level and the theoretical level and establish linear modeling frameworks (Lowry & Gaskin, 2014).

I based my decision to use PLS-SEM instead of CB-SEM on the need to describe the extent to which each of the independent variables (LMX and ESR) demonstrates a relationship between the dependent variables (PA and CD). In contrast, the objective of CB-SEM is to replicate covariance without explaining variance (Hair et al., 2011). Furthermore, I used PLS-SEM versus CB-SEM because PLS-SEM: (a) minimizes residual variance, (b) is more robust with fewer identification issues (easily analyzes

reflective and formative measurement models), (c) works well with small and large samples, and (d) incorporates multidimensional (formative and reflective) constructs (Hair et al., 2014; Hair et al., 2011). Researchers have described PLS-SEM as a *soft modeling technique* that lessens demands on (a) measurement scales, (b) sample sizes, and (c) residual distributions (Henseler & Sarstedt, 2013).

Data Screening

The first step in conducting an assessment via PLS-SEM is to screen data to assure data quality (Hair et al., 2014). Researchers should report (a) degrees of freedom, (b) *p* value, and (c) measurement fit of SEM using (a) Chi-Square (x^2), (b) Standardized Root Mean Square Residual (SRMR), and (c) Comparative Fit Index (CFI; Nunkoo, Ramkissoon, & Gursoy, 2013; Prudon, 2015). However, unlike CB-SEM, PLS-SEM does not produce a *universal standard scale*; thereby preventing researchers from developing a global validation index (Henseler & Sarstedt, 2013). Therefore, I examined data collected by identifying (a) *missing data*, (b) *suspicious response patterns*, (c) *outliers,* (d) *extreme data distribution* through *box plots,* and (e) *extreme nonnormal* data distribution such as *skewness* and *kurtosis* (Hair et al., 2014).

Researchers have defined *missing data* as (a) one or more survey forms missing, (b) no response to survey questions, or (c) surveys or responses inadvertently deleted during transfer between media (downloaded data from SurveyMonkey website to Excel spreadsheet; Gorondutse & Hilman, 2014; Martinez-Camblor, Corral, & Maria de la Hera, 2013; Ngan, Yung, & Yeh, 2015). The same authors described *excessive data* as (a) participants submitting more than one survey, (b) participants selecting more than one

response to each question, or (c) surveys or responses inadvertently duplicated during transfer of data between media. To reduce the frequency of missing or excessive data, I designed my survey website to ensure that participants could select only one response to each item on the page and respond to all items on the page prior to proceeding to the next page (Hair et al., 2014).

Knapp and Kirk (2003) invited 2000 students to participate in research examining the different responses and results between (a) pencil and paper surveys, (b) Internet surveys, and (c) touch-tone surveys. Of the 1,077 survey packets taken by the students, 352 surveys were completed (174 pencil-and-paper, 57 Internet, and 121 touch-tones; Knapp & Kirk, 2003). Knapp and Kirk screened the data to identify missing and redundant responses. Knapp and Kirk's analysis of the Internet survey indicated no multiple attempts to access the survey. However, Knapp and Kirk identified six incidents of multiple attempts to access the touch-tone survey. Furthermore, on the third day of their Internet survey, Knapp and Kirk realized their website was inadvertently taken offline for 27 hours. Therefore, Knapp and Kirk assumed that this downtime accounted for the low response rate for the Internet survey. Knapp and Kirk designed the Internet survey to display one question at a time and once the participant selected a response the next question would display. The participants of the Internet survey also had the option of returning to a previous page to review and/or change their answers (Knapp & Kirk, 2003). Knapp and Kirk identified one incident of missing data from the mail-in survey in which the participant failed to complete one page of the survey. Therefore, Knapp and Kirk removed the missing page from their analysis. Knapp and Kirk's analysis indicated

no differences in the results of the survey methods (pencil and paper, touch-tone, or web-based) in the outcome of the research.

Although Knapp's and Kirk's (2003) results indicated no differences in data collection methods, researchers still need to screen their surveys for possible *straight lining* responses. Hair et al. (2014) identified participants' straight lining as a suspicious response pattern. Since I adopted a 5-point Likert-type scale to collect data for my study, a potential problem might emerge if participants' select all 3's, the middle response, for all items (Hair et al., 2014). A potential suspicious response pattern could also emerge if participants selected all 1's (Hair et al., 2014). My results of screening the 44 validated surveys for suspicious response patterns indicated that none of the surveys contained straight lining. If I had identified surveys containing straight lining, I would have removed the surveys from the dataset and placed the surveys in a separate Excel spreadsheet labeled *Excluded from Analysis* (Hair et al., 2014).

I also screened the surveys for outliers and inliers. Hair et al. (2014) defined outliers as participants' extreme responses that fall outside of the expected range. As recommended by Kock (2015), I analyzed only ranked data using Kock's (2017) WarpPLS program. Using only ranked data in my analysis reduced the potential effect of outliers on the indicator variables' ratio scale by eliminating outliers without reducing the sample size (Kock, 2015). Ngan et al. (2015) and Dong, Yu, and Zhu (2015) described *inliers* as normal data points that fall within the expected range. However, Ngan et al. noted that although inliers are normal data that fall within the expected range, some inliers can be erroneous data that researchers could fail to detect during analysis. Dong et

al. noted that inliers can result from participants inputting the wrong values while completing the survey. Since I designed my surveys using a Likert-type scale with values ranging between 1 and 5, participants were not able to enter infeasible values. Therefore, after screening my data I determined that no incorrect values were present in the consolidated database from my survey participants' results.

Hair et al. (2014) noted that parametric researchers rely on *normal data distributions* when working with CB-SEM; whereas, researchers use PLS-SEM to examine *nonnormally distributed data*. Furthermore, Hair et al. noted that although PLS-SEM is robust and works well with nonnormally distributed data, researchers should identify whether their data distributions are normal or nonnormal when using PLS-SEM. Hassan, Ramayah, Mohamed, and Maghsoudi (2015) noted that although PLS-SEM is a nonparametric approach, researchers should identify extreme nonnormally distributed data.

Following Kock's (2015) recommendation, I used only ranked data in my analysis. Furthermore, as indicated in Figure 2 and following Kock's guidance, I expected to lessen the effect of outliers on the indicator variables' ratio scale by using only ranked data to eliminate outliers without reducing the sample size. The scatter plots in Figure 2 illustrate the relationships between the latent variables with their associated indicator variables. However, the scatter plots in Figure 2 depict nonnormally distributed data with the majority of the data points concentrated on the right side of the graph. The scatter plots also show several outliers on the left side of the graph and depict the distortion that the outliers have on the linear shape of the plot. However, Kock noted that

analyzing only ranked data using the WarpPLS (2017) program will identify outliers and remove their effect from the analysis without affecting the sample size. Furthermore, Hair et al. (2014) noted that PLS-SEM is robust and works well with nonnormally distributed data. Therefore, I expect that the nonnormally distributed data, outliers, and distorted linear plots for this study did not substantially affect the interpretation of this study's results.

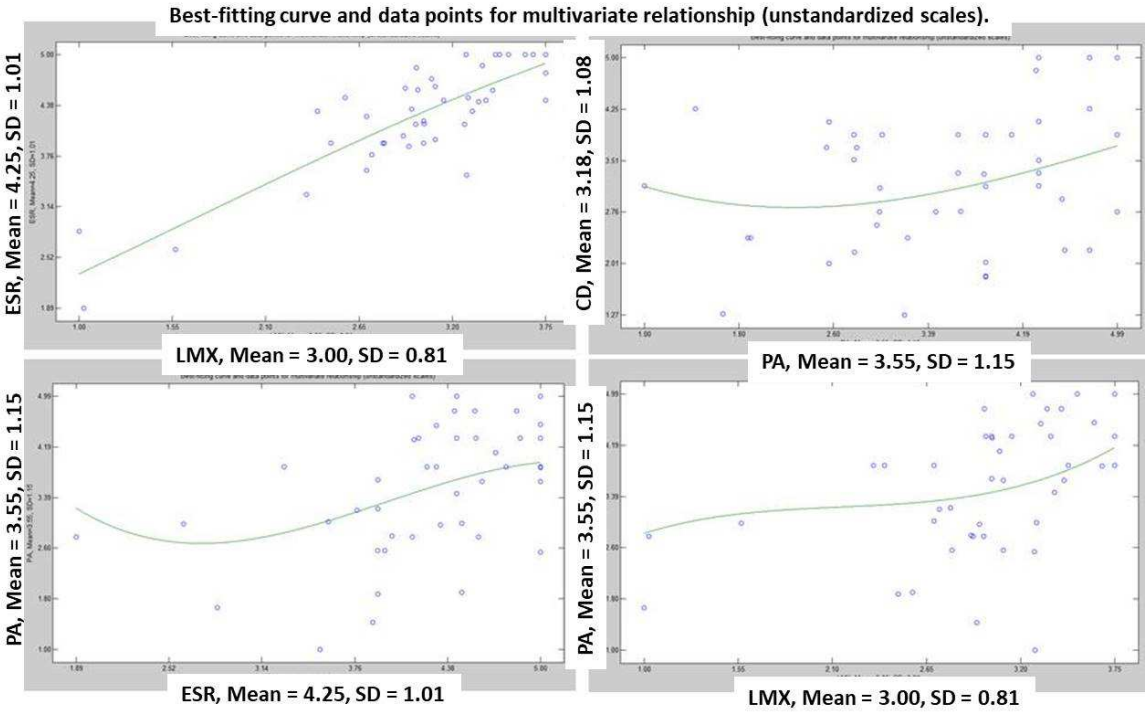

Figure 2. Scatter plots of indicator variables and latent variables' relationships.

Hair et al. (2014) noted that researchers use the Kolmogorov-Smirnov (K-S) test or the Shapiro-Wilks (S-W) test to examine the underlying nature of data distributions. Sarkar (2014) noted that researchers should refrain from using the K-S test since the K-S test is less powerful than the S-W test. IBM SPSS *Tests of Normality* results from this study are in Table 9 and consist of both the K-S test results and the S-W test results.

Sarkar noted that a significant K-S test result ($p < .05$) or significant S-W test result ($p < .05$) indicates nonnormally distributed data. As indicated in Table 9, the K-S test results and the S-W test results for all indicator variables indicated nonnormally distributed data ($p < .05$). However, since Hair et al. noted that PLS-SEM is robust and works well with nonnormally distributed data, and from Sarkar's (2014) guidance, this study's nonnormal data distributions did not substantially affect the reliability or the validity of the interpretation of this study's results.

Table 9

Tests of Normality

Variable[a]	Kolmogorov-Smirnov[b]			Shapiro-Wilk		
	Statistic	df	Significance*	Statistic	df	Significance*
LMX_1	.265	44	.000	.746	44	.000
LMX_2	.219	44	.000	.834	44	.000
LMX_3	.270	44	.000	.786	44	.000
LMX_4	.286	44	.000	.773	44	.000
LMX_5	.216	44	.000	.896	44	.001
LMX_6	.295	44	.000	.764	44	.000
LMX_7	.345	44	.000	.738	44	.000
ESR_1	.304	44	.000	.765	44	.000
ESR_2	.258	44	.000	.858	44	.000
ESR_3	.260	44	.000	.862	44	.000
ESR_4	.325	44	.000	.652	44	.000
ESR_5	.270	44	.000	.714	44	.000
ESR_6	.261	44	.000	.771	44	.000
PA_1	.255	44	.000	.819	44	.000
PA_2	.266	44	.000	.771	44	.000
PA_3	.222	44	.000	.895	44	.001
PA_4	.223	44	.000	.903	44	.001
PA_5	.267	44	.000	.877	44	.000
CD_1	.233	44	.000	.899	44	.001
CD_2	.206	44	.000	.899	44	.001
CD_3	.203	44	.000	.912	44	.003
CD_4	.283	44	.000	.873	44	.000
CD_5	.196	44	.000	.911	44	.002
CD_6	.218	44	.000	.898	44	.001

Note:N = 44 (df).
[a]The Variable column indicates each indicator variable as located in Figure 1. [b]Reflects use of Lilliefors Significance Correction.
*$p < .01$.

High skewness, an indication of nonnormally distributed data, is the extent that the distributions of participants' responses indicated a protracted left tail or right tail versus a normal distribution (Hair et al., 2014). Positive data skewness occurs if the researcher's analysis of the participants' responses is greater than +1 and the frequency distribution has tail extends to the right (Field, 2014; Hair et al., 2014; Sakar, 2014). Negative skewness occurs if the researcher's analysis of participants' responses is less

than -1 and the frequency distribution has a tail that extends to the left (Field, 2014; Hair et al., 2014; Sakar, 2014). Kurtosis is another metric for examining data distributions' characteristics and is the extent that the distributions of participants' responses cluster in the middle of the spectrum exhibiting a *peaked, narrow data distribution* on the graph (Hair et al., 2014). Kurtosis statistic is greater than +1 then data are more *peaked* than a normal data distribution, and if the kurtosis statistic results are less than -1 then the data distribution is *flatter* than a normal data distribution (Hair et al., 2014). The indicator variables' data distributions in Table 10 indicated evidence of skewness and kurtosis within the data distribution frequency. However, Hair et al. noted that PLS-SEM is robust and works well with nonnormally distributed data. Therefore, from Sarkar's (2014) guidance, this study's nonnormal frequency data distributions did not substantially affect the reliability or validity of the interpretation of this study's results.

Table 10

Data Distribution Frequency

Variables[a]	Mean	SD	99% Confidence Interval for Mean		Skewness	Kurtosis
			Lower Bound	Upper Bound		
LMX_1	4.25	.811	3.92	4.58	-1.596	4.654
LMX_2	3.93	1.108	3.48	4.38	-.935	.420
LMX_3	4.07	1.065	3.64	4.50	-1.350	1.636
LMX_4	4.20	1.002	3.80	4.61	-1.305	1.401
LMX_5	3.36	1.143	2.90	3.83	-.186	-.445
LMX_6	4.16	.914	3.79	4.53	-1.480	2.806
LMX_7	3.93	.998	3.53	4.34	-1.625	3.251
ESR_1	4.14	.905	3.77	4.50	-1.465	2.864
ESR_2	3.80	1.069	3.36	4.23	-.886	.507
ESR_3	3.82	.922	3.44	4.19	-.740	.828
ESR_4	4.34	1.055	3.91	4.77	-1.984	3.625
ESR_5	4.25	1.014	3.84	4.66	-1.794	3.422
ESR_6	4.25	.781	3.93	4.57	-1.092	1.397
PA_1	4.05	1.011	3.63	4.46	-1.086	.877
PA_2	4.14	1.047	3.71	4.56	-1.302	1.137
PA_3	3.55	1.150	3.08	4.01	-.452	-.623
PA_4	3.23	1.054	2.80	3.66	-.230	-.679
PA_5	3.55	1.150	3.08	4.01	-.548	-.607
CD_1	3.50	1.023	3.08	3.92	-.341	-.493
CD_2	3.45	.951	3.07	3.84	-.204	-.120
CD_3	3.18	1.084	2.74	3.62	.080	-.611
CD_4	3.52	.952	3.14	3.91	-.576	-.016
CD_5	3.27	1.020	2.86	3.69	-.172	-.256
CD_6	3.32	.983	2.92	3.72	-.233	.098

Note:N = 44. SD = Standard Deviation
[a]The Variable column indicates each indicator variable as contained in Figure 1.

Since the bootstrapping method of analysis is robust and performs well with nonnormally distributed data (Hair et al., 2014), I used the bootstrapping method of analysis included in Kock's (2017) WarpPLS 5.0 program to estimate the path coefficients' data distributions (Hair et al., 2014). However, the bootstrapping method of analysis can only provide limited guidance when data are extremely nonnormally distributed (Hair et al., 2014). Furthermore, nonnormally distributed data can distort researchers' multivariate analysis results and bootstrapping can inflate standard errors

within the analysis (Hair et al., 2014). Therefore, following Hair et al.'s (2014), Kock's (2015), Sarstedt et al.'s (2014), and Wong's (2013) guidelines in Table 4, I tested the statistical significance of the path coefficients by (a) examining for potential collinearity issues, (b) computing the *p* values, (c) computing the R^2 to evaluate the SEM model's predictive accuracy, (d) calculating the *absolute* effect size, and (e) calculating the Q^2 through the cross-validated redundancy approach (blindfolding). I will discuss the results of testing the statistical significance of the path coefficients in the Section 3 subheadings Measurement Model Assessment Results and Structural Model Assessment Results.

Measurement Model Assessment

The second step in assessing PLS-SEM results is to assess the validity of the measurement model (Hair et al., 2014). Hair et al. (2014) described the measurement model as the outer model of the PLS-SEM. Assessing the measurement model enables examining the relationship between the latent variables and the indicator variables (Hair et al, 2014). Within this subheading, I will discuss the information presented in Table 8, and outline the proposed procedures to assess the validity of the measurement model for my PLS-SEM. Researchers conduct measurement model assessment by first identifying *reflective and formative measured* variables (Hair et al., 2014). As indicated in Table 8, I identified LMX and ESR as independent exogenous formative variables, and PA and CD as dependent endogenous reflective variables.

