

Servant Leadership: An Effective Leadership Model for Achieving Optimal Productivity

Submitted by

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Approved

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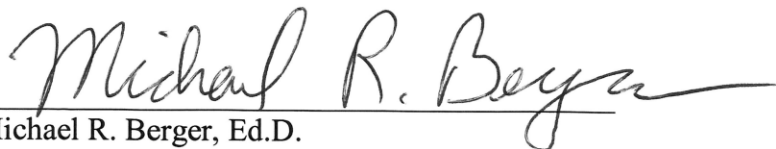
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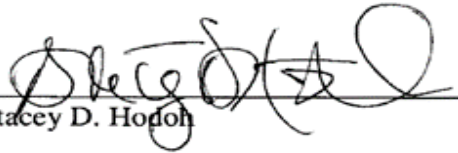
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Abstract

The purpose of this quantitative, correlational research study was to determine if, and to what degree, a positive correlation existed between servant leadership behaviors displayed in a for-profit distribution center environment and individual worker productivity. Two research questions guided the study: (1) is there a positive correlation between servant leadership behaviors displayed in a for-profit distribution center environment and levels of individual worker productivity? And, (2) is there a positive correlation between each of the six subscales of servant leadership behavior (values people, develops people, builds community, displays authenticity, provides leadership, shares leadership) and levels of individual worker productivity in a distribution center environment? The theoretical foundation was the servant leadership model. A total of 133 employees representing three high-performing distribution centers of a national supply chain company completed the Organizational Leadership Assessment (OLA) survey. Individual productivity was calculated using the Total Productivity Model (TPM). Results from the regression analysis revealed a statistically significant relationship between participants' individual productivity scores and overall servant leadership behavior ($R = .628$, $R^2 = .395$, $F(1, 131) = 85.486$, $p < .001$). Additionally, results from the multiple regression analysis indicated there was a significant multivariate relationship between participants' individual productivity and the subscale *value people* ($R = .707$, $R^2 = .500$, $F(6, 126) = 21.020$, $p < .001$). While the study revealed a positive and significant correlation between the study variables, further research should determine if the relationships are causal.

Keywords: Servant leadership, organizational productivity, high performance

Dedication

To my heavenly Father, thank you for giving me the wisdom, courage, and capacity to lead and serve. And to my dad Nathaniel R. Hodoh, Sr., whose early faith in grassroots leadership and community activism shaped who I am today; to my mother Bernice Hodoh - my spiritual fountain and rock who taught me the value of serving the underrepresented through stewardship; and to my amazing Sweetie; and loving siblings Bridget, Tracey, and Roy; in appreciation for your love, support, and encouragement so abundantly manifested throughout this doctoral journey – *our* doctoral journey.

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Chapter 1: Introduction to the Study

Introduction

Supply chain organizations have traditionally looked for ways to improve how to get things done with fewer resources. Researchers have traced formal labor management theories and practices for productivity improvement in industrial settings to the early 1700's (Mildred & Taneja, 2010). By the first half of the twentieth century, a focus on internal manufacturing efficiencies was a sufficient measurement of success for supply chain activities (Corominas, 2013). Over time, the global economy has experienced radical change in how goods flow from manufacturing sites to consumers (Sahin, Narayanan, & Robinson, 2013; Singh & Raghuvanshi, 2014). Technology, automation, increased customer expectations, and global competition have evolved modern day approaches to productivity improvements to ensure resources are used economically and are not wasted (Hajdul & Mindur, 2015).

The role of the supply chain leader in today's digital economy is more important than ever given the expectation that supply chains are the engines of growth for major economies. As a critical lever for distribution networks, it has become increasingly important to have leadership capability that can influence productivity levels of both manual and knowledge work (Birasnay, Rangnekar, & Dalpati, 2011; Drucker 1999; Nickols, 2011; Wong & Neck, 2012). There are many potential benefits from improving organizational productivity within a company, including increases in profitability, lower operating costs, improved resource utilization, and improved customer satisfaction (Arif-Uz-Zaman & Amm 2014; Hajdul & Mindur, 2015). It is necessary for effective supply chain leaders to not only create flexible, nimble operations that improve unit productivity

rates, but to also demonstrate foresight with speed, agility and a laser sharp customer focus under conditions of chaos, complexity, and uncertainty (Matwiejczuk, 2012; Ogunbiyi, Oladapo, & Goulding, 2014).

While influence is considered a key element of leadership, servant leadership changes the focus of this influence by emphasizing the concept of service in the leader-follower relationship. According to Parolini (2005), the servant-leader model offers a positive alternative to other leadership models or philosophies while moving the concept of leadership to one that provides a supportive environment to human development. As servant leadership is operationalized in the work environment, followers are likely to feel empowered (van Dierendonck, Stam, Boersma, de Windt, & Alkema, 2014). Prior research has demonstrated that followers who are empowered through servant leadership are more apt to influence their work environment in a positive way (Zhu, 2006). Another benefit of servant leadership argued by researchers is that followers engage in servant leadership behaviors with one another, which speaks to the perpetuation process of servant leadership in the work culture and its positive correlates to organizational performance (Melchar & Bosco, 2010; Hu & Liden, 2011).

While Greenleaf's (1977) seminal work on servant leadership has laid the foundation to an expanding theoretical construct of service-oriented leadership, the *servant-led organization* was defined by Laub (2003). A servant leadership oriented organization is one in which the characteristics of servant leadership are displayed through the organizational culture with leadership and the overall workforce valuing and practicing servant leader behaviors. This servant leadership puts the needs of others first

and through this service-oriented culture the organization gains incredible influence for the common good of the individual.

Up to this point not much has been done to examine the effect of a servant leadership culture on an individual's productivity levels in general industry, specifically hypercompetitive for-profit distribution center operations. Liden, Wayne, Chenwei and Meuser (2014) conducted an empirical test of the servant-leader model in a for-profit food service retailer where employees were expected to perform their duties at a high level. In a sample of 961 employees working in 71 restaurants of a mid-sized restaurant chain, a model was developed that asserts servant leadership influences individual performance that enhances individual attitudes and behaviors through the mediating influence of a serving culture (Liden et al., 2014). The study revealed that modeling servant leadership strategically across specific management levels created a culture in which servant leaders propagated leadership behaviors among followers through the mediating influence of an individuals' association with the group (Liden et al., 2014).

Although compelling empirical evidence correlated servant leadership behaviors to increased performance, it was not known if, and to what degree a positive correlation exists between levels of employee perceptions of servant leadership and levels of individual worker productivity in a for-profit distribution center environment. Thus, there was a gap in the literature this study addressed. Understanding the effects of a serving culture on productivity in a distribution center environment has special merits. After investigating such relationships, organizational leaders and organizational development practitioners can now identify tactics to improve behaviors and attitudes that lead to stronger levels of individual productivity (Liden et al., 2014; Melchar & Bosco, 2010). In

addition, the data extended the literature relating servant leadership behaviors to organizational performance (Jones, 2012). It is essential that line managers are aware of the potential affect servant leadership behaviors have on individual worker productivity (van Dierendonck et al., 2014).

Chapter 1 includes the background to the study, the problem statement, purpose of the study, the research questions, hypotheses, a discussion of how the current research advanced scientific knowledge, and the significance of the study. The rationale for the selected research design and methodology is presented, along with definitions of research terms, and assumptions. The chapter concludes with a discussion on limitations, and delimitations of the study.

Background of the Study

The competitive environment created by contemporary supply chain organizations has produced a hyper-productive work culture where employee performance is continually measured and monitored in pursuit of cost reductions and customer satisfaction. These changes influenced supply chain organizations to develop changes to their operations if they wished to survive and bring the expected profits to their operations (Crews & Bhatia, 2012). To drive growth and profitability, many supply chain operators have relied primarily on the implementation of intricate expense reduction programs to reduce cost and slash expenses (Hajdul & Mindur, 2015). In many other instances, improved individual worker productivity over the last decade was achieved by autocratic leaders accustomed to mandating employees to work harder, faster, and safer or to increase productivity levels through a reduction in force plan without considering the internal and external customer service implications (Yokl, 2011).

The competitive ability of a supply chain organization depends directly on its ability to influence performance within its whole supply chain. Liden, Wayne, Chenwei and Meuser (2014) suggested servant leadership is very effective when applied in an organizational context, and may be viable for adoption in other industries, such as service oriented for-profit distribution centers. Melchar and Bosco (2010) argued that servant leadership increased follower engagement and customer satisfaction. When exploring the concept of servant leadership applied in organizational settings, research in higher education, health care, and the non-profit sector indicated servant leadership has a positive effect on employee engagement, increased performance, and organizational potency amongst many stakeholders (Hu & Liden, 2011; Liden, Wayne, Zhao, & Henderson, 2008; Melchar & Bosco, 2010).

Thus, the current study postulated that servant leadership has a positive correlation on individual worker productivity levels in distribution center operations where economic pressures and competitive forces require companies to broaden their performance objective to include leadership effectiveness as a cost of doing business. This study addressed the need for further research to ascertain the generalizability of Liden et al.'s (2014) findings while using a professional sample in a different industry, such as supply chain. Further, the process by which servant leadership impacts employee behaviors and organizational outcomes was explored to further develop the theoretical basis of servant leadership.

Problem Statement

It was not known if, and to what degree, levels of employee perceptions of servant leadership behaviors of the work culture correlated with individual worker productivity in

the distribution center environment of a for-profit supply chain organization. Previous empirical research examined the relationship between servant leadership and organizational performance (Irving, 2005; Liden et al., 2014; Melchar & Bosco, 2010; Naquin & Tynan, 2003). Supportively, many researchers agreed there was a positive correlation between servant leadership behaviors and increased levels of performance.

Melchar and Bosco (2010) conducted a quantitative correlational study that examined the relationship between levels of servant leadership and performance in the luxury automobile dealership industry where employees were expected to perform their duties at a high level. The study revealed that modeling servant leadership strategically across specific management levels created a culture in which servant leaders propagated servant-minded behaviors among followers and evolved the organization into a serving culture. A year later, Hu and Liden's (2011) empirical research conducted in the financial services industry produced results that servant leadership moderated the relationship between goal, team potency, process clarity, and organizational performance. Similarly, results from a research study conducted by Liden, Wayne, Chenwei, and Meuser (2014) on a mid-sized restaurant chain indicated servant leadership influences team performance that enhances individual attitudes and behaviors through the mediating influence of a serving culture.

One of the central tenets of modern day servant leadership extolled by Greenleaf (1977) was the emulation of servant leader behaviors that germinate in the work culture. Liden, Wayne, Chenwei, and Meuser (2014) suggested follower modeling of servant leadership behaviors stimulate a process supported by social learning theory that suggests servant leader attitudes and behaviors *trickle down* to subordinates and stimulate

cognitive positive change propagated by member interactions. Servant leadership moves the concept of leadership to one that encompasses behaviors that provide a supportive environment for human development due to its close alignment with positive organizational scholarship (Melchar & Bosco, 2010). Consequently, servant leadership operates beyond the individual and dyadic levels (between leader and follower) due to individual member engagement in modeling servant leadership behaviors that positively influence growth and learning that support performance outcomes (Liden et al, 2014).

Harnessing the work culture to compete in a global, chaotic, diverse, and fast paced environment will require organizational development practitioners and human resource leaders to model supply chain leadership behavioral capabilities within the organization critical to supporting organizational outcomes. Against this backdrop, research on the concepts of supply chain leadership and leadership capability are deemed important for two reasons: (a) there is a need for supply chain leaders to maintain long term organizational health to sustain the organization, and (b) effective supply chain leadership is necessary to maintain the required energy and knowledge needed by employees and key stakeholders to drive change, growth, and renewal (Olhager, 2013). More so than ever before, supply chain leaders are expected to prepare their organizations for the future.

Although empirical evidence correlated servant leadership at the organizational level with increased levels of performance, minimum evidence has been presented on the relationship between servant leadership and individual worker productivity in a for-profit distribution center operation. Melchar and Bosco (2010) asserted that further examination of servant leadership in an organizational setting could expand important knowledge

relating to employee productivity. Understanding the relationship between servant leadership and productivity is essential in finding effective leadership behaviors and competencies that improve labor cost and operational efficiencies in contemporary service industries (van Dierendonck et al., 2014; Yorkl, 2011). The review of servant-leader practices in diverse for-profit organizations helped to increase knowledge of servant leader behaviors and the extent to which they promote positive work outcomes across a multitude of industries.

This study investigated if characteristics of servant leadership reflected in a for-profit distribution center work environment were positively linked to levels of individual worker productivity while understanding the potential affect servant leadership behaviors had on the individual, the work culture, and business outcomes. The research was framed in the theoretical context that servant leadership has a significant positive relationship with organizational performance by creating a culture in which servant leaders propagate leadership behaviors among individual followers by creating and evolving a serving culture (Liden et al., 2014). This serving culture directly influences team performance through the mediating influence of an individuals' association and identification of the team (Hu & Liden, 2011).

Purpose of the Study

The purpose of this quantitative, correlational study was to examine if, and to what degree, a positive correlation existed between levels of employee perceptions of servant leadership and levels of individual worker productivity in a for-profit distribution center environment. In order to assess this correlation, the researcher gathered responses from employees about their perceptions of the levels of servant leadership behaviors

displayed in the work culture. The study consisted of a target population of 200 employees from three high performing for-profit grocery distribution centers located in Florida and Oregon. The independent variable, servant leadership, was measured using Laub's (1999) Organizational Leadership Assessment (OLA) tool. The dependent variable, individual worker productivity, was calculated using the Total Productivity Model (Khater & Mostafa, 2011). The findings of this study advance the understanding of the relationship between servant leadership characteristics and individual worker productivity in a for-profit work environment.

Study results were evaluated to determine if a statistically significant relationship exists between levels of servant leadership behaviors and individual worker productivity. The data collection from this study adds to the literature in this area by broadening the knowledge surrounding the problem statement. The data analysis extended the literature relating servant leadership to organizational performance by investigating the correlation of servant leader behaviors with individual worker productivity. Further, this study contributed to the field by providing new information and resources relevant to servant leadership and individual worker productivity among semi-skilled distribution center workers in the US.

The research was framed in the theoretical context that servant leadership has a significant positive relationship with organizational performance by creating a culture in which servant leaders propagate leadership behaviors among followers by creating and evolving a serving culture. This serving culture directly influences individual performance through the mediating influence of an individuals' association and identification of the team or service organization (Hu & Liden, 2011; Liden et al., 2014;

Melchar & Bosco, 2010). Greenleaf's (1977) outcomes formed the framework for this study. Laub's Organizational Leadership Assessment tool (1999) measures six distinct subscales of servant leadership: (a) valuing people, (b) developing people, (c) building community, (d) displaying authenticity, (e) providing leadership, and (f) sharing leadership (Laub, 1999).

Research Questions and Hypotheses

To better understand various relationships between servant leadership behaviors and individual worker productivity, appropriate research questions with alignment to the problem statement were essential to the study. Two research questions were formulated to advance the overall focus and direction of the present research, and to extend Liden, Wayne, Chenwei, and Meuser's (2014) research to determine if their findings in a mid-sized restaurant chain were generalizable to distribution center operations. The present study was framed using Greenleaf's (1977) theoretical context that servant leadership has a significant positive relationship with organizational performance by creating a culture in which servant leaders propagate leadership behaviors that are modeled and adopted by followers.

Research questions. With respect to the research problem statement, the following research questions guided the present study and relate to the problem statement to determine to what degree, if any, levels of employee perceptions of servant leadership behaviors of the work culture correlated with levels of individual worker productivity of a distribution center environment as follows:

RQ1: If and to what extent does the levels of employee perceptions of servant leadership behaviors displayed in a for-profit distribution center environment correlate with levels of individual worker productivity?

RQ2: If and to what extent does the levels of employee perceptions of each of the six subscales of servant leadership behavior (values people, develops people, builds community, displays authenticity, provides leadership, shares leadership) displayed in a for-profit distribution center environment correlate with levels of individual worker productivity?

Hypotheses and null hypotheses. The hypotheses present the expected relationship between levels of employee perceptions of servant leadership (independent variable) and levels of individual worker productivity (dependent variable) (Fraenkel, Wallen & Hyun, 2012). The hypothesis in the present correlational study was designed to show how the two variables of servant leadership behaviors and levels of productivity are related, but does not suggest exploration of a causal relationship amongst the variables. By contrast, the null hypotheses predicted there was no relationship between the variables being studied. The hypotheses and null hypotheses for the present study aligned with the problem and purpose statements, as follows:

H1_A: A positive correlation exists between employee perceptions of the overall level of servant leadership behaviors displayed in a for-profit distribution center environment and levels of individual worker productivity.

H1₀: A positive correlation does not exist between employee perceptions of the overall level of servant leadership behaviors displayed in a for-profit distribution center environment and levels of individual worker productivity.

To further define and focus this doctoral research study, the following hypotheses and null hypotheses explored the relationship of each of the six subscales of servant leadership behavior (values people, develops people, builds community, displays authenticity, provides leadership, shares leadership) displayed in a for-profit distribution center and the correlates with levels of individual worker productivity as follows:

H2_A: A positive correlation exists between the levels of employee perceptions of the servant leadership construct of *valuing people* and levels of individual worker productivity.

H2₀: A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of *valuing people* and levels of individual worker productivity.

H2_B: A positive correlation exists between the levels of employee perceptions of the servant leadership construct of *developing people* and levels of individual worker productivity.

H2₀: A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of *developing people* and levels of individual worker productivity.

H2_C: A positive correlation exists between the levels of employee perceptions of the servant leadership construct of *building community* and levels of individual worker productivity.

H2₀: A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of *building community* and levels of individual worker productivity.

H2_D: A positive correlation exists between the levels of employee perceptions of the servant leadership construct of *displaying authenticity* and levels of individual worker productivity.

H2₀: A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of *displaying authenticity* and levels of individual worker productivity.

H2_E: A positive correlation exists between the levels of employee perceptions of the servant leadership construct of *providing leadership* and levels of individual worker productivity.

H2₀: A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of *providing leadership* and levels of individual worker productivity.

H2_F: A positive correlation exists between the levels of employee perceptions of the servant leadership construct of *sharing leadership* and levels of individual worker productivity.

H2₀: A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of *sharing leadership* and levels of individual worker productivity.

Advancing Scientific Knowledge

The present study advanced the scientific knowledge in the area of servant leadership and worker performance. Prior studies investigated the relationship between servant leadership and organizational performance and determined there was a positive correlation (Hu & Liden, 2011; Liden et al., 2014; Melchar & Bosco, 2010; Walumbwa,

Hartnell, and Oke, 2010). Melchar and Bosco (2010) conducted a quantitative correlational study that examined the relationship between levels of servant leadership and performance in the automobile dealership industry where employees were expected to perform their duties at a high level. The study revealed that modeling servant leadership strategically across specific management levels can create a culture in which servant leaders propagate servant-minded behaviors among followers and evolve the organization into a serving culture (Melchar & Bosco, 2010).

Walumbwa, Hartnell, and Oke's (2010) empirical research is also important to the body of research related to servant leadership and organizational citizenship behaviors (OCB). Organizational citizenship behavior is a form of job performance that is productive and contributes to an organization's technical core (Wei, 2014). Walumbwa et al.'s (2010) quantitative correlational study surveyed seven multinational companies and 815 employees in Kenya. The researchers examined the extent to which employee attitude, procedural justice climate, and service climate mediated the relationship between servant leadership and OCB. Results of the study indicated a significant indirect positive effect of servant leadership on OCB (Walumbwa et al., 2010). This study represents an important contribution to the literature by demonstrating the ability of servant leadership to influence climate, which has an effect on employee behaviors.

The following year, Hu and Liden (2011) critically reviewed the relationship between goal and process clarity and servant leadership as antecedents to team potency and effectiveness. A sample of 304 employees representing 71 teams at five financial institutions was represented in the study. This study is important to researchers and practitioners because Hu and Liden (2011) demonstrated that servant leadership

moderates the relationship between goal, team potency and process clarity, and team performance.

In their quantitative correlational analysis of a mid-sized food service restaurant chain, Liden, Wayne, Chenwei, and Meuser's (2014) results indicated servant leadership influences individual performance that enhances individual attitudes and behaviors through the mediating influence of a serving culture (Liden et al., 2014). Furthering this research study using a different professional sample like distribution center workers helps to ascertain the generalizability of Liden, Wayne, Chenwei, and Meuser's (2014) research findings, as suggested based on the results of their study. The current research study utilized the theory and findings from Liden et al.'s (2014) empirical study to extend and continue the study of servant leadership and performance in a for-profit organizational context.

While researchers have examined empirical evidence between levels of servant leadership and specific areas of organizational performance, previous studies identified a need in the literature and influenced the present study to investigate the relationship between levels of servant leadership and levels of individual worker productivity (Liden et al., 2014; Melchar & Bosco, 2010). The present study was framed using Greenleaf's (1977) theoretical context that servant leadership has a significant positive relationship with organizational performance by creating a culture in which servant leaders propagate leadership behaviors that are modeled and adopted by followers. The servant-led organization leadership theory is defined by Laub (1999) as an organization in which the characteristics of servant leadership are displayed through the organizational culture with leadership and the overall workforce valuing and practicing servant leader behaviors.

This servant leadership puts the needs of others first and through this service-oriented culture the organization gains incredible influence for the common good of the individual.

This study addressed a research gap in the literature and advanced the scientific body of knowledge by addressing the need for future research on servant leadership and correlates to business outcomes. Although the correlation between servant leadership and performance is well documented, there is scant empirical research in the literature examining servant leadership and individual worker productivity, a key performance indicator in distribution center operations of supply chain networks. Servant leadership is a unique leadership approach that adds value to an organizations hierarchy.

Significance of the Study

The significance of this quantitative correlational study was to statistically equate levels of employee perceptions of servant leadership behaviors with levels of productivity in a for-profit distribution center environment. Recent empirical evidence indicated that supply chains have maintained an intense focus on controlling costs by maximizing profitability. Placing a strong focus on individual worker productivity levels in for-profit distribution center environments where profits are razor thin has been a key area of focus (Yokl, 2011).

Prior research generally shows a positive relationship between servant leadership cultures and performance (Hu & Liden, 2011; Hunter et al., 2013; Melchar & Bosco, 2010). Results from previous research suggested servant leaders can be effective in for-profit service environments. Melchar and Bosco (2010) conducted a quantitative correlational study that examined the relationship between levels of servant leadership

and performance in the luxury automobile dealership industry where employees were expected to perform their duties at a high level. Hu and Liden (2011) critically reviewed the relationship between goal and process clarity and servant leadership as antecedents to team potency and effectiveness. Liden et al. (2014) analyzed the servant leadership model in a multiple-site restaurant chain with proven effectiveness in achieving high levels of customer service. Similarly, results from a research study conducted by Liden, Wayne, Chenwei, and Meuser (2014) on a mid-sized restaurant chain indicated servant leadership influences organizational performance that enhances individual attitudes and behaviors through the mediating influence of a serving culture.

Although there is an abundance of research studies available on various leadership approaches in supply chain, no research has been conducted on the relationship between servant leadership behaviors and individual worker productivity in a for-profit distribution center environment. The collection of data from this study added to the literature in this area by broadening the knowledge of servant leadership at the organizational level and its effect on individual worker productivity, a key performance indicator in supply chain organizations – a dynamic growth industry. Additionally, the data extended the literature relating servant leadership and performance by examining the correlation of key servant leadership characteristics at the organizational level to individual productivity output levels. Although this study does not seek to demonstrate causation, investigating possible relationships between servant leadership and productivity adds practical value to supply chain organizations. The present study is aligned with the problem statement by identifying and measuring employee perceptions

of effective servant leadership behaviors that affect levels of individual worker productivity.

Although prior empirical research examined the relationship between servant leadership and levels of performance in a service organization, a defined gap exists in the literature regarding the relationship of servant leadership behaviors and individual worker productivity levels of distribution center workers. By investigating such relationships, supply chain leaders and organizational development specialists might be capable of identifying leadership behaviors that may improve organizational effectiveness. This study also revealed specific servant leadership subscales that provided a supportive environment for optimal productivity in a for-profit distribution center environment.

Rationale for Methodology

This study utilized a quantitative approach to determine if, and to what degree a positive correlation existed between servant leadership and individual productivity levels. Prior research employed a quantitative methodology to determine the relationship between servant leadership behaviors and organizational performance (Laub, 1999; Liden, Wayne, & Henderson, 2008; Melchar & Bosco, 2010). This study's methodology was consistent with Liden, Wayne, Chenwei, and Meuser's (2014) empirical research on servant leadership and performance with both quantitative studies measuring the relationship of servant leadership to some area of performance in a for-profit service environment. Both studies were also framed under a key tenant of Greenleaf's (1977) servant leadership construct that asserts modeling servant leadership strategically across specific management levels can create a culture in which servant leaders propagate leadership behaviors among followers that influence positive organizational outcomes.

When considering the methodology of a research study, a quantitative methodology involves empirical analysis of data that has been collected from a sample of individuals from specific populations to make generalizable observations for the whole based on the measure of relationships (Fraenkel, Wallen, & Hyun, 2012). Further, quantitative research seeks to establish relationships between study variables and seeks to clarify a hypothesis through statistical data analysis of numerical data (Fraenkel et al., 2012). Appropriate selection of the research methodology is imperative in comprehending and interpreting research results based on the context of the research questions and the hypotheses (Yin, 2009). Because quantitative research quantifies statistical data, a quantitative methodology was appropriate for the present study.

Fraenkel, Wallen, and Hyun (2012) assert that quantitative methodologies are comprised of explicit hypotheses. The quantitative approach uses objective instruments such as questionnaires, personality scales, aptitude assessments, and standardized assessments. Deploying a qualitative research methodology may be ideal for a research problem that requires contextual data. Using this method, respondents may provide open ended responses which can be used to collect the ‘why’ of contextual information embedded in their response to design a more robust study (Fraenkel et al., 2012). Since the problem statement in this study seeks to make generalizable observations for the entire population based on the measure of relationships between the two study variables, a quantitative approach was deemed most appropriate.

Nature of the Research Design for the Study

A correlational research design was utilized for this study. According to Fraenkel, Wallen, and Hyun (2012), a correlational research design, “seeks to investigate the extent

to which one or more relationships of some type exist” (p.11). A correlational study was the most appropriate design to identify the degree to which there was a relationship between servant leadership in an organizational setting and levels of individual worker productivity. Examining the correlation between one independent variable and one dependent variable simplified the data analysis process (Yin, 2009). Additionally, the study correlated the sub dimensions of servant leadership with levels of individual worker productivity in order to obtain a more dynamic analysis. The results from the study were analyzed with the use of a Pearson r correlation coefficient, which provided a numerical summary of the data. A causal comparative design was not appropriate for this study since there was not a comparison of the variables with an intent of understanding the causes for different study groups (Fraenkel et al., 2012). Similarly, the experimental and quasi experimental designs were not considered since pre and post tested groups were not instituted to see if there was a difference in leadership effectiveness with respect to individual worker productivity levels (Fraenkel et al., 2012).

In the present study, servant leadership was measured using Laub’s (1999) Organizational Leadership Assessment instrument. Laub (1999) introduced a model and assessment tool based on Greenleaf’s (1977) servant leadership model that measures levels of member perceptions of *servant leadership* within the organization. The six key areas of the servant-led organization model are: displays authenticity, values people, develops people, builds community, provides leadership, and shares leadership (Laub, 1999). Laub (1999) stated a servant-led organization is one that puts the needs of others first and as a result gains plausible power and strength throughout the entire organization. The OLA instrument (Laub, 1999) was field tested extensively with a high reliability

score using the Cronbach Alpha coefficient (Laub, 1999). The present study consisted of a minimum sample size of 132 employees representing three for-profit distribution centers in the US. According to Yin (2009), the sample selection for a correlational study should be carefully selected as in any type of study. The minimum acceptable sample size for a correlational study is considered by most researchers to be no less than 30 (Fraenkel et al., 2012). In addition, a statistical power analysis was conducted in order to justify the minimum sample size. The statistical power analysis indicated a minimum sample size of 98 participants, while the OLA Group recommended a sample size of 132 participants. The researcher used a sample size that was the greater of the OLA Group recommendation and the a-priori statistical power analysis.

While considering the human factors related to productivity and servant-minded organizations, it was also important to pair this with how individual productivity is measured. Productivity is a concept related to production systems and is the standard indicating how efficiently organization use material, labor, and capital (Huang, Dismukes, Shi, & Su, 2002). Simply put, productivity is the relationship between outputs and all employed inputs measured in real terms. It refers to a comparison between what comes out of production and what goes into production; it is the arithmetical ratio between the amount produced and the amount of all resources used in terms of manufacturing and distribution. Productivity may be measured for manufacturing organizations or their work functions (Khater & Mostafa, 2011). To measure individual worker productivity, models and formulas have been developed by Sumanth (Khater & Mostafa, 2011) and based on an extensive body of economic and industrial engineering research and analysis.

Proper care of data, information, and human subjects insure the overall research process is reliable and accurate which aids in bolstering trust from the academic community, experts, and users. Essential to this study is the professional collection of servant leadership data and productivity data. This data and proprietary information was managed reliably and responsibly, and with respect to published research standards within the industry and academic research community (Yin, 2009). A structured process was used to collect research data. Site authorization was obtained from the chief operating officer of the subject supply chain organization. The Grand Canyon University Institutional Review Board (IRB) approval was granted prior to the data collection process. All necessary IRB approvals and consent required to conduct the research proposal were completed by the researcher prior to commencing research activities.

Once IRB and site authorization were obtained, written approval to obtain company data and to engage employees in the servant leadership assessment test was requested in writing. Likewise, the researcher obtained individual worker productivity data from the human resource official representing the subject supply chain organization. Identifiers such as employee names, employee numbers, participant's date of birth, screen or user name, and email address were not provided by the subject organization. All information regarding the subject organization remained in the possession of the researcher and shall be maintained in a secure location for a minimum of three years. All participants were provided access to the survey privacy policy for the OLA survey (Laub, 1999) which spelled out how collected data was to be used prior to completing the research questionnaire.

The researcher agreed to honor all confidentiality and privacy policies required by the participating supply chain organization to ensure that data and information was collected for specified research purposes. Requests to be excluded from the participant survey were acknowledged and honored. Subjects had a reasonable expectation they would be contacted by email to participate in the research survey and would not be contacted for any reason via unsolicited emails.

Definition of Terms

The terms listed in this section are terms that are commonly used within the study. This section defines the study construct and provides a common understanding of technical terminology, variables, and concepts used within the scope of the study. The following terms were used operationally in this study.

Authentic leadership. A pattern of ethical and transparent leader behaviors that encourage openness and trust in the leader-follower relationship. The authentic leader builds healthier work environments and trusting relationships through balanced processing, relational transparency, internalized moral perspective, and self-awareness (Clapp-Smith, Vogelgesang, & Avey 2009).

Cases per hour. A ratio of production outputs to inputs. Total cases received and shipped divided by total hours worked (Khater & Mostafa, 2011).

Climate. A psychological state strongly affected by conditions within the organization, including systems, structure, and leadership behaviors; a perception of how things are in the organizational environment. Referred to as the *mood* of an organization (Gucel & Begeç, 2012).

Culture. A system of shared beliefs, assumptions, and values, which governs how individuals behave in organizations. These shared values influence the people in the organization and dictate how they act, perform their jobs, make assumptions and decisions. Referred to as the *personality* of an organization (Gucel & Begeç, 2012).

Distribution center. A principal part of a supply chain network where goods are received, stored temporarily, and redistributed according to customer demand (Vidalis, Koukounialos, Ntio, & Varlas, 2012).

Efficiency. A level of performance that describes a process that uses the lowest amount of inputs to create the greatest amount of outputs (Salimath & Jones, 2011).

Individual performance. The outputs produced by an individual (Hu & Liden, 2011).

Leader. A person perceived to have formal and authoritative power who influences followers through collaborative means for the creation, advancement, and/or attainment of a shared vision. Leaders may also be informal influencers who serve and direct the lives of other followers (Shams, Shareef, Mahmood & Ishaque, 2012).

Logistics. A specific part of a supply chain that plans, implements, executes, and controls the movement and placement of goods and/or people, and the related supporting activities between the point of origin and the point of consumption in order to meet customers' requirements (Mohanta & Thooyamani, 2010).

Organizational effectiveness. Describes how effective an organization is in achieving the outcomes the organization intends to produce (Hu & Liden, 2011).

Organizational Leadership Assessment (OLA). Instrument created in 1999 by Dr. James Laub. Survey tool that measures an organization's servant leadership level or health (Laub, 1999).

Population. All employees at each of the distribution center organizations in Florida and Oregon included in this study.

Productivity. The arithmetical ratio between the amount produced and the amount of all resources used in terms of manufacturing and distribution. Productivity may be measured for manufacturing organizations, distribution center operations, or their work functions (Khater & Mostafa, 2011).

Productivity data. Published productivity data for each distribution center included in this study. This is object performance as perceived by the study supply chain organization and calculated by dividing total cartons handled by total hours worked at the individual, team, group, or organizational level (Khater & Mostafa, 2011).

Servant leadership. Leadership philosophy based on the premise the leader *is* servant first. It begins with the natural feeling that one wants to serve *first*, then conscious choice brings one to aspire to lead (Spears, 2004).

Supply chain. The sequence of processes involved in the production and distribution of a commodity (Olhager, 2013).