Researchers examine the extent and nature of the relationships between the formative latent variables and the formative indicator variables by assessing (a) convergent validity, (b) collinearity issues of indicators (tolerance/variance inflation

factor [VIF]), and (c) significance and relevance of indicators (outer weights & outer loadings; Hair et al., 2014; Hoffman, Schiele, & Krabbendam, 2013; Sarstedt et al., 2014). Researchers measure the quality of the relationships between the reflective latent variables and the reflective indicators of the PLS-SEM by assessing (a) internal consistency reliability - composite reliability (ρ_c), (b) convergent validity (indicator reliability [outer loadings] and average variance extracted [AVE]), and (c) discriminant validity (cross loading and Fornell-Larcker criterion; Astrachan, Patel, & Wanzenried, 2014; Hair et al., 2014; Hoffman et al., 2013; Klarner, Sarstedt, Hoeck, & Ringle, 2013; Kock, 2015; Sarstedt et al., 2014).

Convergent validity. Researchers assess *convergent validity* by examining the extent to which indicator variables correlate positively with the other indicator variables of the latent variable (Hair et al., 2014; Hoffman et al., 2013; Sarstedt et al., 2014). To assess convergent validity, I conducted a *redundancy analysis* to analyze the formative measurement model by measuring the correlation of the formative variable with a reflective variable of the same construct (Hair et al., 2014). Hair et al. (2014) indicated that the magnitude of the path coefficient between the two latent variables reflects the degree of convergent validity of the formative indicators of the latent formative variable. Hair et al. recommended that a value above .80 is acceptable, which equates to an R^2 value above .64. Sarstedt et al. (2014) noted that a value of .70 and above is acceptable, which equates to an R^2 value of .50 or higher. I will discuss the results of examining convergent validity in the subheading Measurement Model Assessment Results in Section 3 under the heading Presentation of the Findings.

Collinearity issues of indicators (tolerance/variance inflation factor).

Collinearity issues can emerge while researchers are assessing formative measurement models because high correlations among formative indicator variables are not expected (Hair et al., 2014). High collinearity among formative indicators affects the estimation of weights and their significance (Hair et al., 2014). To assess the level of collinearity, I calculated the *tolerance* statistic by measuring the variance inflation factor (VIF) using the WarpPLS software package (Hair et al., 2014; Kock, 2017). The authors noted that if the results of the analysis indicate a tolerance value of .20 or lower and a VIF of 5 or higher, then a potential collinearity problem exists, and one of the indicators is a candidate for removal to increase assurance of the model's content validity. The results of the collinearity analysis were that all the indicator variables' VIFs were ≤ 5 indicating that no significant collinearity was present among the indicator variables.

Significance and relevance of indicators (outer weights & outer loadings). To assess the significance and relevance of formative indicator variables, I used the bootstrapping feature included within Kock's (2017) WarpPLS 5.0 program and followed Kock's (2015) recommendation of using 100 resamples. Kock (2015) noted that using more than 100 resamples during the bootstrapping function could lead to *negligible improvements* in the *reliability* of *p* values. Researchers use the bootstrapping procedure to calculate the *t* values of the outer weights to measure the indicator weights' significance to the latent variable (Hair et al., 2014). However, Kock (2015) recommended researchers report the *p* values for hypothesis tests because the *p* value reflects the *strength* of the path coefficient. Therefore, since Kock's (2017) WarpPLS 5.0

program does not produce *t* values, for this study I will report only *p* values. Outer weights represent the strength of the relationships between the measured formative indicator variables and the exogenous latent variables (Hair et al., 2014). Outer loadings represent the absolute contribution of the indicator variable to the latent variable (Hair et al., 2014). Kock's (2017) WarpPLS 5.0 program contains the results for outer weights and outer loadings together when assessing formative indicator variables during the measurement model assessment (Hair et al., 2014).

If the formative variable assessment results indicate an outer weight as nonsignificant, but the results for the outer loading is high ($\geq$ .50), then the indicator variable is important to the model (Hair et al., 2014). However, if the assessment results indicate an outer weight as nonsignificant and the results for the outer loading is low (< .50), then the researcher will need to retain or discard the indicator variable (Hair et al., 2014). Sarstedt et al. (2014) advised researchers to be cautious when deleting indicators from the construct because formative indicators are not interchangeable, and the latent variable is dependent on all indicators defining the construct. Sarstedt et al. also noted that removal of a formative variable might have adverse consequences on the measurement model's content validity. I will discuss the results of examining the significance and relevance of formative indicator variables in the subheading Measurement Model Assessment Results in Section 3 under the heading Presentation of the Findings.

Internal consistency reliability - composite reliability (ρ_c). Researchers typically measure consistency reliability using Cronbach's α, the traditional criterion

(Hair et al., 2014). However, in my study, I reported consistency reliability using both Cronbach's α and composite reliability (ρ_c). Following Hair et al.'s (2014), Kock's (2015), and Sarstedt et al.'s (2014) guidance in Table 4, my analysis results indicated that the Cronbach's α for my study's instruments were > .90 and composite reliabilities were also > .90, thereby demonstrating internal consistency reliability.

Cronbach's α assumes all indicators have an equal outer loading on the latent variables (Hair et al., 2014). Hair et al. (2014) also noted the tendency of Cronbach's α to *underestimate* the internal consistency reliability because of Cronbach's α sensitivity to the number of items in the instrument. Therefore, I also measured internal consistency reliability of the reflective indicator variables by measuring the *composite reliability* (ρ_c), which reflects the outer loading of indicator variables on their associated construct (Astrachan et al., 2014; Hair et al., 2014; Sarstedt et al., 2014). In Section 3's Presentation of the Findings heading, I discuss the internal consistency reliability and the composite reliability (ρ_c) of the indicator variables in the subheading Measurement Model Assessment Results.

The results of the composite reliability (ρ_c) are indicated by a value between 0 and 1, with the larger value indicating stronger composite reliability (ρ_c) (Hair et al., 2014). Composite reliability (ρ_c) values between .60 and .70 are acceptable for exploratory research, and values between .70 and .90 are satisfactory in advanced stages of research (Hair et al., 2014; Sarstedt et al., 2014). However, values above .90 indicate that all indicators are measuring the same phenomenon; therefore, the indicators are not a valid measure of the latent variable (Hair et al., 2014; Sarstedt et al., 2014). Astrachan et al.

(2014) conducted an outer model examination of their PLS-SEM model by evaluating the relationships between their constructs, (a) *business expectations,* (b) *expertise*, (c) *social expectations*, and (d) *trust,* and the construct's indicators producing composite reliability (ρ_c) results of the relationships between the constructs and their indicators. Astrachan et al.'s composite reliability (ρ_c) results of the relationships between their four constructs, (a) business expectations (.86), (b) expertise (.86), (c) social expectations (.88), and (d) trust (.89), and the construct's indicators exceeded Hair et al.'s (2014) recommendation of a minimum value of .70, and thereby indicated strong internal consistency reliability.

Convergent validity - indicator reliability (outer loadings) and average variance extracted (AVE). To determine if indicator variables within the model for the latent variables correlated positively with alternative indicator variables, I established *convergent validity* by calculating both the outer loadings of the indicator variables and the AVE (Hair et al., 2014; Sarstedt et al., 2014). Outer loadings represent the strength of the relationships between the measured reflective indicator variables and the endogenous latent variables (Hair et al., 2014).

Indicator reliability is established when the results of the analysis indicate high outer loadings of the indicator variables on the latent variable (Hair et al., 2014). As a minimum, the outer loadings should be statistically significant with a value of .708 or higher (Hair et al., 2014). Hair et al. (2014) noted that an indicator reliability value of .70, which is close to a reliability value of .708, is acceptable to establish convergent validity. I calculated the AVE to establish the convergent validity of the latent variable. Hair et al. indicated that AVE is the sum of the squared loadings divided by the number of indicator

variables. An AVE value of .50 or higher indicates that the latent variable explains more than 50% of the variance of the indicator variables (Hair et al., 2014; Sarstedt et al., 2014). Astrachan et al.'s (2014) AVE results exceeded .56 for all of their constructs, and therefore, established convergent validity. In Section 3, under the heading Presentation of the Findings, I will discuss convergent validity and the results of calculating both the outer loadings and the AVE's of the reflective indicator variables in the subheading Measurement Model Assessment Results.

Discriminant validity: cross loading and Fornell-Larcker criterion.

Researchers establish discriminant validity to determine if the constructs within the model are distinct from each other along the path model (Hair et al., 2014; Sarstedt et al., 2014). Researchers measure discriminant validity by examining the cross loading of the reflective indicators or by using the Fornell-Larcker criterion (Hair et al., 2014; Sarstedt et al., 2014). When researchers establish discriminant validity by examining the cross loading of the reflective indicators, researchers determine if the indicator variables load higher on their associated construct than with the other constructs within the path model (Hair et al., 2014; Sarstedt et al., 2014).

Hair et al. (2014) noted that examining the cross-loadings of the indicator variables is *lenient* and could indicate discriminant validity of two or more latent variables. Hair et al. noted that Fornell-Larker criterion is a conservative method of examining the discriminant validity of latent variables. The Fornell-Larker criterion compares the AVE square root and the reflective variable correlation to determine shared variance (Hair et al., 2014; Sarstedt et al., 2014). Sarstedt et al. (2014) recommended that

a latent variable should not exhibit *shared variance* with another latent variable that has a higher AVE value (Hair et al., 2014). Astrachan et al.'s (2014) Fornell-Larcker criterion results indicated that all latent variable AVE values exceeded the *squared inner construct correlations (SIC)* with the exception of Social Expectations: (a) Business Expectations AVE = .56 > Expertise SIC = .31, (b) Expertise AVE = .67 > Social Expectations SIC = .39, (c) Social Expectations AVE = .56 < Trust SIC = .57, and Trust = AVE .75. In Section 3, under the heading Presentation of the Findings, I will discuss discriminant validity and the results of examining the cross loadings of the reflective indicator variables in the subheading Measurement Model Assessment Results.

Data matrix for the PLS-SEM conceptual model. Table 11 is the data matrix for the PLS-SEM conceptual model (Figure 1) of LMX, ESR, PA, and CD and identifies the (a) formative indicator variables, (b) reflective indicator variables, (c) exogenous latent variables, and (d) endogenous latent variables. Using the PLS-SEM algorithm provides the scores of the exogenous latent variables (LMX, ESR) and the endogenous latent variables (PA, CD), to estimate each partial regression model within the PLS-SEM model (Hair et al., 2014). The result of each partial regression model includes estimates of the relationships in (a) the measurement model (loadings, weights), (b) the structural model (path coefficients), and (c) the resultant R^2 values of the endogenous latent variables (Hair et al., 2014).

Table 11

Data Matrix for the PLS-SEM Conceptual Model

	Formative indicator variables		Reflective indicator variables		Exogenous latent variables		Endogenous latent variables	
Case	LMX-E1 to LMX-E7	ESR-1 to ESR-6	PA-1 to PA-5	CD-1 to CD-6	LMX	ESR	PA	CD
1								
…								
400								

Note. Adapted from "Chapter 3: Path Model Estimation," by J. F. Hair, Jr., G. T. M. Hult, C. M. Ringle, and M. Sarstedt, 2014, *A primer on partial least squares structural equation modeling (PLS-SEM),* Los Angeles: Sage.
LMX (Leader-Member Exchange), ESR (Employee-Supervisor Relationship), PA (Performance Appraisal), CD (Career Development).

The formative indicator variables (LMX_E1 to LMX_E7 and ESR_1 to ESR_6) in Figure 3 (labeled as *Block A* and *Block B)* indicate the hypothesized relationship from the formative indicator variables to the latent variables (LMX and ESR). The measured reflective indicator va1riables (PA_1 to PA_5 and CD_1 to CD_6) in Figure 3 (*Block C* and *Block D*) indicate the hypothesized relationship from the reflective indicator variables to the latent variables (PA and CD).

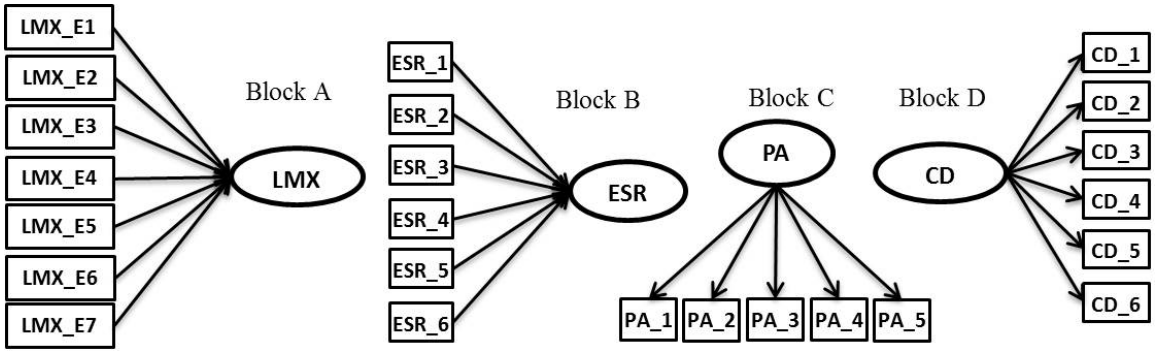

Figure 3. Formative and reflective indicator variables and latent variables (LMX, ESR, PA, CD)

As indicated in Table 8, to answer SRQ1 and to test $H1_0$, I assessed the formative measurement models (Blocks A and B) included in Figure 3 by assessing (a) convergent validity, (b) potential collinearity issues of indicators (tolerance/VIF), and (c) significance and relevance of indicators (outer weights & outer loadings; Hair et al., 2014; Hoffman et al., 2013; Sarstedt et al., 2014). Also indicated in Table 8, to answer SRQ2 and to test $H2_0$, I assessed the formative and reflective measurement models (Blocks A, B, and C) included in Figure 3 by assessing (a) convergent validity, (b) potential collinearity issues of indicators (tolerance/VIF), (c) significance and relevance of indicators (outer weights & outer loadings), (d) internal consistency reliability (composite reliability [ρ_c]), (e), convergent validity (indicator reliability [outer loadings] and calculate AVE value), and (f) discriminant validity (cross loading and Fornell-Larcker criterion; Astrachan et al., 2014; Hair et al., 2014; Hoffman et al., 2013; Klarner et al., 2013; Sarstedt et al., 2014). Also indicated in Table 8, to answer SRQ3 and to test $H3_0$, I assessed the formative and reflective measurement models (Blocks A, B, C, and D) included in Figure 3 by assessing (a) convergent validity, (b) potential collinearity issues of indicators (tolerance/VIF), (c) significance and relevance of indicators (outer weights & outer loadings), (d) internal consistency reliability (composite reliability [ρ_c]), (e), convergent validity (indicator reliability [outer loadings] and average variance extracted [AVE] value), and (f) discriminant validity (cross loading and Fornell-Larcker criterion; Astrachan et al., 2014; Hair et al., 2014; Hoffman et al., 2013; Klarner et al., 2013; Sarstedt et al., 2014).

Structural Model Assessment

The third step in assessing the validity of a PLS-SEM analysis is to examine the structural model (Hair et al., 2014). Hair et al. (2014) described the structural model of the PLS-SEM as the inner model that demonstrates the relationship between latent variables. Within this subheading, I discuss the information presented in Table 8 and Figure 4 and outline the procedures to answer SRQ3 by testing $H3_0$ to assess the validity of my PLS-SEM. Researchers apply structural theory to assess structural models' validity by examining the quality of the relationship between the latent variables (Hair et al., 2014). Latent variables can represent either independent exogenous latent variables, dependent endogenous latent variables or both (Hair et al., 2014). As indicated in Table 8 and as included in Figure 4, I identified LMX and ESR as independent formative variables, and PA and CD as dependent reflective variables. Researchers measure the relationships among the latent variables by examining (a) collinearity issues of predictor latent variables (tolerance/VIF), (b) significance and relevance of SEM correlation, (c) the coefficient of determination (R^2), (d) f^2 (effect size), and (e) predictive relevance Q^2 (Astrachan et al., 2014; Hair et al., 2014; Hoffman et al., 2013; Klarner et al., 2013; Sarstedt et al., 2014).