Transformational leadership. A process whereby leaders influence significant positive change at the individual, team, group, and organizational level; behavioral dimensions include acting with fairness and integrity, establishing high expectations, providing support and recognition, igniting and stirring emotions and passions in

individuals, and influencing people to shift their focus beyond self-interests to strive to reach goals (Lopez-Zafra, Garcia-Retamero, & Berrios-Martos, 2012).

Assumptions, Limitations, Delimitations

Assumptions. The assumptions of this study were based on the study of servant leadership and organizational performance. According to Fraenkel, Wallen, and Hyun (2012), assumptions are defined as any important assertion presumed to be true, but not actually verified. Major assumptions should be described in any empirical research proposal. The following assumptions were applicable to the present study:

1. It was assumed that the participants of the study answered the questions to the surveys honestly, to the best of their ability, and did not offer responses that did not accurately reflect their true beliefs.
2. It was assumed the Organizational Leadership Assessment (OLA) tool (Laub, 1999) is a valid and reliable tool when being used with the selected employee population. The honest and full participation of employees working at the selected distribution center sites created reliable and valid data to be used throughout the study.

Limitations/Delimitations. Knowledge concerning limitations of a study may assist other researchers in assessing the degree to which the findings can be generalized (Fraenkel, Wallen & Hyun, 2012). Delimitations are boundaries set by the researcher to control the study. In the present study, the researcher identified the following limitations/delimitations:

1. The study was limited to one for-profit supply chain organization with locations in [REDACTED], [REDACTED] and [REDACTED].
2. Due to the unique demographics of the supply chain organization, findings cannot necessarily be generalized to other supply chain organizations.
3. Due to the size of the distribution centers, participants may have assumed that results would be shared with executive leaders and might feel retaliation from leadership. This feeling may have participants not answering questions as truthfully.

4. The study was only limited to the validity and reliability of the survey instruments.
5. The findings of the study might have differed from distribution center employees to retail employees or manufacturing employees. Since the study was directed in a distribution center operation, the results of the study do not reflect the entire population of the overall supply chain organization.
6. Study participants may have had varying perceptions and understanding of servant leadership that may have influenced their interpretations of survey questions.
7. The study measured the perceptions of all employees, which may differ from the perceptions of top leadership or reality.
8. Because correlational studies do not investigate cause and effect, causal conclusions cannot not be drawn from the study (Yin, 2009).

Summary and Organization of the Remainder of the Study

This chapter introduced the research study, which focused on the relationship between levels of employee perceptions of servant leadership and levels of individual worker productivity in a for-profit distribution center environment. Previous empirical research has examined the relationship between servant leadership and various areas of organizational performance (Ehrhart, 2004; Hunter et al., 2013; Hu & Liden, 2011; Liden et al., 2014; Melchar & Bosco, 2010). Liden et al.'s (2014) study results supported the hypothesis that servant leadership in a food retail store was positively related to store performance (i.e., quality, customer satisfaction, and compliance). Yet, a defined gap or need existed in the literature concerning the generalizability of findings from this study to other for-profit industries and professional samples. The current study addressed the research gap by extending previous research conducted by Liden et al. (2014) on servant leadership to examine the relationship between servant leadership, as measured by OLA

(Laub, 1999), and individual worker productivity in a for-profit distribution center environment of a supply chain organization (Liden et al., 2014).

The findings of this study may help supply chain leaders and organizational development practitioners discover effective leadership competencies that influence optimal levels of productivity. In addition, this study contributed to the field of leadership by providing new information and data relevant to leadership effectiveness and individual worker productivity in a for-profit distribution center environment, while extending research conducted by Liden, Wayne, Chenwei, & Meuser (2014) to a different industry. Thus, the purpose of this quantitative correlational study was to examine if, and to what extent a positive correlation existed between levels of employee perceptions of servant leadership behaviors and levels of individual worker productivity among employees in a for-profit distribution center environment. Chapter 2 will present an organized review of literature covering the background to the problem, the theoretical framework providing the foundation of the study, and various topics and themes related to the proposed study. These topics include (a) organizational performance and productivity, (b) an overview of emerging leadership models, (c) servant leadership in relation to organizational performance, (d) methodological strengths and weaknesses (e) measuring worker productivity, and (f) servant leadership measurement instruments.

Chapter 3 will present a detailed discussion of the methodology of the study beginning with the restatement of research questions and hypotheses, followed by the research design, population and sample selection, instrumentation, validity, reliability, data collection procedures, data analysis procedures, and ethical considerations. Chapter 4 will present the data summary and statistical analysis of the study data. Finally, Chapter

5 will present the summary of the study, findings, implications, and recommendations from the study.

Chapter 2: Literature Review

Introduction to the Chapter and Background to the Problem

The purpose of this quantitative case study was to examine if a positive correlation existed between servant leadership and individual worker productivity among employees in a distribution center environment. Specifically, this study examined the relationship between levels of employee perceptions of servant leadership within the work culture, and levels of individual worker productivity within a for-profit distribution center environment. These distribution center operations are a principal part of a supply chain network where goods are received, stored temporarily, and redistributed according to customer demand (Vidalis et al., 2012).

The review of literature in this study explored previous research that encompasses the theoretical framework for the study. The intent of the literature review is to provide a comprehensive review of relevant empirical research, peer-reviewed journal articles, books, and electronic sources. The literature review was completed using various sources contained in the Grand Canyon University Library database. Empirical journal articles on relevant subjects were researched through available academic databases, including EBSCOhost, JSTOR, ABI/INFORM, and ProQuest. Doctoral dissertations were accessed through ProQuest Dissertations and Thesis. Additional resources to support this study were found on the internet, and include Google Scholar and a number of leadership and educational websites. The review of literature included a snowballing technique that compiled references from various documents (Marshall, 1998). This technique helped to identify over 250 books, empirical journal articles, and dissertations relevant to the study. Because this study is correlational, the researcher explored case studies examining the

relationship of servant leadership to levels of organizational performance in a for-profit environment. The research used the following search terms: servant leadership, servant leadership and performance, servant leadership and productivity, servant leadership and climate, servant leadership and organizational citizenship behaviors, servant organization, supply chain and performance, leadership and productivity, and supply chain productivity. Overall, the literature review provided the foundation of the study to explore the relationship between servant leadership and organizational performance.

This chapter first introduces the background of the problem, which provided justification for this study based on previous research in the literature. It also presents the historical background behind the study. Second, this chapter presents the theoretical framework serving as the foundation for this research study, along with the models to be used behind the study variables. Third, this research study presents a review of the literature that includes other topics relevant to the study. These topics include (a) organizational performance and productivity, (b) an overview of emerging leadership models, (c) servant leadership in relation to organizational performance, (d) methodological strengths and weaknesses (e) measuring worker productivity, and (f) servant leadership measurement instruments. Finally, a summary of the literature review further synthesizes the literature and identifies the problem statement in the context of its background, the research questions based on the theoretical foundation, the design in relation to previous designs, and data collection approaches and instruments.

The background of the study provides a foundational framework that links trends from prior research to the current study and provides the current empirical articles that define the need for this research. Earlier studies found a statistically significant positive

relationship between servant leadership characteristics and performance in organizational settings (Irving, 2005; Liden et al., 2014; Melchar & Bosco, 2010; Naquin & Tynan, 2003; West et al., 2003). Scholars have presented various perspectives regarding the correlation between servant leadership theories and models that provided the foundation for the current study, contextualized the research problem, and linked common themes.

Servant leadership was first introduced into an organizational context by Robert K. Greenleaf (1977) through three foundational essays: “*The Servant as a Leader*” (1970), “*The Institution as Servant*” (1972), and “*Trustees as Servants*” (1972). Greenleaf (1977) defined servant leadership as an inward lifelong journey where leaders are distinguished by a primary motivation to serve and an aspiration to lead (Sendjaya and Sarros, 2002). Much of the research conducted on servant leadership to date consists of the development of theoretical frameworks and servant leadership assessment tools that allow academic scholars to explore servant leadership as a tenable theory and practice.

Servant leadership is deemed as a growing new leadership theory that has implicit connections to ethics, authenticity, and morality (Graham, 1991; Parolini, 2005; Russell, 2001). Coined by Robert K. Greenleaf in 1970, servant leadership is practiced in religious settings, educational institutions, government agencies, and for-profit organizations, but it remains understudied (Spears, 2004). Since the late 1970s, research scholars examined the link between ethics, leadership, and organizational performance. However, Greenleaf’s (1977) conceptualization of servant leadership as a way of life rather than a leadership theory or technique raised questions as to how it can be empirically tested and operationalized in organizations (Spears, 2004).

In the late 1990s, researchers called for more empirical research studies to test servant leadership theory (Russell & Stone, 2002). Three streams of research emerged: (a) a servant leadership conceptual stream, (b) a servant leadership measurement stream, and (c) a servant leadership model development stream (Parris & Peachey, 2013). In spite of the three streams that emerged, there are still too few empirical studies on servant leadership that explore this leadership paradigm in organizational settings (van Dierendonck et al., 2014).

Spears (1996), Laub (1999), and Patterson (2003) expounded on Greenleaf's (1977) servant leadership theory by exploring servant leadership concepts. Spears (1996) defined key characteristics of servant leadership based on Greenleaf's (1977) foundational works: (a) awareness, (b) building community, (c) commitment to the growth of people, (d) conceptualization, (e) empathy, (f) foresight, (g) healing, (h) listening, (i) persuasion, and (j) stewardship. Spear's definition of servant leader characteristics is based on leadership at the individual level. On the other hand, Laub's (1999) Organizational Leadership Assessment (OLA) introduced an evaluation of the servant-led organization, rather than individual servant leadership. Laub's (1999) six key characterizations of the servant-led organization are: (a) values people, (b) develops people, (c) builds community, (d) displays authenticity, (e) provides leadership, and (f) shares leadership.

Both Spears (1996) and Laub's (1999) definition of servant leadership have been widely used in quantitative studies. Spears (1996) definition of servant leadership practices is defined as placing the good of followers over the self-interests of leadership. Laub's (1999) definition rests upon measuring levels of individual employee perceptions

of servant leadership within the work culture or at the unit level. Patterson's (2003) leader-to-follower servant leadership model begins with a leader's agapao love, or love for others, which is conceptualized into seven values: (a) being teachable, (b) demonstrating concern for others, (c) showing discipline, (d) pursuing the greater good for the organization, (e) demonstrating mercy to all with actions and beliefs, and (f) creating a space for the growth of peace.

Although Spears (1996), Laub (1999) and Patterson's (2003) characteristics of servant leadership are widely cited in empirical research journals, many researchers assert there is not a consensus on its definition or theoretical framework (Carter & Baghurst, 2014; Van Dierendonck et al., 2014) (See Table 1). Scholars continue to probe Greenleaf's (1977) conceptualization of servant leadership by referencing a variety of definitions and servant leader characteristics sourced from multiple works (see Table 1). Without a standard or generally accepted theoretical model of servant leadership, cross-cultural research results may vary based on national context and socialization and will have different meaning and implications when operationalized (Cerit, 2010). A major criticism of this theoretical construct is the difficulty in empirical exploration since there are variations in servant leadership definitions, constructs, and measurement scales (Parris & Peachey, 2013). Yet, the value gained from previous research illustrates that servant leadership is an effective and tenable theory (Hu & Liden, 2011; Laub, 1999; Patterson, 2003; Spears, 1996; Walumbwa et al. 2010).

Table 1

Servant Leadership Characteristics in the Literature

Servant Leadership Characteristics	Spears (1996)	Laub (1999)	Russell & Stone (2002)	Patterson (2003)
Agapao love				•
Altruism				•
Appreciation of others			•	
Awareness	•			
Building community	•	•		
Commitment	•			
Conceptualization	•			
Displaying authenticity		•		
Empathy	•			
Empowerment			•	•
Foresight	•			
Healing	•			
Honesty			•	
Humility				•
Integrity			•	
Listening	•			
Modeling			•	
Personal development		•		
Persuasion	•			
Pioneering			•	
Providing leadership		•		
Service/Stewardship	•		•	•
Stewardship				
Trust			•	•
Valuing people		•		
Vision			•	•

Academic researchers have applied servant leadership measurements to explore specific research themes: cross cultural applicability (Cerit, 2010), servant leadership attributes (Wallin & Crippen, 2008), team level effectiveness and organizational citizenship behavior (Hu & Liden, 2011; Liden et al., 2014; Melchar & Bosco, 2010), follower well-being (Jones, 2012), and workplace spirituality (van Dierendonck et al.,

2014). Through the use of servant leadership assessment tools, researchers and organizational development practitioners were able to evaluate prominent servant leadership characteristics and behaviors that correlated with stronger levels of organizational effectiveness.

Liden, Wayne, Zhao, and Henderson (2008) conducted a quantitative correlational study that examined the relationship between servant leadership and organizational citizenship behaviors (OCB). The researchers surveyed 298 university students in the Midwest United States. Study results indicated that servant leadership behaviors at the individual leader level make a unique contribution in promoting community citizenship behaviors, organizational commitment, and in-role performance. Although Liden et al.'s (2008) study focused on servant leadership and its potential effect on individual follower citizenship behaviors, Liden et al. (2008) determined that future research should focus on group level behaviors and their impact on organizational performance (Liden et al., 2008).

Empirical research suggested servant leadership enhances profits through a reduction in customer turnover, an increase in organizational trust, and increased employee satisfaction. Jones (2012) conducted a qualitative study of the servant-leader model with 21 senior managers representing 16 business organizations. Participants included CEOs, three presidents, six senior vice presidents, one professor, and one author. All participants were self-identified as servant leaders or had experience with the servant leadership model. The study design incorporated a 1 to 2-hour interview with each participant on the subject of servant leadership to collect individual viewpoints. Interviews were recorded on an audio tape recorder, and data was subsequently coded,

evaluated, and analyzed (Jones, 2012). Study results suggest servant leadership behaviors enhance profitability through improved customer retention and increased employee engagement in organizations where leaders see themselves as servants first. The researcher suggested that future research should be conducted in a mix of publically owned organizations or firms located in the Southwest to provide complimentary or different results (Jones, 2012).

Although earlier studies examined the relationship between servant leadership and individual performance, more recent studies questioned whether servant leadership could be operationalized at the organizational level to affect team performance and potency (Hu & Liden, 2011; Jones, 2012; Liden et al., 2014; Melchar & Bosco, 2010). In service firms, leadership is specifically pointed out as a key element of success due to the importance of cooperation, collaboration, learning, continual improvement, and customer satisfaction in this environment (Melchar & Bosco, 2010). In a recent empirical study, Liden et al. (2014) analyzed the servant leadership model in a multiple-site restaurant chain with proven effectiveness in achieving high levels of customer service. Results from this research suggested servant leaders can be effective in for-profit service environments. The researcher postulated that future studies should be conducted in other industries to determine if the results are generalizable.

To further Liden, Wayne, Chenwei, and Meuser's (2014) work and to address a gap in the literature, the purpose of this dissertation was to examine the servant leadership model empirically to increase understanding of the degree to which servant leader behaviors affect productivity in a hypercompetitive distribution center environment. The ability to measure the constructs of this theory consistently among

various organizational contexts helps to understand the external and internal factors influencing its effectiveness (Melchar & Bosco, 2010). This research study aimed to extend model development on the processes and underlying relationships between servant leadership and individual worker productivity outcomes, while contributing to the sparse research on the cross-level effects that individual worker variables have on organizational responses.

While research on servant leadership and performance has increased within the last decade, Liden, Wayne, Chenwei, and Meuser (2014) suggested that future research should investigate the relationship between servant leadership and performance to determine generalizability of their study to other industries. This quantitative case study addressed a gap in the literature on servant leadership and performance by analyzing constructs of this theory within a for-profit distribution center environment and extending Liden et al.'s (2014) research. The ability to measure the constructs of this theory consistently among various organizational contexts, industries, and geographic locations helps to understand the external and internal factors influencing its effectiveness (Jones, 2012; Liden et al, 2008; Melchar & Bosco, 2010). Further investigation of the main components of servant leadership in a for-profit service environment expands important knowledge relating to individual worker performance and business outcomes (Jones, 2012; Liden, et al, 2008; Liden et al., 2014; Melchar & Bosco, 2010).

By validating through this study that servant leaders are committed to personal growth and development of their employees, it underscores the value of servant leadership beyond the quality and quantity of work performed in general industry. From this perspective, employees do not just comprise a physical workforce, but they can be an

energized team of thinkers who can initiate continual improvements in many facets of an organization (Carter & Baghurst, 2014). This study expanded the literature by examining empirical knowledge relating levels of employee perceptions of servant leadership characteristics within the organization to levels of organizational productivity.

Theoretical Foundations

The theoretical foundation for this study rests on the historical theory of servant leadership presented by Greenleaf (1977) and the research objective to evaluate servant leadership correlates to levels of organizational performance. The servant leadership model offers a theoretical construct to examine connections between a specific leadership philosophy and levels of individual worker performance in a for-profit distribution center work environment. Greenleaf's (1977) theory on servant leadership has ten characteristics representing the foundational framework of the model (Spears, 2004): (a) listening, (b) empathy, (c) healing, (d) awareness, (e) persuasion, (f) conceptualization, (g) foresight, (h) stewardship, (i) commitment to the growth of people, and (j) building community. The central tenet of the theory is that an effective leader must first serve those he or she intends to lead while understanding the role of the leader as a servant (Greenleaf, 1977).

Laub (1999) introduced a servant leadership assessment tool based on Greenleaf's (1977) servant leadership model. Laub's (1999) assessment tool, the Organizational Leadership Assessment (OLA), measures servant leadership at the organizational level. Laub (1999) coined the term *servant-led organization* for companies that have high levels of servant leadership behaviors in the work culture. Laub's (1999) tool measures levels of individual employee perceptions of servant leadership behaviors at the organizational

level. The six key areas of Laub's (1999) OLA tool are: (a) displays authenticity, (b) values people, (c) develops people, (d) builds community, (e) provides leadership, and (f) shares leadership (Laub, 1999). Laub (2003) stated a servant-led organization is one that puts the needs of others first and as a result gains plausible power and strength throughout the entire organization. The organizational leadership assessment (OLA) tool was field tested extensively with a high reliability score using the Cronbach Alpha coefficient (Laub, 2003).

Additionally, while considering the human factors related to individual worker productivity and servant-minded organizations, it is also important to pair this with how individual productivity is calculated. This study was influenced by Sumanth's Total Productivity Model (Khater & Mostafa, 2011).. Productivity is a concept related to production systems and is the standard indicating how efficiently organization use material, labor, and capital (Huang et al., 2002). Productivity may be measured for an individual, an entire organization, or their work functions (Khater & Mostafa, 2011). Simply put, productivity is the relationship between output and all employed inputs measured in real terms. It refers to a comparison between what comes out of production and what goes into production; it is the arithmetical ratio between the amount produced and the amount of all resources used in terms of manufacturing and distribution (Khater & Mostafa, 2011).

To measure individual worker productivity, models and formulas have been developed by Sumanth (Khater & Mostafa, 2011) and based on an extensive body of economic and industrial engineering research and analysis. Sumanth's TPM (Khater & Mostafa, 2011) offers a mathematical model to compute individual productivity in a

business environment. Although there are different models for productivity measurement, many of them have limitations (Khater & Mostafa, 2011). The Total Productivity Model has many advantages both diagnostic and prescriptive. This model is commonly used for organizational productivity evaluations, planning and improvement in a scientific manner and it has many applications in service organizations and manufacturing settings (Khater & Mostafa, 2011). The model defines total productivity as a measurement of total outputs to total inputs.

The growth in service firms and the connections identified in the literature between leadership characteristics and business performance make the study of servant leadership especially appropriate. Laub (1999) and Parolini (2005) argued that organizations that create a servant-minded culture would offer value by maximizing the capability of both their workforce and leadership. In this sense, Russell and Stone (2002) hypothesized that servant leaders are effective in a non-traditional way that allows autonomy for followers to leverage their talent and abilities while producing an engaged workforce that allows an organization to fulfill its mission. While being served, organizational members become healthier, wiser, freer, more autonomous, and more likely themselves to serve (Laub, 1999). Thus, effective leaders ensure productivity levels are optimal and boost the satisfaction and engagement of employees.

Although a number of early studies have referenced servant leadership both to examine leadership practices in for-profit organizations and how these practices may influence business performance, recent studies questioned whether a relationship exists between servant leadership and individual worker performance. Some studies link servant leadership characteristics of leaders to organizational effectiveness (Drury, 2004;

Parolini, 2005; Patterson 2003; Russell & Stone, 2002; Sendjaya & Sarros, 2002; Dennis & Winston, 2003). Further, theory-building research has provided insight into the leading characteristics of servant leadership at the organizational level and the developing culture (Greenleaf, 1977; Hu & Liden, 2011; Jones, 2012; Laub, 1999; Liden et al., 2008).

This research applied the constructs of Greenleaf's (1977) servant leadership theory and Sumanth's Total Productivity Model (Khater & Mostafa, 2011) by measuring employee perceptions of servant leadership characteristics at the organizational level in a multiple-site for-profit distribution center environment and correlating to levels of individual worker productivity. This study incorporated Laub's (1999) OLA tool and Sumanth's Total Productivity Model (Khater & Mostafa, 2011) to provide a framework on the data that was measured and analyzed. The theoretical models incorporated in this study provided the foundation for the research, guided the research study, and promoted theory construction.

Using both a servant leadership theory and productivity calculation model helped derive theoretical statements that support and relate the problem under investigation while also relating the study variables in a manner that qualified and quantified the effect of servant leadership on individual worker productivity. The research questions in this study aligned with multiple theoretical models because these models contributed to the rationale of the relationship between servant leadership behaviors and individual worker productivity. This study incorporated foundational elements from prior research in the areas of servant oriented leadership and organizational performance.

Review of the Literature

The purpose of this quantitative correlational study was to examine if, and to what degree, a positive correlation existed between levels of servant leadership (independent variable) and levels of individual worker productivity (dependent variable) in a for-profit distribution center environment. The review of literature provides an overview of various thematic topics relevant to the study. These topics include: (a) organizational performance and productivity, (b) an overview of emerging leadership models, (c) servant leadership in relation to organizational performance, (d) methodological strengths and weaknesses (e) measuring worker productivity, and (f) servant leadership measurement instruments. Overall, the review of literature provides the foundation of the study to examine the relationship between servant leadership and individual worker productivity.

Organizational performance and productivity. Globalization and increasing competition are leading to flattened hierarchies, increased use of teams, matrix organizations, and an increasing span of control. Over the past century, automation has progressively influenced industries with job tasks that are repetitive in nature (Khater & Mostafa, 2011). Such areas include the manufacturing, warehousing, distribution sectors, as well as sectors that require clerical and administrative work. The contemporary supply chain organization has been marked by upheavals in technology innovations and the urgent need for innovative processes, services, and products to add market value or to maintain a competitive advantage (Olhager, 2013). Thus, increasing the levels of organizational productivity in supply chains may be complicated due to a noticeable shift

from *manual work* to *knowledge work* (Nickols, 2011). The shift has generated work that requires *knowledge* and *manual labor* inputs from workers.

The new supply chain organization entails work that is more specialized to include a worker whose primary job tasks necessitates a proficiency in providing physical inputs while often simultaneously handling data and technology. Formal research suggests the complexity of work ushered in with the knowledge economy requires contemporary leadership approaches to influence organizational productivity and employee satisfaction (Ruiz, Giret, Botti, & Feria, 2011). Bakotic (2012) hypothesized that knowledge work offers more job satisfaction than sheer manual labor alone because it offers employees the opportunity to create innovations and improvements that generate both personal and organizational growth and development.

Productivity of the manual worker. Productivity management has been an area of focus for researchers for centuries. Formal labor management ideas can be traced to the 1700s (Mildred & Taneja, 2010). The most significant developments in management theory emerged in the 1860s through the seminal work of Frederick Winslow Taylor (Blake & Moseley, 2010). In the late 1860's, Taylor studied manual work and examined the productivity of the manual worker (Short, 2011). During this time, productivity was low and economies were comparably underdeveloped (Taneja & Toombs, 2011). As a mechanical engineer by trade, Taylor sought to improve industrial efficiencies through a theory referred to as *scientific management* (Wren, 2011).

Taylor's scientific management focused primarily on improving efficiencies for industrial organizations whose means of production was manual labor. This management theory evaluated job tasks and analyzed the physical effort and time it took to complete a

task (Guidotti, 2011). Motions that were considered essential to perform a task were set up in a standardized logical sequence referred to as a *job* (Evangelopoulos, 2011). Tools needed to support the job were redesigned to ensure they were effective. Manual worker productivity increased 50 times after Taylor introduced the concept of manual labor (Bell & Martin, 2012). Starosta (2011) asserted that although many philosophers, including well-respected management theorists such as Karl Marx, Henry Fayol, and Henry Gantt, argued that manual work required skill (Short, 2011), Taylor convinced many that there was no such thing as skill. Instead, Taylor postulated that repetitive motion coupled with knowledge created a more productive unskilled worker (Wren, 2011). By the 1880s, Taylor was credited as the first person to apply knowledge to work (Evangelopoulos, 2011; Starosta, 2011; Wren, 2011).

As much as Taylor's work was widely accepted, there are criticisms of his theory. Taylor's theory requires workers to follow tightly controlled work instructions, creating a rigid rules-driven organization (Taneja & Toombs, 2011). Labor unions at the time challenged Taylor's work and criticized scientific management theory for not considering worker needs (Salimath & Jones, 2011). Taylor argued that workers be paid based on their production levels rather than skill (Bell & Martin, 2012). While Taylor's scientific management theory separated the concept of manual work from mental work, it quickly fell out of favor by the 1930s due to its lack of focus on the human elements (Evangelopoulos, 2011). Taylor continues to receive credit for his seminal work on labor management, with many tenets of his scientific management theory reflected in today's labor management practices, including lean manufacturing and Six Sigma, industrial engineering, business process engineering, and operations management.

Productivity of the knowledge worker. The evolution of craft production to mass production, along with the introduction of automation and technology in general industry created a shift to knowledge management. Coined by Peter Drucker (1999), and as the name implies, *knowledge workers* are employees who primarily work with knowledge and information. Knowledge workers help their organizations think holistically and systemically as they improve their work processes with a commitment to growing their personal knowledge for the benefit of the organization (Mohanta & Thooyamani, 2010). Knowledge workers are experts that have more knowledge about their jobs than their supervisor since they have unique experiences in executing processes that add value to the organization (Drucker, 1999). It is risky for leaders to assume they know as much or even more than knowledge workers do (Wong & Neck, 2013). Leading under this pretense may undermine the value these employees bring to the organization. Knowledge workers possess technical and institutional knowledge that is key to improving the processes they interact with each day.

It is important for leaders to display behaviors that motivate knowledge workers by offering interesting and challenging work, and creating opportunities for learning (Mohanta & Thooyamani, 2010). According to Drucker (1999) and in contrast to Taylor's scientific management theory, one does not *manage* people. The real task is to lead people with a goal of making employee strengths productive. When leading knowledge workers and focusing on increasing their productivity, Drucker (1999) argued it is critical for managers to remain transparent in sharing the mission, vision, business objectives, performance expectations, and results.

For knowledge workers to thrive in the new organization, they have to be led like volunteers, especially since they are mobile and are not necessarily motivated by a paycheck alone or loyal to an organization or specific leader (Wong & Neck, 2012). These workers can leave an organization if they do not feel valued because they own their means of production – their knowledge (Drucker, 1999). To motivate knowledge workers to overcome challenges associated with change, productivity challenges, and leadership shortcomings, it is important to listen to their feedback and provide them with an opportunity to gain satisfaction from their work by treating them as business partners (Drucker, 1999). Wong and Neck (2012) argued that industrialized countries of the 21st century may rely more and more on knowledge worker productivity to improve organizational performance than on advances in technology and production equipment. Thus, improving knowledge worker productivity becomes a competitive advantage for these companies.

The evolution of managing work. The 21st century knowledge economy produced a savvy worker that may require a contemporary leadership approach that encourages non-routine problem solving, productive labor management, and overall high performance inherent in a collaborative environment. Leaders can no longer merely focus on meeting the organization's financial objectives (Babakus, Yavas & Ashill, 2011; Iqbal, Inayat, Ijaz, & Zahid, 2012). They now must create a sustainable and balanced operational plan to support business objectives and strategic priorities with a focus on process improvements, organizational learning, customer focus, and financial performance (Jones, 2012). This environment requires leaders to influence a combination of creative, convergent, and divergent thinking (Wong & Neck, 2012).

The competitive ability of an organization depends directly on its ability to influence productivity of all work performed within its whole supply chain. At the very least, organizations may have to adapt the organizational form to improve individual worker productivity of the manual worker, knowledge worker, and *knowledge laborer* – a new type of worker that has emerged in industrial settings in the Information Age, and coined by this researcher (Corominas, 2013; Sahin et al., 2013). The contemporary knowledge laborer owns their means of productivity, which includes manual labor and knowledge. Thus, leadership effectiveness may have positive correlates to business performance in competitive industries where economic pressures from the knowledge economy require companies to broaden their performance objective to include leadership effectiveness as a cost of doing business (Corominas, 2013; van Dierendonck et al., 2014).

Overview of emerging leadership models. Like many other constructs in the social sciences, the definition of leadership is debatable. While research associated with the topic of leadership has advanced and our competitive landscape has become a major force, key characteristics of our modern day leadership models have also progressed (Walumbwa et al., 2010). These new models consider the complexities of a global and chaotic environment and are often referred to as *emerging leadership theories* (Northouse, 2010). Given the diverse and dynamic environment, leaders must carefully choose the most effective leadership model to suit their organizations. Though there are many models, theories, and philosophies on leadership, most scholars share a singular view: leadership remains an existent body of work necessary for the effectiveness of

organizations (Yokl, 2011). Ultimately, when workers feel comfortable and trust their leaders, there is a likelihood that performance and individual productivity will improve.

Leadership research has evolved significantly over the past century (Hu & Liden, 2011). An evolution of leadership suggests there is no clear single definition of the concept among scholars. Three primary phases in the study of leadership theories have developed over the past century. The period 1900 to World War II marked the first phase and included many definitions of leadership, and placed an emphasis on leaders' psychological and trait theories (Northouse, 2010). Trait based leadership theorists argue that a leader's personal traits will reveal leader effectiveness, while behavior based theorists argue that leader-follower interaction and leader behavior may predict leader effectiveness (Northouse, 2010; Yokl, 2011).

The second phase, spanning from the end of World War II to the late 1960s, introduced a behavioral approach toward leadership with a focus on leader behaviors (Northouse, 2010). The 1970s marked the third phase, initiating a shift from examining leader behaviors toward definitions examining the leadership environment and included the development of situational and contingency theories (Yokl, 2011). In the late 1970s, servant leadership emerged, viewing the leader as a servant (Spears, 1996).

Authentic leadership. Many leadership theories developed by scholars arose in response to a need from society. A relatively new leadership theory reliant on leader personal traits is authentic leadership (AL). Authentic leadership emerged because of an array of ethical debacles of the early 2000s, including WorldCom and Enron (Zhu, 2006). Walumbwa et al. (2010) deliberated the origins of AL and the Greek meaning for authenticity, which is, 'to thine own self be true' (p. 319). Authentic leadership is a pattern

of ethical and transparent leader behaviors that encourage openness and trust in the leader-follower relationship (Cavazotte, Duarte, & Gobbo, 2013; Walumbwa et al., 2010). The authentic leader builds healthier work environments and trusting relationships through four key components: (a) balanced processing, (b) relational transparency, (c) internalized moral perspective, and (d) self-awareness (Clapp-Smith et al., 2009).

Authentic leaders use balanced processing by allowing adequate input and perspectives from followers when making critical decisions. According to Clapp-Smith et al. (2009), they promote openness and honesty (relational transparency) that encourages idea sharing and feedback, while setting role model level standards of ethical and moral conduct (internalized moral perspective) (Nichols & Erakovich, 2013). Finally, authentic leaders have a keen sense of self-awareness of their own strengths and limitations and how they affect others (Clapp-Smith et al., 2009). Walumbwa et al. (2010) suggested that, by demonstrating these behaviors, authentic leaders facilitate quality relationships leading to engaged employees, increased job satisfaction, and higher levels of performance.

Recent empirical studies have investigated the relationship between authentic leadership and performance (Nichols & Erakovich, 2013; Rego, Reis, & Pina, 2015). This research suggests there is statistically significant evidence that AL is a valid construct (Gatling, 2014; Leroy et al., 2012). The Authentic Leadership Questionnaire (ALQ) is a theory driven leadership survey instrument used in many AL studies to measure AL behaviors (Walumbwa et al., 2008). The four scales comprising the ALQ are: (a) self-awareness, (b) transparency, (c) ethical and moral conduct, and (d) balanced processing (Walumbwa et al., 2010). The ALQ has demonstrated strong reliability and

validity with a high degree of statistical significance through Cronbach Alpha testing (Gatling, 2014; Leroy et al., 2012).

Leroy et al. (2012) tested the notion that AL behavior is an antecedent to follower perceptions of leader behavioral integrity, which in turn affects follower commitment and work performance. Leroy et al. (2012) sampled 345 followers and 49 teams representing 25 small to medium-sized organizations using the ALQ. Using structural equation modeling, the researchers determined that AL is the core of effective leadership necessary in building trust due to its clear focus on integrity, high ethical standards, and honesty in the development of the leader-follower relationship. Thus, organizational trust is a corresponding outcome of AL behaviors and a necessary construct in the evaluation of AL and the leader-follower relationship. Leroy et al. (2012) hypothesized that perceptions of behavioral integrity mediate AL and follower commitment. They found that supportive leader behavior and trust in leadership are necessary for followers to feel comfortable in voicing concerns to improve the workplace.

Empirical evidence suggests a correlation between AL behaviors and increased performance, yet evidence shows AL behaviors are different among multiple industry segments (Zhu, 2006). These industry differences underscore the need for further research to understand authentic leader effectiveness among industry segments such as supply chain, or within a particular industry segment such as manufacturing, distribution, transportation, or merchandising. Because much of the data in each of the studies examined was cross-sectional in nature, it was difficult to make any causal inferences between AL and performance. Though some researchers contend there is a distinct

relationship between AL behaviors and performance, research assessing the work relationship between AL and follower work behaviors remain scarce (Gatling, 2014).

Transformational leadership. James Burns was the first leadership researcher to conceptualize transformational leadership (Couto, 2015). Transformational leadership describes a process whereby leaders influence significant positive change at the individual, team, group, and organizational level (Lopez-Zafra et al., 2012). James Bass (Bass & Avolio, 1995), also considered a pioneer of transformational leadership, extended Burns' concept by operationalizing transformational leadership through the identification of descriptive transformative behaviors. These behavioral dimensions include acting with fairness and integrity, establishing high expectations, providing support and recognition, igniting and stirring emotions and passions in individuals, and influencing people to shift their focus beyond self-interests to strive to reach goals (Choudhary, Akhtar, & Zaheer, 2012). Bass presented a formal theory of transformational leadership to include measurements and models in his book *Leadership and Performance Beyond Expectations*. Bass and Avolio (1995) and others later expanded this seminal work to include a full range of leadership models that differentiated transformational, transactional, and laissez-faire leadership models.

Transformational leadership is comprised of four components: (a) idealized influence, (b) inspirational motivation, (c) individualized consideration, and (d) intellectual stimulation (Wright & Pandey, 2010). According to Wright and Pandey (2010), the nature of transformational leadership theory is the foundation upon which all change that takes place within organizations is dependent. Srithongrung (2011) hypothesized that transformational leadership influences long-term behavior of followers

by increasing internal motivation in lieu of extrinsic rewards that usually only motivate over the short term. Transformational leaders use important personal characteristics to gain influence, such as self-confidence, dominance, and strong conviction in their personal beliefs (Bass & Avolio, 1995). Moreover, successful transformational leaders exhibit key behaviors such as a keen ability to articulate a compelling vision, build an attractive personal brand and image, demonstrate confidence, and increase follower motivation without the need for a leader-follower exchange of rights or goods to take place, as with transactional leadership (Wright & Pandey, 2010).

Recent empirical studies have investigated the relationship between transformational leadership and organizational performance. Statistical results indicate this leadership concept is effective with respect to increasing performance outcomes (Breevaart, Bakker, Demerouti, Sleebos, & Maduro, 2014; Choudhary et al., 2012; Gul & Sahin, 2011; Penava & Šehić, 2014). Among these outcomes, creativity in particular has a major impact on innovating and creating a competitive advantage (Gul & Sahin, 2011).

Cheung and Wong (2011) investigated the relationship between transformational leadership and follower creativity and hypothesized that transformational leadership has a positive correlation on employee creativity. They tested this hypothesis using a hierarchical regression. A sample of 182 subordinate-supervisor dyads were randomly collected from a cross section of industries, including banking, travel, retail, restaurants, and hotels. The Multifactor Leadership Questionnaire (Bass & Avolio, 1995) was used to measure Transformational Leadership while twelve items to measure creativity were adopted from the book *Managing Creative People* (Young, 1994). Results indicate a positive relationship between transformational leadership and employee creativity when

there is a high degree of relation support. These findings suggest followers are likely to rely on transformational leaders to encourage and guide them to a new work frontier. Moreover, transformational leaders are likely to be appreciative of followers' creative ideas, while also placing greater trust in the leader-follower relationship (Breevaart et al, 2014; Pereira & Gomes, 2012). This trust often provides followers with increased levels of job autonomy and promotes employee engagement. These findings are especially significant to service organizations, which rely on employee creativity to improve customer satisfaction through problem solving and close interactive relationships.

Transformational leadership is a style that fosters freedom, self-motivation, and creativity. This style of leading may be a good fit for knowledge workers who strive to integrate new paradigms and perspectives (Breevaart et al, 2014; Pereira & Gomes, 2012). But, without a clear system of goals and values, nor a clear picture of what kind of transformation is needed, transformational leaders may tend to operate on political and social agendas, and timelines (Choudhary et al., 2012). Wright and Pandey (2010) postulated that transformational leadership theory lacks conceptual clarity and has the potential to be counterproductive.

For example, Adolph Hitler's style of leadership aligns closely with transformational leadership. Yet, his leadership was perceived as controversial because his transformative style was so effective in perpetuating misguided values in Germany (Lepsius, 2006). He destroyed democracy with a dictatorship, imposed unconstitutional laws against certain groups of people, and did not allow freedom of speech (Lepsius, 2006). Millions of Germans were inspired to set aside private wants for Hitler's new vision in spite of their personal suffering (Lepsius, 2006). Hitler altered German

government to fit his own vision and personal objectives, rather than aligning his vision to fit that of the German government.

In spite of empirical studies indicating transformational leadership is an effective option, this leadership approach can also be problematic if the new direction or vision promoted by the leader does not affirm the greater good of the organization and its members (Wright & Pandey, 2010). In other words, if the transformational leader influences followers to move in a direction disadvantageous for the organization, then one would have to question or challenge this leadership style and its value to an organization. The model of servant leadership, as proposed by Greenleaf (1977), seems to offer a more effective option to providing employees with a culture of empowerment, learning, and guidance that promotes employee and customer satisfaction.

Robert K. Greenleaf's servant leadership. The concept of servant leadership has been closely tied to theology. *Servanthood* is an idea traced to early periods in the Bible, which regularly references several key Greek terms to denote the term servant while referring to leaders: *diakonos*, *doulos*, *huperetes*, *therapon*, *oiketes*, *sundoulos*, and *pais* (Sendjaya & Sarros, 2002). None of these words suggests a lack of self-respect or low self-esteem. Rather, voluntary subservience is manifested in the willingness to assume the lowliest of positions and withstand adversity and suffering on behalf of other people (Greenleaf, 1977). As leaders place the interest of followers and the organization over personal interests, it facilitates a mutual sharing of responsibility and power with followers. This is important to production workers and laborers because these workers begin to develop high leader-member exchange (LMX) relationships and begin to take on informal leadership roles (Liden et al., 2008). This strengthened leader-subordinate

relationship builds a climate that generates feelings of employee empowerment, resulting in improved performance and a metamorphosis of followers into servant leaders themselves (Liden et al., 2008; Murari & Kripa, 2012).

Greenleaf (1977) introduced the term servant leader to the academic community in the 1960s and 1970s. While lecturing at the Harvard Business School and the Massachusetts Institute of Technology's Sloan School of Management, Greenleaf developed the servant leadership model in the context of scholarly work in the area of organizational management (Sendjaya & Sarros, 2002). Greenleaf's seminal book entitled *Servant Leadership: A Journey into the Nature of Legitimate Power and Greatness* introduced him as the grandfather of servant leadership in modern times (Spears, 1996). Greenleaf (1977) asserted that servant leaders help followers grow so followers become more competent to meet their own needs and better prepared to serve society and organizational needs in general. Greenleaf (1977) hypothesized that individuals could evaluate their personal servant leadership competence by determining if those served experienced personal and professional growth, become more autonomous, and shifted their mindset to that of servant. According to Spears (2004), serving others through servant leadership is not solely about doing things for others. The focus is to develop followers to become more autonomous and less reliant on the leader (Chen, Zhu, & Zhou, 2015).

The evolution of servant leadership. For over 30 years, Spears (1996) has tracked the evolution and growth of servant leadership. He examined Greenleaf's (1977) research and writings and researched the contemporary literature on servant leadership to identify 10 characteristics thought to be elemental for servant leaders. Although the list is not all-

inclusive, servant leaders should demonstrate the core qualities to motivate and engage others (Spears, 1996). The servant leader traits identified by Spears (1996) include the following ten characteristics: (a) awareness, (b) building community, (c) commitment to growth of people, (d) conceptualization, (e) empathy, (f) foresight, (g) healing, (h) listening, (i) persuasion, and (j) stewardship.

Characterized as an extension of the servant leadership model initially presented by Greenleaf in 1977, Kathleen Patterson (2003) presented a leadership philosophy also referred to as servant leadership in her doctoral dissertation. Both Greenleaf's (1977) and Patterson's (2003) servant leadership models are built on the premise that servant leaders are follower-focused whereby the needs of followers are primary and the objectives of the organization are peripheral. When examining both Greenleaf's (1977) and Patterson's (2003) servant leadership models, their conceptual frameworks share the following traits: vision, influence, trust, credibility or respect, delegation or risk sharing, integrity, and modeling. Greenleaf (1977) and Patterson (2003) believed if organizational leader's paid special attention to the needs of their followers, the organization would benefit by the extraordinary efforts of their followers to fulfill the mission and vision of the organization.

Patterson (2003) espoused that servant leadership theory exemplifies a logical extension of the transformational leadership theory. This extension addresses a gap in the literature with respect to Patterson's (2003) study, where it was observed that transformational theory did not consider the phenomena of love, humility, altruism, and visionary leadership for followers. The principal difference between servant leadership and transformational leadership is the focus of the leader, a contention that makes

Greenleaf's (1977) and Patterson's (2003) leadership models distinctly separate theoretical frameworks from transformational theory (Patterson, 2003).

A 2004 study by Stone, Russell, and Patterson (as cited in Patterson, 2003) on the differences that exist between transformational leadership and servant leadership traits found that transformational leaders motivate their followers to rise above their personal interests and focus on accomplishing organizational goals. This is a distinct contrast to servant leadership, which espouses that leaders should focus totally on the goals and aspirations of the follower (Greenleaf, 1977; Patterson, 2003). Russell and Stone (2002) assert servant leadership and transformational leadership have points of variation but may be complementary leadership theories in some respects. The servant leadership model has a greater focus on service to followers, while acquiring influence in a nontraditional manner derived from servant-hood. The servant leader paradigm allows extraordinary freedom and autonomy for followers and places a higher degree of trust in followers than in any more directive leadership style (Chen et al., 2015).

While theories of leadership are helpful in conceptualizing how a company should be run or how supervisors should interact with employees, what may be most important is how these theories are operationalized. As an outgrowth of Greenleaf's (1977) work, research surrounding servant leadership from the early 1990's to 2013 focused on examining themes that can help operationalize servant leadership concepts in organizational settings. Graham (1991) emphasized the inspirational and moral dimensions of servant leadership in establishing a servant leadership model capable of combating the inherent dangers linked to value-neutral leadership paradigms such as charismatic or transformational leadership. Servant leadership studies commonly cite

Farling, Stone, and Winston's work (Russell & Stone, 2002) on servant leadership and this study has served as a theoretical reference for much empirical research that followed.

Russell and Stone (2002) argued that vision, influence, credibility, trust, and service are prominent characteristics of servant leadership. Further empirical investigations of servant leadership have used these elements in their research. For example, Patterson's (2003) model adopted three: vision, trust, and service. Russell (2001) hypothesized that vision, credibility, trust, service, modeling, pioneering, appreciating others, and empowerment are distinct characteristics of servant leadership attributes. Russell's (2001) examination of the literature on servant leadership emphasized congruence with personal and organizational values centered on the aspects of trust, appreciation of others, and empowerment. Russell (2001) espoused that values are the underlying factors that fundamentally separate servant leaders from all other leadership types. Specifically, Russell (2001) stated a leader's personal values with respect to honesty and integrity play a crucial role in establishing interpersonal and organizational trust, cornerstones to effective collaboration with respect to team dynamics. Russell (2001) hypothesized that servant leadership succeeds or fails based on the personal values of the individuals who adopt servant leader behaviors. Further, overall team performance will be similarly affected, for leader values pointedly affect follower behaviors and ultimately influence organizational behaviors, including individual performance.

Finally, Patterson (2003) hypothesized the study of moral and ethical behavior, the greater good of the organization, and the commitment to stakeholders are becoming a priority for leadership and organizations as a whole. Laub (1999), and Sendjaya and

Sarros (2002) proposed that servant leadership has evolved into a widely accepted leadership model by organizational leaders and researchers alike. Both Patterson (2003) and Laub (1999) argued that servant leadership is unique as a leadership model in that its foundation is based on a worldview that includes religion, research, philosophy, and application in organizational settings. Further, servant-leadership has gained in popularity due to its universal appeal and focus on authenticity, transparency, virtues and morally accepted behaviors (Patterson, 2003). Greenleaf (1977) developed a comprehensive model of leadership that included a set of characteristics that would allow leaders to serve people with the intentions to create a better society through serving first (Parolini, 2005).

Authentic, transformational, and servant leadership. Each of these three emerging leadership theories has a moral dimension. In essence, they align their interest with followers to create a greater common good for followers, the organization, and the community at large (Nichols & Erakovich, 2013). Each leadership theory demonstrates a sincere concern for the well-being of followers, with an emphasis on the importance of followers in the leadership process (Leroy et al., 2012). Zhu (2006) argued that AL may be the foundation to servant leadership and transformational leadership. An important pre-condition to AL is to be true to oneself (Leroy et al., 2012), which underscores the premise that leaders are self-aware and regulate themselves while being true to others. Leroy et al. (2012) and Zhu (2006) proposed that being true to oneself manifests itself as behavioral integrity, an important characteristic of servant leadership.

Researchers exploring the concept of emerging leadership theories applied in for-profit settings, in higher education, health care, and the non-profit sector assert that servant leadership has a positive effect on employee engagement, increased performance,

and climate in diverse settings and within industries and among industry segments (Chen et al., 2015; Hu & Liden, 2011; Hunter et al., 2013; Liden et al., 2014; Melchar & Bosco, 2010). Thus, servant leadership characteristics may have positive correlates on business performance in competitive industries where economic pressures and ethical dilemmas require companies to broaden their performance objective to include leadership effectiveness as a cost of doing business (van Dierendonck et al., 2014). Melchar and Bosco (2010) suggested servant leadership is very effective when applied in an organizational context, and may be viable for adoption by for-profit companies operating in demanding settings, including service oriented industries like supply chain and distribution.

Across a broad spectrum of organizations, leaders have embraced servant leadership as a legitimate leadership style for creating a positive and productive environment. In the 1990s, scholars promoted a movement toward a leadership model of putting people first as a necessary step in creating a profitable business (Spears, 2004). Spears (2004) noted that standard practices are rapidly accepting the ideas put forward by Robert Greenleaf, Stephen Covey, Peter Senge, Max DePree, Margaret Wheatley, Ken Blanchard, and many others who suggest there is a better way to lead organizations and diverse institutions.

Organizations are progressing toward a more profound leadership model; one based on morals, community, teamwork, empowerment, collaboration, shared decision-making, and human development (Murari & Kripa, 2012; Spears, 2004; Yokl, 2011). While Greenleaf's (1977) seminal work on servant leadership has laid the foundation for an expanding theoretical construct of service-oriented leadership, up to this point not

much has been done to examine the effect of a servant leadership culture on individual worker productivity in a for-profit distribution center environment. This present research offers servant leadership as an emerging leadership approach that appears more relevant and timely in the present context of hypercompetitive, for-profit, service organizations than other value-laden leadership approaches.

Servant leadership in relation to organizational performance. Modeling servant leadership at strategic levels of an organization can create an organizational climate in which servant leadership characteristics develop among lower level managers. Relationships grounded in teamwork, collaboration, ethical and caring behavior, and the facilitation of personal growth are likely to improve organizational performance (Jones, 2012). Although the correlation between servant leadership and performance is well documented, there are few studies examining servant leadership and productivity – a ratio of production outputs to inputs (Melchar & Bosco, 2010). To state the significance of this topic in a different way, leadership has fiduciary prominence if it correlates with organizational effectiveness in a way that adds value to the customer proposition (Irving, 2005).

Servant leadership and high performance. Recent empirical studies have investigated the relationship between servant leadership and organizational performance (Hunter et al., 2013; Hu & Liden, 2011; Liden et al., 2014; Melchar & Bosco, 2010). Hu and Liden (2011) critically reviewed the relationship between goal and process clarity and servant leadership as antecedents to team potency and effectiveness. Using a quantitative design, a sample of 304 employees representing 71 teams at five financial institutions, was represented in the study. Using structural equation modeling to analyze

the data, the results confirmed that servant leadership at the individual level offers a unique contribution to the organization beyond transformational leadership. Liden et al. (2008) provided additional evidence suggesting servant leadership offers active concern for the well-being of the broader organization, its stakeholders, constituencies, and the community at large.

This study is important to researchers and practitioners because Hu and Liden (2011) demonstrated that servant leadership moderates the relationship between team goals, team potency and process clarity, and team performance. Furthermore, research indicated the relationship between both goal and process clarity and team potency were stronger when servant leadership was present. Study results were generalized to the banking industry, raising concerns regarding limitations to the study.

Hunter, Neubert, Perry, Witt, Penney, and Weinberger (2013) tested the relationship between personality, servant leadership, and organizational outcomes. The survey involved 224 retail stores located in the United States that included 425 workers (12% response rate), 110 store managers (29% response rate), and 40 regional managers (68% response rate). The study used Goldberg et al.'s Personality Item Tool to evaluate leader agreeableness and extroversion. Ehrhart's (2004) tool tested the follower's perspective of servant leadership. The 7-item Global Service Climate Scale measured service climate (Schneider & George, 2011). The aim of the study was to expound on the notion that servant leaders effectively inspire a cycle of service whereby followers adopt service behaviors for each other, customers, and the community.

Using a regression analysis, findings offered evidence that servant leadership is an effective leadership behavior when fostering a service environment by inducing positive

work behaviors among followers. This study expanded upon Liden et al.'s (2008) multilevel model of servant leadership. Servant leadership at the store level related to followers' helping behavior throughout the store. Helping behavior was assessed using two subscales of organizational citizenship behaviors (OCB-1) (Settoon & Mossholder, 2002).

Hunter et al.'s (2013) study offered several important contributions. First, the investigation into personality lends insight into individuals who are likely to become servant leaders. Next, at the organizational level, a servant leadership orientation is linked to unit level profitability and sales measures (Hunter et al., 2013) and increased return on assets (Peterson, Galvin, & Lange, 2012). However, there were limitations in the study design. Store managers invited employees to participate, but the recruitment process was not controlled. It is not known if survey invitations were available to all employees or a portion, raising concerns regarding sampling bias and obscured response rates. Hunter et al. (2013) used multi-level multi-source data to assess servant leadership. This method offers the benefit of including perceptions of servant leadership at organizational levels above and below the leader.

Melchar and Bosco (2010) hypothesized that mid-level managers reporting to servant leaders will exhibit above average levels of servant leadership characteristics. This quantitative correlational study used Barbuto and Wheeler's (2006) Servant Leadership Questionnaire to assess mid-level service managers of three high performing automobile dealerships to determine whether they were perceived by their employees to exhibit servant leader behaviors. The population sample included 59 mid-level managers across three high performing luxury automobile dealerships. The researchers distributed a

survey to each employee over a 2-week period. The survey instrument used 28 questions to measure varying levels of the five servant leader characteristics: (a) organizational stewardship, (b) emotional healing, (c) wisdom, (d) altruistic calling, and (e) persuasive mapping. Performance was determined based on sales volume and customer satisfaction survey ratings. Demographic variables (age, gender, ethnicity, length of service, education) were also measured to determine whether perceptions of the managers were affected by these variables.

Results of the study indicated the modeling of servant leadership at strategic management levels can create an organizational culture in which servant leadership characteristics develop among lower level managers. Liden, Wayne, Chenwei, and Meuser's (2014) study is significant because the research data clearly indicates servant leaders can be effective in competitive, for-profit environments. Although study results may be limited due to concerns with its generalizability, the servant leadership model was evaluated in an organization with a proven record of accomplishment for successful customer service, a key performance indicator in the automotive sales industry. Continued research of servant leadership practices in for-profit organizations will increase understanding of servant leadership and citizenship behaviors and how they influence increased organizational performance.

Servant leadership in relation to organizational citizenship behaviors (OCB).

Organizations committed to improving organizational citizenship behaviors (OCB) through effective leadership can increase their organization's overall efficacy. Generally speaking, OCB is a form of job performance contributing to an organization's technical core (Pirvali, Ghadam, & Asadi, 2014). Research supports the positive relationship

between servant leadership and OCB (Zheng, Zhang, & Li, 2012). Broadly speaking, there are three categories of job performance (Ehrhart, 2004): (a) task performance, (b) organizational citizenship behavior, and (c) counterproductive work behavior.

Task performance is the effectiveness in which employees perform primary job tasks required by the formal job description (Hu & Liden, 2011; Pirvali et al., 2014).

Organizational citizenship behavior (OCB) refers to behavior that is beneficial to the organization and goes beyond formal job requirements and includes such behavior as offering business improvement suggestions and ideas, helping co-workers at work, and working extra hours to perform a quality and productive job (Zheng, Zhang, & Li, 2012). OCB is discretionary behavior that may not be explicitly recognized by the organization's formal reward system and promotes organizational effectiveness (Ahmad & Omar, 2015; Ruiz-Palomino & Martinez-Canas, 2014). Finally, *counterproductive work behavior* is intentional member behavior that is harmful to the interests of an organization (Karavardar, 2014).

Servant leadership influences organizational citizenship behaviors. Several studies have investigated the relationship between servant leadership and OCB (Ehrhart, 2004; Hu & Liden, 2011; Hunter et al., 2013; Liden et al., 2008; Walumbwa et al., 2010). Ehrhart (2004) is credited as the first to examine empirically the relationship between servant leadership and OCB. During Ehrhart's (2004) quantitative correlational study, 298 employees of a grocery department store in the United States were surveyed to analyze the hypothesis that perceptions of a procedural justice climate was a mediator between servant leadership and OCB. Study results revealed an indirect significant relationship between servant leadership and OCB through the mediating effect of

procedural justice climate. Ehrhart's (2004) study may have been enhanced by incorporating mediating variables (i.e., trust, commitment) and moderating variables (i.e., task interdependence, collective trust, group cohesiveness) into the study to better understand servant leadership and its correlates to OCB.

Liden et al. (2008) provided additional empirical evidence regarding the relationship between servant leadership and citizenship behaviors of 298 university students in the Midwest United States. In this study, Liden et al. (2008) provided empirical evidence that helping followers develop and grow, demonstrating ethical behavior, and providing value creation for the community significantly related to community citizenship behaviors. However, study results showed a significant negative relationship between helping employees grow and community citizenship behaviors. Results indicated that servant leadership behaviors at the individual leader level make a unique contribution in promoting community citizenship behaviors, organizational commitment, and in-role performance. This study is important because the results supported Graham's (1991) claims on the difference between servant leadership and transformational leadership, suggesting that servant leadership offers greater concern for the well-being of the broader organization and stakeholders at large.

For this study, Liden et al. (2008) developed a servant leadership instrument referred to as the Servant Leadership Scale. This 28-item instrument consists of seven dimensions: (a) emotional healing, (b) creating value of the community, (c) conceptual skills, (d) empowering, (e) helping subordinates grow and succeed, (f) putting subordinates first, and (g) behaving ethically (Liden et al., 2008). The study focused on developing and validating the instrument while also offering evidence that servant

leadership explains citizenship behaviors, in-role performance, and organizational commitment beyond transformational leadership and leader member exchange. Four of the seven servant leadership dimensions (helping subordinates grow and succeed, putting subordinates first, behaving ethically, and creating value for the community) were chosen to test the relationship with organizational citizenship behavior. Emotional healing, empowerment, and conceptual skills were not shown to be significant in their hierarchical linear model and were excluded from the study.

Walumbwa et al.'s (2010) empirical research is also important to the body of research related to OCB and servant leadership. This quantitative correlational study surveyed seven multinational companies and 815 employees in Kenya. The researchers examined the extent to which employee attitude, procedural justice climate, and service climate mediated the relationship between servant leadership and OCB. Ehrhart's (2004) 14-item Servant Leadership Scale instrument was used to assess servant leadership characteristics of supervisors. Results of the study indicated a significant indirect positive effect of servant leadership on OCB (Walumbwa et al., 2010). This study represents an important contribution to the literature by demonstrating the ability of servant leadership to influence climate, which ultimately motivates employee behaviors. Like other servant leadership studies, this research has limitations. The study is generalized to multinational corporations, indicating the findings may not be relevant when applied to indigenous and public organizations. Future research is needed to include differing cultural contexts for insights on the conditions in which servant leaders are more or less effective in influencing employee behaviors and climate in a culturally diverse setting.

Research strongly suggested servant leadership is a predictor of follower citizenship behavior. One implication of this notion is that leaders who wish to encourage citizenship behaviors among employees are encouraged to model these behaviors (Ehrhart, 2004; Hu & Liden, 2011; Hunter et al., 2013; Liden et al., 2008; Walumbwa et al., 2010). Although recent studies have focused on servant leadership and its potential effect on individual follower citizenship behaviors, the literature suggests future research should focus on group level behaviors and their impact on organizational performance. Finally, further research is necessary to understand the applicability of Liden et al.'s (2008) servant leadership instrument and its usefulness for future research.

Methodological strengths and weaknesses. The majority of the methodology from the research described throughout this literature review section has been quantitative. Ehrhart (2004) employed a quantitative methodology followed with a correlational design. The study investigated the relationship between servant leadership and organizational citizenship behavior as measured by the composite scores of the Servant Leadership Survey (Ehrhart, 2004). The study may have been further enhanced by incorporating mediating variables (i.e., trust, commitment) and moderating variables (i.e., task interdependence, group cohesiveness) into the analysis to better understand servant leadership and its correlates to OCB and procedural justice climate.

Walumbwa, Hartnell and Oke (2010) employed a quantitative, correlational study that examined the extent to which employee attitudes, procedural justice climate, and service climate mediated the relationship between servant leadership and OCB using Ehrhart's (2004) Servant Leadership Survey. Using a cross level investigative technique, the study produced robust analyses by examining composite and sub dimension

performance levels of both variables in the study, and surveyed over 800 employees represented by seven organizations located in Kenya. However, the study was generalizable to multinational for-profit organizations and may not be applicable to public organizations and small to medium size businesses. Additionally, the research findings may not be applicable to different industries, populations, and geographical locations. If the study consisted of sample populations from different ethnic groups and socioeconomic status, the study may have benefited organizations with diverse populations. Because correlational studies do not investigate cause and effect, causal conclusions cannot be drawn from the study (Yin, 2009).

Melchar and Bosco (2010) employed a quantitative methodology with a correlational design to determine the relationship between servant leadership and performance of a multiple site automobile dealership. The study produced strong analyses by correlating sub-dimensions of servant leadership to sales volume and customer satisfaction survey ratings, while also measuring employee perceptions based on demographic variables (i.e., age, gender, length of service, education). The study utilized Barbuto and Wheeler's (2006) Servant Leadership Questionnaire to assess mid-level service managers to determine whether they were perceived by their employees to exhibit servant leader behaviors. Melchar and Bosco's (2010) study clearly demonstrates servant leaders can be effective in competitive, for-profit environments. However, the small sample size of 59 respondents, coupled with the single industry focus adds limitations to the study.

The methodological strengths and weaknesses presented in this section provide important information regarding the relationship between servant leadership and

performance. Each researcher (Ehrhart, 2004; Walumbwa et al., 2010; Melchar & Bosco, 2010) employed a quantitative methodology using a correlational design to determine the extent of the relationship between servant leadership and organizational behaviors and performance. However, each study employed different assessment instruments to measure servant leadership and its correlates to the study variables. Collectively, the studies covered a broad range of organizational performance areas, including organizational climate, organizational citizenship behaviors (OCB), customer service levels, compliance, quality, and sales. Future research may seek to examine servant leadership behaviors while expanding on mediating variables such as leader personality and levels of self-awareness. Ultimately, this empirical research identified gaps in the literature and allowed this study to analyze the relationship between a for-profit, servant led organization and individual worker productivity levels.

Servant leadership measurement instruments. There has been a well-documented and ongoing debate whether to evaluate organizational behavior (OB) and performance at an organizational level or at an individual level. Some researchers (Hunter et al., 2013) have argued in favor of the individual level effect, while others (Covey, 1998; Laub, 1999; Russell, 2001) have argued for research measurement focus at the organizational level. When researchers are focused on the individual level, their analysis misses the impact of environmental and synergistic forces at play within an organization. In the words of Covey (1998), “If you really want to get servant-leadership, then you’ve got to have institutionalization of the principles at the organizational level” (p. xvii). In order to explore the depth of and the reasons these relationships are successful or not, this study examined the relationship between servant leadership at the

organizational level. The researcher collected individual perceptions of servant leadership behaviors in the work culture to assess how these behaviors were propagated and institutionalized into organizational behaviors.

There are a number of survey instruments available to measure servant leadership behaviors in an organizational setting. Although there are at least fourteen different servant leadership measurement tools available, many researchers have combined multiple scales to construct their surveys (Sendjaya & Sarros, 2002). The two most popular measures of servant leadership theory used by empirical studies were Laub's (1999) Organizational Leadership Assessment instrument and Ehrhart's (2004) Servant Leadership Scale (SLS) (van Dierendonck et al., 2014).

Various other instruments have been used to a lesser extent or combined with other scales to analyze servant leadership at the team or group level, while fewer examined servant leadership at the individual level (Parris & Peachey, 2013). Academic researchers have applied servant leadership measurements to explore specific research themes: cross cultural applicability (Cerit, 2010); team level effectiveness and organizational citizenship behavior (Ehrhart, 2004; Hu & Liden, 2011; Melchar & Bosco, 2010), follower well-being (Jones, 2012), and workplace spirituality (van Dierendonck et al., 2014). Through the use of servant leadership assessment tools, researchers and organizational development practitioners were able to evaluate prominent servant leadership characteristics and behaviors that correlated with stronger levels of organizational effectiveness.

Organizational Leadership Assessment (OLA). Developed by James Laub (1999) and based on extensive field testing and practical research, the OLA was designed to

serve two purposes: (a) measure specific servant leadership variables organizationally and to (b) assess overall organizational health. The OLA produces categorical continuous data that provides a score for levels of servant leadership behaviors of the overall organization and for six leadership dimensions: (a) display authenticity, (b) value people, (c) develop people, (d) build community, (e) provide leadership, and (f) share leadership (Laub, 1999). These servant leadership behaviors are based on Greenleaf's (1977) established characteristics of servant leadership.

The OLA tool measures characteristics of a servant-led organization. The survey instrument is designed to be used by all levels within an organization to determine how different groups view their sub-groups and leadership. The OLA instrument contains 66 items that determine the essential characteristics of servant leadership, with interval data as the resultant data. The organizational leadership assessment (OLA) tool was field tested extensively with a high reliability score of .9802 using the Cronbach Alpha coefficient (Laub, 1999). Construct validity was determined by using a panel of experts who adopted the Delphi process to arrive at a consensus on the constructs of the servant-minded organization.

Researchers credit the OLA instrument for stimulating servant leadership research and application. However, the inter-correlations amongst the six leadership dimensions are so high that its multidimensional nature may not be apparent. This leads some researchers to conclude the overall OLA score is limited to research purposes only and may not be as useful when applying to multiple samples.

Servant Leadership Scale (SLS). Developed by Ehrhart (2004) and based on an extensive review of the literature, the SLS was designed during an empirical, cross-

sectional study on servant leadership in a grocery retail chain. The SLA tool measures characteristics of the servant-led organization. Although scale development was not Ehrhart's (2004) initial focus, his early servant leadership research produced an eight dimension scale linked to Greenleaf's (1977) ideas: (a) standing back, (b) accountability, (c) empowerment, (d) courage, (e) forgiveness, (f) humility, (g) stewardship, and (h) authenticity (Spears, 1996). These dimensions were summarized after a deductive and inductive research approach that included a close review of the literature, along with insights collected from interviews with managers who exhibited strong servant leadership qualities as recommended by the European Greenleaf Center for Servant Leadership (Ehrhart, 2004). The eight servant leadership dimensions were framed into a preliminary model and tested for validity, reliability, and internal consistency (Ehrhart, 2004).

The survey instrument is designed to assess the leader-follower relationship from the perspective of the *follower*. The SLS instrument contains 30 items that capture the essential characteristics of servant leadership, with interval data as the resultant data (Ehrhart, 2004). The SLS produces categorical continuous data that provides a score for levels of servant leadership behaviors. The SLA tool was field tested extensively by researchers with a high reliability score for all scales ranging from .69 to .91 using the Cronbach Alpha coefficient (Ehrhart, 2004). Unlike the OLA (Laub, 1999), construct validity was determined by using exploratory and confirmatory factor analysis across different samples, where the eight dimensional structure was confirmed and supports replication of the structure in future studies. The SLS tool is credited as the first SL instrument to include requisite servant leadership elements from the literature that can be distinguished through the application of psychometrics.