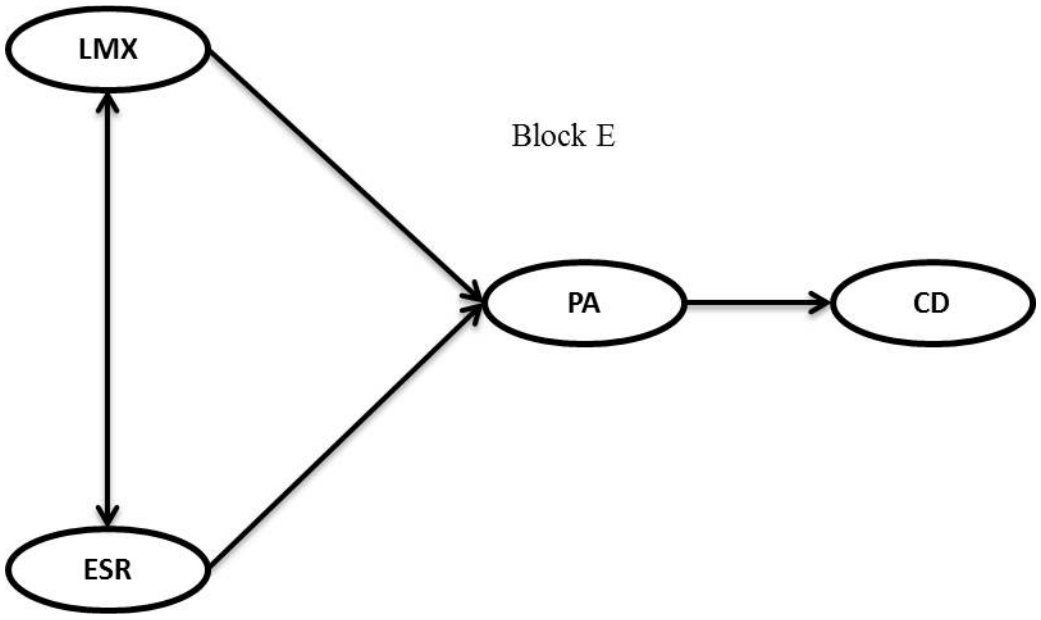

Figure 4. Structural model of latent variables LMX, ESR, PA, and CD.

The latent variables (LMX, ESR) depicted in Figure 4 (Block E) denote their hypothesized relationship. The independent latent variables (LMX, ESR) in Figure 4, indicate a separate relationship with the dependent variable (PA), which also hypothesizes a relationship with the dependent variable (CD). The path coefficients among the latent variables represent the relationships between the independent latent variables and the dependent latent variables (Hair et al., 2014).

Examining and addressing potential collinearity issues of predictor constructs (tolerance/VIF). Researchers define the level of collinearity within the path coefficients of the structural model among the predictor exogenous latent variables and among the endogenous latent variables as being *significant* if they are statistically significant predictors of other latent variables (Hair et al., 2014; Sarstedt et al., 2014). Researchers measure the collinearity issues within the SEM using the same measures

when assessing the collinearity issues of formative indicator variables using tolerance and VIF values (Hair et al., 2014; Sarstedt et al., 2014). Since the exogenous latent variables LMX and ESR serve as predictors of the endogenous latent variable PA, I examined the collinearity between the two exogenous latent variables included in Figure 4 by assessing tolerance levels and VIF values (Hair et al., 2014; Sarstedt et al., 2014). Hair et al. (2014) recommended that tolerance levels below .20, and VIF values above 5.00 are indicative of significant collinearity within the SEM.

Sarstedt et al. (2014) examined the collinearity between their three exogenous latent variables (a) *Family Power*, (b) *Family Culture*, and (c) *Family Experience* since the three exogenous latent variables serve as predictors on two of their endogenous latent variables (a) *Innovation* and (b) *Strategic Information Sharing*. Sarstedt et al. measured the collinearity between the endogenous latent variables Innovation and Strategic Information Sharing because they also served as predictors of the endogenous latent variable *Relationship Value.* Sarstedt et al.'s VIF value results ranged between 1.144 (Family Power) and 3.448 (Strategic Information Sharing and Innovation) indicating collinearity was not a significant issue affecting the analysis and interpretation of their structural model.

Hair et al. (2014) suggested that if collinearity exists within the SEM, then the researcher should consider (a) eliminating constructs, (b) combining related constructs into a single construct, or (c) creating a higher order construct (HOC). However, eliminating the LMX and ESR latent variables was not feasible in my study since the results of my PLS-SEM and my ability to answer my PRQ were dependent on being able

to answer the SRQs and test the derivate hypotheses. My analysis results indicated no significant collinearity between the exogenous latent variables with VIF values < 5 (LMX = 4.55 and ESR = 3.90) and AVE's > .20 (LMX = .652 and ESR = .686). Therefore, I retained both exogenous latent variables and did not merge them into a higher-order construct (HOC).

Significance and relevance of SEM correlation. By employing the PLS-SEM algorithm, researchers obtain estimates of the path coefficients of the structural model relationships (Hair et al., 2014). Hair et al. (2014) noted that the path coefficients (hypothesized relationships among the latent variables) have standardized values between -1 and +1. A path coefficients estimate > 0 and $\leq$ 1 has a *positive* relationship and path coefficients estimate $\geq$ -1 and < 0 has a *negative* relationship indicating a statistically significant relationship (Hair et al., 2014). A path coefficient of zero indicates a statistically nonsignificant relationship (Hair et al., 2014). Researchers use the bootstrapping procedure to calculate the *t* values to determine the path coefficient's significance (Hair et al., 2014). However, Kock (2015) recommended that researchers report *p* values for hypothesis testing because the *p* value reflects the *strength* of the path coefficient. Therefore, since Kock's (2017) WarpPLS 5.0 program does not produce *t* values, I will report only *p* values.

Hair et al. (2014) noted that researchers who conduct *exploratory* studies utilize a 10% significance level and routinely report the *p* value. However, since my study includes three sets of hypotheses, Cohen (1992) recommended a significance level of 1% for studies testing multiple null hypotheses (H_0). Researchers apply a *multiple*

comparison adjustment for the significance level (i.e. Bonferroni adjustment) to address possible composite Type I errors (Bose & Gijselaers, 2013; Henseler, Ringle, & Sarstedt, 2015). To determine a Bonferroni adjusted significance level, I would have divided the routine significance level suggested by Hair et al. (10%) by the number of null hypotheses (3) to obtain an adjusted significance level of 3.3% (.1/3 = .033; Bose & Gijselaers, 2013; Henseler et al., 2015). However, since I followed Cohen's recommendation and reported the *p* value with a significance level of $\leq$ 1 percent ($p \leq$ .01), and because the Bonferroni adjusted significance level is actually higher (.033), there was no need to employ a Bonferroni adjustment.

Van de Ridder, Berk, Stokking, and Ten Cate (2014) conducted a study examining *feedback providers' credibility* and the impact on students' satisfaction of the feedback and students' performances. Van de Ridder et al. hypothesized that there is an effect of feedback provider credibility on (a) employee satisfaction with the feedback, (b) employee self-efficacy, and (c) employee performance. Van de Ridder et al. applied the Bonferroni adjustment to address Type I errors by dividing their established α (.10) by the number of hypotheses being testing (.10/3 = .03) to arrive at an adjusted study significance level (α = .03). Bowie, McGurk, Mausbach, Patterson, and Harvey (2012) conducted a study examining *cognitive remediation* and *functional skills training* for treating schizophrenia. Bowie et al. conducted a pairwise comparison by examining *interaction effects* with a Bonferroni adjustment by dividing their established α (.05) by the number of their six primary analyses (.05/6 = .008) to arrive at an adjusted study significance level (α = .008).

Sarstedt et al. (2014) examined the statistical significance and nature of nine structural model relationships. Their results were that six of the nine relationships were significant ($p \leq .05$). Sarstedt et al.'s path coefficient results for the six significant relationships were between (a) Family Power – Strategic Information Sharing (0.372), (b) Family Experience – Strategic Information Sharing (0.299), (c) Family Experience – Innovation (0.096) (d) Strategic Information Sharing – Innovation (0.775), (e) Strategic Information Sharing – Relationship Value (0.374), and Innovation – Relationship Value (0.477). Sarstedt et al.'s path coefficient results of the three nonsignificant relationships were between (a) Family Culture – Strategic Information Sharing (-0.074), (b) Family Culture – Innovation (-0.077), and (c) Family Power – Innovation (0.061).

Astrachan et al. (2014) reported *p* values in their discussion of their five hypotheses from their analysis results of their PLS-SEM path coefficients and significance levels. However, Astrachan et al. included *t* values in their study indicating that their *t* values were larger than the commonly accepted critical value of 1.96 (significance level = 5%). Astrachan et al.'s results also accepted all five hypotheses. Astrachan et al.'s *t* value results were (a) Business Expectations – Trust ($t = 1.999$), (b) Business Expectations – Expertise ($t = 2.314$), (c) Social Expectations – Trust ($t = 7.135$), (d) Social Expectations – Expertise ($t = 5.515$), and (e) Expertise – Trust ($t = 7.669$).

As shown in Figure 1, and since my study's results indicated significant path coefficients' ($p \leq .01$), there was no need to calculate the *total effect* of the relationships. However, to test SRQ3, I will examine the mediating effect of the variable PA on the path coefficients between LMX and CD, and ESR and CD using Kock's (2017)

WarpPLS program, which automatically calculates the estimation of indirect effects and the associated *p* values (Kock, 2014a). In Section 3, under the heading Presentation of the Findings, I will discuss the indirect effects of the mediating latent variable PA in the subheading Structural Model Assessment Results.

Level of R^2. Hair et al. (2014) defined R^2 as the *coefficient of determination (CoD)*. Researchers use R^2 to evaluate the SEM model's predictive accuracy and the combined effects of the exogenous latent variables on the endogenous variables (Hair et al., 2014). The R^2 value ranges between 0 and 1 (Hair et al., 2014). Hair et al. noted that, depending on the nature of the research, values as low as .20 could indicate high predictive accuracy. Hair et al. (2011), Hair et al. (2014), Kock (2015), and Wong (2013) recommended using R^2 values of (a) $\geq$ .75 to indicate *substantial* predictive accuracy, (b) between .25 and .75 to indicate *moderate* predictive accuracy, and (c) $\leq$ .25 to indicate *weak* predictive accuracy. For my study I followed Hair et al. (2011), Hair et al. (2014), Kock', and Wong's recommendation and used R^2 values of (a) $\geq$ .75 to indicate substantial predictive accuracy, (b) between .25 and .75 to indicate moderate predictive accuracy, and (c) $\leq$ .25 to indicate weak predictive accuracy. In Section 3, under the heading Presentation of the Findings, I will discuss the implications from the R^2 relative to the SEM model's predictive accuracy in the subheading Structural Model Assessment Results.

f^2 effect size. To examine the effect size that a predictor exogenous latent variable has on an endogenous latent variable at the structural level in Figure 5, I calculated the absolute effect size value of the PLS path between each exogenous latent variable (LMX,

ESR) to the endogenous latent variable (PA). To calculate the f^2 value for the effect of each predictor exogenous latent variable (LMX, ESR) on the endogenous latent variable (PA) the R^2 value of the PLS path of one exogenous latent variable is first included in the calculations and then a second value of the R^2 is estimated when the same exogenous latent variable is excluded from the calculation (Hair et al., 2014). However, Kock (2015) noted that Cohen's (1988) calculation for f^2 value includes a stepwise regression procedure, which changes the weighting scores linking latent and indicator variables, thereby inducing potential biases in the effect size measures. Furthermore, researchers have used the same process to calculate the q^2 effect size of exogenous latent variables on endogenous latent variables that researchers use to calculate the effect size for the f^2 value (Hair et al., 2014). However, since the Kock's (2017) WarpPLS program calculates the absolute effect size but does not calculate q^2 effect size, I did not include the q^2 effect size in my results. To address effect sizes, I used a procedure in Kock's (2017) WarpPLS program to estimate the absolute effect size values of the predictor latent variables to the R^2 coefficients of the criterion latent variables. Hair et al. (2014), Kock, and Wong (2013) noted that researchers use a standard set of guidelines for indicating the f^2 value of the effect size of the predictor exogenous latent variable on the endogenous latent variable: (a) *no noticeable effect (<.02)*, (b) *small [.02,.15)*, (c) *medium [.15,.35)*, and (d) *large* ($\geq$ *.35*.

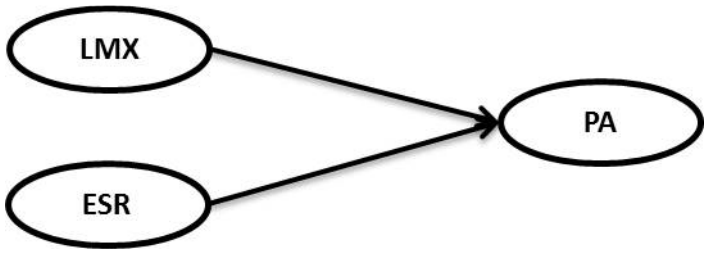

Figure 5. Predictor exogenous variables (LMX, ESR) on the endogenous variable (PA). LMX and ESR are exogenous independent variables connected to PA the dependent endogenous variable.

To calculate the absolute effect size value of the PLS path between the two exogenous latent variables (LMX, ESR) in Figure 5 and the endogenous latent variable (PA), I used Kock's (2017) WarpPLS program to calculate the effect sizes for the path coefficients. Researchers use a set of standard criteria for indicating the effect size value of the predictor exogenous latent variable on the endogenous latent variable: (a) *no noticeable effect (<.02)*, (b) *small [.02,.15)*, (c) *medium [.15,.35)*, and (d) *large* ($\geq .35$; Hair et al., 2014; Kock, 2015; Wong; 2013).

Since, as depicted in Figure 6, the latent variable PA acts as an exogenous variable on CD, and although PA is the only endogenous latent variable connected to CD, I followed Wong's (2013) recommendation that researchers should report the f^2 effect size. I calculated the R^2 value of the PLS path between PA and CD to evaluate the effects of the exogenous latent variable (PA) on the endogenous variable (CD). Since there is only one exogenous variable (PA) connected to the endogenous variable (CD), I calculated the effect size for the path coefficients. In Section 3, under the heading *Presentation of the Findings*, I will discuss the findings of the absolute effect size

analyses and the R^2 relative to the SEM model's predictive accuracy in the subheading Structural Model Assessment Results.

Figure 6. Predictor exogenous variable (PA) influence on the endogenous variable (CD).

Predictive relevance Q^2. Whereas f^2 values indicate the effect size of the predictor exogenous latent variables on the endogenous latent variables, Q^2 values determine the extent to which the endogenous latent variables' reflective indicators have *predictive relevance* to the PLS path model (Hair et al., 2014; Kock, 2015; Sarstedt et al., 2014). Hair et al. (2014), Kock (2015), and Sarstedt et al. (2014) noted that a Q^2 values > 0 indicates that the endogenous latent variables' reflective indicators have predictive relevance, whereas Q^2 values < 0 indicate that the endogenous latent variables' reflective indicators are lacking in predictive relevance. Hair et al. noted that there are two approaches to calculating Q^2 values, the *cross-validated redundancy approach,* and the *cross-validated commonality approach*. Hair et al. noted that the cross-validated commonality approach reflects the estimated construct scores of the endogenous latent variable without including structural model data to predict excluded data. Therefore, Hair et al. recommended that researchers use the cross-validated redundancy approach since data prediction is based on both the structural model's construct scores and the measurement model's endogenous construct scores.

I calculated the Q^2 values of both endogenous latent variables (PA, CD) in Figure 6 using the *blindfolding* function of Kock's (2017) WarpPLS program. The blindfolding

function randomly removes reflective indicator variables from the endogenous latent variable and predicts an estimated value for the missing indicator variable (Hair et al., 2014). The blindfolding function will repeat the process of removing reflective indicator variables until all indicators have been removed, and predictive values have been calculated (Hair et al., 2014). To calculate the Q^2 value, researchers calculate the differences between the actual indicator values and the predicted indicator values (Hair et al., 2014). In Section 3, under the heading Presentation of the Findings, I will discuss the implications of the Q^2 values on the PLS path model in the subheading Structural Model Assessment Results.

I tested the internal consistency reliability of my study's instruments for my study's population using both Cronbach's α and composite reliability (ρ_c). Following Hair et al.'s (2014), Kock's (2015), and Sarstedt et al.'s (2014) guidance in Table 4, the results of my analysis indicated that my instruments' Cronbach's' alphas (α) were > 0.90 and composite reliabilities were also > 0.90, thereby demonstrating internal consistency reliability. I assured the validity of my SEM by following the procedures outlined in the following heading, *Study Validity*, by (a) screening the data, (b) evaluating the measurement model, and (c) evaluating the structural model.

Using the procedures outlined in the next heading, I ensured the validity of my study's findings. Following Hair et al.'s (2014), Kock's (2015), and Sarstedt et al.'s (2014) guidance in Table 4, the results of my analysis indicated acceptable convergent validity since all combined loadings were > 0.5 and all p values were < .001. Furthermore, following Hair et al.'s, Kock's, and Sarstedt et al.'s guidelines in

developing Table 4, I demonstrated discriminant validity since all of the loadings of each indicator variable on its associated latent variable were larger than the indicator variables' loading on adjacent latent variables.