Other servant leadership instruments in the literature. Theoretically, servant leader behaviors can be characterized using dozens of dimensions which would be difficult to include in a methodological design and equally challenging to operationalize. Empirical research in the literature reflects content overlap in servant leadership dimensions that underlie proposed measurements (Liden, et al, 2008). The vast number of SL dimensions identified in the literature have led to various other servant leadership instruments used to a lesser extent for research purposes or combined with other scales (Parris & Peachey, 2013). For example, Page and Wong's Servant Leadership Profile tool (Dennis & Winston, 2003) originated with a twelve dimensional conceptual framework, and later reduced to seven dimensions, and subsequently to five. Dennis and Winston (2003) attempted to replicate this conceptual framework and reduced it to a three-dimensional structure.

Further, Barbuto and Wheeler (2006) developed a 23-item, five dimensional SL instrument consistent with Greenleaf's (1977) ten characteristics as interpreted by Spears (1996). An unsuccessful attempt to replicate their findings suggests the instrument may be one dimensional. Dennis and Bocarnea (2005) developed a five-dimensional instrument directly related to Patterson's (2003) seven-dimensional model. This instrument was later studied within a Latin American organizational context (Irving, 2005) where only three of the five scales were confirmed for reliability once translated. Finally, Sendjaya and Sarros (2002) introduced a 35-item instrument with 22 characteristics grouped across six scales. This study lacks clarity on the solidity of the hypothesized structure, with each of the six dimensions tested separately for one-dimensionality. Data representing the factorial validity of the overall model is lacking,

along with weak inter-correlations between the dimensions (ranging between .66 and .87), raising concern amongst researchers for its proposed use as a multi-dimensional structure (van Dierendonck et al., 2014). Based on this information, the OLA tool (Laub, 1999) was determined to be the most appropriate instrument to measure servant leadership characteristics at the organizational or group level, which aligned with this study's design.

Measuring worker productivity. Business performance has been a growing topic in the twentieth century for several reasons: increased competition, the rapidly changing nature of work, the intensity of supply and demand, the increasing impact and evolution of technology in the workplace, and how it all transforms to value for the customer. There are a number of empirical studies in the literature on methods to measure and calculate worker productivity (Olhager, 2013). But, there is not a single universally accepted method to measure productivity across multiple industries (Blake & Moseley, 2010). This makes model comparisons mathematically cumbersome and problematic. Further, model developers have assigned different names to similar concepts making model comparisons even more confusing.

Khater and Mostafa (2011) define productivity as the relationship between what is produced by an organizational system versus what is consumed to create these organizational outputs. Although there are many different methods to calculate productivity with multiple factors and variables, the most common framework in distribution involves a comparison of inputs to outputs and stated in real terms (Khater & Mostafa, 2011). Productivity methods investigated in this research study focused on

human capital productivity and excluded factors such as the quality of the work, economic growth, and environmental factors.

When measuring worker productivity levels in distribution, there are several factors to consider: (a) the tools needed to perform the job task, (b) competencies needed to perform the task, and (c) the complexity of the job task (Khater & Mostafa, 2011). Productivity can be calculated at the individual worker, team/group, or organizational level. An increase or decrease in the productivity of an individual worker may affect the productivity for the overall team. Thus, some researchers perceive the work group as the best level to measure productivity (Guidotti, 2011; Haden, Humphreys, Cooke & Penland, 2012). On the other hand, the current research study calculated productivity at the individual worker level and compared to individual perceptions of servant leadership in the work culture based on individual participant OLA survey data. This framework helped analyze the effect of a servant leadership culture on individual worker productivity, which ultimately affects overall team productivity. This approach tested a key tenant of Greenleaf's (1977) servant leadership construct, which asserts that modeling servant leadership strategically across specific management levels can create a culture in which servant leaders propagate leadership behaviors among followers that influence individual worker performance and positive organizational outcomes. Although productivity is quite simple to quantify for manual labor, the term *productivity* is not to be used interchangeably with *performance*, which describes how well a task or activity is completed versus a given standard (Khater & Mostafa, 2011).

Sumanth's Total Productivity Model (TPM). Developed by David Sumanth (Khater & Mostafa, 2011), this model is used to calculate productivity at the individual,

team, or organizational level. The TPM calculates total productivity by dividing total outputs by total inputs (Khater & Mostafa, 2011). When calculating productivity using this method, multiple outputs and inputs can be adopted to appropriately reflect the actual production process elements from the organization it represents. The Total Productivity Model considers five types of tangible inputs: (a) human labor, (b) work materials, (c) capital, (d) energy and (e) other expenses (transport, supplies, etc.) (Khater & Mostafa, 2011). The TPM production outputs may include the total number of *finished* units produced or handled, or the total number of *partial* units produced or handled (Khater & Mostafa, 2011). The TPM can be applied in any manufacturing or service environment, and is based on generally accepted economic theories, accounting practices, and industrial engineering practices.

Multifactor Productivity Measurements Model (MFPMM). The Multifactor Productivity Measurements Model or MFPMM is an accounting model that calculates productivity based on the premise that profitability is a function of productivity and price growth. The MFPMM model considers the same five tangible inputs as the TPM: (a) human labor, (b) work materials, (c) capital, (d) energy and (e) other expenses, and aggregates total outputs of an organizational system in comparison to the total inputs of the same system. Unlike the TPM, each input and output data point from the organizational system is calculated over a specified period and reflects quantity, price, and value factors at the lowest defined level of the disaggregated data.

Although the MFPMM is capable of evaluating the effect each input has on profitability and offers insights as to which factors are having the greatest impact on profit growth or stagnation, it is not widely used for several reasons. A criticism of the

MFPMM model is that data is difficult to collect since much of the required data is deemed confidential (cost and price information) and not readily shared by a firm's finance and accounting groups. Another downside to implementing this model is the total count of input and output variables can vary from organization to organization and can be excessive since there is no limit. This makes modeling and aggregating hierarchical data a very complicated, costly, and complex endeavor.

Unlike the TPM, adopting the MFPMM model makes it easier to identify business improvement opportunities due to the number of ratios and comparisons drawn from the robust data, including cost-revenue ratios (revenue consumed by a specific input), productivity ratios (stated in absolute productivity values), weighted performance indexes and change ratios (to show productivity percentage changes from period to period). Productivity data comparisons over specific time periods serve as underpinnings of the analyses, making growth opportunities in a company's profits fairly easy to pinpoint (i.e., productivity improvement or price recovery). To the contrary, Sumanth's TPM measures organizational productivity and does not consider any other performance factors (Khater & Mostafa, 2011).

In this research study, individual worker productivity was calculated using Sumanth's Total Productivity Model (Khater & Mostafa, 2011). A single output variable (aggregate number of total cartons handled) was compared to a single input variable (aggregate number of total individual employee work hours). Productivity was calculated by using continuous data to compute units processed by the hour (UPH) as follows: total cartons handled (outputs) divided by total hours worked (inputs) (Ruiz et al., 2011). That is, higher levels of scores indicate higher levels of productivity. Productivity data was

collected and measured at the individual level using an automated archival database tool referred to as a Warehouse Management System (WMS), a standard data collection method and best practice in supply chain environments (Gagliardi, Renaud, & Ruiz, 2012; Wang, Chen, & Xie, 2010). This method has been consistently applied as a best practice in distribution center environments to calculate individual worker and team productivity, and aligns with the research problem statement, research design, and hypotheses (Khater & Mostafa, 2011).

Summary

This chapter provided a broad overview of the existing literature related to the research variables contained in the study. The study explored if, and to what degree a positive correlation existed between levels of employee perceptions of servant leadership and levels of individual worker productivity in a for-profit distribution center environment. This study was formed primarily by the theoretical foundations of servant leadership as presented by Robert K. Greenleaf (Spears, 1996) and James Laub (1999). The research questions in this study are aligned with multiple theoretical models because they provide a rationale on the relationship between the two study variables. Each theoretical model provided the foundation for the proposed study. This research advanced these theories by providing empirical data on the correlates of servant leadership and levels of individual worker productivity. The five thematic topics discussed in the literature review were (a) organizational performance and productivity, (b) an overview of emerging leadership models, (c) servant leadership in relation to organizational performance, d) methodological strengths and weaknesses (e) measuring worker productivity, and (f) servant leadership measurement instruments. These themes are

related to the focus of this study in that each contributes to the overall understanding of the research topic.

A quantitative approach using a correlational design was chosen for the purpose of collecting and analyzing numerical data regarding the relationship between a servant-led organization and individual worker productivity in a distribution center environment. Many of the previous studies on this topic utilized quantitative methods. The literature review contained in this research study provided a basis for the continued use of this approach (Ehrhart, 2004; Walumbwa et al., 2010; Liden et al., 2014; Melchar & Bosco, 2010).

Empirical research has provided evidence that servant leadership is distinct from related emerging leadership theories such as transformational leadership, leader-member exchange (LMX), and authentic leadership. Ehrhart (2004) postulated that servant leadership predicts a 5% improvement in employee commitment, a 7% improvement in employee satisfaction with a supervisor, a 4% improvement in perceived supervisor support, and an 8% improvement in procedural justice climate in comparison to transformational leadership theory and LMX theory. This evidence is critical given how strongly transformational leadership and leader-member exchange behaviors are linked to positive employee behaviors and attitudes (Walumbwa et al., 2010).

Previous empirical research has identified strong relationships between levels of servant leadership and organizational performance. These studies identified a gap in the literature concerning the relationship between levels of servant leadership at the unit level, and its correlates to levels of productivity in a for-profit, hypercompetitive service environment (Ehrhart, 2004; Hunter et al., 2013; Hu & Liden, 2011; Liden et al., 2014;

Melchar & Bosco, 2010). Empirical data and servant leadership theory to date affirm the notion that servant leadership is a value laden and unique leadership approach that can extend the body of knowledge on service oriented leadership theories and business outcomes (Walumbwa et al, 2010).

This study expands the existing research of servant leadership and organizational performance by extending research conducted by Liden, Wayne, Chenwei, and Meuser (2014) to investigate the relationship between servant leadership and productivity in supply chain networks to determine if their previous research in a fast food retail environment is generalizable to distribution center operations. The findings from this study may assist organizational leaders and organizational development practitioners in determining effective leadership behaviors suitable for influencing optimal productivity in hypercompetitive distribution center operations. This study may offer a valuable starting point for leadership training, leadership development, and the evolution of leadership capability modeling in supply chain and distribution service industries. Future research should be conducted to determine if the relationship between the study variables are causal. Chapter 3 will provide a detailed discussion of the methodology that was employed in the study. Chapter 4 presents data results, non-statistical information, and statistical analysis used for interpretation along with raw data, while Chapter 5 presents concluding remarks and further research opportunities and recommendations based on the study results and analysis.

Chapter 3: Methodology

Introduction

This chapter describes the methodology used to determine if there was a relationship between levels of employee perceptions of servant leadership and levels of individual worker productivity in a for-profit U.S. supply chain organization. The structure of this chapter begins with the problem statement, and then discusses the study's research questions and hypotheses, research methodology, research design, population and sampling procedures, instrumentation, validity, reliability, data collection and analysis procedures, ethical considerations, and potential limitations. The research questions and hypotheses were used to form the foundation for the methodology chosen for this study. This chapter presents a detailed analysis of the methodology components that are central to the study.

Statement of the Problem

It was not known to what degree levels of employee perceptions of servant leadership behaviors of the work culture correlated with levels of individual worker productivity in a for-profit distribution center environment of a supply chain organization. Understanding the relationship between levels of servant leadership and levels of productivity at the organizational level is essential in identifying effective behaviors in the work culture that can positively impact organizational effectiveness. The need for this study was identified through empirical research conducted by Liden, Wayne, Chenwei, and Meuser (2014). Through their quantitative research study, Liden et al. (2014) examined servant leadership behaviors among leaders to determine if these behaviors propagated servant leadership behaviors among followers by creating a serving

culture, a key tenet of servant leadership. Thus, this study contributed to solving the research problem by providing a quantitative analysis on the relationship between levels of servant leadership behaviors (composite) and subscales (values people, develops people, builds community, displays authenticity, provides leadership, shares leadership) and individual worker productivity in a for-profit setting.

Research Questions and Hypotheses

The purpose of this quantitative research was to examine if levels of employee perceptions of servant leadership behaviors affected levels of individual worker productivity in a for-profit distribution center environment. The research questions and hypotheses were developed by the researcher during the review of literature. Previous empirical research conducted by Liden, Wayne, Chenwei, and Meuser (2014) has shown a positive correlation between servant leadership at the organizational level and performance at a mid-sized retail restaurant chain. Results of the study indicated modeling of servant leadership by strategic level managers can develop an organizational culture of followers who are servant leaders as well. “Another direction for future research is to ascertain the generalizability of our findings with a professional sample in a different industry” (Liden et al., 2014, pg. 1448).

The servant leader model provides an effective alternative to other leadership approaches while also offering a supportive environment for human development. The success achieved by these servant leaders in the Liden et al. (2014) research study suggests this leadership style is viable for adoption by other firms and industries due to its positive correlates on group outcomes. Thus, further investigations of the main components of the servant leadership construct expanded the literature by relating servant

leadership to individual worker productivity in a demanding, hypercompetitive industry like distribution.

Research questions. Two research questions were formulated to advance the overall focus and direction of the present research, and to extend Liden, Wayne, Chenwei, and Meuser's (2014) research into a different industry context. The research questions for the present study aligned with the problem and purpose statements of the study as follows:

RQ1: If and to what extent does the levels of employee perceptions of servant leadership behaviors displayed in a for-profit distribution center correlate with levels of individual worker productivity?

RQ2: If and to what extent does the levels of employee perceptions of each of the six subscales of servant leadership behavior (values people, develops people, builds community, displays authenticity, provides leadership, shares leadership) displayed in a for profit distribution center correlate with levels of individual worker productivity?

Hypotheses and null hypotheses. The hypotheses present the expected relationship between servant leadership (independent variable) and levels of individual worker productivity (dependent variable) (Fraenkel et al., 2012). The hypotheses in the present correlational study were designed to show how the two variables of servant leadership and levels of productivity were related, but do not suggest exploration of a causal relationship amongst the variables. By contrast, the null hypotheses predicted there was no relationship between the study variables. The hypotheses and null hypotheses for

the present study aligned with the problem and purpose statements, the hypotheses as follows:

H1_A: A positive correlation exists between the levels of employee perceptions of servant leadership behaviors displayed in a for-profit distribution center and levels of individual worker productivity.

H1₀: A positive correlation does not exist between the levels of employee perceptions of servant leadership behaviors displayed in a for-profit distribution center and levels of individual worker productivity.

To further define and focus this doctoral research study, the following hypotheses and null hypotheses explored the relationship of each of the six sub-scores of servant leadership behavior (values people, develops people, builds community, displays authenticity, provides leadership, shares leadership) displayed in a for-profit distribution center and their correlates with levels of individual worker productivity as follows:

H2_A: A positive correlation exists between the levels of employee perceptions of the servant leadership construct of *valuing people* and levels of individual worker productivity.

H2₀: A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of *valuing people* and levels of individual worker productivity.

H2_B: A positive correlation exists between the levels of employee perceptions of the servant leadership construct of *developing people* and levels of individual worker productivity.

H2₀: A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of *developing people* and levels of individual worker productivity.

H2_C: A positive correlation exists between the levels of employee perceptions of the servant leadership construct of *building community* and levels of individual worker productivity.

H2₀: A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of *building community* and levels of individual worker productivity.

H2_D: A positive correlation exists between the levels of employee perceptions of the servant leadership construct of *displaying authenticity* and levels of individual worker productivity.

H2₀: A positive correlation does not exist between the levels of the servant leadership construct of *displaying authenticity* and levels of individual worker productivity.

H2_E: A positive correlation exists between the levels of employee perceptions of the servant leadership construct of *providing leadership* and levels of individual worker productivity.

H2₀: A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of *providing leadership* and levels of individual worker productivity.

H2_F: A positive correlation exists between the levels of employee perceptions of the servant leadership construct of *sharing leadership* and levels of individual worker productivity.

H2₀: A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of *sharing leadership* and levels of individual worker productivity.

Study variables. The servant-led organization is defined by Laub (1999) as an organization in which the characteristics of servant leadership are displayed through the organizational culture, with leadership and the overall workforce valuing and practicing servant leader behaviors. This servant leadership puts the needs of others first and through this service-oriented culture the organization gains incredible influence for the common good of the individual. The research problem examined servant leadership, the independent variable, by the use of the organizational leadership assessment (OLA) survey instrument (Laub, 1999). The construct is based on six sub-categorical scores: (a) display authenticity, (b) value people, (c) develop people, (d) build community, (e) provide leadership, and (f) share leadership (See Table 2). The servant leadership construct was correlated to worker productivity as part of the framework of this research study.

Table 2

Organizational Leadership Assessment Instrument

OLA Survey Item	SL Characteristic	Survey Questions
Research Question #2: Level of servant leadership in distribution center	1. Values people	1, 4, 9, 15, 19, 52, 54, 55, 57, 63
	2. Develops people	20, 31, 37, 40, 42, 44, 46, 50, 59
	3. Builds community	7, 8, 12, 13, 16, 18, 21, 25, 38, 47
	4. Displays authenticity	3, 6, 10, 11, 23, 28, 32, 33, 35, 43, 51, 61
	5. Provides leadership	2, 5, 14, 22, 27, 30, 36, 45, 49
	6. Shares leadership	17, 24, 26, 29, 34, 39, 41, 48, 53, 65

Productivity is a concept related to production systems and is the standard indication of how efficiently organizations use material, labor, and capital (Huang et al., 2002). Simply put, productivity is the relationship between output and all employed inputs measured in real terms. It refers to a comparison between what comes out of production and what goes into production; it is the arithmetical ratio between the amount produced and the amount of all resources used in terms of distribution operations (Khater & Mostafa, 2011).

To measure productivity, the dependent variable in this study, models and formulas have been developed by Sumanth and based on an extensive body of economic and industrial engineering research and analysis (Khater & Mostafa, 2011). The Total Productivity Model (TPM) offers a mathematical model to compute productivity in a business environment. Although there are different models for productivity measurement, many of them have limitations (Khater & Mostafa, 2011). Sumanth's TPM has many advantages both diagnostic and prescriptive. This model is commonly used for individual

worker and unit level productivity evaluations, planning and improvement in a scientific manner and it has many applications in service organizations and manufacturing settings (Khater & Mostafa, 2011).

Data source. The OLA (Laub, 1999) survey was used to collect data on levels of employee perceptions of servant leadership behaviors and sub-behaviors to answer the research question. The OLA is a 15-minute web based leadership assessment that evaluates components of servant leadership (Laub, 1999). The survey instrument is designed to be used by all levels within an organization to determine how different sub-groups view their sub-groups and leadership (Laub, 2003). The OLA instrument in this study incorporates a Likert-type model, with interval data as the resultant data.

Individual worker productivity data was provided by the subject supply chain organization and reveals worker productivity levels by job function continuously year-to-year. This data was archived in the organization's warehouse management system (WMS) database and used to help answer the research questions. The calculated correlational scores between individual OLA responses and individual worker productivity rates determined if a positive relationship existed between employee perceived levels of servant leadership and levels of individual worker productivity within a for-profit distribution center network in the US.

Research Methodology

The proper selection of a research methodology is critical in evaluating and interpreting the research results with respect to the problem statement, research questions, and hypotheses (Yin, 2009). This study used a quantitative approach to determine if a positive correlation existed between servant leadership behaviors and individual worker

productivity. By extending servant leadership theory into the construct of organizational performance, correlations can be explored.

When examining the perceived differences between the three general research approaches – quantitative, qualitative, and mixed methods, researchers overwhelmingly support quantitative research (Bryman, Becker, & Sempik, 2008). A quantitative research methodology involves an empirical analysis of data collected from a sample of specific populations to make generalizable observations for the whole based on the measure of relationships (Fraenkel et al., 2012). In a quantitative study, the data collected is counted or quantified, but it does not include an explanation on *why* or causal relationships. The quantitative approach utilizes objective instruments such as questionnaires, standardized assessments, aptitude assessments, and personality scales, and is generally less costly than qualitative and mixed methods approaches and is generally less costly to deploy (Fraenkel et al., 2012). Quantitative methodologies are effective in research studies that contain an explicit hypothesis.

Despite overwhelming support for quantitative research, some researchers argue that a tunnel vision focus on quantitative methodologies minimizes research subjects into numbers that are void of the value inherent in the rich phenomena that resonates from social life (Fraenkel et al., 2012). Thus, deploying a qualitative research methodology may be ideal for a research problem that requires contextual data. An advantage to qualitative research methods is that contextual data is available during data collection, and respondents are not constrained to pre-set responses typical of a survey or questionnaire. Using this method, respondents may provide open-ended responses, which

can be used to collect the *why* of contextual information embedded in their response to design a more robust study (Fraenkel et al., 2012).

A mixed-method research methodology incorporates both qualitative and quantitative elements in a manner that both methodologies complement each other (Fraenkel et al., 2012). Using this approach, researchers collect in-depth data to answer certain research questions, and numerical information to answer other research questions. The combined qualitative and quantitative data provides a broader context than either qualitative or quantitative methods offer alone (Fraenkel et al., 2012).

Previous research (Hu & Liden, 2011; Liden et al., 2014; Melchar & Bosco, 2010) has employed a quantitative methodology to investigate the relationship between servant leadership and performance. In each of the previous studies that adopted a quantitative methodology, an empirical analysis of data was collected from a population sample. The analysis was used to make generalizable observations for the entire population based on the measure of relationships.

Because quantitative research methods seek to quantify human behavior in a way that allows statistical interpretation of the results and to address an explicit hypothesis, a quantitative methodology was appropriate for this study rather than a qualitative or mixed method approach. Using a quantitative method helped the researcher better understand the research problem by testing and validating existing theory constructed about servant leadership and performance using measured data. This approach allows quantitative predictions to be made from the analyzed data, and helps generalize a research finding that can be replicated on other populations and sub-populations to develop recommendations based on study results.

Research Design

The present research investigated servant leadership theory by relating an independent variable (servant leadership) and dependent variable (individual worker productivity) in the research questions and hypotheses. A correlational research design was used for this study. According to Fraenkel, Wallen, and Hyun (2012), a correlational research design seeks to analyze the extent to which one or more relationships of some type exist” (p. 11). Correlational research examines subject scores on two distinct variables to determine if there is a relationship (Fraenkel et al., 2012). The study correlated dimensions and sub-dimensions of servant leadership with levels of individual worker productivity to create a robust quantitative data analysis. Since the problem statement and research questions in this study sought to examine the relationship between two variables, a correlational research design was most appropriate.

Certain types of research problems require specific approaches. A quantitative approach is best when testing a theory (Fraenkel et al., 2012). Although there are several quantitative designs that may be considered for the present study, it is important to choose a research design that aligns with the problem statement and research questions (Fraenkel et al., 2012). The aim of the study does not go so far as to analyze causes for these observed data patterns, as is the aim of a *causal comparative* research design. The study sought to explore connections amongst the variables to highlight trends and patterns while measuring information numerically. The basis of the research was to examine the data, relationships, and distributions of study variables that have not been manipulated. Otherwise, a *scientific* research design would need to be deployed to establish cause-effect relationships amongst a group of variables by manipulating an

independent variable to determine the effects on the dependent variable(s). Using a quantitative study with a correlation research design was the most appropriate approach to determine the extent to which employee perceptions of servant leadership behaviors displayed in a for-profit distribution center correlated with levels of individual worker productivity.

The principal researcher collected servant leadership survey data for this study. The Organizational Leadership Assessment tool (Laub, 1999) was used to record survey responses from individuals employed by the subject organization. Each participant invited to complete the survey accessed the same exact instrument without deviation. The study design encompassed servant leadership as the independent variable, and individual worker productivity as the dependent variable. The OLA (Laub, 1999) tool used in the present study was both valid and reliable and measured the six subscales of servant leadership in the work culture of the subject organization. Demographic variables (i.e., gender, age, ethnicity, length of service, education) were summarized as descriptive statistics of the population sample.

Subjects included top leadership, mid-level managers, supervisors, and hourly employees at three for-profit distribution centers identified by their supply chain network as high-performing within their organization. Each distribution center serviced different retailers across the US. These distribution centers ship premium food brands and general merchandise to retail customers whose consumers are among the more demanding in this market due to the high quality and cost of this merchandise. The leaders of these high-functioning distribution centers achieved outcomes indicative of their ability to effectively lead their employees.

The criteria supply chain organizations use to distinguish top performing distribution center operations may vary. Productivity is a common key performance indicator used in for-profit distribution center operations and examined in this research study (Khater & Mostafa, 2011). All three distribution centers included in this study are identified as top performing from a productivity standpoint (in the top 3 of the company's comparative rankings amongst twelve distribution centers). Productivity is calculated by dividing the total number of finished goods shipped and received over a specific period of time, by the total number of labor hours worked over the same time period. The individual worker productivity calculation reflects total cases per hour handled or *CPH* at the individual worker level for each employee. Higher levels of productivity scores indicate higher levels of productivity. This data is archived in the organization's warehouse management system (WMS) database and was referenced in identifying the top performing distribution centers from a team productivity standpoint.

Population and Sample Selection

Description of population. The general population for this study was approximately 1,200 employees working for a national distribution center network. The total number of employees working in the distribution center network was provided by the human resource manager. The individual employee survey results were grouped by distribution center location. Distribution center employees were categorized into several groupings (top leadership, managers/supervisors, and workforce) to make the analysis simple and convenient.

Employee groupings were combined and coded into the OLA instrument (Laub, 1999). The *workforce* category includes an employee group paid an hourly wage to

perform distribution center material handling tasks (i.e., unloading/receiving, putaway, orderfilling, replenishment/stocking, loading). The *top leadership and supervisor/manager* category included intermediate management level employees responsible for leading hourly workers in day to day operations, and accountable to top management. *Top leadership* included senior executives responsible for overseeing the day to day business and providing intermediate and long-term planning and strategy (Vice President, Sr. Director, Director, and General Manager). All employees working at each of the distribution center locations were offered the opportunity to complete the OLA.

Description of sample. The setting for this study was three mid-sized for-profit distribution centers located in the U.S. The distribution centers are part of a multiple unit national distribution network that ships wholesale food merchandise to shipping destinations across the United States and Canada. In this study, the sample was taken from the entire general population N of approximately 1,200 employees working in the distribution network, which is comprised of 12 total distribution center sites. The target population consisted of hourly workers, mid-level managers and supervisors, and top leadership. The target population for this study consisted of 200 total employees working at three of the US distribution centers.

The sample population (n) consisted of 133 employee participants to also include hourly workers, mid-level managers/supervisors, and top leadership. The researcher set the statistical significance as $\alpha = .05$. To achieve a p value of $\leq .05$ in this study, the distribution centers needed to have an acceptable response rate greater than or equal to 132 participants. According to OLA, this random sample should be based on the total

number of employees in each distribution center (Laub, 1999). This sample size is the minimum response rate for this study according to the OLA recommended sample size chart (Laub, 1999). In addition, an a-priori power analysis was conducted to justify the needed sample size based on an anticipated effect size and the selected design (see Appendix E). The a-priori power calculation, computed using G*Power (version 3.0.10) (Faul, Erdfelder, Buchner & Lang, 2009), was computed using an effect size (f^2) of 0.15, and a power of .95. The a-priori analysis calculated a minimum sample size of 89 participants for the current study. On the other hand, the OLA Group recommended sample size was 132 participants. The researcher used a minimum sample size that was the greater of the OLA Group recommendation and the a-priori power analysis. A post hoc power analysis was computed after data collection to be referenced as a retrospective, follow-up analysis (see Appendix F). The post hoc power analysis calculated a minimum sample size of 132 participants, with an effect size of (f^2) of 0.15 and a power of .99.

All employees in each distribution center operation had an opportunity to participate in the research study. Each participant in the study population was assigned a random 3-digit survey code (PIN#). Once the minimum sample size was achieved to complete the survey and considered the representative study sample (n) derived from the study population, the study was closed.

Prior to collecting the data, the researcher obtained written permission from the participating supply chain organization. Additionally, approval was required from the Grand Canyon University Institutional Review Board (IRB) prior to the data collection process. The researcher obtained productivity data for each distribution center participating in the survey. All information regarding performance was collected at the

individual worker level and shall remain in the possession of the researcher and kept in a lock box for a minimum of 3 years. All participants were employed as full-time, regular employees by the subject organization for a minimum of 6 months and were at least 18 years of age or older.

Attrition from a random sample can introduce bias, while also affecting the validity and reliability of the results (Fumagalli, Laurie & Lynn, 2013). To minimize attrition, the researcher employed periodic follow-up activities to ensure participants completed the questionnaire tool. Secondly, the researcher extended survey participation across multiple work shifts and work days to achieve the minimum sample size required for the study.

Instrumentation

There has been an ongoing debate whether to analyze organizational behavior effect at an individual level or organizational level. Prior research reflects arguments in favor of examining the individual level effect, while others (Covey, 1998; Laub, 1999; Russell, 2001) have argued for research focus at the organizational level. A key reason researchers have struggled to identify a correlation between organizational leadership and performance is that much of the research has focused on leadership and performance at the individual behavioral level. When researchers are focused on the individual level, their analysis misses the impact of environmental and synergistic forces at play within an organization (Hu & Liden, 2011). Thus, the present study examined the effect of employee perceptions of servant leadership behaviors reflected in the work culture, with levels of individual worker productivity. Laub's (1999) Organizational Leadership Assessment (OLA) tool is the data collection instrument that was used for this study.

Laub (1999) is credited with creating the theory of the servant-led organization, or one in which characteristics of servant leadership behaviors are displayed throughout the organizational culture (Laub, 1999). This servant-minded culture is reinforced through the values and practices of the leadership and workforce. Laub (1999) hypothesized that servant leadership behaviors in an organizational culture prioritizes the needs of others first, allowing the organization to gain incredible strength and power at all levels of the organization.

Laub (1999) developed the OLA instrument to assess levels of servant leadership in the work environment, as perceived by members of the organization. Constructs of the OLA assessment instrument were established through a Delphi Survey process using a panel of experts in the field of servant leadership. The Delphi Method is a widely accepted forecasting approach adopted in situations where group judgments are used and validated in the absence of having a validated theoretical model (Akins, Tolson, & Cole, 2005). The Delphi Method is a structured approach that aggregates diverse feedback from groups and is valued due to its wide applicability. The 14-member panel included Larry Spears (The Greenleaf Center for Servant Leadership), Tom Peters (Tom Peters Company), and Jim Kouzes (co-author of the Leadership Challenge) (Laub, 2003). After several iterations, the Delphi panel introduced six characteristics of servant leadership, along with an operational definition (See Table 3).

Table 3

Six Key Areas of the Servant Leadership Organization

Characteristics of Servant Leadership	Descriptor
1. Values people	By listening receptively, serving the needs of others first and trusting in people
2. Develops people	By providing opportunities for learning, modeling appropriate behavior and building up others through encouragement
3. Builds community	By building strong relationships, working collaboratively and valuing individual differences
4. Displays authenticity	By integrity and trust, openness and accountability and a willingness to learn from others
5. Provides leadership	By envisioning the future, taking initiative and clarifying goals
6. Shares leadership	By creating a shared vision and sharing decision-making power, status and privilege at all levels of the organization

Laub's (2003) Organizational Leadership Assessment instrument has been widely used in the study of servant leadership (Drury, 2004). The instrument includes six constructs of servant leadership, scored on a unidirectional, 5-point Likert-type scale. Survey response choices range from *strongly disagree* to *strongly agree*. Data collected using the OLA (Laub, 1999) instrument provided information related to the six constructs to determine the level of servant leadership characteristics present in the three distribution center operations under study. The term *servant* was intentionally omitted from the survey so as not to bias participant responses and overall survey results.

The OLA instrument has a reliability measure of .98. The reliability measurements, along with ongoing servant leadership research using the 66-item OLA instrument, have garnered this tool as having strong psychometric properties of reliability and validity. The researcher used the scale developed by Laub (2003) to collect and analyze the data obtained through the OLA instrument. The data was used to analyze

correlations between the levels of employee perceptions of servant leadership characteristics and levels of individual worker productivity in the three for-profit distribution center operations. Appendix D includes the Organizational Leadership Assessment instrument.

Validity

Construct validity was determined by using an expert panel to define essential characteristics of servant leadership that comprised the 66 items within the OLA survey instrument. To test validity, Laub (1999) started by researching servant leader characteristics contained in the literature. Based on an extensive review of the literature, 46 characteristics of servant leadership led to the development of a 66-item scale (Laub, 1999). Next, Laub (1999) chose a panel of 14 recognized servant leadership experts to join in a three-round Delphi survey (Laub, 1999; Miers, 2004). Delphi is a technique used to gain consensus from a group of experts in a given field through the use of facilitation of individual responses to questions. Based on expert responses to the Delphi survey, Laub established six constructs and 74 characteristics of servant leadership (Laub, 1999, 2003).

Face Validity Tests were conducted on the perceived accuracy of the six OLA constructs. A total of 100 graduate students participated in the test (Laub, 1999). There was a consistently high degree of Perception Match across the six detailed constructs of Laub's (1999) OLA instrument. The high degree of Perception Match across the six constructs confirmed the OLA tool had strong validity, and the scale levels for the corresponding six organizational scoring breaks were properly defined (Laub, 1999, 2003).

Finally, Ledbetter (2003) conducted a retest study on the OLA. Results indicated the means and σ deviations between the original test and the retest were consistent (Laub, 1999). Both tests had a P value of $P < .01$, meaning the likelihood that the phenomena tested occurred by chance alone is less than 1%. Correlations between the test and retest were also significant, indicating the validity of the OLA instrument remains consistent over periods of time. Based on peer reviewed literature, the Delphi process and consensus gained from the expertise of the panel members led to the development of a valid servant leadership construct and assessment instrument that is very useful in measuring servant leadership (Laub, 1999, 2003; Mears, 2004).

Reliability

Results of Laub's (1999) original field test of the OLA instrument indicated there is high reliability with high correlation between the subscales (Laub, 1999). Correlation between the OLA subscales was at .736 or greater. This indicates there is a relationship between the variables in which they move in tandem. Reliability estimates exceeded a .90 with a Cronbach-alpha score at .9802. Horsman (2001) and Ledbetter (2003) also conducted reliability testing on the OLA with scores greater than .98 (See Table 4). Additional studies using the Organizational Leadership Assessment instrument showed high levels of reliability on the outcome measures (Horsman, 2001; Laub, 1999; Mears, 2004). The tool was field tested with over 40 organizations and 800 people. Field test results indicate the OLA is a tool that is both reliable and valid in measuring perceptions of servant leadership across all levels of an organizational life. The inter-correlations between the six subscales indicated the OLA instruments strong reliability of .98 has led to reliable measurements, with many researchers recommending the use of this tool for

research purposes due to its strong psychometric properties (Horsman, 2001; Laub, 1999; Miears, 2004).

Table 4

OLA Instrument Reliability

Servant Leadership Characteristics	Laub (1999)	Horsman (2001)	Ledbetter (2003)	Miears (2004)
	<i>n</i> =828	<i>n</i> =540	<i>n</i> =138	<i>n</i> =165
Entire OLA instrument	0.980	0.987	0.981	0.987
Values People	0.910	0.920	0.890	0.925
Develops People	0.900	0.940	0.880	0.936
Builds Community	0.900	0.910	0.890	0.919
Displays Authenticity	0.930	0.950	0.900	0.935
Provides Leadership	0.910	0.920	0.910	0.935
Shares Leadership	0.930	0.950	0.880	0.945

Due to the strong Cronbach-alpha score and its adoption in multiple research projects (Drury, 2004; Irving, 2005), the OLA is considered to have strong reliability (Laub, 2003). Although the subscale had high reliability, the high reliability between scales eliminates the possibility of using the subscales individually for research.

However, Laub (1999) affirms subscales can be used as a diagnosis for individual leadership purposes.

Data Collection and Management

Study data was collected using a web based survey instrument. Data was entered directly into a secure database by study participants. The survey tool was accessed through a secure website link connected to the www.olagroup.com website, as required by the OLA Group. A web-based survey tool allowed data to be collected and analyzed electronically. This approach increased data collection efficiency by reducing lag time associated with waiting on response returns and subsequent data analysis. This approach

also reduced data entry requirements for the researcher, along with the error rate associated with manually keyed data. The following items were included in the web-based instrument: (a) basic demographic questions (i.e., age, gender, ethnicity, length of service with company, educational level); and (b) the OLA questionnaire (Laub, 1999).

The survey instrument was divided into several sections. The first section contained an overview of the research. The second section of the electronic survey tool requested a declaration whether or not the participant was at least eighteen years old. The third section provided the purpose of the survey and consent to participate, as evidenced by the participant completing a checkbox indicating they have been provided a copy of the Informed Consent Form (see Appendix C). The remaining sections included general instructions, the OLA survey questions (66 questions total), followed by participant demographic questions such as age, educational level, gender, ethnicity, and tenure with the organization. Demographic questions (seven questions total) were added to the survey tool to enable comparison amongst demographic data and OLA scores. The final page contained researcher contact information and a brief thank you note.

Data collection took place at three high-performing distribution centers within the same corporation ([REDACTED]; [REDACTED]; [REDACTED]). The researcher collected data during work hours. A permission letter was obtained from the subject supply chain organization granting permission to conduct research at each of the three distribution center locations. All eligible employees were invited to voluntarily participate in the survey.

A recruitment letter (see Appendix G) provided by the principal researcher was posted in the employee cafeteria after IRB approval was granted. The recruitment letter

was posted by the on-site human resource manager, and removed by the principal researcher when the survey period closed. The recruitment letter was also presented during the daily start-up meetings in advance of data collection, and after IRB approval. Interested participants were instructed to visit with the on-site human resource official to: 1) receive an assigned 3-digit survey code (PIN#) required to access the survey prior to the survey session, and 2) to read and acknowledge informed consent by signing their 3-digit code (PIN#). Both the leaders' and employees' consent forms outlined the purpose of the study, risks, benefits, confidentiality, withdrawal privilege, and investigator's statement. The on-site human resource official requested interested participants to place signed consent forms in a secure lockbox. These records were provided to the principal researcher at the end of each survey session.

The research study involved the use of one instrument to collect the data: the Organizational Leadership Assessment (OLA). The OLA survey was administered on-site at each DC by the principal researcher during shift start-up meetings. There were a total of two start-up meetings each day at each distribution center location. The meetings were held in the HR training room where computer terminals were available with Wi-Fi Internet connections (up to 15 computer workstations). The survey was also accessed on personal devices such as smartphones and tablets.

The principal researcher introduced the survey to all participants by reading the recruitment letter (see Appendix G). Any employee choosing not to participate in the survey departed the survey session and returned to their work area. To start the survey, participants were instructed to log in to their computer, access the internet browser, and type the survey URL into their web browser. Although the website link was live, access

to the survey web page was restricted, requiring an organizational code and the participant 3-digit code (pin number) at login. Once the website containing the survey was launched, participants were instructed to access the survey on the olagroup.com website by clicking on “Take the survey”, located at the top of the web page. Participants were instructed to sign in using the organizational code (unique code provided by the principal researcher for each shift) and their unique 3-digit code (pin number) provided previously by the human resource official.

Once the organizational code and unique 3-digit code (pin number) were accepted during sign-in, participants were required to acknowledge Informed Consent was provided by clicking a checkbox when prompted. If Informed Consent was not acknowledged, participants were unable to complete the OLA survey. According to Pick, Berry, Gilbert, and McCaul (2013), study participants may give their consent verbally, non-verbally, or in writing. Although it is common practice for the participant to sign a consent form prior to undertaking any research activity, in most cases it is not a legal requirement, but is considered good practice. Although it is important to note this research study provided an electronic acknowledgement that consent was obtained, the fact a participant acknowledged consent did not validate that consent was legally valid and informed (Pick et al., 2013). For the present study, consent was obtained in writing, and verified by requiring each participant to type an “X” into an acknowledgement statement contained within the survey. Further, implied consent is generally acceptable permission if the researcher believes the participants are not misrepresenting themselves (Pick et al., 2013). Participants were free to withdraw consent at any time without reason.

According to Pick, Berry, Gilbert, and McCaul (2013), study participants may give their consent verbally, non-verbally, or in writing. Although it is common practice for the participant to sign a consent form prior to undertaking any research activity, in most cases it is not a legal requirement, but is considered good practice. Although it is important to note this research study provided both a written and an electronic acknowledgement that consent was obtained. Further, implied consent is generally acceptable permission if the researcher believes the participants are not misrepresenting themselves (Pick et al., 2013). Participants were free to withdraw consent at any time without reason.

Participants were asked to complete the demographic section of the survey, as well as the OLA section of the survey. OLA survey responses for each survey question appeared in a dropdown list containing Likert scale choices allowing the survey participant to select a value from the list. Participants were given the option to skip questions, exit the survey, and/or cancel participation after initiating the survey at any point if they chose. The survey takes approximately fifteen minutes to complete. Once the OLA survey was completed by a participant, a thank you page appeared on the user screen to finalize the survey session. The on-site human resource official provided productivity data for each participant that provided a signed consent document. Productivity data was sent electronically to the principal researcher in a secure spreadsheet file within 24 hours of the closed survey session.

The survey remained on the online server for approximately five days. Accessibility to the secure website was limited by time parameters. Upon completion of the survey, data was removed from the online network by the OLA Group, stored on a

portable, external flash drive, and accessed from a desktop computer. All participants had access to the survey privacy policy for the online survey which spelled out how collected data was to be used prior to completing the research questionnaire.

Missing data or incomplete surveys frequently occur in quantitative research and can lead to incorrect inferences (Brunton-Smith, Carpenter, Kenward, & Tarling, 2014). Once the OLA (Laub, 1999) survey was completed electronically by study participants, the researcher checked for incomplete surveys prior to analyzing and reporting results. For example, if most items in the survey required a response between the values 1 and 5, the data file was checked to ensure a response was provided within the valid range. Data were collected from a sample of 133 employees working for for-profit distribution centers within the United States.

Before the parametric assumptions were assessed, the data were screened for missing data, univariate outliers, and multivariate outliers. Missing data were investigated using frequency counts and no cases were found to have missing data. However, for the criterion variable (team productivity), 14 participants had a score of zero and were removed from all analyses. The data were screened for univariate outliers by transforming raw scores to z-scores and comparing z-scores to a critical value of ± 3.29 , $p < .001$ (Tabachnick & Fidell, 2007). Z-scores that exceed this critical value are more than three standard deviations away from the mean and thus represent outliers. The distributions were evaluated and no cases with univariate outliers were found.

Individual worker productivity data was provided by the human resource manager of the subject organization in a secure spreadsheet data file, and calculated using Sumanth's productivity model (Khater & Mostafa, 2011). Individual worker productivity

is calculated by taking a single output variable (total number of units or cartons handled) and comparing to a single input variable (total individual employee work hours) as follows: total cartons handled (outputs) divided by total hours worked (inputs) (Ruiz et al., 2011). That is, higher levels of scores indicate higher levels of productivity.

The data was stored in a Microsoft Excel (.xls) spreadsheet file and password protected. Personal identifiers such as employee names, employee numbers, participant's date of birth, screen or user name, and email address were not requested or provided by the subject organization. Instead, a 3-digit survey code was assigned to each employee to distinguish individual data and to minimize a breach of confidentiality. The productivity data file included an annual average productivity rate (continuous data) for each employee along with a unique 3-digit randomly assigned survey code.

When participants are not interested or not motivated to participate in a survey, attrition may occur, potentially reducing the sample population (Fumagalli et al., 2013). It is important to insure the sample remains representative of the study population. To address survey attrition, the researcher employed a couple of strategies. First, human resource officials were provided a copy of the recruitment script (see Appendix G) and were asked to share the benefits of the survey to employees in start-up meetings and town hall meetings as an awareness, and to increase engagement. The researcher also arranged to extend an invitation to part-time employees to participate in the study if necessary. The minimal sample size was achieved due to strong levels of engagement and participation from the sample population.

Electronic record-keeping systems adopted by researchers are not universal or standardized (Shankar, 1999). Methods for managing scientific records must work across

a variety of software and hardware platforms and permit the integration of digital and paper records (Shankar, 1999). With respect to the present research, all information pertaining to participants and research subjects shall remain in the possession of the researcher and will be kept in a secure location for a minimum of 3 years. All data have been stored on a password protected system with a password required to access the data files. Only the author of this research study has knowledge of the passwords. The data collection instrument is designed to collect no identifying information about study participants. After 3 years, data on the flash drive storage device will be wiped clean and sanitized with all research data professionally removed, deleted, and deemed unrecoverable. The flash drive will be destroyed by a third party, using an environmentally friendly destruction method. A record of destruction will be provided.

Data Analysis Procedures

Productivity data was provided by the human resources manager of the subject organization. Data screening was performed to ensure data accuracy and to confirm adequacy of the statistical test. Descriptive statistics included testing for normal distribution by examining the means, median and modes for the servant leadership variable (from the OLA) and the individual worker productivity variable. Next, scatterplots were examined to identify possible outliers. According to Fraenkel, Wallen, and Hyun (2012) scatterplots are “pictorial representations of the relationship between two quantitative variables” (p.201). Prior to analyzing the data, basic parametric assumptions were assessed. That is, for the criterion (team productivity) and predictor variables (value people, develops people, builds community, displays authenticity, provides leadership, shares leadership, and overall leadership behavior) assumptions of

normality, linearity, homoscedasticity, and multicollinearity were tested (Fraenkel, Wallen, and Hyun, 2012). Two-tailed tests and an alpha level of .05 were used for all inferential statistical tests. This means the probability of obtaining such an outcome is only five times (or less) in 100 (Fraenkel, Wallen, & Hyun, 2012).

Research Question 1. The first research question asks if any relationship exists between the levels of employee perceptions of servant leadership behaviors and levels of individual worker productivity in a for-profit distribution center environment.

RQ1: If and to what extent does the levels of employee perceptions of servant leadership behaviors displayed in a for-profit distribution center correlate with levels of individual worker productivity?

H1_A: A positive correlation exists between the of employee perceptions of servant leadership behaviors displayed in a for-profit distribution center and levels of individual worker productivity.

H1₀: A positive correlation does not exist between the levels of employee perceptions of servant leadership behaviors displayed in a for-profit distribution center and levels of individual worker productivity.

To answer the first question, the overall distribution center mean score from the OLA for each participant was collected to identify the level of servant leadership. The predictor variable for research question 1 is participants' overall perceived level of servant leadership behavior scores as measured by 66-items on the Organizational Leadership Assessment (OLA). Composite scores were calculated by averaging case scores across the 66 OLA items and were used as the predictor variable for research question 1. Each of the questions are based on a Likert scale ranging from 1 to 5, with a response of

strongly agree given 5 points, and strongly disagree given 1 point. The average score on the OLA is 3.64, according to Laub (2003). The score of 4.0 is the breakpoint for identifying an organization as a Servant leadership organization and indicates the level of agreement (Laub, 2003). Thus, an OLA score greater than or equal to 4.0 was considered optimal levels of servant leadership behaviors displayed within the organization. The OLA score ranges and corresponding organizational health levels are displayed in Table 5.

Table 5

Laub's (2003) OLA Score Ranges and Organizational Categories

OLA Score Ranges	Organizational Health Level
1.00 - 1.99	Org ¹ - Autocratic (Toxic Health)
2.00 - 2.99	Org ² - Autocratic (Poor Health)
3.00 - 3.49	Org ³ - Negative Paternalistic (Limited Health)
3.50 - 3.99	Org ⁴ - Positive Paternalistic (Moderate Health)
4.00 - 4.49	Org ⁵ - Servant (Excellent Health)
4.50 - 5.00	Org ⁶ - Servant (Optimal Health)

A simple regression analyses is used to measure the degree of linear relationship between two variables, and were used to evaluate the statistical measures of research question 1. When the data for both variables is expressed in a quantifiable method, the Pearson r is the appropriate correlation coefficient to utilize (Fraenkel, Wallen, & Hyun, 2012). The Pearson product-moment correlation coefficient analysis is parametric in nature and measures the strength of a relationship between two variables within a sample. The Pearson r requires a population with a normal distribution. Additionally, the Pearson product-moment coefficient establishes the possibility of a relationship without concluding causation of the relationship between the two variables. For the first null

hypothesis, one Pearson correlation was computed between the servant leadership score from the OLA and individual worker productivity scores. If any of the correlations were statistically significant, the null hypothesis was rejected. Data analysis was conducted using SPSS version 23. The results from the OLA instrument are expected to answer the research question and hypotheses.

Research Question 2. The second research question asks if any relationship exists between the levels of employee perceptions of each of the six subscales of servant leadership and levels of individual worker productivity in a for-profit distribution center environment.

RQ2: If and to what extent does the levels of employee perceptions of each of the six subscales of servant leadership behavior (values people, develops people, builds community, displays authenticity, provides leadership, shares leadership) displayed in a for-profit distribution center correlate with levels of individual worker productivity?

H2_A: A positive correlation exists between the levels of employee perceptions of the servant leadership construct of *valuing people* and levels of individual worker productivity.

H2₀: A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of *valuing people* and levels of individual worker productivity.

H2_B: A positive correlation exists between the levels of employee perceptions of the servant leadership construct of *developing people* and levels of individual worker productivity.

H2₀: A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of *developing people* and levels of individual worker productivity.

H2_C: A positive correlation exists between the levels of employee perceptions of the servant leadership construct of *building community* and levels of individual worker productivity.

H2₀: A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of *building community* and levels of individual worker productivity.

H2_D: A positive correlation exists between the levels of employee perceptions of the servant leadership construct of *displaying authenticity* and levels of individual worker productivity.

H2₀: A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of *displaying authenticity* and levels of individual worker productivity.

H2_E: A positive correlation exists between the levels of employee perceptions of the servant leadership construct of *providing leadership* and levels of individual worker productivity.

H2₀: A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of *providing leadership* and levels of individual worker productivity.

H2_F: A positive correlation exists between the levels of employee perceptions of the servant leadership construct of *sharing leadership* and levels of individual worker productivity.

H2₀: A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of *sharing leadership* and levels of individual worker productivity.

The OLA was designed to assess both the total organization, as well as the individual leadership within the organization (Laub, 2003). Table 6 represents reliability scores on the six potential OLA subscales.

Table 6

Reliability Scores for OLA Subscales

Subscore Description	N	Mean	Total Possible Score	Standard Deviation	Reliability
Values People	828	53.84	70	8.88	0.91
Develops People	828	37.37	50	7.78	0.90
Builds Community	828	45.2	60	7.87	0.90
Displays Authenticity	828	51.79	70	10.29	0.93
Provides Leadership	828	45.59	60	8.49	0.91
Shares Leadership	828	44.99	60	9.24	0.93

To answer the second question, OLA subscales in each of the distribution centers were analyzed using multiple regression. Each of the subscales were interpreted using the following scale: less than 2.33 – low, 2.34 to 3.67 - moderate, and 3.68 or above - high. A multiple regression analysis was used to measure the degree of linear relationship between the two study variables, and was used to evaluate the statistical measures of research question 2. This null hypothesis was tested by using one additional Pearson correlation. For the null hypothesis, the correlation between perceived levels of servant

leadership of the six subscales (value people, develops people, builds community, displays authenticity, provides leadership, shares leadership, and overall leadership behavior) and levels of productivity were computed. If any of the correlations were statistically significant, the null hypothesis was rejected. The results from the OLA instrument are expected to answer the research question and hypotheses.

Ethical Considerations

Data and proprietary information must be managed reliably and responsibly, and with respect to published research standards within the industry or academic research community (Yin, 2009). Proper care of data, information, and human subjects insure the overall research process is reliable and accurate which helps in bolstering trust from the academic community, experts, and users. Site authorization was obtained via electronic correspondence to an executive officer of the supply chain organization. The Grand Canyon University Institutional Review Board (IRB) approval was required prior to the data collection process. Any necessary IRB approvals and consent required to conduct the research proposal was completed by the researcher prior to commencing research activities.

Once IRB and site authorizations were obtained, written approval to obtain company data and/or to engage employees in the servant leadership assessment test were requested in writing. Likewise, the researcher obtained individual and department level productivity data from an appointed official representing the participating supply chain organization. A randomly assigned three-digit numeric number (PIN#) was assigned to each productivity record to minimize a breach of confidentiality. All information regarding the participants will remain in the possession of the researcher and kept in a

secure location for a period of 3 years. All participants had access to the survey privacy policy for the online survey which spells out how collected data will be used prior to completing the research questionnaire.

All data was stored on a password-protected system with a password required to access the data files. Only the author of this research study has knowledge of the passwords. The data collection instrument is designed to collect no identifying information about study participants. The survey tool is completely anonymous. After three years, data on the flash drive storage device will be wiped clean and sanitized with all research data professionally removed, deleted, and deemed unrecoverable. The flash drive will be destroyed by a third party document destruction service firm, using an environmentally friendly destruction method. A record of destruction will be requested as evidence that all data was safely and professionally destroyed. The researcher honored all confidentiality and privacy policies required by the participating supply chain organization to ensure that data and information was collected for specified research purposes.

Limitations and Delimitations

The servant leadership model was tested in three high performing for-profit distribution centers whose employees are expected to perform at a high level. Although the study provided a unique opportunity to examine the servant leadership theory in a dynamic, competitive work environment, there are limitations to the study. The study is limited to one for-profit US supply chain organization with headquarters in the Midwest. Thus, the results may not be generalizable to other industries or for-profit environments. Also, due to the unique demographics of the supply chain organization, findings cannot

necessarily be generalized to other supply chain organizations. The findings of the study might have differed from distribution center employees to retail employees or manufacturing employees. Since the study is directed in a distribution center operation, the results of the study does not reflect the entire population of the organization. This leadership theory should be investigated in other environments to determine whether internal or external factors exist that could impact its effectiveness. The study is only limited to the validity and reliability of the survey instruments.

Study participants may have had varying perceptions and understanding of servant leadership that could influence their interpretations of survey questions. Due to the small size of the distribution centers, participants may assume that results would be shared with executive leaders and might feel retaliation from leadership. Both scenarios may have participants not answering questions as truthfully. This may create response bias.

The study measured the perceptions of hourly employees, mid-level managers and supervisors, and top leadership. Perceived levels of servant leadership of the workforce may differ from executive leadership. Laub's (1999) research indicates leaders typically rate themselves higher than subordinates or those being led, contributing to positive-outcome bias for this group. This may skew the overall OLA score. Finally, because correlational studies do not investigate cause and effect, causal conclusions cannot not be drawn from the study (Yin, 2009).

Summary

This quantitative correlational study was designed to investigate the relationship between the levels of employee perceptions of servant leadership and levels of individual

worker productivity in a for-profit distribution center environment. The review of servant leadership in a for-profit organization may help increase understanding of servant leadership behaviors and the extent to which they promote positive work cultures and optimal productivity. This chapter presents an overview of the selected methodology for this research study along with its appropriateness. The study utilized a quantitative methodological approach to address the research questions, and hypotheses.

The primary focus of this doctoral research study was to examine if, and to what degree a positive correlation exists between the levels of employee perceptions of servant leadership and levels of productivity in a for-profit distribution center environment. Specifically, this quantitative correlational study examined the relationship between servant leadership behaviors as measured by Laub's (1999) Organizational Leadership Assessment instrument and levels of individual worker productivity calculated using Sumanth's Total Productivity model (Khater & Mostafa, 2011). The sample population (*n*) for this study consisted of 133 distribution center employees from a national distribution center network with locations in [REDACTED], [REDACTED], and [REDACTED].

A correlational research design was employed for this research study. This design is useful to researchers seeking to investigate the extent in which one or more relationships exist between study variables (Fraenkel et al., 2012). Correlation coefficients were calculated using the Pearson *r* in order to analyze the strength of the linear relationships between both variables (Fraenkel, Wallen, Hyun, 2012). The findings of this study will help organizational development practitioners and supply chain leaders find effective ways to model servant leadership behaviors to affect optimal levels of

productivity in hypercompetitive service environments. In addition, this study contributed to the field by extending Liden et al.'s (2014) research study and providing new information and resources relevant to servant leadership and its correlates to productivity.

Chapter 3 also included all of the necessary methods in developing this study including the statement of the problem, the research questions and hypotheses, research methodology, and design. Additionally, the chapter discussed the subject organization, a description of the target population, and sample size. The chapter also identified a rationale for employing a quantitative methodology, instrumentation, data collection and data analysis procedures, the validity and reliability of the research instruments, as well as ethical considerations and limitations identified within the research study. Chapter 4 presents data results, non-statistical information, and statistical analysis used for interpretation along with raw data, while Chapter 5 presents concluding remarks and further research opportunities and recommendations based on the study results and analysis.

Chapter 4: Data Analysis and Results

Introduction

The purpose of this quantitative, correlational study was to examine if, and to what degree a positive correlation existed between levels of employee perceptions of servant leadership and levels of individual worker productivity in a for-profit distribution center environment. This study aimed to identify whether levels of servant leadership behaviors and levels of individual worker productivity were significantly related. It was not known to what extent employee-perceived levels of servant leadership behaviors in a for-profit distribution center environment correlated with levels of individual worker productivity. The research questions and hypotheses were developed by the researcher during the review of literature. Previous empirical research conducted by Liden, Wayne, Chenwei, and Meuser (2014) has shown a positive correlation between servant leadership at the organizational level and performance at a mid-sized retail restaurant chain. Results of the study indicated modeling of servant leadership by strategic level managers can develop an organizational culture of followers who are servant leaders as well. “Another direction for future research is to ascertain the generalizability of our findings with a professional sample in a different industry” (Liden et al., 2014, pg. 1448). The purpose of this chapter is to summarize the collected research data, discuss how it was analyzed, and to present the results.

Research questions guided the research efforts of this study and helped to maintain the research design and alignment with the problem statement. Two research questions were formulated to advance the overall focus and direction of the present research. The hypotheses in the present correlational study were designed to show how

the two variables of servant leadership behaviors and levels of individual worker productivity were related, but did not suggest exploration of a causal relationship amongst the variables. By contrast, the null hypotheses predicted there is no relationship between the variables being studied. The research questions, hypotheses, and null hypotheses for the present study aligned with the problem statement as follows:

RQ1: If and to what extent does the levels of employee perceptions of servant leadership behaviors displayed in a for-profit distribution center environment correlate with levels of individual worker productivity?

H1_A: A positive correlation exists between the levels of employee perceptions of servant leadership behaviors displayed in a for-profit distribution center environment and levels of individual worker productivity.

H1₀: A positive correlation does not exist between the levels of employee perceptions of servant leadership behaviors displayed in a for-profit distribution center environment and levels of individual worker productivity.

To further define and focus this doctoral research study, the following research question, hypotheses, and null hypotheses explored the relationship of each of the six subscales of servant leadership behavior (values people, develops people, builds community, displays authenticity, provides leadership, shares leadership) displayed in a for-profit distribution center and their correlates with levels of individual worker productivity as follows:

RQ2: If and to what extent does the levels of employee perceptions of each of the six subscale of servant leadership behavior (values people, develops people, builds community, displays authenticity, provides leadership, shares

leadership) displayed in a for-profit distribution center environment correlate with levels of individual worker productivity?

H2_A: A positive correlation exists between the levels of employee perceptions of the servant leadership construct of *valuing people* and levels of individual worker productivity.

H2₀: A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of *valuing people* and levels of individual worker productivity.

H2_B: A positive correlation exists between the levels of employee perceptions of the servant leadership construct of *developing people* and levels of individual worker productivity.

H2₀: A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of *developing people* and levels of individual worker productivity.

H2_C: A positive correlation exists between the levels of employee perceptions of the servant leadership construct of *building community* and levels of individual worker productivity.

H2₀: A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of *building community* and levels of individual worker productivity.

H2_D: A positive correlation exists between the levels of employee perceptions of the servant leadership construct of *displaying authenticity* and levels of individual worker productivity.

H2₀: A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of *displaying authenticity* and levels of individual worker productivity.

H2_E: A positive correlation exists between the levels of employee perceptions of the servant leadership construct of *providing leadership* and levels of individual worker productivity.

H2₀: A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of *providing leadership* and levels of individual worker productivity.

H2_F: A positive correlation exists between the levels of employee perceptions of the servant leadership construct of *sharing leadership* and levels of individual worker productivity.

H2₀: A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of *sharing leadership* and levels of individual worker productivity.

Chapter 4 presents a summary of the results of this study, including descriptive data and statistics. The chapter also describes the data analysis procedures employed, and the findings for each of the research questions and their subsequent hypotheses. Lastly, a presentation of the research results is provided and summarizes the results garnered from the statistical analysis procedures performed for each of the research questions.

Descriptive Data

This study was conducted within a for-profit national supply chain organization located in the United States. Permission to conduct the study was acquired from the Chief Operating Officer of the organization. The current study focuses on three high performing distribution centers located in [REDACTED]; [REDACTED]; and [REDACTED] with a population size (N) of 200 employees. For the criterion variable (team productivity), 14 participants had a score of zero and were removed from all analyses, resulting in a study sample size (n) of 133 employees. The subject supply chain distribution center network population (N) at each participating distribution center is described in Table 7.

Table 7

Supply Chain Distribution Center Network Population (N)

Location	No. of Employees (N)
DC# 1	74
DC# 2	91
DC# 3	35
Total =	200

Data were collected from a sample (n) of 133 employees working in the three for-profit distribution centers within the United States. While there was a pre-data collection power analysis computed to determine a minimum sample size of 132, there was also a post hoc power analysis completed. The post hoc power analysis was conducted to justify the actual sample size based on the effect size and the selected design (see Appendix F). The post hoc power analysis calculation, computed using G*Power (version 3.0.10) (Faul, Erdfelder, Buchner & Lang, 2009), was computed using an effect size (f^2) of 0.15, and a power of .99. The post hoc power analysis calculated a minimum sample size (n) of

132 participants for the current study. According to Durrett (2004), the minimum power of any study is 80%. The current research study exceeds these standards suggesting there was an adequate power to detect statistical significance based on the sample size.

Descriptive statistics are provided to summarize and describe the research data collection. Specifically, the majority of participants were male (77.4%, $n = 103$), and the remaining 22.6% were female ($n = 30$). Additionally, 49.6% were between the ages of 18 and 34 years old ($n = 66$), 39.1% were between 35 and 50 years old ($n = 52$), and the remaining 11.3% were between 51 and 69 years old ($n = 15$). Displayed in Table 8 are frequency and percent statistics of participants' gender and age groups.

Table 8

Frequency and Percent Statistics of Participants' Gender and Age Group

Demographic	Frequency (n)	Percent (%)
Gender		
Male	114	77.6
Female	33	22.4
Total	147	100
Age Group		
18-34 years	69	46.9
35-50 years	59	40.1
51-69 years	19	12.9
Total	147	100

Note. Total $n = 133$

When considering the three distribution center locations participating in the research study, the majority of participants were employed at DC# 1 location (39.8%, $n = 53$) and the remaining represented DC# 2 (36.8%, $n = 49$), and DC# 3 locations (23.4%, $n = 31$). Additionally, 48.0% of the participants were White/Caucasian ($n = 64$), 26.3% were Black/African American ($n = 35$), 17.3% were Hispanic/Latino ($n = 23$), and 4.6%

identified as American Indian/Alaskan Native ($n = 1$), Asian ($n = 2$), or Native Hawaiian/Other Pacific Islander ($n = 3$). Displayed in Table 9 are frequency and percent statistics of participants' location and ethnicity.

Table 9

Frequency and Percent Statistics of Participants' Location and Ethnicity

Demographic	Frequency (n)	Percent (%)
Location		
DC# 1	53	39.8
DC# 2	49	36.8
DC# 3	31	23.4
Total	133	100.0
Ethnicity		
American Indian/Alaskan Native	1	0.8
Asian	2	1.5
Black/African American	35	26.3
Hispanic/Latino	23	17.3
Native Hawaiian/Other Pacific Islander	3	2.3
White/Caucasian	64	48.0
Other	5	3.8
Total	133	100.0

Note. Total $n = 133$

Based on the educational profile of the participants, a majority of the population sample attained at least a high school diploma (85%, $n = 113$), with less than 15% of the participants achieving an Associate's (8.2%, $n = 11$) or Bachelor's degree (6.8%, $n = 9$). None of the participants attained an advanced degree. Moreover, when considering length of service, a total of 12 survey participants (9.0%) attained more than 10 years of service with the organization; 29 participants attained 7 to 10 years length of service (21.8%); 17 participants attained 5 to 7 years length of service (12.8%), 6 participants (4.5%) attained 1 to 3 years length of service, and 9 participants (6.8%) had less than 1 year length of

service. A significant number of survey participants had 3 to 5 years' length of service with the organization ($n = 60$, 45.1%). Displayed in Table 10 are frequency and percent statistics of participants' level of education and length of service.

Table 10

Frequency and Percent Statistics of Participants' Level of Education and Length of Service

Demographic	Frequency (n)	Percent (%)
Education		
Associate's degree	11	8.2
Bachelor's degree	9	6.8
High school diploma/GED	113	85.0
Total	133	100.0
Length of Service		
1+ years to 3 years	6	4.5
10+ years	12	9.0
3+ years to 5 years	60	45.1
5+ years to 7 years	17	12.8
7+ years to 10 years	29	21.8
Less than 1 year	9	6.8
Total	133	100.0

Note. Total $n = 133$

The study sample included 133 participants categorized into three primary roles: workforce, manager/supervisor, and top leadership. The *workforce* category includes an employee group paid an hourly wage to perform distribution center material handling tasks (i.e., unloading/receiving, putaway, orderfilling, replenishment/stocking, loading). The *supervisor/manager* category included intermediate management level employees responsible for leading hourly workers in day-to-day operations, and accountable to top management. *Top leadership* included senior executives responsible for overseeing the

day-to-day business and providing intermediate and long-term planning and strategy (Vice President, Sr. Director, Director, and General Manager).

The composition consisted of 86.5% workforce ($n = 115$), 11.3% Manager/Supervisor ($n = 15$), and 2.2% top leadership ($n = 3$). Amongst the three primary roles within distribution center operations, the largest representation of participants was from the hourly ranks led by the Order filling job function ($n = 61$, 45.9%), followed by Replenishment/stocking ($n = 22$, 16.5%), Receiving/Put-away ($n = 15$, 11.3%), Loading ($n = 11$, 8.3%), and QA/QC ($n = 6$, 4.5%). The remaining participants represented the leadership ranks (Manager/Supervisor, $n = 15$, 11.3%; Top leadership, $n = 3$, 2.2%). Displayed in Table 11 are frequency and percent statistics of participants' role/position and job function.