Study Validity

The purpose of this quantitative correlation study is to examine the extent and nature of the influence of the relationship between LMX and ESR on employees' CD through the mediating effect of employees' perceived efficacy of the PA process. My objective in this subheading is to describe how I will validate the findings from my study to ensure that what I am measuring is what I intend to measure to ensure the relevance of the components of my research, and to address threats to the validity of my study (Drost, 2011; Trochim, 2001). Barry, Chaney, Piazza-Gardner, and Chavarria (2014) stated that survey instruments are not valid or reliable for all studies. Therefore, researchers should validate their survey instruments by examining their participants' responses.

Although researchers validated and utilized my survey instruments in previous research and published the survey instruments in peer-reviewed articles, it is important for researchers to report the validity and reliability of instruments in the context of their research population (Barry et al., 2014). Therefore, my intention was not to validate the instruments I used, but to use the instruments to substantiate the operationalization of the latent variables (a) LMX, (b) ESR, (c) PA, and (d) CD in Figure 1 to describe the potential causal relationship paths for improving the efficacy of the PA (Trochim, 2001).

The three types of validity that I will address in this subheading are for my study's (a) external validity, (b) statistical conclusion validity, and (c) construct validity

(Barry et al., 2014; Drost, 2011; Trochim, 2001). Internal validity pertains to the researcher's results being able to claim causal relationship among variables (Drost, 2011; Trochim, 2001). Trochim (2001) noted that internal validity pertains to cause and effect or causal relationship research. Drost (2011) noted that researchers examine internal validity to assess if there are external or internal stimuli affecting the cause and effect of the researcher's results. Since my correlational study was not an experimental or quasi-experimental design, I did not examine cause-and-effect. Therefore, internal validity was not applicable for my study.

External Validity

External validity pertains to the researcher's ability to generalize the results of the study to the population external to the sample population for different times and places (Drost, 2011; Trochim, 2001). Threats to external validity that I addressed are researchers' ability to generalize the results of their research to an external population from the sample population for different times and for different places (Drost, 2011; Trochim, 2001). To address threats to external validity, I surveyed employees from seven of the 20 largest defense contractor companies that employ a combined estimated workforce of 2,000,000 employees throughout the world.

Hazen, Overstreet, Hall, Huscroft, and Hanna (2015) acquired their sample population from numerous defense contractor companies working for the Department of Defense. Hazan et al.'s validity test indicated that their data and model were adequate to test their hypotheses. By including employees from seven of the 20 largest defense contractor companies that employed a combined estimated workforce of 2,000,000

employees throughout the world, I expected to lessen the threat to external validity. However, as previously stated, I initially requested from the defense contractor companies' site managers and HR directors, that only defense contractor companies' employees, who work in the United States, complete the survey.

Statistical Conclusion Validity

Statistical conclusion validity pertains to the researcher's ability to identify credible conclusions pertaining to the relationships among the constructs (Drost, 2011; Trochim, 2001). Trochim (2001) noted two issues to conclusion validity:

- The researcher's results indicate that there is no relationship when, in fact, there is a relationship.
- The researcher's results indicate that there is a relationship when, in fact, there is not a relationship.

Drost (2011) and Trochim identified several threats to researchers' statistical conclusion validity that might influence their relationship conclusions consisting of (a) *low reliability of measures*, (b) *poor reliability of treatment implementation*, (c) *random irrelevancies in the setting*, (d) *random heterogeneity of respondents*, (e) *low statistical power*, (f) *violated assumptions of statistical tests*, and (g) *fishing and the error rate problem*.

Trochim (2001) noted that factors such as (a) *poor question wording,* (b) *bad instrument design,* or (c) *illegibility of field notes* could reduce the reliability of measures. I did not address poor question wording or illegibility of field notes since these two issues pertain to *qualitative* research designs. I addressed the potential threat to the reliability of

measures by using reliable and validated survey instruments from peer-reviewed articles. I tested the internal consistency reliability of my study's instruments for my study's population using Kock's (2017) WarpPLS program. Following Hair et al.'s (2014), Kock's (2015), and Sarstedt et al.'s (2014) guidance in Table 4, the results of my analysis indicated that my instruments' Cronbach's' alphas (αs) were > 0.90 and composite reliabilities were also > 0.90, thereby demonstrating internal consistency reliability. Furthermore, following the relevant guidance in Table 4, the results of my analysis indicated acceptable convergent validity since all combined loadings were > 0.5 and all *p* values were < .001. In addition, and following Hair et al.'s, Kock's, and Sarstedt et al.'s guidance in Table 4, my analysis results also indicated discriminant validity since all of the loadings of each indicator variable on its associated latent variable is larger than the indicator variables' loading on adjacent latent variables.

I did not address the reliability of treatment implementation since my research is a quantitative correlational study and not an experimental or quasi-experimental research study. Poor reliability of treatment implementation is an issue that might affect research in which the researcher is attempting to develop a program or a new medical treatment (Trochim, 2001). I also did not address random irrelevancies in the setting since I conducted data collection via the Internet, and I did not have any control over the setting in which the participants completed the surveys. I only advised participants to conduct the survey in a quiet setting to avoid interruptions or external influences in their decisions. Since I elicited the assistance from company site managers and HR directors for access to potential participants, I did not have any control over the random

heterogeneity of respondents. However, I *assumed* there were a variety of participants since my study consisted of employees from seven of the 20 largest defense contractor companies that I invited to participate. The 20 defense contractor companies employ a combined estimated workforce of 2,000,000 employees throughout the world. However, I requested that only defense contractor companies' employees, who work in the United States, complete the survey.

To address the threat of insufficient statistical power, I followed researchers' recommendations for using the conventionally accepted statistical power level of .80, the conventionally accepted anticipated effect size of .15, and a probability alpha value of .01 to calculate the required sample size (Bell et al., 2014; Field, 2014; Fritz et al., 2015; Sham & Purcell, 2014). Therefore, using a minimum R^2 value of .50 from Cohen's Minimum R^2 Calculation Table in Hair et al.'s (2014) book, I calculated the minimum sample size using both αs of .01 and .05. The minimum sample size calculation results using an α of .01 was 47 samples and the results for an α of .05 was 33 samples. Since my study included three hypotheses and null hypotheses, Cohen (1992) recommended an α of .01 for studies testing multiple null hypotheses (H_0). For this reason, I calculated the minimum sample size to be between 33 and 47 participants. I also followed Trochim's (2001) recommendation to address both α (type I error) and β (type II error). A Type I error (α = .01) would cause the researcher to reject the null hypothesis incorrectly. A Type II error (β = .20) would cause the researcher to incorrectly accept the null hypothesis.

Trochim (2001) noted that the *violated assumptions of statistical tests* threat to validity consist of researchers not understanding the true nature of the data in the research. To address assumption violations of statistical tests, I conducted a descriptive statistical analysis using the *bootstrapping* method in *IBM's SPSS* program with 5000 resamples, which produced 220,000 cases. The results of my Shapiro-Wilk test of normality indicated that the results were significant ($p < .01$) and the response data were nonnormally distributed. However, since Hair et al. noted that PLS-SEM is robust and works well with nonnormally distributed data, and therefore, the data distribution for this study is not expected to substantially affect the reliability or validity of the *interpretation* of this study's results (Sarkar, 2014).

Trochim (2001) noted that the *fishing and the error rate problem* pertains to the researcher conducting multiple analyses, but treating each analysis as if it were independent. To address the fishing and the error rate problem, researchers (i.e., Bose & Gijselaers, 2013; Henseler et al., 2015; Trochim, 2001) recommended conducting a multiple test adjustment. Since I conducted multiple analyses in my study, I followed Cohen's (1992) recommended significance level of 1% for studies testing multiple null hypotheses (H_0). Researchers adjust the significance level by using the Bonferroni correction procedure. However, since I used a .01 (α) to test three hypotheses, there was no need to perform a Bonferroni adjustment to reduce the composite significance level further.

Construct Validity

Construct validity pertains to the researcher's ability to operationalize their variables to the predictive results once a causal relationship is established (Drost, 2011; Trochim, 2001). When researchers operationalize their constructs, they are in effect translating the construct to reflect *real world* applications (Krueger & Markon, 2014; Meins, 2013). There are six construct validity types, and Trochim (2001) organized them into two categories *translation validity* and *criterion-related validity*. Trochim introduced the term translation validity out of necessity since no other category existed. Trochim included *face validity* and *content validity* within the translation validity category in determining if the researcher's operationalization fits the construct's theoretical definition. Under the criterion-related validity category, Trochim included (a) *predictive validity,* (b) *concurrent validity*, (c) *convergent validity,* and (d) *discriminant validity*, which examines if the operationalization reacts according to the theory of the construct.

Translation validity. Researchers examine translation validity to determine if the constructs accurately convert to the operationalization of the constructs (Drost, 2011; Trochim, 2001). Researchers determine translation validity by examining face validity and criterion-related validity (Drost, 2011; Trochim, 2001). Researchers examine face validity to determine if the construct operationalization is a good representation of the construct according to expert observation and theory (Trochim, 2001). The threat to face validity is that it is a subjective observation by researchers (Drost, 2011). To lessen the threat to face validity, researchers should enlist experts to examine the measure to determine if it reflects the construct (Trochim, 2001). I was able to reduce threats to the

face validity of my research by using survey instruments validated by researchers and published in peer-reviewed articles, and through reviewing professional and academic literature associated with the theory of the latent variables in Figure 1.

Researchers examine content validity to determine if the operationalization of their constructs is relevant to their research content characteristics (Robertson, Burnett, & Cochrane, 2014; Trochim, 2001). Drost (2011) noted that content validity is a qualitative method for ensuring that the operationalization of constructs reflects the theoretical definition according to the professional and academic literature. Therefore, to lessen threats to the content validity of my study, I included theoretical definitions of my latent variables included in Figure 1 from the professional and academic literature associated with the theories pertaining to the latent variables. I also defined the latent variables (a) LMX, (b) ESR, (c) PA, and (CD) in the *Foundation of the Study, Background of the Problem,* and *Operational Definition* headings of *Section 1* of my study. I also ensured that the reflective and formative variable indicators of the instruments that I used, reflect the *domain* and *dimensions* of the latent variables (a) LMX, (b) ESR, (c) PA, and (d) CD (Drost, 2011). Furthermore, I verified that the instruments that I used to measure the latent variables (a) LMX, (b) ESR, (c) PA, and (d) CD have operationalized the latent variables and reflected the definitions of the variables that I provided.

Criterion-related validity. Researchers examine criterion-related validity to test the performance of their operationalization of their constructs against established criteria (Drost, 2011; Trochim, 2001). Researchers test translation validity by examining how well the researcher is able to operationalize the constructs; whereas, researchers test

criterion-related validity by examining how well the researcher is able to predict the performance of operationalized constructs based on theory (Trochim, 2001). Researchers examine criterion-related validity by testing (a) predictive validity, (b) concurrent validity, (c) convergent validity, and (d) discriminant validity (Trochim, 2001).

Researchers examine predictive validity by testing their operationalized constructs' ability to predict the theorized behavior (Trochim, 2001). Researchers establish concurrent validity by examining the efficacy of their operationalized constructs' ability to distinguish between theorized performances (Trochim, 2001). Researchers establish convergent validity by examining the efficacy of their operationalized constructs' ability to distinguish similarities between the results of the research compared to previous researchers' results (Trochim, 2001). Researchers examine discriminant validity by testing their operationalized constructs' ability to distinguish dissimilarities between the results of the proposed instruments compared to the results from previous instruments that should not be correlated (Trochim, 2001).

To reduce threats to criterion-related validity, I compared the psychometric properties of my operationalized constructs with the results from previous researchers. I also compared the psychometric properties of my operationalized constructs to theoretical literature and to professional and academic literature. I examined construct validity by using IBM's SPSS 23 software package to conduct a confirmatory factor analysis of my constructs to compare with the results from previous researchers. Sinclair (2013) reported the reliability and validity results of the three instruments used in his research from professional and academic literature. However, Sinclair could not locate a complete set of

measures with which to compare the results. Therefore, Sinclair performed confirmatory factor analysis to assess construct validity.

Drost (2011) noted that one prevalent threat to construct validity is *common method variance*. Researchers have noted that common method biases are the most common source of measurement errors because participants answer all of the questions on self-report surveys during cross-sectional studies (Balkan & Kholod, 2015; Coenen & Van den Bulck, 2016). Researchers also noted that conducting surveys at different times and places helps to lessen method variances (Balkan & Kholod, 2015; Coenen & Van den Bulck, 2016). Spector (2006) noted that numerous researchers have invoked common method variances so often that researchers should classify common method variance as an urban myth. Spector stated that systematic errors could emerge from a study's constructs and variables, and from other external stimuli, such as participants' attitude or social status. However, Spector concurred with researchers that by conducting longitudinal studies or including participants from numerous locations and at different times could lessen method variance errors.

R. E. Johnson, Rosen, and Djurdjevic (2011) validated 1067 participants' surveys from two of the authors' studies of various businesses and locations to examine the different methods that other researchers use to lessen common method variance within their research. R. E. Johnson et al.'s results indicated attitudes and personalities generalize across people regardless of demographics. Therefore, R. E. Johnson et al. claimed to demonstrate external validity for their study's findings because the authors drew their participants from multiple sources at different times. Therefore, to address the

potential common method variance within the results of my study, I surveyed participants from seven of the 20 largest defense contractor companies.

Transition and Summary

Section 2 contains a restatement of the purpose of the study and describes my role as the researcher. Section 2 also contains a description of the strategies for (a) gaining access to the participants; (b) the methods for establishing a relationship with the participants; (c) assuring the participants' anonymity; and (d) an explanation of the research method and design, the sample population, and description of potential ethical issues. Section 2 continues with a description of (a) the data collection process, (b) the data analysis instruments, (c) the data collection technique, (d) the data organization technique, and (e) the data analysis method. Section 2 concludes with an explanation on the means for assuring my study's external and internal validity.

Section 3 contains a restatement of the purpose of the study, a summarization of the findings, and the results of conducting the PLS-SEM statistical tests. Section 3 also contains a description of the statistical tests with an explanation of the (a) variables, (b) purpose of the tests, and (c) the test results' relationship to the research questions and hypotheses. Section 3 continues with a discussion of the (a) potential applications of the study's findings to the professional and business practices, (b) the implications of the study's findings for social change, and (c) recommendations for actions and future research. Section 3 also contains a discussion of my experiences during, and after the completion of the doctoral study process. Furthermore, I will identify (a) potential personal biases that arose, (b) preconceived ideas and values that emerged, and (c)

potential effects caused by myself on the participants during my doctoral study process. Section 3 concludes with a discussion on the extent and nature to which the study's findings answer the PRQ, and align with the theoretical framework and the existing literature.

Section 3: Application to Professional Practice and Implications for Change

Introduction

The purpose of this quantitative correlation study was to examine the extent and nature of the influence of the relationship between leader-member exchange (LMX) and employee-supervisor relationship (ESR) on employees' career development (CD) through the mediating effect of employees' perceived efficacy of the performance appraisal (PA) process. The specific business problem is that some defense contractor supervisors do not understand the influence of the relationship between LMX and ESR on employees' CD through the mediating effect of employees' perceived efficacy of the PA process. The independent variables were LMX and ESR, and the dependent variables were PA and CD.

The initial findings indicated that majority of the respondents replied with high ratings indicating high-quality exchanges with their supervisor. However, 5% of the respondents consistently replied with a low rating indicating low-quality exchanges, thereby supporting Dulebohn et al.'s (2012) identification of two levels of LMX (low-quality exchange, and high-quality exchange). Dulebohn et al. also noted that both the employee and supervisor contribute to the quality of the exchange.

The initial findings indicated that 70% of respondents reported that their PAs were fair and were an accurate assessment of their performance. However, 5% of the respondents consistently replied with low ratings with over 30% indicating that their organizations' PA system did not help them with their CD. In addition, there was an equal percentage of respondents (> 30%) who selected either the response (a) *neither*

agreed nor disagreed or (b) *agree* that their organization offered CD opportunities. In summary, the overall results indicated that although there was high-quality LMX and ESR within the organizations, employees perceived that organizational leaders did not use the PA system to develop employees and thereby increase employees' CD opportunities.

Presentation of the Findings

In this study, using Kock's (2017) WarpPLS 5.0 software program, I analyzed data using PLS-SEM. I examined the extent and nature of the relationship between LMX and ESR for improving the efficacy of employees' PA for guiding employees' CD. To address the specific business problem, I formulated the following research questions and hypotheses for examining the potential application of LMX theory and influence of distributive and interactional justice dimensions of organizational justice theory for examining LMX, ESR, PA, and CD. To address the specific business problem, the PRQ was this: To what extent does the relationship between LMX and ESR influence employees' CD through the mediating effect of employees' perceived efficacy of the PA process?