Table 11

Frequency and Percent Statistics of Participants' Role/position and Job Function

Demographic	Frequency (n)	Percent (%)
Role/Position		
Workforce	115	86.5
Manager/Supervisor	15	11.3
Top Leadership	3	2.2
Total	133	100.0
Job Function		
Loading	11	8.3
Manager/Supervisor	15	11.3
Orderfilling	61	45.9
QA/QC	6	4.5
Receiving/Putaway	15	11.3
Replenishment/stocking	22	16.5
Top Leadership	3	2.2
Total	133	100.0

Note. Total $n = 133$

With respect to this research study, a single survey instrument was used. Laub's (1999) Organizational Leadership Assessment (OLA) instrument has been successfully used in other empirical studies to measure servant leadership behaviors and six subscales of servant leadership: (a) values people, (b) develops people, (c) builds community, (d) displays authenticity, (e) provides leadership, and (f) shares leadership. The researcher utilized archival data derived from the subject organizations warehouse management system (WMS) to analyze individual worker productivity rates for the period November 1, 2014 to October 31, 2015. Consent to conduct the study was obtained from the Chief Operating Officer of the subject organization and the Grand Canyon University Institutional Review Board. Employee identity and confidentiality were preserved by using a three-digit numeric coding system so that identification of participants could not be breached. The survey data from the OLA assessment instrument was retrieved from a secure web-based database system maintained by olagroup.com. The data from the OLA instrument was provided via a secure data spreadsheet. Identifiers such as employee names and employee identification numbers were removed by the researcher in order to ensure participant anonymity. The raw data was imported into SPSS version 23 for analysis.

Data Analysis Procedures

Inferential statistics were used to draw conclusions from the sample tested. The Statistical Package for the Social Sciences (SPSS) version 23.0 was used to code and tabulate scores collected from the survey and provided summarized values where applicable including the mean, central tendency, variance, and standard deviation.

Regression and multiple regression analyses were used to evaluate the two research questions. The research questions and hypotheses were:

RQ1: If and to what extent does levels of employee perceptions of servant leadership behaviors displayed in a for-profit distribution center environment correlate with levels of individual worker productivity?

H1_A: A positive correlation exists between the levels of employee perceptions of servant leadership behaviors displayed in a for-profit distribution center environment and levels of individual worker productivity.

H1₀: A positive correlation does not exist between the levels of employee perceptions of servant leadership behaviors displayed in a for-profit distribution center environment and levels of individual worker productivity.

RQ2: If and to what extent does the levels of employee perceptions of each of the six subscales of servant leadership behavior (values people, develops people, builds community, displays authenticity, provides leadership, shares leadership) displayed in a for-profit distribution center environment correlates with levels of individual worker productivity?

H2_A: A positive correlation exists between the levels of employee perceptions of the servant leadership construct of valuing people and levels of individual worker productivity.

H2₀: A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of valuing people and levels of individual worker productivity.

H2_B: A positive correlation exists between the levels of employee perceptions of the servant leadership construct of developing people and levels of individual worker productivity.

H2₀: A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of developing people and levels of individual worker productivity.

H2_C: A positive correlation exists between the levels of employee perceptions of the servant leadership construct of building community and levels of individual worker productivity.

H2₀: A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of building community and levels of individual worker productivity.

H2_D: A positive correlation exists between the levels of employee perceptions of the servant leadership construct of displaying authenticity and levels of individual worker productivity.

H2₀: A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of displaying authenticity and levels of individual worker productivity.

H2_E: A positive correlation exists between the levels of employee perceptions of the servant leadership construct of providing leadership and levels of individual worker productivity.

H2₀: A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of providing leadership and levels of individual worker productivity.

H2_F: A positive correlation exists between the levels of employee perceptions of the servant leadership construct of sharing leadership and levels of individual worker productivity.

H2₀: A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of sharing leadership and levels of individual worker productivity.

Prior to analyzing the research questions, data hygiene and data screening were undertaken to ensure the variables of interest met appropriate statistical parametric assumptions. According to Tabachnick and Fidell (2007), data hygiene and screening helps detect incomplete, inaccurate, or irrelevant data from a dataset, while also replacing, deleting, or modifying for consistency. Thus, the following analyses were assessed using an analytic strategy in that the variables were first evaluated for missing data, univariate and multivariate outliers, normality, linearity, homoscedasticity, and multicollinearity. Finally, linear regression and multiple regression analyses were run to determine if any relationships existed between the variables of interest. The variables and statistical tests used to evaluate the research questions are displayed in Table 12.

Table 12

Summary of Variables and Statistical Tests used to Evaluate Research Questions 1-2

Research Question	Predictor Variable	Criterion Variable	Analysis
RQ1	Leadership Behavior Composite	Individual worker Productivity	Regression
RQ2	Leadership Behavior Subscales	Individual worker Productivity	Multiple Regression

Data evaluation. Both RQ1 and RQ2 were evaluated using regression and multiple regression analyses to determine if any significant relationships existed between participants' level of servant leadership behaviors, the six leadership behavior component subscales, and individual worker productivity. The criterion variable for research questions 1 and 2 was participants' productivity. Individual worker productivity was measured by standardized scores and expressed in units per hour format and was calculated using Sumanth's Total Productivity Model (Khater & Mostafa, 2011). That is, higher levels of scores indicated greater levels of individual worker productivity.

The predictor variable for research question 1 was participants' overall level of servant leadership behavior scores as measured by 66-items on the Organizational Leadership Assessment (OLA). Composite scores were calculated by averaging case scores across the 66 OLA items and were used as the predictor variable for research question 1. The predictor variables for research question 2 included participants' level of leadership behavior component subscale scores as measured by the OLA. Specifically, the six servant leadership behavior subscales included values people (10-items), develops people (9-items), builds community (10-items), displays authenticity (12-items), provides leadership (9-items), and shares leadership (10-items). Response parameters for the OLA predictor variables were measured on a 5-point Likert-type scale where 1 = *strongly*

disagree, 2 = *disagree*, 3 = *undecided*, 4 = *agree*, and 5 = *strongly agree*. Composite scores were calculated by averaging case scores across each of the subscales' items and were used as the predictor variables for research question 2.

Data cleaning. Data were collected from a sample of 147 employees working for three for-profit distribution centers within the United States. Before the parametric assumptions were assessed, the data were screened for missing data, univariate outliers, and multivariate outliers. Missing data were investigated using frequency counts and no cases were found to have missing data. However, for the criterion variable (individual worker productivity), 14 participants had a score of zero and were removed from all analyses. The data were screened for univariate outliers by transforming raw scores to z-scores and comparing z-scores to a critical value of ± 3.29 , $p < .001$ (Tabachnick & Fidell, 2007). Z-scores that exceed this critical value are more than three standard deviations away from the mean and thus represent outliers. The distributions were evaluated and no cases with univariate outliers were found.

For the multiple regression analysis, multivariate outliers were evaluated using Mahalanobis distance. According to Tabachnick and Fidell (2007), Mahalanobis distance is a method used to identify multivariate outliers. Mahalanobis distances were computed for each variable and these scores were compared to a critical value from the chi-square distribution table. Mahalanobis distance for two predictor variables indicates a critical value of 13.82 and no cases were found to exceed this value. Thus, 133 responses from participants were received and 133 were evaluated by the regression and multiple regression models used to evaluate RQ1 and RQ2 ($n = 133$). Descriptive statistics of the criterion and predictor variables are displayed in Table 13.

Table 13

Descriptive Statistics of the Criterion and Predictor Variables used to Evaluate Research Questions 1 and 2

Variable	Min	Max	Mean	Std. Deviation	Skewness	Kurtosis
Individual worker Productivity			155.887	13.606	-0.645	0.693
Overall Leadership	3.680	4.370	4.063	0.142	-0.405	-0.013
Value People	3.700	4.900	4.505	0.234	-0.853	0.675
Develops People	3.670	5.000	4.475	0.264	-0.697	0.492
Builds Community	3.000	3.900	3.445	0.187	0.219	-0.133
Displays Authenticity	3.330	4.420	3.889	0.198	0.143	0.450
Provides Leadership	3.670	5.000	4.400	0.242	0.095	-0.070
Shares Leadership	3.600	4.800	4.331	0.204	-0.580	1.794

Note. Total $n = 133$

Reliability. Reliability analyses were run to determine if the predictor variables (leadership behavior subscales: value people, develops people, builds community, displays authenticity, provides leadership, shares leadership subscales, and overall leadership behavior) were sufficiently reliable. Reliability analysis allows one to study the properties of measurement scales and the items that compose the scales (Tabachnick & Fidell, 2007). Cronbach's alpha (α) reliability analysis procedure calculates a reliability coefficient that ranges between 0 and 1. The reliability coefficient is based on the average inter-item correlation. Scale reliability is assumed if the coefficient is $\geq .60$. Results from the tests indicated that no variable constructs were sufficiently reliable ($\alpha < .60$) except for the overall leadership behavior predictor variable used for research question 1 ($\alpha = .791$). Although, the subscale variables violated the assumption, no survey items would increase Cronbach's alpha by removing them from the constructs. Thus, no actions were taken and the violations of reliability were considered limitations of the study. Displayed in Table 14 are summary statistics from the reliability analyses.

Table 14
Summary of Reliability Analyses Conducted for the Leadership Behavior Predictor Variables

Variable	# of Items	Cronbach's Alpha
Value People	10	0.485
Develops People	9	0.572
Builds Community	10	0.366
Displays Authenticity	12	0.358
Provides Leadership	9	0.403
Shares Leadership	10	0.384
Overall Leadership Behavior	66	0.791

Note. Total $n = 133$

Normality. Before the research questions were analyzed, basic parametric assumptions were assessed. That is, for the criterion (individual worker productivity) and predictor variables (value people, develops people, builds community, displays authenticity, provides leadership, shares leadership, and overall leadership behavior) assumptions of normality, linearity, homoscedasticity, and multicollinearity were tested. The variables were analyzed for linearity and homoscedasticity using scatterplots and the distributions met the assumptions. To test if the distributions were normally distributed, the skew and kurtosis coefficients were divided by the skew/kurtosis standard errors, resulting in z-skew/z-kurtosis coefficients. This technique was recommended by Tabachnick and Fidell (2007). Specifically, z-skew/z-kurtosis coefficients exceeding the critical range between -3.29 and +3.29 ($p < .001$) may indicate non-normality. Thus, based on the evaluation of the z-skew/z-kurtosis coefficients, three variable distributions exceeded the critical range—see Table 15 for skewness and kurtosis statistics. Although the distributions were significantly skewed/kurtotic, according to the central limit theorem, sample sizes of 30 or more approximates the mean of the population (Durrett, 2004). With this in mind, Tabachnick and Fidell (2007) posited that when a sample size

exceeds 100, statistical tests that use the general linear model, such as analysis of variance (ANOVA) and regression (including multiple regression), are robust against violations of normality. Therefore, the assumption of normality was conditionally assumed for the significantly skewed/kurtotic distributions and the violation was considered a limitation of the study. Displayed in Table 15 are skewness and kurtosis statistics of the criterion and predictor variables used to evaluate research questions 1 and 2.

Table 15

Skewness and Kurtosis Statistics of the Criterion and Predictor Variables used to Evaluate Research Questions 1 and 2

Variable	Skewness	Skew Std. Error	Skew Std. Error	Kurtosis	Kurtosis Std. Error	Skew Std. Error
Team Productivity	-0.645	0.21	-3.071	0.693	0.417	1.662
Overall Leadership	-0.405	0.21	-1.929	-0.013	0.417	-0.031
Value People	-0.853	0.21	*-4.062	0.675	0.417	1.619
Develops People	-0.697	0.21	*-3.319	0.492	0.417	1.18
Builds Community	0.219	0.21	1.043	-0.133	0.417	-0.319
Displays Authenticity	0.143	0.21	0.681	0.45	0.417	1.079
Provides Leadership	0.095	0.21	0.452	-0.07	0.417	-0.168
Shares Leadership	-0.58	0.21	-2.762	1.794	0.417	*4.302

Note. *Variables exceeded critical range for z-skew/z-kurtosis (<-3.29, >3.29). Total $n = 133$

Multicollinearity. For research question 2, the assumption of multicollinearity was tested by calculating correlations between the six predictor variables (value people, develops people, builds community, displays authenticity, provides leadership, and shares leadership subscales) and collinearity statistics (tolerance and variance inflation factor). Results indicated that no correlations between predictor variables exceeded the critical value of .80. Tolerance was calculated using the formula $T = 1 - R^2$ and variance inflation factor (VIF) is the inverse of Tolerance (1 divided by T). Commonly used cut-

off points for determining the presence of multicollinearity are $T < .10$ and $VIF > 10$.

Results further indicated that the predictor variables did not exceed the critical values for tolerance or VIF. Thus, since the correlation, tolerance and VIF coefficients did not exceed their critical values, the presence of multicollinearity was not assumed. Displayed in Table 16 are summary details of the correlations between predictor variables used to evaluate research question 2.

Table 16

Summary of Multicollinearity for the Predictor Variables used to Evaluate Research Question 2

Predictor Variable	Predictor Variable					
	1	2	3	4	5	6
Value People (1)	1.000	0.659	-0.036	0.388	0.562	0.403
Develops People (2)		1.000	0.182	0.289	0.422	0.280
Builds Community (3)			1.000	0.219	-0.058	0.303
Displays Authenticity (4)				1.000	0.359	0.517
Provides Leadership (5)					1.000	0.388
Shares Leadership (6)						1.000

Note. Total $n = 133$

Results

This research study contained two primary research questions. Each research question contained corresponding hypotheses, including null and alternative hypotheses. In this section, the researcher utilized the results of the statistical analyses to answer each of the research questions contained in this study.

Results of Research Question 1. Regression analyses were used to evaluate research question 1 and to determine if any significant positive correlations existed between participants' level of servant leadership behaviors and individual worker productivity. The criterion variable for research question 1 was participants' individual

worker productivity. The predictor variable specified in the regression analysis was participants' overall level of leadership behavior scores as measured by 66-items on the Organizational Leadership Assessment (OLA). Composite scores were calculated by averaging case scores across the 66 OLA items and were used as the predictor variable for research question 1. The null and alternative hypotheses were:

Null Hypothesis 1 (H_{10}): A positive correlation does not exist between the level of servant leadership behaviors displayed in a for-profit distribution center and levels of individual worker productivity.

Alternate Hypothesis 1 (H_{1A}): A positive correlation exists between the level of servant leadership behaviors displayed in a for-profit distribution center and levels of individual worker productivity.

Using SPSS 23.0, a regression analysis was conducted to determine if any significant relationships existed between participants' level of servant leadership behavior and individual worker productivity. Results indicated there was a positive and significant relationship between participants' individual worker productivity scores and overall servant leadership behavior (composite), $R = .628$, $R^2 = .395$, $F(1, 131) = 85.486$, $p < .001$. That is, 39.5% ($R^2 = .395$) of the variance observed in the criterion variable (individual worker productivity) was due to servant leadership behavior. Thus, the null hypothesis for research question 1 was rejected in favor of the alternative hypothesis. A model summary of the regression analysis is displayed in Table 17.

Table 17

Model Summary of Regression Analysis for Research Question 1

Source	<i>R</i>	<i>R</i> ²	Std. Error	F	df1	df2	Sig. (<i>p</i>)
Omnibus	.628	.395	10.625	85.486	1	131	< .001

Source	Unstandardized Coefficients		Standardized Coefficients		<i>t</i>	Sig. (<i>p</i>)	Part Correlation
	B	Std. Error	Beta				
(Constant)	-88.793	26.480			-3.353	.001	
Overall Leadership	60.227	6.514	0.628		9.246	< .001	.628

Note. Criterion variable = individual worker productivity; *n* = 133

Figure 1 displays the regression plot depicting the relationship between overall servant leadership and individual worker productivity. The scatterplot displays a positive and significant relationship between the two variables. The regression equation is $\hat{Y} = -88.793 * x + 60.227$. This means that for every one-unit increase in overall servant leadership scores, productivity increased by 26.480 units.

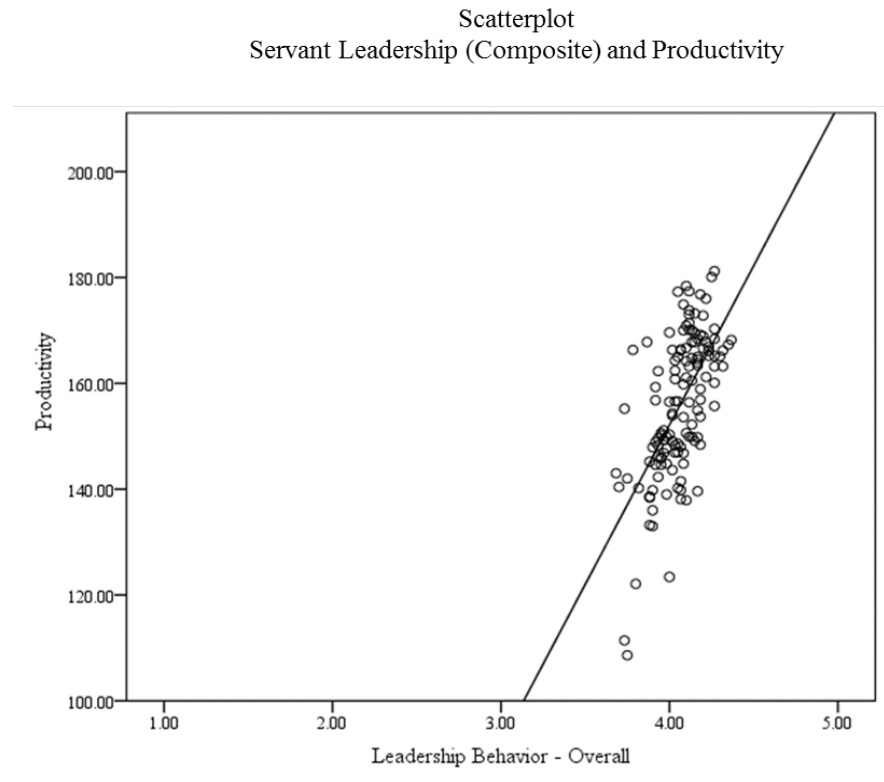


Figure 1. Scatterplot of participants' team productivity and overall leadership scores.

Results of Research Question 2. A multiple regression analysis was used to determine if any significant relationships existed between participants' leadership behavior component subscales (values people, develops people, builds community, displays authenticity, provides leadership, and shares leadership) and individual worker productivity. Results from the multiple regression analysis indicated there was a significant multivariate relationship between participants' individual worker productivity and a model containing six predictor variables, $R = .707$, $R^2 = .500$, $F(6, 126) = 21.020$, $p < .001$. That is, 50.0% ($R^2 = .500$) of the variance observed in the criterion variable (individual worker productivity) was due to a model containing six predictor variables. A model summary of the multiple regression analysis is displayed in Table 18.

Table 18
Model Summary of Multiple Regression Analysis for Research Question 2

Source	<i>R</i>	<i>R</i> ²	Std. Error	<i>F</i>	<i>df</i> 1	<i>df</i> 2	Sig. (<i>p</i>)
Omnibus	0.707	0.500	9.845	21.020	6	126	< .001

Source	Unstandardized Coefficients		Standardized Coefficients		<i>t</i>	Sig. (<i>p</i>)	Part Correlation
	<i>B</i>	Std. Error	Beta				
(Constant)	-72.510	25.688			-2.823	0.006	
Value People	26.045	5.699		0.448	4.570	< .001	0.288
Develops People	8.636	4.539		0.167	1.903	0.059	0.120
Builds Community	6.706	5.219		0.092	1.285	0.201	0.081
Displays Authenticity	9.350	5.273		0.136	1.773	0.079	0.112
Provides Leadership	8.634	4.491		0.154	1.923	0.057	0.121
Shares Leadership	-5.776	5.407		-0.087	-1.068	0.287	-0.067

Note. Criterion variable = individual worker productivity; *n* = 133

The null and alternative hypotheses were:

Null Hypothesis 2A (H2₀): A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of valuing people and levels of individual worker productivity.

Alternate Hypothesis 2A (H2_A): A positive correlation exists between the levels of employee perceptions of the servant leadership construct of valuing people and levels of individual worker productivity.

Null Hypothesis 2B (H2₀): A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of developing people and levels of individual worker productivity.

Alternate Hypothesis 2B (H2_B): A positive correlation exists between the levels of employee perceptions of the servant leadership construct of developing people and levels of individual worker productivity.

Null Hypothesis 2C (H2₀): A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of building community and levels of individual worker productivity.

Alternate Hypothesis 2C (H2_C): A positive correlation exists between the levels of employee perceptions of the servant leadership construct of building community and levels of individual worker productivity.

Null Hypothesis 2D (H2₀): A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of displaying authenticity and levels of individual worker productivity.

Alternate Hypothesis 2D (H2_D): A positive correlation exists between the levels of employee perceptions of the servant leadership construct of displaying authenticity and levels of individual worker productivity.

Null Hypothesis 2E (H2₀): A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of providing leadership and levels of individual worker productivity.

Alternate Hypothesis 2E (H2_E): A positive correlation exists between the levels of employee perceptions of the servant leadership construct of providing leadership and levels of individual worker productivity.

Null Hypothesis 2F (H2₀): A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of sharing leadership and levels of individual worker productivity.

Alternate Hypothesis 2F (H2_F): A positive correlation exists between the levels of employee perceptions of the servant leadership construct of sharing leadership and levels of individual worker productivity.

The contribution of each predictor variable when the variance explained by all others were controlled for was evaluated using the standardized Beta coefficient. Results indicated that one predictor variable made a significantly unique contribution in explaining the criterion variable (value people $p < .001$). That is, there was a significant, positive relationship between participants' individual worker productivity and their value towards others (values people subscale). Thus, null hypothesis A for RQ2 was rejected in favor of the alternative hypothesis. The remaining predictor variables did not make significantly unique contributions in explaining the criterion variable. Therefore, null hypotheses B-F were retained in favor of the alternative hypotheses.

Figure 2 displays the regression plot depicting the relationship between overall servant leadership and *value people* sub-scores. The scatterplot displays a positive and significant relationship between the two variables. The regression equation is $\hat{Y} = -72.510 *x + 26.045$. This means that for every one-unit increase in the *value people* sub-scores, productivity increased by 5.699 units.

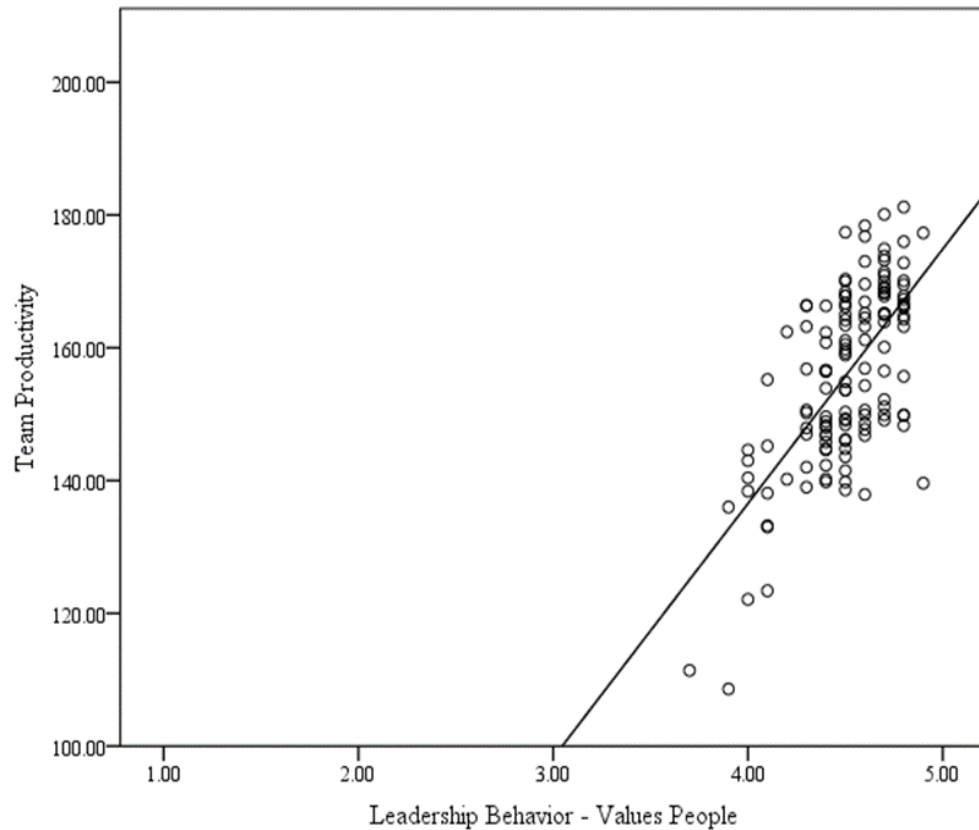


Figure 2. Scatterplot of participants' team productivity and *value people* scores.

Summary

The purpose of this quantitative correlational study was to examine if, and to what degree, a positive correlation exists between levels of servant leadership behaviors and levels of individual worker productivity in a for-profit distribution center environment. The study consisted of 133 distribution center workers representing three distribution centers in a national supply chain organization. Archival employee productivity data were obtained from the subject organization and contained productivity data for participants.

This chapter presented the descriptive statistics and statistical analysis such as regression, and multiple regression analyses to measure the relationship between the study variables. The chapter began by describing the sample population using descriptive

statistics followed by a description of the data analysis procedures employed for the current study. In addition, data limitations that emerged based on data analysis was discussed. Findings from analyzing the data were significant: For H1_A, results from the regression analysis indicated there was a significant and positive relationship between servant leadership and individual worker productivity. For H2_A, results from the multiple regression analysis indicated there was a significant relationship between one of the six subscales (value people) of servant leadership and levels of individual worker productivity. Table 19 displays summary findings for Hypotheses 1 and 2.

Table 19

Summary of Results for Hypotheses 1 and 2

Hypothesis	Predictor Variable	Criterion Variable	Analysis	Sig. (<i>p</i>)
H1	Leadership Behavior Composite	Individual worker Productivity	Regression	< .001
H2	Leadership Behavior Subscales	Individual worker Productivity	Multiple Regression	< .001

Note. Total *n* = 133

Chapter 5 provides an overview of the importance of this study and its contribution to expanding understanding of the research topic. Chapter 5 also restates the two research questions and provides conclusions and recommendations based on interpretation of the data findings related to the research questions and hypotheses. Chapter 5 will also discuss the specific findings of this study, the theoretical and future implications, suggestions for future research, and recommendations for future practice.

Chapter 5: Summary, Conclusions, and Recommendations

Introduction

The purpose of this quantitative correlational study was to examine if, and to what extent, a positive correlation exists between levels of employee perceptions of servant leadership and levels of individual worker productivity in a for-profit distribution center environment. Similar research studies have examined the relationship between servant leadership and performance in a for-profit service environment (Liden, Wayne, Chenwei, and Meuser's, 2014; Melchar & Bosco, 2010). Yet, a gap in the literature existed with respect to the relationship between the levels of employee perceptions of servant leadership and the levels of individual worker productivity in a for-profit distribution center operation. This quantitative case study addressed a gap in the literature on servant leadership and performance by analyzing constructs of this theory within a for-profit distribution center environment and extending Liden et al.'s (2014) research. Further investigation of the main components of servant leadership in a for-profit service environment expands important knowledge relating to individual worker performance and business outcomes (Jones, 2012; Liden, et al, 2008; Liden et al., 2014; Melchar & Bosco, 2010). Based on this gap in the literature, the following research questions and hypotheses guided this study:

RQ1: If and to what extent does the level of servant leadership behaviors displayed in a for-profit distribution center environment correlate with levels of individual worker productivity?

H1_A: A positive correlation exists between the level of servant leadership behaviors displayed in a for-profit distribution center environment and levels of individual worker productivity.

H1₀: A positive correlation does not exist between the level of servant leadership behaviors displayed in a for-profit distribution center environment and levels of individual worker productivity.

RQ2: If and to what extent does the levels of employee perceptions of each of the six subscales of servant leadership behavior (values people, develops people, builds community, displays authenticity, provides leadership, shares leadership) displayed in a for-profit distribution center environment correlates with levels of individual worker productivity?

H2_A: A positive correlation exists between the levels of employee perceptions of the servant leadership construct of *valuing people* and levels of individual worker productivity.

H2₀: A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of *valuing people* and levels of individual worker productivity.

H2_B: A positive correlation exists between the levels of employee perceptions of the servant leadership construct of *developing people* and levels of individual worker productivity.

H2₀: A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of *developing people* and levels of individual worker productivity.

H2_C: A positive correlation exists between the levels of employee perceptions of the servant leadership construct of *building community* and levels of individual worker productivity.

H2₀: A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of *building community* and levels of individual worker productivity.

H2_D: A positive correlation exists between the levels of employee perceptions of the servant leadership construct of *displaying authenticity* and levels of individual worker productivity.

H2₀: A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of *displaying authenticity* and levels of individual worker productivity.

H2_E: A positive correlation exists between the levels of employee perceptions of the servant leadership construct of *providing leadership* and levels of individual worker productivity.

H2₀: A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of *providing leadership* and levels of individual worker productivity.

H2_F: A positive correlation exists between the levels of employee perceptions of the servant leadership construct of *sharing leadership* and levels of individual worker productivity.

H2₀: A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of *sharing leadership* and levels of individual worker productivity.

Understanding such relationships may help supply chain leaders and organizational development practitioners identify and develop leadership strategies that may improve individual worker productivity and organizational outcomes. This study may also reveal specific servant leadership subscales that provide a supportive environment for optimal productivity in a hypercompetitive, for-profit service environment. These findings are especially significant to service organizations, which rely on semi-skilled laborers, knowledge workers, and knowledge laborers to improve customer satisfaction through problem solving and close interactive relationships. Advancements in this area may lead to the identification of leadership behaviors that increase organizational outcomes while furthering exploration of the servant leadership theoretical model. The findings from the current study have opened opportunities to expand research in this area.

This chapter provides a summary of the research study, along with conclusions, limitations of the study, and future theoretical and practical implications. The researcher's observations of the study are noted, along with conclusions and findings associated with each of the research questions and subsequent hypotheses. The chapter concludes with a discussion on recommendations for future practice and research.

Summary of the Study

The researcher conducted this study in an attempt to understand the relationship between the levels of employee perceptions of servant leadership and levels of individual worker productivity in a national for-profit distribution center network. This study

focused exclusively on 133 employees representing three high performing, for-profit distribution center operations in the U.S. Participants included top leadership, managers/supervisors, and the hourly workforce of the subject supply chain organization. Although compelling empirical evidence examined the relationship between the levels of employee perceptions of servant leadership and levels of worker performance (Liden, Wayne, Chenwei, & Meuser's, 2014), as of recently there has been no research concerning the correlation between servant leadership and individual worker productivity in a for-profit, organizational context. Therefore, the purpose of this quantitative correlational study was to examine if, and to what degree, a positive correlation exists between levels of servant leadership and individual worker productivity in a for-profit distribution center environment.

The findings of this study revealed there is a positive and significant relationship between servant leadership and productivity, and advanced the understanding of the relationship between servant leadership and organizational performance in a for-profit environment. The collection of data from this study added to the literature in this area by broadening the knowledge surrounding the problem statement. Moreover, the data extended the literature relating servant leadership to individual worker performance by examining the correlation of servant leadership subscales to individual worker productivity.

Chapter 1 provided an introduction and rationale for the study. The chapter also introduced the research questions that were used to justify the purpose of the study, and addressed the current lack of research on servant leadership and individual worker productivity in the literature. The chapter discussed how this study advanced scientific

knowledge and introduced the significance of the study. The researcher provided the rationale for the selected methodology and research design, and concluded Chapter 1 with definitions of research terms, assumptions, limitations, and the study's delimitations.

Chapter 2 synthesized a literature review of the foundational and current literature related to servant leadership and individual worker productivity. In addition, chapter 2 presented a synthesis of the literature including the background to the problem, the theoretical framework providing the foundation to the study, and several themes and topics related to the proposed study. Specifically, chapter 2 included a discussion of servant leadership and correlates to individual worker productivity. Chapter 2 provided a synopsis of previous research, along with gaps in the literature, and methodological strengths and weaknesses found in earlier studies.

Chapter 3 presented an overview of the research methodology and selected research design. A quantitative methodology with a correlational design was employed as they are suitable to researchers who are interested in determining the extent to which two or more variables are related (Tabachnick, & Fidell, 2007). The researcher utilized data collected using Laub's (1999) Organizational Leadership Assessment instrument and secondary individual worker productivity data provided by a national supply chain network in the US to determine the extent of the relationship between the levels of employee perceptions of servant leadership and the levels of individual worker productivity of distribution center employees. Chapter 3 outlined the data analysis procedures required to process the data, and answer each research question and related hypothesis.

Chapter 4 presented the descriptive data, statistics, and statistical analyses such as regression and multiple regression analyses to summarize and measure the relationship between the study variables. The chapter began by describing the population sample using descriptive data and statistics. Chapter 4 also included a discussion on the data analysis procedures, followed by a discussion on the research results from the data analyses. The study results were then used to answer the research questions and hypotheses.

Finally, Chapter 5 presents a synopsis on the importance of this research study and its contribution to the body of literature with respect to expanding knowledge of the topic. Chapter 5 restates the two research questions, and provides conclusions and recommendations based on the description of the data findings related to the research questions and hypotheses. Chapter 5 presents a discussion on the specific findings of this study, theoretical and future implications, suggestions on servant leadership training and leadership capability modeling, and recommendations for future research.

Summary of Findings and Conclusion

The purpose of this quantitative correlational study was to examine if, and to what degree a positive correlation exists between levels of servant leadership and levels of individual worker productivity in a for-profit distribution center environment. Specifically, this quantitative correlational study examined the relationship between levels of servant leadership, as measured by the Organizational Leadership Assessment instrument (Laub, 1999), and levels of individual worker productivity calculated by using the Total Productivity Model (Khater & Mostafa, 2011). To accomplish this objective, this study presented two research questions with each supported by an alternative hypothesis and a null hypothesis.

The first research question was: RQ1: If and to what extent does the level of servant leadership behaviors displayed in a for-profit distribution center environment correlate with levels of individual worker productivity? The following hypotheses were associated with this research question:

H1_A: A positive correlation exists between the level of servant leadership behaviors displayed in a for-profit distribution center environment and levels of individual worker productivity.

H1₀: A positive correlation does not exist between the level of servant leadership behaviors displayed in a for-profit distribution center environment and levels of individual worker productivity.

RQ1 was evaluated using a regression analysis to determine if any significant positive correlations existed between the levels of employee perceptions of overall servant leadership (composite) and the levels of individual worker productivity of workers in a for-profit distribution center environment. The predictor variable was perceptions of servant leadership behaviors as measured by Laub's (1999) Organizational Leadership Assessment instrument (OLA). The criterion variable used in the regression analyses was levels of individual worker productivity as calculated using the Total Productivity Model (Khater & Mostafa, 2011).

Results from the regression analysis indicated there was a positive and significant relationship between levels of servant leadership behaviors (composite) and levels of individual worker productivity, $R = .628$, $R^2 = .395$, $F(1, 131) = 85.486$, $p < .001$. That is, 39.5% ($R^2 = .395$) of the variance observed in the criterion variable (individual worker productivity) was due to the predictor variable (perceptions of servant leadership). In other words, team productivity is positively and significantly affected by overall servant

leadership behaviors displayed in the work environment. Based on findings, the null hypothesis was rejected in favor of the alternative. Thus, empirical evidence suggests there is a relationship between levels of servant leadership and levels of individual worker productivity.

The second research question was: RQ2 – If and to what extent does the levels of employee perceptions of each of the six subscales of servant leadership behavior (values people, develops people, builds community, displays authenticity, provides leadership, shares leadership) displayed in a for-profit distribution center environment correlate with levels of individual worker productivity?

H2_A: A positive correlation exists between the levels of employee perceptions of the servant leadership construct of *valuing people* and levels of individual worker productivity.

H2₀: A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of *valuing people* and levels of individual worker productivity.

H2_B: A positive correlation exists between the levels of employee perceptions of the servant leadership construct of *developing people* and levels of individual worker productivity.

H2₀: A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of *developing people* and levels of individual worker productivity.

H2_C: A positive correlation exists between the levels of employee perceptions of the servant leadership construct of *building community* and levels of individual worker productivity.

H2₀: A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of *building community* and levels of individual worker productivity.

H2_D: A positive correlation exists between the levels of employee perceptions of the servant leadership construct of *displaying authenticity* and levels of individual worker productivity.

H2₀: A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of *displaying authenticity* and levels of individual worker productivity.

H2_E: A positive correlation exists between the levels of employee perceptions of the servant leadership construct of *providing leadership* and levels of individual worker productivity.

H2₀: A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of *providing leadership* and levels of individual worker productivity.

H2_F: A positive correlation exists between the levels of employee perceptions of the servant leadership construct of *sharing leadership* and levels of individual worker productivity.

H2₀: A positive correlation does not exist between the levels of employee perceptions of the servant leadership construct of *sharing leadership* and levels of individual worker productivity.

Research question 2 was evaluated using multiple regression analyses to determine if any significant and positive correlations existed between the levels of

employee perceptions of servant leadership component subscales (value people, develops people, builds community, displays authenticity, provides leadership, and shares leadership) and levels of individual worker productivity in a for-profit distribution center environment. The criterion variable was participant's individual worker productivity calculated using Sumanth's Total Productivity Model (Khater & Mostafa, 2011). The predictor variable used in the multiple regression analysis was participants' level of servant leadership component subscale scores as measured by 66-items on Laub's (1999) Organizational Leadership Assessment (OLA).

Results from the multiple regression analysis for RQ2 indicated one predictor variable made a significantly unique contribution in explaining the criterion variable (value people, $p < .001$). There was a positive and significant relationship between participants' team productivity and the servant leadership subscale *value people*. That is, for each change of 1 unit in scoring for this subscale, the productivity score changed by 5.699 units. Therefore, alternative hypothesis A for RQ2 was accepted in favor of the null hypothesis, meaning it is more likely there is a relationship between the two study variables than not. Thus, empirical evidence suggests a significant relationship exists between levels of individual worker productivity and the servant leadership subscale value people. In other words, team productivity is positively and significantly affected when individuals feel as though they are valued in the workplace.

The remaining predictor variables did not make significantly unique contributions in explaining the criterion variable. Therefore, null hypotheses B through F were retained in favor of the alternative hypothesis, meaning it is more likely there is not a significant relationship between the two study variables. Thus, empirical evidence suggests a significant relationship does not exist between levels of individual worker productivity

and the remaining subscales (develops people, builds community, displays authenticity, provides leadership, and shares leadership).

Conclusions. The findings of this study extended the current research knowledge and scholarship in the area of servant leadership and performance. The findings suggested a strong positive correlation existed between the levels of employee perceptions of overall servant leadership behaviors (composite) and levels of individual worker productivity in a for-profit distribution center environment. When analyzing the six servant leadership behavior component subscales (value people, develops people, builds community, displays authenticity, provides leadership, and shares leadership), there was a significant positive relationship between participants' team productivity and the servant leadership subscale *value people* ($p < .001$).

As presented in the Chapter 2 Literature Review, Liden et al. (2014) analyzed the servant leadership model in a multiple-site restaurant chain with proven effectiveness in achieving high levels of customer service. Results from this research suggested servant leaders can be effective in for-profit service environments. The researcher postulated that future studies should be conducted in other industries or service environments to determine if the results are generalizable to other industries. This research study confirms Liden et al.'s (2014) premise that servant leaders can be effective in for-profit environments. The ability to measure the constructs of this theory consistently among various organizational contexts helps to understand the external and internal factors influencing its effectiveness (Melchar & Bosco, 2010). This research study aimed to extend model development on the processes and underlying relationships between servant leadership and individual worker productivity outcomes, while contributing to the sparse

research on the cross-level effects that individual worker variables have on organizational responses.

This study is significant because the researcher examined the relationship between servant leadership behaviors and employee productivity in three high performing distribution centers, and concluded through empirical evidence that significant positive correlations do exist between the two study variables, which was predictable based on research conducted by Liden, Wayne, Chenwei, and Meuser (2014). Consistent with Greenleaf's (1977) theory that servant leadership instills a desire in followers to serve others, both Liden et al.'s (2014) research and the current study supported the premise that an organizations serving culture built behaviors that affected an individual's association with performance norms associated with the organizational culture. These findings are especially significant to service organizations, which rely on close interactive relationships to improve customer service and organizational outcomes.

The findings of this study may help organizational development specialists identify leadership behaviors that may improve organizational effectiveness that lead to increased levels of productivity in an industrial service environment. Further, this study contributed to the field by offering new information relevant to servant leadership and individual worker productivity in a for-profit organizational context. This study does not confirm servant leadership self-efficacy, or the belief that one can be an effective servant leader.

Implications

There has been significant research over the past few decades examining the constructs of servant leadership in relationship to organizational performance (Ehrhart, 2004; Liden et al., 2014; Melchar & Bosco, 2010; Walumbwa et al., 2010). Expanding

the research of these concepts to a fast paced, chaotic, and complex supply chain environment, specifically for-profit distribution center operations, has created a broader understanding of these concepts applied in a different research setting. Since there is scant research in the literature relating servant leadership to productivity, the current research is significant in furthering empirical research in this area. There are several implications to consider based on the results of this study, many of which are associated with the theoretical framework upon which the research was built. Just as important, practical and future implications derived from this research study should be considered as they may be meaningful to researchers and organizational development practitioners.

Theoretical implications. The theoretical implications of this research study encompass both the interpretation of findings in the existing literature framework, and the interpretation of data in terms of the research questions. The theoretical foundation for this study rests on the historical theory of servant leadership presented by Greenleaf (1977) and the research objective to evaluate servant leadership correlates to levels of worker productivity. The servant leadership model offers a theoretical construct to examine connections between a specific leadership philosophy and levels of individual worker performance. Greenleaf's (1977) theory on servant leadership has ten characteristics representing the foundational framework of the model (Spears, 2004): (a) listening, (b) empathy, (c) healing, (d) awareness, (e) persuasion, (f) conceptualization, (g) foresight, (h) stewardship, (i) commitment to the growth of people, and (j) building community. The central tenet of the theory is that an effective leader must first serve those he or she intends to lead while understanding the role of the leader as a servant (Greenleaf, 1977).

Laub (1999) introduced a model and assessment tool based on Greenleaf's (1977) servant leadership model that measures servant leadership at the organizational level, also referred to as the *servant-led organization*. Laub's (1999) tool measures levels of individual employee perceptions of servant leadership behaviors at the organizational level. The six key areas of the servant-led organization model are: (a) displays authenticity, (b) value people, (c) develops people, (d) builds community, (e) provides leadership, and (f) shares leadership (Laub, 1999). Laub (2003) stated a servant-led organization is one that puts the needs of others first and as a result gains plausible power and strength throughout the entire organization.

Findings from the current study add to the theory of servant leadership by investigating its application in a for-profit setting, specifically a distribution center environment. The current research expanded the practice of servant leadership and its correlates to individual worker productivity. Understanding the relationship between servant leadership behaviors and individual worker productivity will support future researcher aimed at expanding upon this study while examining the role of servant leadership in various for-profit settings to improve business outcomes.

Practical implications. Previous research discussed in the Chapter 2 Literature Review found a positive and significant correlation between servant leadership and several organizational performance related themes: (a) customer service levels, (b) organizational citizenship behaviors (OCB), (c) sales, (d) compliance, and (e) engagement (Hunter et al., 2013; Hu & Liden, 2011; Liden et al., 2014; Melchar & Bosco, 2010). The present study correlated overall servant leadership (composite) and the six subscales with levels of productivity using regression and multiple regression

analyses. Findings from the current research study were consistent with conclusions from previous studies as noted in chapter 2. The researcher presented empirical results that posited individual worker productivity is significantly affected by overall servant leadership behaviors (composite), as well as the servant leadership subscale *value people*.

The *value people* subscale is demonstrated when organizational members are serving the needs of others first, listening receptively for understanding, and trusting in people (Laub, 1999). The results of this study indicated the *value people* subscale had a significant impact on worker productivity ($p < .05$). Demonstrating value for people underscores a leader's belief that workers are not merely resources necessary to completing a job task, but are capable of producing work with positive intentions that produce value to stakeholders. Servant leaders that value people are willing to invest in their development, while also acknowledging their present value and long term potential.

When examining the correlates of the remaining servant leadership subscales to individual worker productivity, the data analysis revealed a moderate relationship between the predictor and criterion variable that was slightly above the p -value significance threshold ($p < .05$) and may warrant further exploration: *develops people* ($p = .059, \beta = 8.636$), *displays authenticity* ($p = .079, \beta = 9.350$) and *provides leadership* ($p = .057, \beta = 8.634$). Although scoring from these three subscales were moderately correlated to productivity scores, their contributions were considerable considering their Beta co-efficient and individual effect size.

The findings from this study have several practical implications. As previously stated in Chapter 2, technology, automation, increased customer expectations, and global competition have evolved modern day approaches to individual worker productivity

improvements to ensure an organization's resources are used economically and are not wasted (Hajdul & Mindur, 2015). Liden et al. (2014) argued that a growing service sector combined with increased levels of competition point to the necessity for organizations to adopt servant leadership approaches to effectively develop employees and teams so their full value are realized.

Thus, the current study suggests it is critically important that managers working in a for-profit service sector be trained to embrace servant leadership behaviors. In explaining the correlation between a serving culture and distribution center worker productivity, the researcher argued that employees emulate servant leader behaviors and engage in servant leadership with each other through colleague interactions and valuing people. These interactions create a perpetuating cycle through employee identification with the serving culture. Thus, trends in leadership approaches for a multitude of organizations around the globe indicate that servant leadership has increasingly become more relevant with many implications for practice (Liden et al., 2014).

Future implications. Based on the findings of this study and similar studies previously mentioned in the Literature Review, there are future implications to consider from the findings. Researchers should examine the correlation between individual worker productivity and the educational levels of the workforce. The sample population of the current study included 14.3% of employees with an Associate's degree or Bachelor's degree, and the remaining 85.7% with a high school diploma or GED. Understanding educational levels of the workforce and the perceptions of servant leadership behavior on productivity would provide insight on mediating factors between the criterion and

predictor variables and the organizations ability to sustain positive outcomes in a hyper-competitive industry.

Another future implication of the current study is to assess levels of overall servant leadership in correlation to employee engagement in the distribution center environment. The flattened organizational hierarchy and increased span of control for leadership in the contemporary supply chain organization has led to greater demands on leader's time in the workplace. Employees will expect a more cooperative, empowering, individualized leadership style focused on meeting diverse follower needs in the absence of layered management structures. As a result of the present research study, future implications include assessing whether a servant leadership culture correlates positively and significantly with increased levels of internal customer satisfaction in a for-profit distribution center environment to ensure the contemporary organization is getting value from engaged employees.

This study provided a robust analysis by examining the composite and subscales of Laub's (1999) Organizational Leadership Assessment (OLA). The study also displayed strengths and weaknesses based on the methodology, research design, and data. Moreover, the results of this study did contain limitations. The study was limited to one for-profit supply chain organization with locations [REDACTED], [REDACTED] and [REDACTED]. Due to the unique demographics of the supply chain organization, findings cannot necessarily be generalized to other supply chain organizations. Due to the size of the distribution centers, participants may assume that results would be shared with executive leaders and might feel retaliation from leadership. This feeling may have

participants not answering questions as truthfully, and is considered to be a limitation to the study.

The study was also limited to the validity and reliability of the survey instruments. Scale reliability is assumed if the coefficient is $\geq .60$. Results from the reliability tests indicated that no variable constructs were sufficiently reliable ($\alpha < .60$) on each of the six component subscales except for the overall servant leadership behavior predictor variable used for research question 1 ($\alpha = .791$). Although, the subscale variables violated the assumption, no survey items would increase Cronbach's alpha by removing them from the constructs. Thus, no actions were taken and the violations of reliability on the servant leadership subscale variables were considered limitations of the study.

Finally, with respect to normality of the data in RQ2, three variable distributions exceeded the critical range (value people, develops people, shares leadership) based on the evaluation of the z-skew/z-kurtosis coefficients. Although the distributions were significantly skewed/kurtotic, the sample size exceeded 100 participants ($n = 133$), thus deeming the statistical analyses robust against violations of normality. Therefore, the assumption of normality was conditionally assumed for the significantly skewed/kurtotic due to sufficient sample size distributions and the violations were considered a limitation of the study. Nevertheless, the study did concur what previous researchers in various service industries have found: there is a strong positive and significant correlation between levels of servant leadership and organizational performance in a for-profit service environment (Liden et al, 2014; Melchar & Bosco, 2010).

Recommendations

Recommendations for future research. Although there are many research studies that examine servant leadership behaviors and organizational performance respectively, there are limited studies correlating the level of servant leadership behaviors to individual worker productivity. As a result of limited research regarding the findings of this study, and the positive and significant findings between the study variables, there are several recommendations to consider for future research.

Replicating this study and exploring correlates between servant leadership and individual worker productivity in a global geographic context will expand upon the findings from the current study. Understanding perceptions of servant leadership from a cultural standpoint may help gain insights on the significance of the study variables with respect to cultural implications. This study centered on a national supply chain network, and did not contain a sufficient diverse global population sample necessary to explore statistical findings in this area.

Current study results revealed a statistically significant and positive relationship between the servant leadership subscale *value people*, in relation to individual worker productivity. In other words, individual worker productivity is significantly affected when people in the workplace are perceived as valuing one another. Future research should include a qualitative study to explore what causes a person to value others, and what confounders are affecting the criterion variable (individual worker productivity) in this regard.

The data analysis for the current study revealed a moderate relationship between individual worker productivity and several servant leadership subscales: *develops people*,

displays authenticity, and provides leadership. Although these three servant leadership dimensions were moderately correlated to productivity scores using a multiple regression analyses, their contributions were considerable considering their p -value, standardized Beta co-efficient, the total sample size ($n = 133$), and the robustness of the multiple regression analysis against skewness. The current research study should be replicated in a future study to determine if there could be a significant relationship with these subscales using a different professional sample, a different service industry, or a population sample that includes cross-functional disciplines. If it is statistically determined through future empirical research there is a positive and significant correlation between individual worker productivity (composite) and scores in potentially four of six servant leadership subscales, these findings would further enhance research and practice.

Finally, an additional way to extend the generalizability of the results of this study is to analyze servant leadership with a population sample that includes a larger percentage of women leaders. The current study was based on a sample size of 22.4% female and 77.6% male participants. A unique paradox may exist with this implication. Prior research on women and leadership posit that women have a more participative, collaborative, and democratic leadership style than men (Eagly & Karau, 2002). With a larger representation of women leaders, it would be most fruitful to examine follower reactions to servant leadership in a for-profit service environment to determine whether follower reactions vary based on gender. Future implications as a result of research in this area can enhance practitioner knowledge of how leader gender effects follower responses to servant leadership behaviors and subsequent business outcomes, including profitability.

Recommendations for future practice. The results of this study reveal an opportunity to improve business outcomes, specifically individual worker productivity, by operationalizing servant leadership in a for-profit work environment. Findings from the current research were consistent with results from prior research presented in the chapter 2 Literature Review, which indicated a positive relationship between levels of servant leadership behaviors and levels of organizational performance (Liden et al., 2014, Melchar & Bosco, 2010; Walumbwa et al., 2010). Moreover, the results obtained in this research are significant because the findings may help to provide supply chain leaders and organizational development practitioners with an alternative option to improve individual worker productivity in hypercompetitive, service environments. Results from the current research indicate servant leadership had a positive effect on optimizing levels of individual worker productivity in a for-profit distribution center environment. As a result of the findings from the current study, there are three key recommendations for future practice.

Servant leadership training. The findings of this study showed a strong statistical correlation between the levels of employee perceptions of servant leadership and levels of individual worker productivity in a for-profit distribution center environment. By investigating such relationships, supply chain leaders and organizational development practitioners are capable of identifying strategies that may improve servant leadership effectiveness. Levels of individual worker productivity improved when servant leadership behaviors were present. The results obtained in this research study are significant because the findings may help supply chain leaders and organizational development practitioners identify alternative ways of improving individual worker productivity through servant

leadership. The findings of the current study have positive implications for distribution center managers.

Implementing servant leadership training across all levels of a distribution center may help improve worker productivity. Employees in this study who perceived high levels of servant leadership behaviors in the workplace demonstrated high levels of performance. Implementing employee training that encompasses the principles of servant leadership characteristics (valuing people, developing people, building community, displaying authenticity, providing leadership, and sharing leadership) can help improve leadership effectiveness and organizational outcomes (Liden et al., 2014).

Servant leadership competency model. As organizations look to increase leadership effectiveness, it is critical to identify servant leadership skills and behaviors that lead to high performance (Hunter et al., 2013). The results of this study indicated servant leadership behaviors were consistent in affecting levels of individual worker productivity in three high performing distribution centers in a national, for-profit supply chain network. Therefore, it is reasonable to recommend that future practice should lead to the development of leadership competencies that align with servant leadership behaviors and maturity capability (Melchar & Bosco, 2010). These core competencies should be well defined and incorporated into an organizations performance management system to support leaders in operationalizing servant leadership behaviors, while also providing periodic feedback to facilitate leadership development and feedback to increase servant leader effectiveness.

Organizational Leadership Assessment (OLA) instrument reliability. The statistical results of the Organizational Leadership Assessment (OLA) (Laub, 1999)

survey instrument provided important data to validate the reliability of the instrument in a hypercompetitive for-profit service environment. The statistical results of the Organizational Leadership Assessment (Laub, 1999) in the current study validated the reliability of the instrument in for-profit distribution center operations. In previous studies, researchers primarily used the OLA (Laub, 1999) in religious, educational, and not-for-profit institutions. The findings from the current research support a broadened application of the OLA (Laub, 1999) to include for-profit organizations and industries for future practice.

These recommendations are provided as practical suggestions. As noted earlier, with high levels of servant leadership behaviors displayed in the work culture, worker productivity can be raised to its highest possible level (Liden et al., 2014). Hence, it is reasonable to believe that high levels of servant leadership capability within an organizational context will increase individual worker productivity levels while having a positive effect on organizational outcomes.

References

- Ahmad, A., & Omar, Z. (2015). Improving organizational citizenship behavior through spirituality and work engagement. *American Journal of Applied Sciences*, 12(3), 200-207. Retrieved from <http://search.proquest.com/docview/1686762230?accountid=7374>
- Akins, R. B., Tolson, H., & Cole, B. R. (2005). Stability of response characteristics of a Delphi panel: application of bootstrap data expansion. *BMC Medical Research Methodology*, 5(1), 37.
- Arif-Uz-Zaman, K., & Amm, N. A. (2014). Lean supply chain performance measurement. *International Journal of Productivity and Performance Management*, 63(5), 588-612. Retrieved from <http://search.proquest.com/docview/1536488723?accountid=7374>
- Babakus, E., Yavas, U., & Ashill, N. (2011). Service worker burnout and turnover intentions: Roles of person-job fit, servant leadership, and customer orientation. *Services Marketing Quarterly*, 32, 17-31. <http://dx.doi.org/10.1080/15332969.2011.533091>
- Bakotic, D. (2012). Job satisfaction of knowledge workers in Croatian companies. *Journal of International Management Studies*, 7(2), 53-60. Retrieved from <http://search.proquest.com/docview/1326437448?accountid=7374>
- Barbuto, J. E., & Wheeler, D. W. (2006). Scale development and construct clarification of servant leadership. *Group & Organization Management*, 31(3), 300-326. Retrieved from

<https://lopes.idm.oclc.org/login?url=http://search.proquest.com.lopes.idm.oclc.org/docview/203373307?accountid=7374>

- Bass, B., & Avolio, B. (1995). *MLQ, Multifactor Leadership Questionnaire* (2nd ed.). Redwood City, CA: Mind Garden.
- Bell, R. L., & Martin, J. S. (2012). The relevance of scientific management and equity theory in everyday managerial communication situations. *Journal of Management Policy and Practice*, 13(3), 106-115.
- Birasnay, M., Rangnekar, S., & Dalpati, A. (2011). Transformational leadership and human capital benefits: The role of knowledge management. *Leadership & Organization Development Journal*, 32(2), 106-126.
- <http://dx.doi.org/10.1108/01437731111112962>
- Blake, A. M., & Moseley, J. L. (2010). One hundred years after the principles of Scientific Management: Frederick Taylor's life and impact on the field of human performance technology. *Performance Improvement*, 49(4), 27-34.
- Breevaart, K., Bakker, A. B., Demerouti, E., Sleebos, D. M., & Maduro, V. (2014). Uncovering the underlying relationship between transformational leaders and followers' task performance. *Journal of Personnel Psychology*, 13(4), 194-203.
- [doi:10.1027/1866-5888/a000118](https://doi.org/10.1027/1866-5888/a000118)
- Brunton-Smith, I. I., Carpenter, J., Kenward, M., & Tarling, R. (2014). Multiple Imputations for handling missing data in social research. *Social Research Update*, (65), 1-4.

- Bryman, A., Becker, S. & Sempik, J. (2008). Quality criteria for quantitative, qualitative and mixed methods research: A view from social policy. *International Journal of Social Research Methodology*, 11(4), 261-276.
- Carter, D., & Baghurst, T. (2014). The Influence of Servant Leadership on Restaurant Employee Engagement. *Journal of Business Ethics*, 124(3), 453-464.
- Cavazotte, F., Duarte, C., & Gobbo, A. (2013). Authentic leader, safe work: The influence of leadership on safety performance. *Brazilian Business Review*, 10(2), 95-119. Retrieved from <http://search.proquest.com/docview/1519620637?accountid=7374>
- Cerit, Y. (2010). The effects of servant leadership on teachers' organizational commitment in primary schools in Turkey. *International Journal of Leadership in Education*, 13(3), 301-317.
- Chen, Z., Zhu, J., & Zhou, M. (2015). How does a servant leader fuel the service fire? A multilevel model of servant leadership, individual self-identity, group competition climate, and customer service performance. *Journal of Applied Psychology*, 100(2), 511-521. doi:10.1037/a0038036
- Cheung, M., & Wong, C. (2011). Transformational leadership, leader support, and employee creativity. *Leadership & Organization Development Journal*, 32(7), 656-672. <http://dx.doi.org/10.1108/01437731111169988>
- Choudhary, A., Akhtar, A., & Zaheer, A. (2012). Impact of transformational and servant leadership on organizational performance: A comparative analysis. *Journal of Business Ethics*, 116, 433-440. <http://dx.doi.org/10.1007/s10551-012-1470-8>

- Clapp-Smith, R., Vogelgesang, G., & Aevey, J. (2009). Authentic leadership and positive psychological capital: the mediating role of trust at the group level of analysis. *Journal of Leadership and Organizational Studies* 15(3), 227-240.
- Corominas, A. (2013). Supply chains: what they are and the new problems they raise. *International Journal of Production Research*, 51(23/24), 6828-6835.
doi:10.1080/00207543.2013.852700
- Couto, R. A. (2015). Puzzles, paradoxes, and paradigms: the intellectual legacy of James MacGregor Burns. *Leadership & the Humanities*, 3(1), 19-25.
- Covey, S. (1998). Forward. In L. C. Spears (Ed), *Insights on leadership: Service, stewardship, spirit, and servant-leadership*. New York: John Wiley & Sons.
- Crews, D., & Bhatia, D. (2012). Supervisory practices in the transportation logistics industry. *SAM Advanced Management Journal* (07497075), 77(1), 38-45.
- Dennis, R., & Bocarnea, M. (2005). Development of the servant leadership assessment instrument. *Leadership & Organization Development Journal*, 2005(26), 600–615. doi: 10.1108/01437730510633692
- Dennis, R., & Winston, B. E. (2003). A factor analysis of Page and Wong's servant leadership instrument. *Leadership & Organization Development Journal*, 24(7), 455-459. Retrieved from
<http://search.proquest.com/docview/226925980?accountid=7374>
- Drucker, P. F. (1999). Knowledge-worker productivity: The biggest challenge. *Management Review*, 41(2), 79-94.
- Drury, S. L. (2004). Servant leadership and organizational commitment: Empirical findings and workplace implications. Retrieved from

http://www.regent.edu/acad/sls/publications/conference_proceedings/servant_leadership_roundtable/2004pdf/drury_servant_leadership.pdf

Durrett, R. (2004), *Probability: theory and examples* (4th ed.), Cambridge University Press, ISBN 0521765390

Eagly, A. H., & Karau, S. J. 2002. Role congruity theory of prejudice toward female leaders. *Psychological Review*, 109: 573–598.

Ehrhart, M. G. (2004). Leadership and procedural justice climate as antecedents of unit-level organizational citizenship behavior. *Personnel Psychology*, 57(7), 61-94.

Evangelopoulos, N. (2011). Citing Taylor: Tracing Taylorism's Technical and Sociotechnical Duality through Latent Semantic Analysis. *Journal of Business & Management*, 17(1), 57-74.

Faul, F., Erdfelder, E., Buchner, A., & Lang, A. G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, 41, 1149-1160.

Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2012). *How to design and evaluate research in education*. New York, NY: McGraw-Hill Higher Education.

Fumagalli, L., Laurie, H., & Lynn, P. (2013). Experiments with methods to reduce attrition in longitudinal surveys. *Journal of the Royal Statistical Society Series A-Statistics in Society*, 176(2), 499-519.

Gagliardi, J., Renaud, J., & Ruiz, A. (2012). Models for automated storage and retrieval systems: A literature review. *International Journal of Production Research*, 50(24), 7110-7125. <http://dx.doi.org/10.1080/00207543.2011.633234>

- Gatling, A. (2014). The authentic leadership qualities of business coaches and its impact on coaching performance.
- Graham, J. W. (1991). An essay on organizational citizenship behavior. *Employee Responsibilities and Rights Journal*, 4(4), 249-270.
- Greenleaf, R. K. (1977). *Servant leadership: A journey into the nature of legitimate power and greatness*. New York, NY: Paulist Press,
- Gucel, C., & Begeç, S. (2012). The effect of the servant leadership on organizational citizenship behavior: Case study of a university. *International Journal of Social Sciences and Humanity Studies*, 4, 107-116.
- Guidotti, T. (2011). Taylorism, the aging workforce, and the Biopsychosocial model. *Archives of Environmental & Occupational Health*, 191-192.
- Gul, H., & Sahin, K. (2011). Transformational leadership as a new approach to leadership in the information society and public employees' perception of transformational leadership. *Selcuk Ueniversitesi Sosyal Bilimler Enstituesue Dergisi*, 12(25), 237-249. Retrieved from <http://search.proquest.com/docview/1364688635?accountid=7374>
- Haden, S. P., Humphreys, J. H., Cooke, J., & Penland, P. (2012). Applying Taylor's principles to teams: Renewing a century-old theory. *Journal of Leadership, Accountability and Ethics*, 9(4), 11-20.
- Hajdul, M., & Mindur, L. (2015). Lean and reliable digital supply chains. *Logforum*, 11(1), 15-27. doi:10.17270/J.LOG.2015.1.2
- Horsman, J. H. (2001). Perspectives of servant-leadership and spirit in organizations. *Dissertation Abstracts International*, 62 (03), 1119. (UMI No. 3010149)

- Hu, J., & Liden, R. (2011). Team potency and team effectiveness: An examination of goal and process clarity and servant leadership. *Journal of Applied Psychology*, 96(4), 851-862. <http://dx.doi.org/10.1037/a0022465>
- Huang, S. H., Dismukes, J. P., Shi, J., & Su, Q. (2002). Manufacturing system modeling for productivity improvement. *Journal of Manufacturing Systems*, 21(4), 249-259.
- Hunter, E. M., Neubert, M. J., Perry, S. J., Witt, L., Penney, L. M., & Weinberger, E. (2013). Servant leaders inspire servant followers: Antecedents and outcomes for employees and the organization. *The Leadership Quarterly*, 24, 316-331.
- Iqbal, J., Inayat, S., Ijaz, M., & Zahid, A. (2012). Leadership styles: Identifying approaches and dimensions of leaders. *Interdisciplinary Journal of Contemporary Research in Business*, 4(3), 641-659. Retrieved from <http://search.proquest.com/docview/1041088012?accountid=7374>
- Irving, J. A. (2005). *Servant leadership and the effectiveness of teams* (Doctoral dissertation). Available from ProQuest Dissertations. (UMI No. 305356267)
- Jones, D. (2012). Does servant leadership lead to greater customer focus and employee satisfaction? *Business Studies Journal*, 4(2), 21-35.
- Karavardar, G. (2014). Perceived organizational support, psychological empowerment, organizational citizenship behavior, job performance and job embeddedness: A research on the fast food industry in Istanbul, Turkey. *International Journal of Business and Management*, 9(4), 131-139. Retrieved from <http://search.proquest.com/docview/1525757315?accountid=7374>

- Khater, M., & Mostafa, N. (2011). Selection of productivity improvement techniques via mathematical modeling. *Management Science Letters*, 1, 379-388.
<http://dx.doi.org/doi:10.5267/j.msl.2011.01.006>
- Laub, J. (1999). *Assessing the servant leadership: Development of the servant leadership (SOLA) instrument* (Doctoral dissertation). Available from Dissertation Abstracts International. (UMI No. 9921922)
- Laub, J. (2003). From paternalism to the servant leadership: Expanding the Organizational Leadership Assessment (OLA) model. Paper presented at the Proceedings of the Servant Leadership Research Roundtable.
- Ledbetter, D. S. (2003). Law enforcement leaders and servant leadership: A reliability study of the organizational leadership assessment. *Dissertation Abstracts International*, 64 (11), 4200. (UMI No. 3110778)
- Lepsius, M. (2006). The model of charismatic leadership and its applicability to the rule of Adolf Hitler. *Totalitarian Movements & Political Religions*, 7(2), 175-190.
- Leroy, H., Palanski, M. E., & Simons, T. (2012). Authentic leadership and behavioral integrity as drivers of follower commitment and performance. *Journal of Business Ethics*, 107(3), 255-264. doi:<http://dx.doi.org/10.1007/s10551-011-1036-1>
- Liden, R. C., Wayne, S. J., Chenwei, L., & Meuser, J.D. (2014). Servant leadership and serving culture: Influence on individual and unit performance, *Academy of Management Journal*, 57(5), 1434-1452. doi:10.5465/amj.2013.0034
- Liden, R. C., Wayne, S. J., Zhao, H., & Henderson, D. (2008). Servant leadership: Development of a multidimensional measure and multi-level assessment. *The Leadership Quarterly*, 19, 161-177.