To address my business problem and answer the PRQ, I used the SEM in Figure 1 to formulate three SRQs.

SRQ1: To what extent does a relationship exist between LMX and ESR?

SRQ2: To what extent does the relationship between LMX and ESR influence the employees' perceived efficacy of the PA process?

SRQ3: To what extent does the relationship between LMX and ESR influence employees' CD through the mediating effect of employees' perceived efficacy of the PA process?

After reviewing Figure 1, the PRQ, and the SRQs, I formulated three two-sided hypotheses to test the significance of the relationship between the independent variables (LMX, ESR) that influences employees' CD through the mediating effect of employees' perceived efficacy of the PA process.

$H1_0$: There is no significant relationship between LMX and ESR.

$H1_a$: There is a significant relationship between LMX and ESR.

$H2_0$: There is no significant relationship between LMX and ESR that influences the employees' perceived efficacy of the PA process.

$H2_a$: There is a significant relationship between LMX and ESR that influences the employees' perceived efficacy of the PA process.

$H3_0$: There is no significant relationship between LMX and ESR that influences employees' CD through the mediating effect of employees' perceived efficacy of the PA process.

$H3_a$: There is a significant relationship between LMX and ESR that influences employees' CD through the mediating effect of employees' perceived efficacy of the PA process.

I used four instruments to measure the relationships among the latent variables (a) LMX, (b) ESR, (c) PA, and (d) CD. Using Graen and Uhl-Bien's (1995) 7-item LMX-7 instrument provided employees' responses pertaining to LMX between supervisors and

employees. Using Moorman's (1991) 6-item Interactional Justice instrument provided employees' responses pertaining to ESR. Using Waldman's (1997) 5-item Appraisal System Satisfaction instrument provided employees' responses pertaining to their organization's PA system. Using Kraimer et al.'s (2011) 6-item PCO instrument provided employees' responses pertaining to their company's CD policies. Although Graen and Uhl-Bien designed their LMX-7 instrument to measure both supervisors' and employees' dyadic responses, I only required employees' perceptions on LMX (LMX_E), ESR, PA, and CD to answer my research questions.

Participants' Demographics

Table 12 is a summary of my study's participants' demographics ($N = 44$) as indicated by the frequency numbers and percentages of participants for each category.

Table 12

Participants' Demographics (N = 44)

Demographic	Scale	Category	*N*	%
Gender	1	Female	10	22.7
	2	Male	34	77.3
Age (Years)	1	18 - 30	3	6.8
	2	31 - 40	11	25.0
	3	41 - 50	12	27.3
	4	51 - 60	14	31.8
	5	> 61	4	9.1
Race (Reported by U.S. Census)	1	American Indian / Alaskan Native	0	0
	2	Asian / Pacific Islander	1	2.3
	3	Black / African American	5	11.4
	4	Hispanic	8	18.2
	5	White / Caucasian	27	61.4
	6	Mixed / Other	3	6.8
Time employed with current company	1	< 5 years	17	38.6
	2	5 - 10 years	12	27.3
	3	11 to 15 years	6	13.6
	4	16 to 20 years	6	13.6
	5	21 to 25 years	2	4.5
	6	26 to 30 years	0	0
	7	≥ 31 years	1	2.3
Months since last performance appraisal	1	1 month	23	52.3
	2	2 months	6	13.6
	3	3 months	6	13.6
	4	4 months	2	4.5
	5	5 months	1	2.3
	6	6 months	2	4.5
	7	7 months	1	2.3
	8	8 months	0	0
	9	9 months	0	0
	10	10 months	0	0
	11	11 months	0	0
	12	12 months	3	6.8

Of the 53 potential participants who accessed my SurveyMonkey website, five participants (9.43%) selected *No* to the first question (Have you received a performance appraisal within the past year?) and so did not gain access to the survey website. Of the 46 potential participants who gained access to my SurveyMonkey website and selected *I Consent* to participate in the research, one exited the survey website without completing the survey. One potential participant completed the demographic component of the survey, but exited the survey site without completing the four subsections of the composite survey section. Therefore, 44 of the 53 potential participants who accessed my SurveyMonkey website completed all components of the survey. After careful screening of the surveys, I determined that there were no missing data, excessive data, or straightlining issues. Furthermore, there were several instances of potential suspicious response patterns producing outliers, but by using ranked data during my analysis via Kock's (2015) WarpPLS 5.0 software program, I was expected to lessen the effects of outliers on the indicator variables' ratio scale by eliminating outliers without reducing the sample size.

The survey sample consisted of 34 men (77.3%) and 10 women (22.7%). Although the majority of the participants were between 51 and 60 years old (N = 14, 31.8%), there was an equal number between 31 and 40 years old (N = 11, 25%) and between 41 and 50 years old (N = 12, 27.3%). The participants between 18 and 30 years old comprised 6.8% (N = 3) of the sample, while 9.1% (N = 4) reported 61 years old or older. The majority of the participants (N = 27, 61.4%) considered themselves White or Caucasians, while Hispanics comprised 18.2% (N = 8), Black or African American

comprised 11.4% ($N = 5$), Asian or Pacific Islander comprised 2.3% ($N = 1$), and Mixed or Others comprised 6.8% ($N = 3$) of the sample. Statistics for how long participants worked for their organizations were that 38.6% ($N = 17$) reported less than 5 years, while 27.3% ($N = 12$) reported between 5 and 10 years, and equal percentage 13.6% ($N = 6$) reported between 11 and 15 years and between 16 and 20 years. There were two participants (4.5%) who reported between 21 and 25 years, and 2.3% ($N = 1$) reported over 31 years. Over half of the participants ($N = 23$, 52.3%) indicated that they received a PA within 1 month of completing the survey, while an equal number of participants ($N = 6$, 13.6%) indicated that they received a PA in the last 2 to 3 months prior to completing the survey. Three participants (6.8%) indicated that they received their last PA within 12 months of completing the survey.

Measurement Model Assessment Results

The second step in assessing PLS-SEM results is to assess the validity of the measurement model (Hair et al., 2014). Hair et al. (2014) described the measurement model as the outer model of the PLS-SEM. Assessing the measurement model requires examining the relationships between the latent variables and the indicator variables (Hair et al, 2014).

I analyzed the model using Warp3 PLS Mode M multiple regression imputation (replacing missing data with substituted values) in Kock's (2017) WarpPLS software package. I used the bootstrapping feature included within Kock's (2017) WarpPLS 5.0 program and followed Kock's (2015) recommendation of using 100 resamples. Kock (2015) noted that using more than 100 resamples during the bootstrapping function could

lead to negligible improvements in the reliability of *p* values. Therefore, I followed Kock's (2015) recommendation and employed the bootstrapping resampling method of 100 resamples that resulted in six iterations to obtain an PLS-SEM algorithm solution. Using the Warp3 algorithm, I analyzed nonnormal data distribution using an algorithm that warps the predictor scores to identify the nonlinear latent variable relationships. The Mode M function measures the influence that the indicator variables have on the latent variables by identifying if the indicator variables are formative or reflective (Kock, 2015).

I calculated the fit of the model to the data using WarpPLS (Kock, 2015). My findings in Table 13 indicated that the *p* values for the average path coefficient (.450) and the average R^2 (.392) are less than .001. The results of my analysis indicated that the fit indices criteria supported my model fit to the data and presented adequate predictive and explanatory qualities (Kock, 2015). Furthermore, following Hair et al.'s (2014), Kock's (2015), and Sarstedt et al.'s (2014) guidance (in Table 4), my analysis results of the average variance inflation factor (2.009) is lower than 3.3, and therefore indicating that there is no statistically significant evidence of collinearity among the latent variables.

Table 13

Model Fit Indices and p Values (N = 44)

Analyses	Results	Remarks
Average path coefficient (APC)	.450	$P < .001$
Average R^2 (ARS)	.392	$P < .001$
Average adjusted R^2 (AARS)	.372	$P < .001$
Average block VIF (AVIF)	2.009	acceptable if ≤ 5, ideally ≤ 3.3
Average full collinearity VIF (AFVIF)	2.811	acceptable if ≤ 5, ideally ≤ 3.3
Algorithm used in analysis	NA	Warp3, PLS Mode A Multiple Regression
Resampling method used in the analysis	NA	Bootstrapping
Number of data resamples used	100	
Number of iterations to obtain estimates	6	
Only ranked data used in analysis	Yes	

Note. VIF (Variance Inflation Factor). Adapted from "The Budget-Related Antecedents of Job Performance," by E. Y. Karakoc and G. Ozer, 2016, *International Journal of Research in Business & Social Science, 5*(3), 38-53. doi:10.20525/ijrbs.v5i3.165.

I conducted a confirmatory factor analysis to test the fit of data to the model in Figure 1. Following Hair et al.'s (2014), Kock's (2015), and Sarstedt et al.'s (2014) guidance (in Table 4) that an outer loading value $\geq .70$ establishes convergent validity, my results in Table 14 indicated acceptable convergent validity. The results of my analyses showed that all combined loadings were > 0.70 with the exception of the indicator variables LMX_E5 (0.618) and ESR_5 (0.603), and all *p* values were < .001. Furthermore, following Hair et al.'s, Kock's, and Sarstedt et al.'s guidance (in Table 4), my results also indicated discriminant validity since all indicator variable loadings on their associated latent variables were larger than the indicator variables' loadings on adjacent latent variables.

Table 14

Combined Loadings and Cross-Loadings (N = 44)

	LMX	ESR	PA	CD	Indicator type	*SE*
LMX_E1	(0.725)***	0.515	0.291	0.052	Formative	0.112
LMX_E2	(0.838)***	0.171	0.031	0.171	Formative	0.107
LMX_E3	(0.831)***	0.122	0.044	0.214	Formative	0.107
LMX_E4	(0.846)***	0.194	-0.060	-0.041	Formative	0.107
LMX_E5	(0.618)***	-0.926	-0.345	-0.264	Formative	0.117
LMX_E6	(0.841)***	-0.520	-0.059	-0.058	Formative	0.107
LMX_E7	(0.916)***	0.248	0.044	-0.121	Formative	0.104
ESR_1	0.374	(0.892)***	0.058	-0.139	Formative	0.105
ESR_2	-0.606	(0.603)***	0.074	0.085	Formative	0.118
ESR_3	-0.257	(0.772)***	0.070	0.255	Formative	0.110
ESR_4	0.299	(0.867)***	0.001	-0.030	Formative	0.106
ESR_5	0.230	(0.908)***	-0.049	-0.045	Formative	0.104
ESR_6	-0.270	(0.885)***	-0.121	-0.065	Formative	0.105
PA_1	0.356	-0.209	(0.859)***	-0.194	Reflective	0.106
PA_2	0.348	-0.106	(0.803)***	-0.236	Reflective	0.108
PA_3	-0.169	0.072	(0.897)***	0.150	Reflective	0.104
PA_4	-0.271	0.096	(0.879)***	0.182	Reflective	0.105
PA_5	-0.223	0.132	(0.878)***	0.070	Reflective	0.105
CD_1	-0.166	0.103	0.197	(0.883)***	Reflective	0.105
CD_2	-0.484	0.557	-0.135	(0.850)***	Reflective	0.106
CD_3	0.049	-0.031	0.017	(0.922)***	Reflective	0.103
CD_4	-0.393	-0.443	0.005	(0.817)***	Reflective	0.108
CD_5	0.226	-0.259	-0.108	(0.835)***	Reflective	0.107
CD_6	0.003	0.052	0.012	(0.842)***	Reflective	0.107

Note. LMX (Leader-Member Exchange), ESR (Employee-Supervisor Relationship), PA (Performance Appraisal), CD (Career Development). SE (Standard Error).
Adapted from "The Budget-Related Antecedents of Job Performance," by E. Y. Karakoc and G. Ozer, 2016, *International Journal of Research in Business & Social Science*, *5*(3), 38-53. doi:10.20525/ijrbs.v5i3.165.
Combined loadings of indicator variables on latent variables are in parentheses.
*$p < .05$. ** $p < .01$. ***$p < .001$.

The combined loadings (Table 14) represent the absolute contribution of the indicator variable to the latent variable (Hair et al., 2014). The indicator weights (Table 15) represent the strength of the relationships between the measured formative indicator variables and the exogenous latent variables (Hair et al., 2014).

Table 15

Indicator Weights (N = 44)

	LMX	ESR	PA	CD	Indicator type	SE	*p*	VIF	W	ES
LMX_E1	(0.159)	0.000	0.000	0.000	Formative	0.141	.133	2.253	1	0.115
LMX_E2	(0.184)	0.000	0.000	0.000	Formative	0.140	.098	2.576	1	0.154
LMX_E3	(0.182)	0.000	0.000	0.000	Formative	0.140	.100	2.534	1	0.151
LMX_E4	(0.185)	0.000	0.000	0.000	Formative	0.140	.096	2.994	1	0.157
LMX_E5	(0.136)	0.000	0.000	0.000	Formative	0.143	.174	1.681	1	0.084
LMX_E6	(0.184)	0.000	0.000	0.000	Formative	0.140	.097	3.132	1	0.155
LMX_E7	(0.201)	0.000	0.000	0.000	Formative	0.139	.078	5.007	1	0.184
ESR_1	0.000	(0.217)	0.000	0.000	Formative	0.138	.062	4.105	1	0.193
ESR_2	0.000	(0.147)	0.000	0.000	Formative	0.142	.154	1.686	1	0.088
ESR_3	0.000	(0.188)	0.000	0.000	Formative	0.140	.093	2.003	1	0.145
ESR_4	0.000	(0.211)	0.000	0.000	Formative	0.138	.067	4.923	1	0.183
ESR_5	0.000	(0.221)	0.000	0.000	Formative	0.138	.058	4.605	1	0.200
ESR_6	0.000	(0.215)	0.000	0.000	Formative	0.138	.063	3.582	1	0.190
PA_1	0.000	0.000	(0.230)	0.000	Reflective	0.137	.050	8.499	1	0.198
PA_2	0.000	0.000	(0.215)	0.000	Reflective	0.138	.063	7.327	1	0.173
PA_3	0.000	0.000	(0.240)	0.000	Reflective	0.137	.043	6.237	1	0.216
PA_4	0.000	0.000	(0.236)	0.000	Reflective	0.137	.046	4.066	1	0.207
PA_5	0.000	0.000	(0.235)	0.000	Reflective	0.137	.047	4.483	1	0.206
CD_1	0.000	0.000	0.000	(0.199)	Reflective	0.139	.079	3.461	1	0.176
CD_2	0.000	0.000	0.000	(0.192)	Reflective	0.139	.087	4.842	1	0.163
CD_3	0.000	0.000	0.000	(0.208)	Reflective	0.138	.070	6.049	1	0.192
CD_4	0.000	0.000	0.000	(0.185)	Reflective	0.140	.097	3.007	1	0.151
CD_5	0.000	0.000	0.000	(0.189)	Reflective	0.140	.092	3.016	1	0.157
CD_6	0.000	0.000	0.000	(0.190)	Reflective	0.139	.090	3.294	1	0.160

Note. LMX (Leader-Member Exchange), ESR (Employee-Supervisor Relationship), PA (Performance Appraisal), CD (Career Development), SE (Standard Error), VIF (Variance Inflation Factor), W (WLS = Weight-Loading Sign), ES (Effect Size).

If the formative variable assessment results indicate an indicator weight as nonsignificant, but the results for the combined loading is high (≥ .50), then the indicator variable is still contributing to the model's latent variables (Hair et al., 2014). However, if the indicator weight is nonsignificant and the combined loading is low (< .50), then the researcher will need to make a decision to either retain or discard the indicator variable (Hair et al., 2014). Sarstedt et al. (2014) advised researchers to be cautious when deleting indicators from a model because formative indicators are not interchangeable, and the latent variable is dependent on all indicators defining the construct. Sarstedt et al. also noted that removal of a formative variable might have *adverse consequences* on the measurement model's content validity.

Reviewing the indicator variable assessment results in Table 15 revealed that the indicator variables' weights were nonsignificant ($p > .05$) with the exception of the indicator variable PA_1 ($p = .050$). However, since the indicator variable assessment results in Table 14 indicated that the variables' combined loadings were > 0.50, then the indicator variables are important to the structural model. Therefore, since the formative indicator variables' combined loadings were ≥ 0.50, and following Hair et al.'s (2014), Kock's (2015), and Sarstedt et al.'s (2014) guidance in Table 4, I retained the formative indicator variables. Furthermore, I established discriminant validity since the reflective indicator variables' combined loadings were ≤ 0.70, and since the indicator variables load higher on their latent variable than on adjacent latent variables within the path model. Therefore, following Hair et al.'s, Kock's, and Sarstedt et al.'s guidance (in Table 4), retained all of the reflective indicator variables.