- Lopez-Zafra, E., Garcia-Retamero, R., & Berrios-Martos, M. (2012). The relationship between transformational leadership and emotional intelligence from a gendered approach. *Psychological Record*, 62(1), 97-114.
- Marshall, D. (1998). Snowballing technique. *A Dictionary of Sociology*. Retrieved from <http://www.encyclopedia.com/doc/1O88-snowballingtechnique.html>
- Matwiejczuk, R. (2012). The influence of Logistics potentials on business management. *Logforum Journal*, 8(3), 201-216.
- Melchar, D. E., & Bosco, S. M. (2010). Achieving high organization performance through servant leadership. *Journal of Business Inquiry: Research, Education & Application*, 9(1), 74-88.
- Miears, L. D. (2004). Servant leadership and job satisfaction: A correlational study in Texas education agency region X public schools. *Dissertation Abstracts International*, 65 (9), 3251. (UMI No. 3148083)
- Mildred, G. P., & Taneja, S. (2010). Henri Fayol, practitioner and theoretician - revered and reviled. *Journal of Management*, 16(4), 489-503.
<http://dx.doi.org/10.1108/17511341011073960>
- Mohanta, G., & Thooyamani, K. (2010). Productivity improvement: Knowledge workers. *SCMS Journal of Indian Management*, 7(3), 89-100.
- Murari, K., & Kripa, S. G. (2012). Impact of servant leadership on employee empowerment. *Journal of Strategic Human Resource Management*, 1(1), 28-37.
Retrieved from <http://search.proquest.com/docview/1478027992?accountid=7374>
- Naquin, C. E., & Tynan, R. O. (2003). The team halo effect: why teams are not blamed for their failures. *Journal of Applied Psychology*, 88(2), 332.

- Nichols, T. W., & Erakovich, R. (2013). Authentic leadership and implicit theory: A normative form of leadership? *Leadership & Organization Development Journal*, 34(2), 182-195. doi:<http://dx.doi.org/10.1108/01437731311321931>
- Nickols, F. (2011). Manage your own performance: No one else can. *Performance Improvement*, 50(2), 31. Retrieved from <http://search.proquest.com/docview/856454331?accountid=7374>
- Northouse, P. (2010). *Leadership: Theory and practice* (5th ed.). Thousand Oaks, CA: Sage Publishing.
- Ogunbiyi, O., Oladapo, A., & Goulding, J. (2014). An empirical study of the impact of lean construction techniques on sustainable construction in the UK. *Construction Innovation*, 14(1), 88-107. doi:<http://dx.doi.org/10.1108/CI-08-2012-0045>
- Olhager, J. (2013). Evolution of operations planning and control: from production to supply chains. *International Journal of Production Research*, 51(23/24), 6836-6843. doi:10.1080/00207543.2012.761363
- Parolini, J. L. (2005). Investigating the relationships among emotional intelligence, servant leadership behaviors and servant leadership culture. *Regent University Publications*. Retrieved from http://www.regent.edu/acad/sls/publications/conference_proceedings/servant_leadership_roundtable/2005/pdf/parolini_invest.pdf.
- Parris, D. & Peachey, J. (2013). A systematic literature review of servant leadership theory in organizational contexts. *Journal of Business Ethics*, 113(3), 377-393.

- Patterson, K. A. (2003). *Servant leadership: A theoretical model* (Doctoral dissertation). Available from Dissertation Abstract International. (UMI No. 3082719)
- Penava, S., & Šehić, D. (2014). The relevance of transformational leadership in shaping employee attitudes towards organizational change. *Economic Annals*, 59(200), 131-162.
- Pereira, C. M., & Gomes, J. F. (2012). The strength of human resource practices and transformational leadership: impact on organizational performance. *International Journal of Human Resource Management*, 23(20), 4301-4318.
doi:10.1080/09585192.2012.667434
- Peterson, S., Galvin, B & Lange, D. (2012). CEO servant leadership: Exploring executive characteristics and firm performance. *Personnel Psychology*, 65, 565-596.
- Pick, A., Berry, S., Gilbert, K., & McCaul, J. (2013). Informed consent in clinical research. *Nursing Standard*, 27(49), 44-47.
- Pirvali, A., Ghadam, H. S., & Asadi, A. (2014). Surveying the relationship between the employees organizational citizenship behavior with customer satisfaction. *Kuwait Chapter of the Arabian Journal of Business and Management Review*, 3(6), 147-153. Retrieved from
<http://search.proquest.com/docview/1510284399?accountid=7374>
- Rego, A., Reis J., & Pina, E. C. (2015). Authentic leaders promoting store performance: The mediating roles of virtuousness and potency. *Journal of Business Ethics*, 128(3), 617-634. doi:<http://dx.doi.org/10.1007/s10551-014-2125-8>
- Ruiz, N., Giret, A., Botti, V., & Fera, V. (2011). Agent supported simulation environment for intelligent manufacturing and warehouse management systems.

International Journal of Production Research, 49(5), 1469-1482.

<http://dx.doi.org/10.1080/00207543.2010.522304>

Ruiz-Palomino, P., & Martínez-Canas, R. (2014). Ethical culture, ethical intent, and organizational citizenship behavior: The moderating and mediating role of person-organization fit. *Journal of Business Ethics*, 120(1), 95-108.

doi:<http://dx.doi.org/10.1007/s10551-013-1650-1>

Russell, R. F. (2001). The role of values in servant leadership. *Leadership and Organizational Development Journal*, 22(2), 76-84.

Russell, R. F., & Stone, A. G. (2002). A review of servant leadership attributes: Developing a practical model. *Leadership & Organization Development Journal*, 23(3-4), 145-158.

Sahin, F., Narayanan, A., & Robinson, E. P. (2013). Rolling horizon planning in supply chains: review, implications and directions for future research. *International Journal of Production Research*, 51(18), 5413-5436.

doi:10.1080/00207543.2013.775523

Salimath, M. S., & Jones, III, R. J. (2011). Scientific entrepreneurial management: Bricolage, bootstrapping, and the quest for efficiencies. *Journal of Business Management*, 17(1), 85-103.

Schneider, S. K., & George, W. M. (2011). Servant leadership versus transformational leadership in voluntary service organizations. *Leadership & Organization Development Journal*, 32(1), 60-77.

<http://dx.doi.org/10.1108/01437731111099283>

- Sendjaya, S., & Sarros, J. C. (2002). Servant leadership: Its origin, development, and applications in organizations. *Journal of Leadership & Organizational Studies*, 9(2), 57-64.
- Settoon, R., & Mossholder, K. (2002). Relationship quality and relationship context as antecedents of person and task-focused interpersonal citizenship behavior, *Journal of Applied Psychology*, 87, 255-267.
- Shams, U. R., Shareef, A., Mahmood, A., & Ishaque, A. (2012). Perceived leadership styles and organizational commitment. *Interdisciplinary Journal of Contemporary Research in Business*, 4(1), 616-626.
- Shankar, K. (1999). Towards a framework for managing electronic records in scientific research. *Archival Issues: Journal of the Midwest Archives Conference*, 24(1), 21-35.
- Short, J. C. (2011). The debate goes on: A graphical portrayal of the Sinclair-Taylor editorial dialogue. *Journal of Business Management*, 17(1), 43-55.
- Singh, J., & Raghuwanshi, R. (2014). Role of supply chain management in retail sector. *International Journal of Management Research and Reviews*, 4(11), 1091-1103.
Retrieved from <http://search.proquest.com/docview/1636542254?accountid=7374>
- Spears, L. (1996). Reflections on Robert K. Greenleaf and servant leadership. *Leadership and Organization Development Journal*, 17(7), 33-35.
- Spears, L. (2004). Practicing servant-leadership. *Leader to Leader*, 2004(34), 7-11.
Retrieved from <http://search.proquest.com/docview/218344443?accountid=7374>

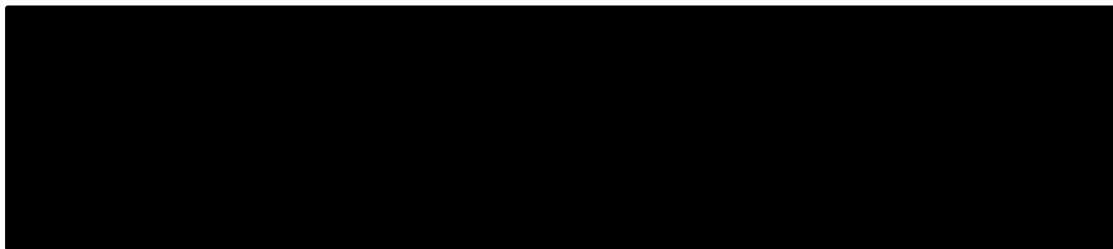
- Srithongrung, A. (2011). The causal relationships among transformational leadership, organizational commitment, and employee effectiveness. *International Journal of Public Administration*, 34(6), 376-388.
- Starosta, G. (2011). Machinery, productive subjectivity and the limits to capitalism in capital and the Grundrisse. *Science & Society*, 75(1), 42-58.
<http://dx.doi.org/10.1521/isis.2011.75.1.42>
- Tabachnick, B., C. & Fidell, L., S. (2007). *Using Multivariate Statistics* (5th edition). Boston, MA: Pearson.
- Taneja, G. P., & Toombs, L. A. (2011). Frederick W. Taylor's scientific management principles: Relevance and validity. *Journal of Applied Management and Entrepreneurship*, 16(30), 60-78.
- Van Dierendonck, D., Stam, D., Boersma, P., De Windt, N., & Alkema, J. (2014). Same difference? Exploring the differential mechanisms linking servant leadership and transformational leadership to follower outcomes. *The Leadership Quarterly*, 25(3), 544-562. <http://dx.doi.org/http://dx.doi.org/10.1016/j.leaqua.2013.11.014>
- Vidalis, M., Koukoumialos, S., Ntio, D., & Varlas, G. (2012). Performance evaluation of a merge supply system with a distribution center, two reliable suppliers, one buffer and Erlang lead times. *International Journal of Business Science & Applied Management*, 7(3), 42-55.
- Wallin, D. C., & Crippen, C. (2008). Mentorship and gendered assumptions: Examining the discourse of manitoba superintendents. *EAF Journal*, 19(2), 56-IV. Retrieved from <https://lopes.idm.oclc.org/login?url=http://search.proquest.com.lopes>

- Walumbwa, F. O., Hartnell, C. A., & Oke, A. (2010). Servant leadership, procedural justice climate, service climate, employee attitudes, and organizational citizenship behavior: A cross-level investigation. *Journal of Applied Psychology*, 95, 517. <http://dx.doi.org/10.1037/a0018867>
- Wang, H., Chen, S., & Xie, Y. (2010). An RFID-based digital warehouse management system in the tobacco industry: A case study. *International Journal of Production Research*, 48(9), 2513-2548. <http://dx.doi.org/10.1080/00207540903564918>
- Wei, Y. (2014). The benefits of organizational citizenship behavior for job performance and the moderating role of human capital. *International Journal of Business and Management*, 9(7), 87-99. Retrieved from <http://search.proquest.com/docview/1545342313?accountid=7374>
- Wong, P. S., & Neck, P. A. (2012). A practitioner's approach to Drucker's knowledge-worker productivity in the 21st century - a new model (part two). *Revista De Management Comparat International*, 13(4), 543-560. Retrieved from <http://search.proquest.com/docview/1355867169?accountid=7374>
- Wong, P. S., & Neck, P. A. (2013). When east meets west a proposed study to develop, maintain and reinstate harmony in business. *International Conference on Business Strategy & Organizational Behaviour (Bizstrategy)*, 104-114.
- Wren, D. (2011). The Centennial of Frederick W. Taylor's Principles of Scientific Management: A Retrospective Commentary. *Journal of Business & Management*, 17(1), 11-22.

- Wright, B. E., & Pandey, S. K. (2010). Transformational leadership in the public sector: Does structure matter? *Journal of Public Administration Research & Theory*, 20(1), 75-89. <http://dx.doi.org/10.1093/jopart/mup003>
- Yin, R. K. (2009). *Case Study Research: Design and Methods* (4th ed.). London: SAGE Publishing.
- Yokl, R. T. (2011). The future of supply chain expense management. *Healthcare Financial Management: Journal of the Healthcare Financial Management Association*, 65(3), 38-40. Retrieved from <http://search.proquest.com/docview/858659960?accountid=7374>
- Young, L. M. (1994). Managing creative people. *Journal of Creative Behavior*, 28, 16-20. <http://dx.doi.org>
- Zheng, W., Zhang, M., & Li, H. (2012). Performance appraisal process and organizational citizenship behavior. *Journal of Managerial Psychology*, 27, 732-752.
- Zhu, W. (2006). *Authentic leadership and follower moral decision intention* (Doctoral dissertation). Available from ProQuest Dissertations.

Appendix A



Site Authorization Letter



January 13, 2016

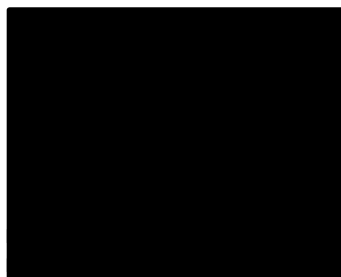
Grand Canyon University
Office of Academic Research
College of Doctoral Studies
3300 W. Camelback Road
Phoenix, AZ 85017
Tele: 602-639-6804

Dear IRB Members,

Upon reviewing the proposed study, *Servant Leadership: An Effective Leadership Model for Achieving Optimal Productivity in a Distribution Center Environment*, presented by Stacey Hodoh, I have granted authorization for Stacey Hodoh to conduct research at the following K 


I understand the purpose of this quantitative correlational research study is to examine possible relationships between servant leadership behaviors, as measured by the Organizational Leadership Assessment tool (OLA), amongst distribution center workers and it's correlation to high levels of team productivity. We understand Stacey will conduct the following research activities: (1) **contact our employees to recruit participation in this research project**, (2) **collect demographic data from each distribution center site**, (3) **receive individual productivity data from the on-site HR Manager**, and (4) **administer, collect, assess, and analyze OLA survey data with individual productivity data** from site participants for the research purposes indicated herein. It is understood that this project will end no later than April 30, 2016.

Furthermore, to ensure that our employees are protected, Stacey has agreed to provide me a copy of any Grand Canyon University IRB consent documents before she recruits our employees to participate in her research study. Stacey has also agreed to provide a final copy of the approved dissertation document upon university approval. We look forward to learning more about the results of Stacey's research and the potential benefits it may offer our organization and the supply chain industry in general. If there are any concerns regarding the permissions being granted by this letter, please feel free to contact me at the phone number listed below.



Appendix B

IRB Approval Letter



GRAND CANYON
UNIVERSITY™

3300 West Camelback Road, Phoenix Arizona 85017 602.639.7500 Toll Free 800.800.9776 www.gcu.edu

DATE: January 22, 2016

TO: Stacey Hodoh
FROM: Grand Canyon University Institutional Review Board

STUDY TITLE: [838958-1] Servant Leadership: An Effective Leadership Model for Achieving Optimal Productivity in a Distribution Center Environment

IRB REFERENCE #:
SUBMISSION TYPE: New Project

ACTION: DETERMINATION OF EXEMPT STATUS
DECISION DATE: January 22, 2016

REVIEW CATEGORY: Exemption category # [7.2]

Thank you for your submission of New Project materials for this research study. Grand Canyon University Institutional Review Board has determined this project is EXEMPT FROM IRB REVIEW according to federal regulations.

We will put a copy of this correspondence on file in our office.

If you have any questions, please contact Stephanie Henkel at 602-639-8010 or stephanie.henkel@gcu.edu. Please include your study title and reference number in all correspondence with this office. cc:

Appendix C

Informed Consent

Grand Canyon University



College of Doctoral Studies
3300 W. Camelback Road
Phoenix, AZ 85017
Phone: 602-639-7804
Email: irb@gcu.edu

INFORMED CONSENT FORM (SOCIAL BEHAVIORAL) MINIMAL RISK

CONSENT FORM

Servant Leadership: An Effective Leadership Model for Achieving Optimal Productivity in a Distribution Center Environment

INTRODUCTION

The purposes of this form are to provide you (as a prospective research study participant) information that may affect your decision as to whether or not to participate in this research and to record the consent of those who agree to be involved in the study.

RESEARCH

Dr. D. Hodoh, Principal Investigator, Grand Canyon University has invited your participation in a research study.

STUDY PURPOSE

Several studies have been conducted looking into the subject of servant leadership and performance. None have explored the relationship between servant leadership and productivity in a for-profit distribution center environment.

DESCRIPTION OF RESEARCH STUDY

If you decide to participate, then as a study participant you will join a study involving research of servant leadership behaviors in the workplace and levels of productivity. Participation is voluntary and open to all employees working at the distribution site (Elkton, FL, Weston (FL), or Portland, OR). Participants can skip questions in the survey if they so choose. Participants can also opt to not have their average 2014-2015 individual productivity rate shared.

If you say YES, then your participation will last for a duration of 15 minutes at the Elkton (FL), Weston (FL), or Portland (OR) DC. Approximately 132 of subjects will be participating in this study.

RISKS

There are no known risks from taking part in this study, but in any research, there is some possibility that you may be subject to risks that have not yet been identified.

BENEFITS

Although there may be no direct benefits to you, the possible benefits of your participation are to provide distribution center leaders with information on (a) the effect of servant leadership behaviors on individual worker productivity, (b) the effect of servant leadership behavior on overall organizational performance, and (c) servant leader behaviors that may improve leadership effectiveness.

NEW INFORMATION

If the researchers find new information during the study that would reasonably change your decision about participating, then they will provide this information to you.

CONSENT FORM

Servant Leadership: An Effective Leadership Model for Achieving Optimal Productivity in a Distribution Center Environment

CONFIDENTIALITY

information obtained in this study is strictly confidential. The results of this research study may be used in report presentations, and publications, but the researchers will not identify you. In order to maintain confidentiality of your record, the Human Resource Manager will keep the names of all participants confidential by assigning a random 3-digit unique participant code to each participant, in lieu of the Researcher accepting personal information on the completed survey. Information will be secured in a password protected database system and spreadsheet, with access to the confidential information provided to the principal investigator.

WITHDRAWAL PRIVILEGE

Participation in this study is completely voluntary. It is ok for you to say no. Even if you say yes now, you are free to say no, stop, and withdraw from the study at any time. Participation is voluntary and nonparticipation or withdrawal from the study will not affect how you are treated, or your employment status with the organization.

COSTS AND PAYMENTS

The researchers want your decision about participating in the study to be absolutely voluntary. No payments will be provided for your participation.

VOLUNTARY CONSENT

If you have any questions you have concerning the research study or your participation in the study, before or after your consent, you may contact Stacey D. Hodoh, 404-764-8274 or sdhodoh@my.gcu.edu.

If you have questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you may contact the Chair of the Institutional Review Board, through the College of Doctoral Studies at (602) 639-7804.

This consent form explains the nature, demands, benefits and any risk of the project. By signing this form you agree knowingly to assume the risks involved. Remember, your participation is voluntary. You may choose not to participate or to withdraw your consent at any time without penalty or loss of benefit. In signing this consent form, you are not waiving any legal claims, rights, or remedies. A copy of this consent form will be given (offered) to you.

Your signature below indicates that you consent to participate in the above study.

Subject's Signature

Printed Name

Date

INVESTIGATOR'S STATEMENT

I certify that I have explained to the above individual the nature and purpose, the potential benefits and possible risks associated with participation in this research study, have answered any questions that have been raised, and have witnessed the above signature. These elements of Informed Consent conform to the Assurance given by Grand Canyon University to the Office for Human Research Protections to protect the rights of human subjects. I have provided (offered) the subject/participant a copy of this signed consent document."

Signature of Investigator

Date

Appendix D

Copy of Instruments and Permissions Letters to Use the Instruments



Organizational Leadership Assessment

4243 North Sherry Drive
Marion, IN 46952 (765) 664-0174
OLA@OLAGroup.com

General Instructions

The purpose of this instrument is to allow organizations to discover how their leadership practices and beliefs impact the different ways people function within the organization. This instrument is designed to be taken by people at all levels of the organization including workers, managers and top leadership. As you respond to the different statements, please answer as to what you believe is generally true about your organization or work unit. Please respond with your own personal feelings and beliefs and not those of others, or those that others would want you to have. Respond as to how things *are* ... not as they could be, or should be.

Feel free to use the full spectrum of answers (from Strongly Disagree to Strongly Agree). You will find that some of the statements will be easy to respond to while others may require more thought. If you are uncertain, you may want to answer with your first, intuitive response. Please be honest and candid. The response we seek is the one that most closely represents your feelings or beliefs about the statement that is being considered. There are three different sections to this instrument. Carefully read the brief instructions that are given prior to each section. Your involvement in this assessment is anonymous and confidential.

Before completing the assessment it is important to fill in the name of the organization or organizational unit being assessed. If you are assessing an organizational unit (department, team or work unit) rather than the entire organization you will respond to all of the statements in light of that work unit.

Copyright © 1998-2016 by James A. Laub of the OLAGroup. All Rights Reserved.

IMPORTANT: Please complete the following information.

3-Digit Identifier Code ☐☐☐

Organization Name:

Work location (select one):

- ☐ DC# 1
- ☐ DC# 2
- ☐ DC# 3

Job Function/Role (select one):

- ☐ Receiving/unloading
- ☐ Putaway
- ☐ Orderfilling
- ☐ Replenishment/stocking
- ☐ Loading
- ☐ QA/QC/Admin/HR
- ☐ Manager/Supervisor
- ☐ Top Leadership (VP, Director, General Manager)

Age (select one):

- ☐ 18 – 34 years old
- ☐ 35 – 50 years old
- ☐ 51 – 69 years old
- ☐ Over 69 years old

Gender (select one):

- ☐ Female
- ☐ Male

Ethnicity (select one):

- ☐ White or Caucasian
- ☐ Black or African American
- ☐ Hispanic or Latino
- ☐ Native Hawaiian or Other Pacific Islander
- ☐ American Indian or Alaskan Native
- ☐ Asian
- ☐ Unknown
- ☐ I choose not to share my ethnicity

Tenure with organization (select one):

- ☐ Less than 1 year
- ☐ 1 - 2 years
- ☐ 3 - 5 years

- ☐ 5 - 7 years
☐ More than 7 years

Highest level of education completed (select one):

- ☐ Attended high school
☐ High school diploma
☐ Associate's degree
☐ Bachelor's degree
☐ Master's/Doctorate degree

Please provide your response to each statement by placing an **X** in one of the five boxes

1	2	3	4	5
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

Section 1 In this section, please respond to each statement as you believe it applies to **entire organization** (or organizational unit) including workers, **the** managers/supervisors and top leadership.

In general, people within this organization

	1	2	3	4	5
1 Trust each other					
2 Are clear on the key goals of the organization					
3 Are non-judgmental – they keep an open mind					
4 Respect each other					
5 Know where this organization is headed in the future					
6 Maintain high ethical standards					
7 Work well together in teams					
8 Value differences in culture, race and ethnicity					
9 Are caring and compassionate towards each other					
10 Demonstrate high integrity and honesty					
11 Are trustworthy					
12 Relate well to each other					
13 Attempt to work with others more than working on their own					
14 Are held accountable for reaching work goals					
15 Are aware of the needs of others					
16 Allow for individuality of style and expression					

17 Are encouraged by supervisors to share in making <i>important</i> decisions					
18 Work to maintain positive working relationships					
19 Accept people as they are					
20 View conflict as an opportunity to learn and grow					
21 Know how to get along with people					

Please provide your response to each statement by placing an **X** in one of the five boxes

1	2	3	4	5
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

Managers/Supervisors and Top Leadership in this Organization	1	2	3	4	5
22 Communicate a clear vision of the future of the organization					
23 Are open to learning from those who are <i>below</i> them in the organization.					
24 Allow workers to help determine where this organization is headed					
25 Work alongside the workers instead of separate from them					
26 Use persuasion to influence others instead of coercion or force					
27 Don't hesitate to provide the leadership that is needed					
28 Promote open communication and sharing of information					
29 Give workers the power to make <i>important</i> decisions					
30 Provide the support and resources needed to help workers meet their goals					
31 Create an environment that encourages learning					
32 Are open to receiving criticism and challenge from others					
33 Say what they mean, and mean what they say					
34 Encourage each person to exercise leadership					
35 Admit personal limitations & mistakes					
36 Encourage people to take risks even if they may fail					

37 Practice the same behavior they expect from others					
38 Facilitate the building of community & team					
39 Do not demand special recognition for being leaders					
40 Lead by example by modeling appropriate behavior					
41 Seek to influence others from a positive relationship rather than from the authority of their position					
42 Provide opportunities for all workers to develop to their full potential					
43 Honestly evaluate themselves before seeking to evaluate others					
44 Use their power and authority to benefit the workers					
45 Take appropriate action when it is needed					

Section 2 In this next section, please respond to each statement as you believe it applies to the **leadership** of the organization (or organizational unit) including managers/supervisors and top leadership

Please provide your response to each statement by placing an **X** in one of the five boxes

1	2	3	4	5
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

Managers/Supervisors and Top Leadership in this Organization	1	2	3	4	5
46 Build people up through encouragement and affirmation					
47 Encourage workers to work <i>together</i> rather than competing against each other					
48 Are humble – they do not promote themselves					
49 Communicate clear plans and goals for the organization					
50 Provide mentor relationships in order to help people grow professionally					
51 Are accountable and responsible to others					
52 Are receptive listeners					
53 Do not seek after special status or the “perks” of leadership					
54 Put the needs of the workers ahead of their own					

Section 3

In this next section, please respond to each statement as you believe it is true about **you personally** and **your role** in the organization (or organizational unit).

In viewing my own role ...	1	2	3	4	5
55 I feel appreciated by my supervisor for what I contribute					

56 I am working at a high level of productivity					
57 I am listened to by those <i>above</i> me in the organization					
58 I feel good about my contribution to the organization					
59 I receive encouragement and affirmation from those <i>above</i> me in the organization.					
60 My job is important to the success of this organization					
61 I trust the leadership of this organization					
62 I enjoy working in this organization					
63 I am respected by those <i>above</i> me in the organization					
64 I am able to be creative in my job					
65 In this organization, a person's <i>work</i> is valued more than their <i>title</i>					
66 I am able to use my best gifts and abilities in my job					



www.olagroup.com

September 20, 2015

Stacey Hodoh

Dear Stacey,

I hereby give my permission for you to use the Organizational Leadership Assessment (OLA) instrument in your research study. I am willing to allow you to utilize the instrument with the following understandings:

- You will use the OLA in its entirety, as it is, without any changes
- You will use the online version of the OLA
- You will use this assessment only for your research study and will not sell or use it with any compensated management/curriculum development activities
- You will include the copyright statement on all copies of the instrument used for your dissertation
- You will provide a digital copy of your final dissertation as well as any future reports, articles or other publications that make use of the OLA data.
- You will allow me to post your research and dissertation on the OLAgroup website

Sincerely,

A handwritten signature in brown ink that reads "Jim Laub".

Jim Laub, Ed.D.
OLAgroup
18240 Lake Bend Drive
Jupiter, FL, 33458

I understand these conditions and agree to abide by these term and conditions

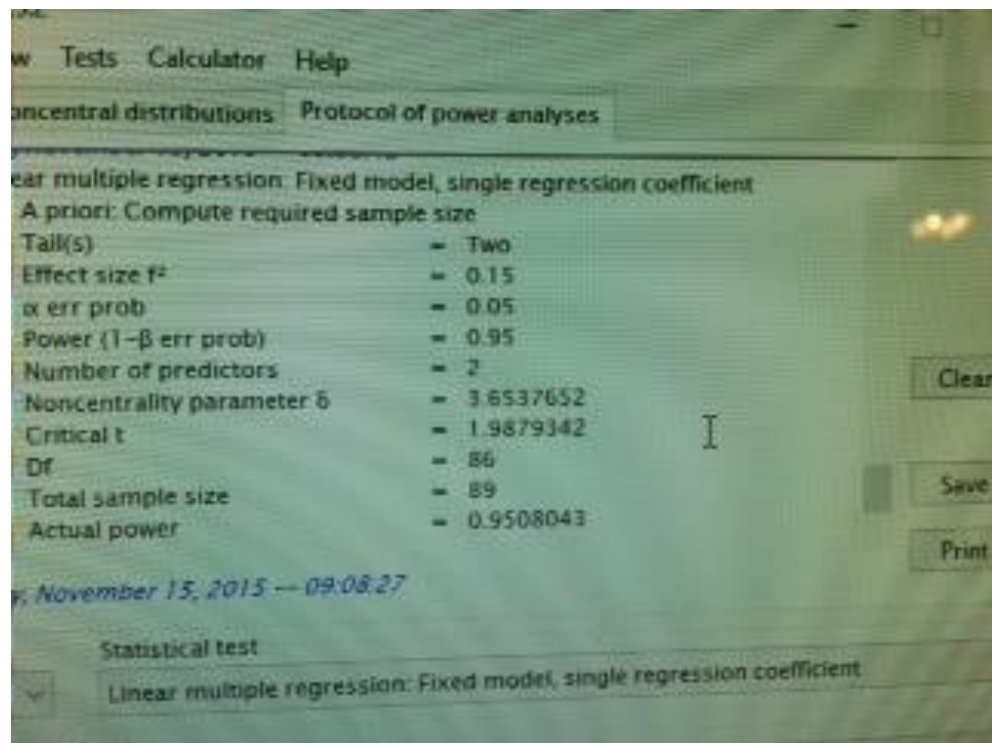
A handwritten signature in black ink, appearing to read "Stacey D. Hodoh".

Stacey D. Hodoh

Date: 9/20/2015

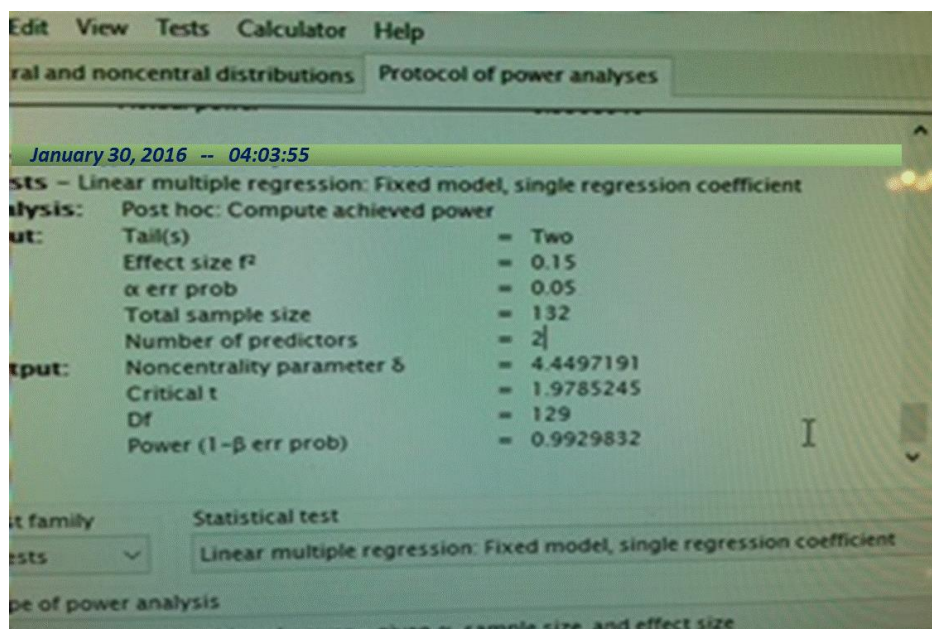
Appendix E

A-Priori Power Analysis (G*Power Screenshot)



Appendix F

Post Hoc Power Analysis (G*Power Screenshot)



Appendix G

Recruitment Script



Grand Canyon University
College of Doctoral Studies
3300 W. Camelback Road
Phoenix, AZ 8501
Phone: 602-639-780
Email: irb@gcu.edu

RECRUITMENT SCRIPT

Servant Leadership: An Effective Leadership Model for Achieving Optimal Productivity in a Distribution Center Environment

January 2016

To All Employees:

I am a graduate learner under the direction of Dr. Jimmy Brown in the College of Doctoral Studies at Grand Canyon University. I am conducting a research study designed to explore the relationship between servant leadership and productivity in a for-profit distribution center environment. I am recruiting individuals to complete a servant leadership questionnaire which will take approximately 15 minutes. All participants must be employed with the subject organization as a full time employee for a minimum period of 6 months, and must be 18 years of age or older.

The survey link can be accessed by typing in the following URL:
<http://www.olagroup.com/Display.asp?Page=OlaLogin>. The survey will be available for 5 days. Your survey responses will not be shared or disclosed by the Principal Researcher. To participate in the survey, you will need to see the on-site human resource manager to receive a 3-digit participant code (PIN# to access the survey), and complete an Informed Consent form. Your 3-digit randomly assigned code will be required to initiate the survey and is intended to help keep your responses confidential. At the time of the survey, I will provide a unique organizational code for each work shift. The organizational code and PIN will be used to log in to the survey website.

As part of your participation in this survey, the organization will provide your annual average individual productivity performance expressed in UPH (example, 124.4 UPH). There will not be any additional personal information requested from you or human resources for your participation in this study (i.e., name, address, SSN).

If you choose to participate, your participation in this study is voluntary. If you have any questions concerning the research study, please call me at (404) 764 – 8274 or I can be contacted at shodoh@my.gcu.edu.

Sincerely,

Stacey D. Hodoh, Principal Investigator

- Phone: (404) 764 - 8274