As demonstrated in Table 16, my analysis results revealed that the Cronbach's αs for my study's instruments were all > .90 and the composite reliabilities were also all > .90, thereby demonstrating internal consistency reliability. Following Hair et al.'s (2014), Kock's (2015), and Sarstedt et al.'s (2014) requirements (in Table 4) for composite reliability (ρ_c) coefficients' ($\rho_c > .60$) and Cronbach's alphas' ($\alpha > .70$), my study's results (in Table 16) indicate that the instruments that I used were sufficiently reliable for my study's population.

Table 16

Composite Reliability (ρ_c), Cronbach's Alpha (α), and AVEs (N = 44)

	Composite reliability (ρ_c) coefficients	Cronbach's alphas' (α) coefficients	AVE
LMX	.928	.908	0.652
ESR	.928	.904	0.686
PA	.936	.914	0.746
CD	.944	.928	0.737

Note. LMX (Leader-Member Exchange), ESR (Employee-Supervisor Relationship), PA (Performance Appraisal), CD (Career Development). AVE (Average Variances Extracted).
Adapted from "The Budget-Related Antecedents of Job Performance," by E. Y. Karakoc and G. Ozer, 2016, *International Journal of Research in Business & Social Science*, *5*(3), 38-53. doi:10.20525/ijrbs.v5i3.165.

Structural Model Assessment Results

Using Kock's (2017) WarpPLS software package, I analyzed the structural model using Warp3 PLS Mode M multiple regression imputation (replacing missing data with substituted values). Hair et al. (2014) described the structural model of the PLS-SEM as the inner model for the relationships among the latent variables. Within this subheading, I discuss the findings from analyzing the structural model (Figure 7).

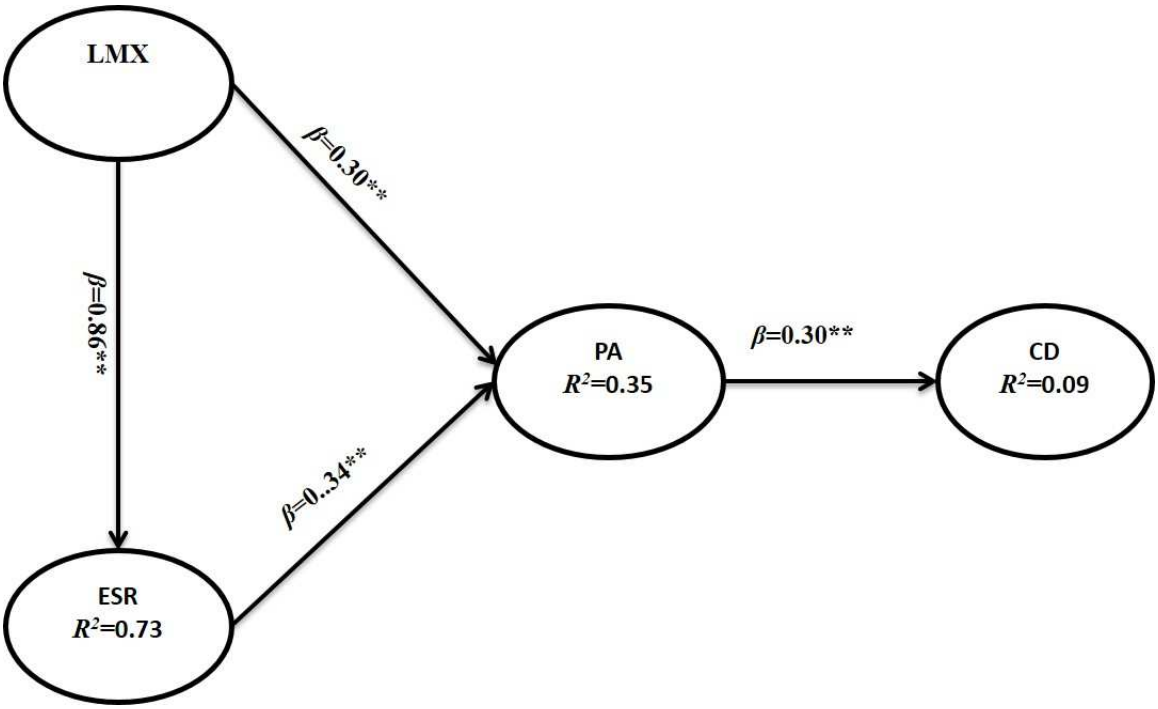

Figure 7. Latent variables' path coefficients
*$p < .05$. ** $p < .01$. ***$p < .001$.

Researchers apply *structural theory* to assess structural models' validity by examining the relationships among the latent variables (Hair et al., 2014). Table 17 contains a compiled list of the PLS-SEM analyses results for examining the latent variables and assessing the structural model's validity and reliability.

Table 17

Summary of PLS-SEM Analyses of Latent Variables (N = 44)

	LMX	ESR	PA	CD
R^2		0.734	0.349	0.092
Adjusted R^2		0.727	0.318	0.070
Composite reliability (ρ_c)	0.928	0.928	0.936	0.944
Cronbach's alpha (α)	0.908	0.904	0.915	0.928
AVE	0.652	0.686	0.746	0.737
VIF	4.550	3.900	1.361	1.433
Q^2		0.733	0.358	0.101
Min	-3.237	-3.498	-2.455	-1.987
Max	1.209	1.114	1.393	1.886
Median	0.086	0.190	0.213	-0.041
Mode	1.209	1.114	0.322	0.724
Skewness	-1.645	-1.383	-0.525	0.046
Kurtosis	3.151	2.365	-0.469	-0.617

Note. Adapted from "WarpPLS 5.0 User Manual," by N. Kock, 2015, Retrieved from WarpPLS: Nonlinear structural equation modeling made easy: http://www.scriptwarp.com/warppls/.
LMX (Leader-Member Exchange), ESR (Employee-Supervisor Relationship), PA (Performance appraisal), CD (Career Development). AVE (Average Variance Extract). VIF (Variance Inflation Factor).

Furthermore, following Hair et al., and Wong's recommendations, I used R^2 values to indicate (a) *substantial* predictive accuracy ($\geq$ .75), (b) *moderate* predictive accuracy (between .25 and .75), and (c) *weak* predictive accuracy ($\leq$ .25). The results of the analysis for the R^2 values in Table 17 indicate *substantial* predictive accuracy for the exogenous latent variable ESR (R^2 = .734) and the endogenous latent variable PA (R^2 = .349), and *weak* predictive accuracy for the endogenous latent variable CD (R^2 = .092).

Following Hair et al.'s (2014), Kock's (2015), and Sarstedt et al.'s (2014) guidance, the PLS-SEM results in Table 4 indicate that (since the Average Variances

Extracted [AVE] for all latent variables is $\geq$ 0.50) the model has convergent validity. Furthermore, following Hair et al.'s, Kock's, and Sarstedt et al.'s guidance (as summarized in Table 4), since the reflective latent variables (PA, CD) do not share variance with another reflective latent variable (as indicated by the square root of the AVE's on the diagonal in parentheses), the results in Table 18 indicate that my model has discriminant validity.

Table 18

Latent Variable Correlation with Square Root AVEs (N = 44)

	LMX	ESR	PA	CD
LMX	(0.807)	0.855	0.494	0.539
ESR	0.855	(0.828)	0.498	0.404
PA	0.494	0.498	(0.864)	0.262
CD	0.539	0.404	0.262	(0.859)

Note. Adapted from "The Budget-Related Antecedents of Job Performance," by E. Y. Karakoc and G. Ozer, 2016, *International Journal of Research in Business & Social Science*, *5*(3), 38-53. doi:10.20525/ijrbs.v5i3.165.
LMX (Leader-Member Exchange), ESR (Employee-Supervisor Relationship), PA (Performance Appraisal), CD (Career Development). AVE (Average Variances Extracted).
Square roots of AVEs shown on the diagonal in parentheses.

I conducted an SEM analysis to examine the relationships among LMX, ESR, PA, and CD. The results (values stated in Figure 7) indicate that there are significant and positive relationships among the pairs of latent variables: (a) LMX and ESR ($\beta = .86$, $p < .01$), (b) LMX and PA ($\beta = .30$, $p = .01$), (c) ESR and PA ($\beta = .34$, $p = .01$), and (d) PA and CD ($\beta = .30$, $p = .01$). My analysis results also indicate that LMX explained (a) 73% of the variance in ESR, (b) LMX and ESR explained 35% of the variance in PA, and (c) PA explained 9% of the variance in CD.

Using Kock's (2017) WarpPLS program, I calculated the absolute effect size value of the PLS path model between the two exogenous latent variables (LMX, ESR) in Figure 5 and the endogenous latent variable (PA). Researchers use a set of standard criteria for indicating the effect size value of the predictor exogenous latent variable on the endogenous latent variable: (a) *no noticeable effect (<.02)*, (b) *small [.02,.15)*, (c) *medium [.15,.35)*, and (d) *large* (≥ *.35)*; Hair et al., 2014; Kock, 2015; Wong; 2013). Following Hair et al.'s (2014), Kock's (2015), and Wong's (2013) guidance (summarized in Table 4), the absolute effect size values in Table 19 indicate a *large* effect size (> 0.35) for LMX to ESR (effect size = 0.734; β = .86). The absolute effect size values in Table 19 also indicate *medium* effect sizes for LMX to PA (effect size = 0.162; β = .30) and ESR to PA (effect size = 0.187; β = .34), and *small* effect size for PA to CD (effect size = 0.092; β = .30).

Table 19

Absolute Effect Sizes and Standard Errors for Path Coefficients (N = 44)

	Absolute effect sizes				Standard errors			
	LMX	ESR	PA	CD	LMX	ESR	PA	CD
LMX								
ESR	0.734				0.106			
PA	0.162	0.187			0.133	0.131		
CD			0.092				0.133	

Note. Adapted from "WarpPLS 5.0 User Manual," by N. Kock, 2015, Retrieved from WarpPLS: Nonlinear structural equation modeling made easy: http://www.scriptwarp.com/warppls/.
LMX (Leader-Member Exchange), ESR (Employee-Supervisor Relationship), PA (Performance Appraisal), CD (Career Development).

Since the latent variable PA acts as an exogenous variable on CD in Figure 6, and although PA is the only endogenous latent variable connected to CD, I followed Wong's (2013) recommendation that researchers report the effect size. I calculated the R^2 value of the PLS path between PA and CD to evaluate the effects of the exogenous latent variable (PA) on the endogenous variable (CD). Since there is only one exogenous variable (PA) connected to the endogenous variable (CD), I calculated the effect size for the path coefficients. Following Hair et al.'s (2014), Kock's (2015), and Wong's guidance in Table 4, the absolute effect size value in Table 19 indicated a small effect size ($\geq$ 0.02 but < 0.15) for the PA to CD (absolute effect size = .092; β = .14).

Whereas absolute effect size values indicate the effect size of the predictor exogenous latent variables on the endogenous latent variables, Q^2 values determine the extent to which the endogenous latent variables' reflective indicators have *predictive relevance* to the PLS path model (Hair et al., 2014; Kock, 2015; Sarstedt et al., 2014). Hair et al. (2014), Kock (2015), and Sarstedt et al. (2014) noted that a Q^2 value > 0 indicates that endogenous latent variables' reflective indicators have predictive relevance, whereas Q^2 value < 0 indicate that endogenous latent variables' reflective indicators are lacking in predictive relevance. The results of the Q^2 analysis in Table 17 indicate that both endogenous latent variables' reflective indicators, PA (Q^2 = 0.358) and CD (Q^2 = 0.101), have predictive relevance to the structural model (Figure 7).

Addressing the Research Questions and Testing the Hypotheses

SRQ1. To what extent does a relationship exist between LMX and ESR? To answer the SRQ1, I tested the null hypothesis ($H1_0$) through the statistical significance of

the path coefficient between LMX and ESR as illustrated in Figure 7. The results indicated a significant positive relationship between LMX and ESR ($\beta = 0.86$, $p < .01$). Therefore, since the relationship between LMX and ESR is significant and positive, the analysis results justify rejecting the first null hypothesis ($H1_0$), and support accepting the first alternative hypothesis ($H1_a$): *There is a significant relationship between LMX and ESR*.

These results supported Thibaut and Kelly's (2009) assertion that LMX theory explained the dyadic relationship between supervisors and employees. Supporting Dulebohn et al.'s (2012) classification of two levels of LMX (low-quality and high-quality exchanges), the majority of the participants (> 50%) responded with high-end scores (3 – 5) of the Likert type scale of the LMX-7 instrument indicating *high-quality exchanges*. However, numerous participants responded with low-end scores (1 or 2) indicating *low-quality exchanges*. Furthermore, my results support the findings of Dysvik et al. (2015), Moideenkutty and Schmidt (2016), and Tandon and Ahmen (2015) that there is a significant positive relationship between LMX and ESR. My results also support Brown et al.'s (2017) and Salvaggio and Kent's (2016) findings that the dimensions of LMX (trust, respect, obligation, competence, commitment) have a positive effect on employees' performance, negative turnover intentions, and higher levels of ESR.

SRQ2. To what extent does the relationship between LMX and ESR influence the employees' perceived efficacy of the PA process? To answer the SRQ2, I tested the null hypothesis ($H2_0$) through the statistical significance of the path coefficient between (a)

LMX and ESR, (b) LMX and PA, and (c) ESR and PA as illustrated in Figure 7. The results indicate a significant positive relationship between (a) LMX and ESR ($\beta = 0.86$, $p < .01$), (b) LMX and PA ($\beta = 0.30$, $p = .01$), and (c) ESR and PA ($\beta = 0.34$, $p < .01$). Therefore, since the relationships between LMX and ESR, LMX and PA, and ESR and PA were significant and positive, the analysis results support rejecting the second null hypothesis ($H2_0$), and support accepting the second alternative hypothesis ($H2_a$): *There is a significant relationship between LMX and ESR that influences employees' perceived efficacy of the PA process*. Furthermore, the path coefficient results provided evidence that there is a positive significant relationship between LMX and ESR, LMX and PA, and ESR and PA, thereby supporting that the relationship between LMX and ESR influences employees' perceptions of the efficacy of their organization's PA process.

The analysis results provided support for employing both LMX theory and organizational justice theory, another theoretical aspect of the dyadic relationship, to gain a better understanding of the relationships of LMX and ESR with employees' perceptions of their PAs. Karakoc and Ozer (2016) postulated that organizational justice is a key component of the PA process, and when combined with LMX theory, can explain employees' perceptions of their supervisors' procedural and distributive fairness during the PA process. Furthermore, my results support Krats and Brown's (2013) findings that high-levels of LMX during the PA process increase employees' perceptions of PA accuracy. Furthermore, high-levels of ESR during the PA process also promote employees' perceptions of PA accuracy, rating fairness, CD, and PA satisfaction, which

influence employees' job performance, increase employees' job satisfaction, and reduce employees' turnover intentions (Jayawardana et al., 2013; Krats & Brown, 2013).

SRQ3. To what extent does the relationship between LMX and ESR influence employees' CD through the mediating effect of employees' perceived efficacy of the PA process? To answer the SRQ3, I tested the null hypothesis ($H3_0$) by calculating the indirect effect of the mediating variable PA between the independent latent variable LMX and the dependent latent variable CD, and between the independent latent variable ESR and the dependent latent variable CD (*Figure 8*).

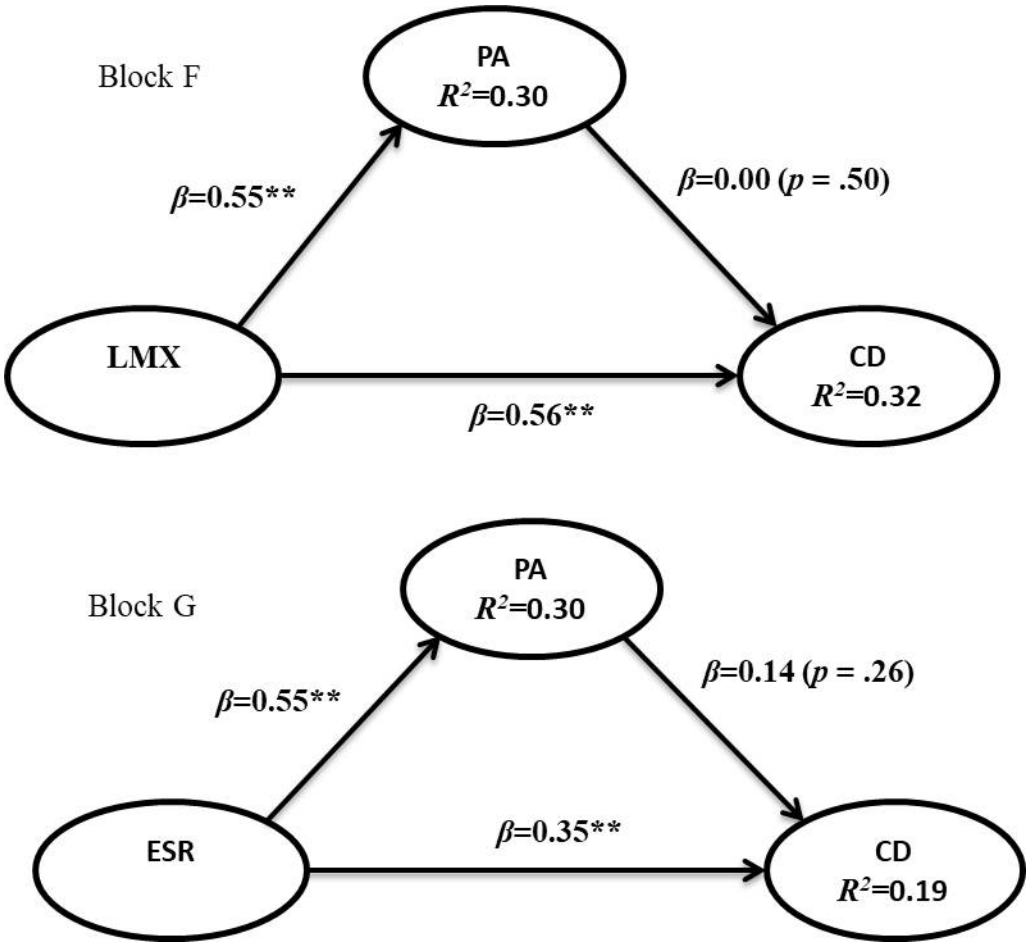

Figure 8. Mediator variable (PA) indirect effect.
*p < .05. ** p < .01. ***p < .001.

I followed Kock's (2014a) guideline to calculate the indirect effect of a mediating variable on the path coefficient of an independent variable and a dependent variable. Kock (2014a) noted that researchers used various approaches to calculate mediating effects, such as approaches recommended by (a) Preacher and Hayes (2004), (b) Hayes and Preacher (2010), or (c) Baron and Kenny (1986). However, since Kock's (2017) WarpPLS program automatically calculates the indirect effects and the associated *p* values, I followed Kock's (2014a) guideline that there must be significant path

coefficient ($p < .05$) between the independent variables (LMX, ESR) and the dependent variable (CD; Figure 8 - Block F & G). Furthermore, for the mediating effect to be significant there must also be significant path coefficients ($p < .05$) between the independent variables (LMX, ESR) and the mediating variable (PA; Figure 8 - Block F & G). As indicated in Figure 8, there are significant path coefficients in Block F between LMX and CD ($\beta = 0.56$, $p < .01$), and LMX and PA ($\beta = 0.55$, $p < .01$). In addition, there are significant path coefficients in Block G between ESR and CD ($\beta = 0.35$, $p < .01$), and ESR and PA ($\beta = 0.55$, $p < .01$).

For *full mediation* to exist in either Block F or Block G there must be a nonsignificant path coefficient between PA and CD (Kock, 2014a). Kock noted that *partial mediation* would occur if there were significant path coefficients between the mediating variable and the dependent variable. However, as indicated in Figure 8, there are nonsignificant path coefficients in Block F between PA and CD ($\beta = 0.00$, $p = .50$), and in Block G between PA and CD ($\beta = 0.55$, $p < .01$). Therefore, as indicated in Figure 8, there is a *full mediation* effect of the variable PA on the path coefficients between LMX and CD, and ESR and CD. Subsequently, these results of analyzing the indirect effects supported the third alternate hypothesis ($H3_a$): There is a significant relationship between LMX and ESR that influences employees' CD through the mediating effect of employees' perceived efficacy of the PA process. My path coefficient results provide evidence that there is a positive significant relationship between LMX and ESR, LMX and PA, and ESR and PA. Furthermore, the results of my indirect effects analysis of mediation provide evidence that LMX and ESR indirectly influence CD through the

mediating effects of employees' perceptions of the efficacy of their organizations' PA process.

My results provide support for employing both LMX theory and the distributive and interactional justice dimensions of organizational justice theory to examine employees' perceptions of CD (fairness of achieved goals) through the PA process (fairness of achieved process), and the relationship between LMX and ESR (Nicklin et al., 2014; Strom et al., 2014). Furthermore, my results support Bravo et al.'s (2015) position that employees' performance increases while employees' turnover intentions diminish when employees experience high-level LMX and receive supervisors' support for professional development. Furthermore, employees who share high-level LMX with their supervisors are more likely to have access to additional job resources and are more likely to be engaged in work, and therefore, are more likely to have better CD opportunities (Breevaart, 2015). Therefore, my results support Waldman's (1997) classification of five dimensions of the PA process that employees consider to be an integral part of the PA process: (a) PA assessment accuracy, (b) PA rating fairness, (c) performance improvement, (d) CD, and (e) PA satisfaction in their organization's PA system. Furthermore, my results support Lopes et al.'s (2015) assertion that the PA is a necessary tool to evaluate employees' talents and to tailor professional development programs. My results also support Lopes et al.'s findings that the PA process mediates the relationship of LMX and ESR with employees' CD, and is an important process to mentor organizations' human capital to identify potential talents and increase organizations' competitive advantages.

Applications to Professional Practice

The findings of this study provide evidence of a positive significant relationship between LMX and ESR. More than 50% of the employees responded that their relationship with their supervisor was *better than average,* with 25% indicating that their relationship with their supervisor was *extremely effective.* In addition, more than 80% of the employees indicated that they share a high-level relationship with their supervisor. My findings support Zagencyk, Purvis, Shoss, Scott, and Cruz's (2015) recommendation that supervisors should encourage high LMX with their employees. Furthermore, Zagencyk et al. noted that employees sharing high LMX with their supervisors has a positive effect on employees experiencing low LMX. The applications of my findings to the professional business practice demonstrate the importance of employees' perceived level of their relationship with their supervisor. Therefore, supervisors who encourage high-levels of exchanges with their employees can create an enriched working environment that promotes employees' job satisfaction and high performance.

My findings also indicate that the relationship between LMX and ESR influences employees' CD through the mediating effect of employees' perceived efficacy of their organizations' PA process. Over 75% of the employees indicated that their last PA rating was fair and accurate. However, only 50% of the employees responded that their PA influenced their improvement or CD, with 25% responding that they *neither agree nor disagree.* Furthermore, less than 50% of employees agreed that there are career opportunities or career advancement opportunities in their organization. In support of my findings, Russell, Ferris, Thompson, and Sikora (2016) noted that organizational leaders

can capitalize on the development of their employees to increase their organizations' competitive advantage. Furthermore, Longenecker, Fink, and Caldwell (2014) noted that 76% of the organizations that they review listed CD as one of the Top 5 reasons for conducting PAs. The findings of this study support the application to professional business practices by demonstrating to organizational leaders that the relationship between LMX and ESR influences employees' CD through the mediating effect of employees' perceived efficacy of the PA process. Furthermore, organizational leaders who utilize their organizations' PA process to influence their employees' CD, foster a professional learning environment that promotes individual growth and increases organizational competitive advantage.

Implications for Social Change

My findings provide evidence that positive LMX and ESR can cultivate supervisors' positive internal corporate social responsibilities (CSR) toward their employees. Furthermore, my results indicate that more than 80% of the employees responded that they either *agree strongly* or *agree* that their supervisors treated them fairly and were genuinely concerned for their rights as employees. Mason and Simmons (2014) noted that employees' view themselves as internal corporate stakeholders who expect identical CSR from their organizational leaders as external stakeholders expect from the corporation. Shen and Benson (2016) posited that organizational managers should implement both external and internal CSR policies to not only attract loyal customers, but engender socially responsible employees.

My findings also indicate that the relationship between LMX and ESR influences employees' CD through the mediating effect of employees' perceived efficacy of their organizations' PA process. Managers who encourage high-level LMX also increase high-level ESR within their organizations, and therefore, have a positive effect on catalyzing corporate social responsibilities (CSR) and positive social changes (Mason & Simmons, 2014). Furthermore, managers who incorporate CSR into HR policies, such as recognizing employees' *social responsibilities* during the PA process, create positive human capital that increases organizational value and competitive advantage (Mason & Simmons, 2014; Shen & Benson, 2016). In addition, organizational leadership encourages employees' social responsibilities through organizational HR practices and CD programs (Shen & Benson, 2016). Managers who associate promotions and rewards with employees' social performances encourage employees' social development, and thereby, increase organizational CSR for achieving a positive organizational reputation (Mason & Simmons, 2014; Shen & Benson, 2016). Furthermore, organizational leaders could enhance positive social change by increasing employees' self-efficacy, and therefore, create a socially responsible workforce, which could translate to increased social responsible community members. Finally, organizational leaders can enhance job satisfaction through developing and mentoring employees that could enhance employees' standard of living benefiting their families and communities.

Recommendations for Action

The results of my study demonstrate to managers, supervisors, and employees that there is a positive relationship between LMX and ESR. Furthermore, my results illustrate

that through the mediating effect of the PA, the relationship between high-level LMX and high-level ESR has a positive effect on employees' CD. In addition, my results demonstrate to managers and supervisors that employees are aware and understand the importance of an effective organizational PA process and the use of the PA process as a valuable tool for mentoring and guiding employees' CD. Although, my findings indicated that more than 60% of the employees responded that they were satisfied with their organizations' PA system, only 45% of the employees responded that their organizations' PA system is helpful in employees' CD. Therefore, supervisors should not only incorporate CD into their employees' annual PA, but also incorporate CD into the employees' regularly scheduled counseling sessions throughout the PA year. In line with Albrecht, Bakker, Gruman, Macey, and Saks' (2015) recommendation, HR directors should incorporate CD and *learning initiatives* into their organizations' PA programs. Albrecht et al. noted that including CD and *learning initiatives* into employees' PA's aids organizational leaders in developing their organizations' human capital, and therefore, enhancing competitive advantages, and increasing corporate sustainability.

The results of my study are potentially important to managers, supervisors, and HR directors, who provide the leadership and authority to develop and enact HRM practices and policies, by ensuring that all employees understand the PA process and PA rating criteria. Furthermore, the results of my study could demonstrate to employees their importance to organizational successes. During employees' and supervisors' interactions, supervisors should illustrate to employees the relevance of their roles during LMX (Harris et al., 2014; Runhaar et al., 2013). Furthermore, supervisors should encourage

high-levels of ESR with their employees through high-levels of LMX (Harris et al., 2014; Runhaar et al., 2013). Anitha (2014) noted that when organizational leaders engage employees, the employees gain an understanding of their importance to the success of organizational goals. Therefore, organizational leaders should develop and promote quality PA systems through HRM practices and policies that will fully engage their employees into organizational activities and aid supervisors in mentoring their employees (Anitha, 2014; Newman, Miao, Hofman, & Zhu, 2016).

Since the results of my study can be important to managers, supervisors, employees, and HR directors, I encourage organizational leaders to share my results with internal stakeholders (managers, supervisors, employees) and external stakeholders (the business community including business owners, managers, employees, community leaders including mayors, city council members, business and educational board of directors, customers). As a Operations Control Center supervisor, I will share my study's results and my study's applications with my managers, supervisors, peers, and employees to create a cohesive working environment and to potentially enhance living standards within the community. My goal is to submit my study to a peer-reviewed journal for publication. I also plan on submitting my key findings for presentation to at least one professional conferences.

Recommendations for Further Research

I employed PLS-SEM instead of CB-SEM in the design of my research. My recommendationfor future researchers is to evaluate my model for the potential applications of different research designs and methods. I also recommend that researchers

incorporate a qualitative segment in their research to explore participants' lived experiences for explaining their response patterns. Furthermore, researchers could employ a longitudinal design to gain a deeper understanding of the ESRs within participating organizations.

I based my study off of LMX theory (Graen, 1976; Thibaut & Kelley, 2009) and the distributive and interactional justice dimensions of organizational justice theory (Nicklin et al., 2014; Strom et al., 2014). I recommend that future researchers examine the relevance of alternative LMX theories and organizational justice theories to my study, such as, leadership-motivated excellence theory (Graen & Schiemann, 2013) and equity theory (Adams, 1965). In addition to applying alternative theories, researchers should examine the use of alternative survey instruments (such as, [a] Scandura and Graen's, 1984, LMX instrument; [b] Colquitt's, 2001, Dimensionality of Organizational Justice instrument; [c] Sanders, Dorenbosch, and De Reuver's, 2008, PA quality instrument; or [d] Lo et al.'s, 2014, CD Scale) to identify potential differences from my study's results.

Another recommendation for future research is that since I surveyed only defense contractor company's employees, researchers survey employees working in other industries to evaluate if my results apply beyond the defense industry. Furthermore, I recommend that researchers include employees' supervisors to examine the dyadic relationships through the LMX theoretical lens. My final recommendation for future research is to include the HR director in the study to gain access to employees' most recent PAs. By comparing employees' most recent PAs with the employees' responses,

researchers should examine the phenomenon associated with ESRs and employees' survey responses.

Reflections

As I reflect back on the beginning of my DBA Doctoral Study journey, I realized that my actual doctoral study experiences consisted of higher academic levels that surpassed my initial preconceived ideas of the doctoral study experience. I based my preconceived ideas of the business community on my own experiences, and although some of my ideas translated to the global business community, I realized that my personal bias formed the basis of my preconceived ideas. After serving 20 years in the US Army and working as a civilian in the defense industry, I had the preconceived idea that there were distinct differences between leaders and followers, and the followers should listen and obey the leaders. Furthermore, my perceptions consisted of the notion that all leaders should be knowledgeable in all aspects of the work environment, and all followers should listen and respect their leaders. However, after reading numerous articles on (a) LMX, (b) LMX theory, (c) ESR, and (d) organizational justice theory, I realized that for a work environment to be successful and productive there needs to be a high-level of communications and respect between employees and leaders.

Another preconceived idea that I had was my belief that supervisors completed PAs only to meet their organizations' annual requirements. Furthermore, I believed that supervisors do not include CD when counseling employees' during the PA process. This preconceived idea established the basis for my passion to examine the relationship between LMX and ESR, and the potential mediating effects of employees' perceptions of

the efficacy of their organizations' PA process. The results showing that 27.2% of my study's participants responding that they *disagreed* that their organizations' PA system helped them with their CD, and 27.3% responding that they neither agreed nor disagreed that their organizations' PA system helped them with their CD supported my assumption that many employees perceived that their supervisors do not effectively include CD during employees' PA counseling sessions.

However, since 46% of employees responded that they agreed that their organizations' PA system helped them with their CD, I now believe that although some employees perceive that supervisors do not include CD during employees' PA counseling sessions, numerous employees believe that supervisors are perceptive to the importance of employees' CD. Furthermore, I continue to believe that employees deserve a quality PA, and organizational leaders should develop and promote quality PA systems for mentoring and developng employees to increase their organizations' competitive advantage. Finally, I believe that organizational leaders should encourage supervisors to engage all their employees into organizational activities and mentor employees' CD (Anitha, 2014; Newman, Miao, Hofman, & Zhu, 2016).

Conclusion

Organizational competitive advantage is difficult to maintain within the global economy. Business competition continues to grow with organizations spending time and money to attract and retain high-quality employees. The findings, conclusions, and recommendations from my study provide supervisors and managers with potential catalysts for developing and retaining skilled professional employees. The results of my

study can also provide employees with the knowledge and evidence that they can be key contributors to organizations, and through an effective PA process, can receive guidance and CD from their supervisors to progress and enjoy the derivative benefits for their families and communities.

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Appendix A: Initial Invitation Letter to Site Managers and HR Directors

To: Director of Human Resources (or Site Manager),

My name is William Henkel and I am a doctoral candidate in the Doctor of Business Administration program at Walden University. I am studying the relationships between leader-member exchange, employee-supervisor relationship, performance appraisal, and employee career development. I would like to survey employees who participate in the company's performance appraisal program. I would like to discuss with you on how my doctoral study could be a *win-win*. Please see the brief overview of my proposal below.

I would like to conduct a survey of your employees to gain their perceptions of the relationships they have with their supervisors. This survey would also examine your employees' perspectives of your organization's performance appraisal program and gain an insight into their opinion of their career development opportunities. My quantitative study approach consists of your employees completing five components of the survey on the SurveyMonkey web site.

The data collection phase of my study will take place during a 2-week period following approval of my doctoral study proposal by the Walden University's Institutional Review Board. Employees who wish to participate in my study will be able to access the SurveyMonkey web site anytime during the 2-week period from any personal computer. Employees will have the opportunity to complete the survey in the privacy of their own home.

For the past 3 years, I have studied the literature and identified some of the most successful practices to improve employee-supervisor relationships and exchanges. I have also identified some of the most successful performance appraisal policies and career development strategies. Upon completion of my study, I will share a summary of my study results and suggestions with you and your company managers. The results of my study should provide additional strategies for managers and HR directors to improve employee-supervisor relationships, improve employee performances, and increase job satisfaction.

As per Walden University's institutional review board (IRB) requirements, to maintain confidentiality, I will use pseudonyms in my study and in any publications emerging out of my study to protect the identity of your company and all participating employees.

Once I receive approval from Walden University's institutional review board (IRB), I will send you an Employee Invitation to Participate in Research letter that you can forward to your employees. The letter will briefly outline my study and provide the employees with the link for the SurveyMonkey website. The employees will be able to access the website from the privacy of their own home, or any location with Internet access that offers confidentiality for the participants.

Attached to this email, I have also included a copy of the Informed Consent to Participate in Research form, a copy of the survey instruments, and a Microsoft PowerPoint presentation that outlines: (a) the business problem, (b) the purpose of my doctoral study, (c) the nature of my doctoral study, (d) my research questions, (e) my hypothesis, (f) the significance of my doctoral study, and (g) potential benefits for the organization.

Please contact me using the below contact information if your have any questions. Thank you for your attention.

William Henkel
Doctoral Candidate
Walden University
XXX-XXX-XXXX
XXXXX@XXXXX

Appendix B: Follow-up Letter to Site Managers and HR Directors

To: Director of Human Resources (or Site Manager),

My name is William Henkel and I am a doctoral candidate in the Doctor of Business Administration program at Walden University. I am studying the relationships between leader-member exchange, employee-supervisor relationship, performance appraisal, and employee career development. I would like to survey your employees to gain insights into the perspectives of the employees of a Defense Contractor Company. I currently received approval from Walden University's Institutional Review Board to collect data. Therefore, I would like to conduct a survey of your employees to gain their perceptions on the relationships they have with their supervisors. This survey would also examine the employees' perspectives of your company's performance appraisal program and gain an insight into their opinion of their career development opportunities. My study consists of employees completing five components of a survey located on the SurveyMonkey web site.

The data collection phase of my study will take place during the next 2-weeks. The employees who wish to participate in my study will be able to access the SurveyMonkey web site anytime during the 2-week period from any computer with Internet access. They will also have the opportunity to complete the survey in the privacy of their own home. The survey is voluntary and participants will have the option to discontinue the survey at any time by exiting from the SurveyMonkey website.

For the past 3 years, I have studied the literature and identified some of the most successful practices to improve employee-supervisor relationships and exchanges. I have also identified some of the most successful performance appraisal policies and career development strategies. Upon completion of my study, I will share a summary of my study results and suggestions with you and your company's managers, supervisors, and employees. The results of my study should provide additional strategies for managers and HR directors to improve employee-supervisor relationships, improve employee performances, and increase job satisfaction. The results of my research might also influence social change within organizations by contributing to the employee-supervisor relationship through communications and interaction, and provide an understanding of how the organizational leadership can maintain organizational sustainability by increasing efficiency.

As per Walden University's institutional review board (IRB) requirements, to maintain confidentiality, I will use pseudonyms in my study and in any publications emerging out of my study to protect the identity of your company and all participating employees. In addition to being anonymous, the survey is voluntary and participants may discontinue the survey at any time without any repercussions.

To alleviate any impact on your company's day-to-day operations, I only request that you forward the attached Employee Invitation to Participate in Research letter to your employees. The employees will be able to access the website from the privacy of their own home, or any location with Internet access that offers confidentiality for the participants.

For questions or comments, please contact me using the following contact information. Thank you for your attention.

William Henkel
Doctoral Candidate
Walden University
XXX-XXX-XXXX
XXXXX@XXXXX

Appendix C: Employee Invitation to Participate in Research

My name is William Henkel and I am a doctoral candidate in the Doctor of Business Administration program at Walden University. I would like to invite you to participate in a survey that will aid me in completing my doctoral studies. The survey is anonymous and voluntary. I am studying the relationships between leader-member exchange (LMX) and employee-supervisor relationship (ESR) for improving the results of the employee's performance appraisal (PA) for influencing the employee's career development (CD). The purpose of my survey is to gain the employee's perceptions on the relationships they have with their supervisor. I will also examine the employee's perceptions of their company's performance appraisal program and gain an insight into their opinion of their career development opportunities.

The survey will take approximately 10 to 15 minutes on the SurveyMonkey website during the next 2-weeks. All interested participants will be able to access the SurveyMonkey website anytime during the next 2-weeks from any computer with Internet access. The participant will also have the opportunity to complete the survey in the privacy of his or her own home. The survey is voluntary and the participant will have the option to discontinue the survey at any time by either selecting the "*Exit*" radio button on the top right corner of each page or by closing the Internet browser window of the website. I am requesting that all interested employees complete three components of the SurveyMonkey website.

The components consist of:

1. An Informed Consent to Participate in Research page in which the participant will either acknowledge his or her consent by selecting "*I Consent"* or *"I do not Consent"* on the bottom of the second page. The Informed Consent to Participate in Research page will (a) explain the study in further detail, (b) explain the privacy protections for the participants, and (c) contain a *Procedures* section explaining the procedures to navigate through the SurveyMonkey website and to complete the survey.
2. The second component of the survey is the Demographics page in which the participants will answer five questions pertaining to the participant: gender, age, race, time employed with current company, and time since last performance appraisal.
3. The third component consists four pages of surveys. Each page contains between five and seven questions for a total of 24 questions. Each survey page pertains to a specific aspect of my study.

Thank you for your interest in my doctoral study research and your participation in my survey. If you have any questions pertaining to my study or the survey, please contact me at the email address provided below. To access the SurveyMonkey website, highlight and paste the following URL link into the address bar, or type the URL link directly into the address bar.

SurveyMonkey URL for William Henkel's survey website:_____.

William Henkel
Doctoral Candidate
Walden University
XXXXX@XXXXX

Appendix D: Demographics Survey

I will ensure that the information provided by the participants will remain confidential. I will not use any personal information for any purpose outside of this research project. I will not include the participant's name or anything else that could identify the participant in the research reports. I will keep data secure by transferring participants' responses to an Excel spreadsheet. Once I analyze the data, I will save the results of the analysis and the Excel spreadsheet to a CD. Once I complete my doctoral study, I will delete all information from all media devices. As required by Walden University, I will keep the completed surveys, a copy of the Excel spreadsheet, and the CD for a period of 5 years in a secured location.

1. Gender (Check one): 1. Female_____. 2. Male_____.

2. Age:
   1. 18 to 30_____.
   2. 31 to 40_____.
   3. 41 to 50_____.
   4. 51 to 60_____.
   5. 61 or older_____.

3. Race:
   1. American Indian / Alaskan Native
   2. Asian / Pacific Islander
   3. Black / African American
   4. Hispanic
   5. White / Caucasian
   6. Mixed / Other

4. Time employed with your current company:
   1. Less than 5 Years_____.
   2. 5 to 10 Years_____.
   3. 11 to 15 Years_____.
   4. 16 to 20 Years_____.
   5. 21 to 25 Years_____.
   6. 26 to 30 Years_____.
   7. 31 or more Years_____.

5. Months since last performance appraisal:
   1.___. 2.___. 3.___. 4.___. 5.___. 6.___.
   7.___. 8.___. 9.___. 10.___. 11.___. 12.___.

Appendix E: Survey Instruments

Table 20

LMX-7 Survey Instrument - Employee

Item	Scale	1	2	3	4	5
LMX_E1	Do you know how satisfied your leader is with what you do?	Rarely	Occasionally	Sometimes	Fairly Often	Very Often
LMX_E2	How well does your leader understand your job problems and needs?	Not a Bit	A Little	A Fair Amount	Quite a Bit	A Great Deal
LMX_E3	How well does your leader recognize your potential?	Not at All	A Little	Moderately	Mostly	Fully
LMX_E4	Regardless of how much formal authority he/she has built into his/her position, what are the chances that your leader would use his/her power to help you solve problems in your work?	None	Small	Moderate	High	Very High
LMX_E5	Again, regardless of the amount of formal authority your leader has, what are the chances that he/she would "bail you out," at his/her expense?	None	Small	Moderate	High	Very High
LMX_E6	I have enough confidence in my leader that I would defend and justify his/her decision if he/she was not present to do so	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
LMX_E7	How would you characterize your working relationship with your leader?	Extremely Ineffective	Worse Than Average	Average	Better Than Average	Extremely Effective

Table 21

Interactional Justice Instrument

Item	Scale	1 Disagree Strongly	2 Disagree	3 Neither agrees nor disagree	4 Agree	5 Agree Strongly
ESR_1	Your supervisor considers your viewpoint and listens to your suggestions.					
ESR_2	Your supervisor suppresses personal biases whenever he or she makes a decision.					
ESR_3	Your supervisor provides you with timely feedback and explains the implications of the feedback.					
ESR_4	Your supervisor treats you fairly, and with kindness and consideration.					
ESR_5	Your supervisor demonstrates genuine concern for your rights as an employee.					
ESR_6	Your supervisor takes steps to deal with you in a truthful manner.					

Table 22

Appraisal System Satisfaction Instrument

Item	Scale	1 Disagree Strongly	2 Disagree	3 Neither agrees nor disagree	4 Agree	5 Agree Strongly
PA_1	My last rating was an accurate assessment of my performance.					
PA_2	I feel my last rating was fair.					
PA_3	The current performance appraisal system encourages me to continually improve the way work is done.					
PA_4	The current performance appraisal system helps me with my career development.					
PA_5	Overall, I am satisfied with the current performance appraisal system.					

Table 23

Perceived Career Opportunity Scale

Item	Scale	1 Disagree Strongly	2 Disagree	3 Neither agrees nor disagree	4 Agree	5 Agree Strongly
CD_1	There are career opportunities within my organization that are attractive to me.					
CD_2	I believe that I can achieve my career goals within my current employer.					
CD_3	My organization offers many job opportunities that match my career goals.					
CD_4	There are positions available in this organization that are of interest to me.					
CD_5	There are positions within my current employer that would allow me to pursue my ideal career.					
CD_6	This organization is a place where I can fulfill my career aspirations.					

Appendix F: Survey Instrument Permissions

LMX-7 Survey Instrument

Mary Uhl-Bien < XXXXX@XXXX 3:41 PM (18 hours ago)

to me

It is a publicly available measure so you are free to use it.

Best,

Mary

Dr. Uhl-Bien,
Thank you once again for permission to use the LMX-7 survey instrument. I am close to completing my proposal and will hopefully begin to collect data and finalize my doctoral study. My mentor, Dr. Al Endres, suggesting that I request permission not only to use the survey instrument but also request your permission to publish the instrument within my doctoral study. I will definitely include reference to you and Dr. Graen, and the article in which I found the instrument.
Thank you
Bill Henkel

Mary Uhl-Bien 5:39 AM (7 hours ago)

Yes you have permission.

Bill,

I am pleased to offer my permission to use the scale. I wish you the best with your research.

Regards,

Rob Moorman

Robert Moorman, Ph.D.
Frank S. Holt Jr. Professor of Business Leadership
Martha and Spencer Love School of Business
Elon University, Elon NC 27244

From: William Henkel [XXXXX@XXXXXXXX]
Sent: Tuesday, September 30, 2014 6:07 PM
To: Robert Moorman
Cc: Al Endres
Subject: William Henkel + Permission to use Survey Instrument

Robert Moorman

Dr. Moorman,
Thank you once again for permission to use the Interactional Justice instrument. I am close to completing my proposal and will hopefully begin to collect data and finalize my doctoral study. My mentor, Dr. Al Endres, suggesting that I request permission not only to use the survey instrument but also request your permission to publish the instrument within my doctoral study. I will definitely include reference to you and the article in which I found the instrument.
Thank you
Bill Henkel

Bill,
Of course. Please use the measure however you wish.
Best,
RM

Robert Moorman, Ph.D.
Frank S. Holt Jr. Professor of Business Leadership
Martha and Spencer Love School of Business
Elon University, Elon NC 27244

Appraisal System Satisfaction Survey Instrument

David Waldman 4:10 PM (17 hours ago)

to me

Hi Bill,

A lot of time has come and gone since the project to which you refer – almost 20 years since the research was actually done. Is the measure listed in the article? If so, then you have my permission to use it. If not, I would doubt that I still could find or reconstruct the measure.

David Waldman

From: William Henkel | XXXX@XXXXXXXXXXXXXXXXXXXXXX
Sent: Thursday, July 03, 2014 3:17 PM
To: David Waldman
Subject: William Henkel + Permission to use Survey Instrument

...

William Henkel < XXXX@XXXXXXXXXXXXXX > 5:51 PM (15 hours ago)

to David

Dr. Waldman,
Thank you for your permission. Yes, the 5 items that I will be using are listed in the Appendix of the article.
Once I finish my doctoral study, I will send you a copy of the results if wish.
Bill

...

William Henkel 5:59 PM (14 hours ago)

Dr. Al, I received this permission from Dr. Waldman to use his instrument. Bill

David Waldman 6:06 PM (15 hours ago)

to me

Thanks, Bill. By the way, if the items are listed at the end of the article, and there is no mention of copyright, then you don't really need my permission or that of the journal (or its publisher) to use the items – as long as you acknowledge in your work that the items come from that article. The same would be true of any comparable set of items published as part of a journal article.

David

Perceived Career Opportunity Scale

Kraimer, Maria L

Dear Bill,

Technically, you do not need my permission to use those scale items on your survey. Once they are published in a journal, anyone is free to use the scales for research purposes. So, feel free to use them!

Here is the 6-item version of PCO if you prefer a longer, more reliable scale (this is the 6-item version we mentioned in the measures description of the PCO scale on page 492).

1. There are career opportunities within my organization that are attractive to me.
2. I believe that I can achieve my career goals within my current employer.
3. My organization offers many job opportunities that match my career goals.
4. There are positions available in this organization that are of interest to me.
5. There are positions within my current employer that would allow me to pursue my ideal career.
6. This organization is a place where I can fulfill my career aspirations.

Best of luck with your dissertation.

Maria

Maria Kraimer, PhD
Professor and Leonard A. Hadley Chair in Leadership
Director of PhD program
Department of Management & Organizations
University of Iowa
Iowa City, IA 52242-1994

Dr. Kraimer,
Thank you once again for permission to use the PCO survey instrument. I am close to completing my proposal and will hopefully begin to collect data and finalize my doctoral study. My mentor, Dr. Al Endres, suggesting that I request permission not only to use the survey instrument but also request your permission to publish the instrument within my doctoral study. I will definitely include reference to you and the other authors, and the article in which I found the instrument.
Thank you
Bill Henkel

Kraimer, Maria L <XXXXX>

Yea, that is fine to publish the PCO instrument in your dissertation.
Good luck with your study!
Maria

Appendix G: National Institutes of Health (NIH) Certificate

Appendix H: IRB Approval to Conduct Research

Dear Mr. Henkel,

This email is to notify you that the Institutional Review Board (IRB) has approved your application for the study entitled, "Correlates of Leader-Member Exchange, Employee-Supervisor Relationship, Performance Appraisal, and Career Development."

Your approval # is 02-13-17-0122032. You will need to reference this number in your dissertation and in any future funding or publication submissions. Also attached to this e-mail is the IRB approved consent form. Please note, if this is already in an on-line format, you will need to update that consent document to include the IRB approval number and expiration date.

Your IRB approval expires on February 12, 2018. One month before this expiration date, you will be sent a Continuing Review Form, which must be submitted if you wish to collect data beyond the approval expiration date.

Your IRB approval is contingent upon your adherence to the exact procedures described in the final version of the IRB application document that has been submitted as of this date. This includes maintaining your current status with the university. Your IRB approval is only valid while you are an actively enrolled student at Walden University. If you need to take a leave of absence or are otherwise unable to remain actively enrolled, your IRB approval is suspended. Absolutely NO participant recruitment or data collection may occur while a student is not actively enrolled.

If you need to make any changes to your research staff or procedures, you must obtain IRB approval by submitting the IRB Request for Change in Procedures Form. You will receive confirmation with a status update of the request within 1 week of submitting the change request form and are not permitted to implement changes prior to receiving approval. Please note that Walden University does not accept responsibility or liability for research activities conducted without the IRB's approval, and the University will not accept or grant credit for student work that fails to comply with the policies and procedures related to ethical standards in research.

When you submitted your IRB application, you made a commitment to communicate both discrete adverse events and general problems to the IRB within 1 week of their occurrence/realization. Failure to do so may result in invalidation of data, loss of academic credit, and/or loss of legal protections otherwise available to the researcher.

Both the Adverse Event Reporting form and Request for Change in Procedures form can be obtained at the IRB section of the Walden website:
http://academicguides.waldenu.edu/researchcenter/orec

Researchers are expected to keep detailed records of their research activities (i.e., participant log sheets, completed consent forms, etc.) for the same period of time they retain the original data. If, in the future, you require copies of the originally submitted IRB materials, you may request them from Institutional Review Board.
Both students and faculty are invited to provide feedback on this IRB experience at the link below:

http://www.surveymonkey.com/s.aspx?sm=qHBJzkJMUx43pZegKlmdiQ_3d_3d

Sincerely,
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Information about the Walden University Institutional Review Board, including instructions for application, may be found at this link:
http://academicguides.waldenu.edu/researchcenter/orec