University of South Florida
Scholar Commons

Graduate Theses and Dissertations

Graduate School

2010

Prioritizing those who follow: Servant leadership, needs satisfaction, and positive employee outcomes

Kristin N. Saboe
University of South Florida

Prioritizing Those Who Follow:

Servant Leadership, Needs Satisfaction, and Positive Employee Outcomes

By

Kristin N. Saboe

Dedication

It is with much appreciation and admiration that I dedicate this thesis to my family, mentors and friends who provided much needed support, encouragement and assistance. I would especially like to express my gratitude to my parents who have, through their example, taught me that the path to success is through dedication, hard-work and appreciating those who helped along the way. Special thanks are also due to Kelly Smith, my research assistant and friend, who provided much needed motivation and encouragement. In addition, I would like to thank my best friends who spent many hours listening with an open ear, counseling me and offering needed mental breaks during the best and worst of times. Lastly, this project would not have been possible without the mentorship of Karen Nelson and Pete DeLisle who helped to ignite my passion in leadership and psychology early in my studies and continue to offer their guidance as my career progresses. Thank you to all of you for being a part of my life!

Acknowledgements

The help, encouragement and support from my primary co-chair, Russell E. Johnson,

deserves acknowledgement. Additionally, the guidance offered by key individuals at each

of the three organizations sampled was much appreciated. I am thankful to have the

support and opportunities for growth provided by these individuals.

Table of Contents

List of Tables

List of Figures

Prioritizing Those Who Follow:

Servant Leadership, Needs Satisfaction, and Positive Employee Outcomes

Kristin N. Saboe

Abstract

Servant leaders seek to fulfill the needs of followers and promote their success and well-being through a follower-centric, generative approach to leadership. This study proposes a model to describe the mediating mechanism of follower needs satisfaction, as proposed by Self-Determination Theory (SDT), for the relationship between servant leadership (SL) behaviors and employee outcomes (e.g., job performance, job attitudes, well-being, community prosocial behavior). Supervisor-subordinate dyads ($N = 147$ pairs) from four diverse organizations completed surveys about the supervisors' leadership behaviors and the subordinates' job experiences. Structural equation modeling and regression analyses were conducted to determine the nature of relationships between SL, SDT needs, and the organizational outcomes. Direct and indirect effects were observed among these variables, suggesting SDT primarily mediates the relationship between supervisors' SL behaviors and subordinates' job attitudes.

Introduction

Fundamentally, leaders are defined by their ability to influence others (Kaiser, Hogan & Craig, 2008). Such a basic definition of leadership underscores two critical assumptions about leader-follower relationships and motivational regulation. First, a leader can only invoke influence in the presence of affected followers. This addresses the motivational outputs of leadership. Identifying "who" and "what" leaders prioritize within their values hierarchy is critical for defining the target (e.g. organization, followers, board members) of leaders' actions. Most leadership theories prioritize the needs and growth of the organization and its leadership, whereas others, such as servant leadership (SL), place priority with followers (Spears, 1995; Stone, Russell, & Patterson, 2004). SL is defined by the ethical responsibility of leaders to prioritize the needs, growth, and well-being of their followers above personal and organizational interests (Graham, 1991; Spears).

Second, followers may not be motivated to internalize the leaders' goals and values, thus serving the leader only in deed but not in creed (Graham, 1991). Addressing the motivational inputs of followers, the second assumption highlights the importance of intrinsic versus extrinsic regulatory sources for followers' motivation. Self-determination theory (SDT; Gagné & Deci, 2005; Ryan & Deci, 2000) posits that people experience greater well-being and achieve higher performance levels when their needs for competence, autonomy, and relatedness are fulfilled (Gagné & Deci). By satisfying these

needs for followers, Mayer, Bardes, and Piccolo (2008) demonstrated that SL behaviors were related to followers' job satisfaction. Based on this finding, as well as SDT and the philosophy of SL, followers of leaders who display SL behaviors are likely to pursue their leaders' aims both in creed and in deed, rather than merely the latter. When such a state occurs, SDT suggests that followers will experience enhanced welfare and performance.

The purpose of this study is to examine the mediating mechanism of needs satisfaction for supervisor-performed SL behaviors and subordinate outcomes. Specifically, a model is proposed in which the fulfillment of subordinates' needs, defined by SDT, mediates the relationship between SL behaviors of supervisors and three clusters of subordinates' workplace outcomes: job performance, well-being, and social cohesion. A test of this model provides as least three contributions to the literature. First, this study provides a holistic approach to the study of leadership, motivation, and follower outcomes by testing all three components within a single model. A large volume of existing leadership research has examined relationships of leaders' traits and behaviors with followers' behaviors, while ignoring the likely mediating role of followers' motivation (Lord & Brown, 2004). Several important basic relationships have been identified within the few empirical studies published on SL and organizational outcomes. Thus, support is mounting for the positive impacts of SL, as proposed in Greenleaf's original atheoretical (Avolio & Gardner, 2005) philosophy of SL (Greenleaf, 1970, 1991). Specifically, empirical findings support SL's relationships with subordinate job performance (Liden, Wayne, Zhao, & Henderson, 2008), job satisfaction (Barbuto & Wheeler, 2005; Mayer, Bardes, & Piccolo, 2008), prosocial behaviors (Ehrhart, 2004;

Walumbwa, Hartnell, & Oke, 2010), affective commitment (Liden et al.), regulatory

focus (Neubert, Kacmar, Carlson, Chonko, & Roberts, 2008) and justice perceptions

(Ehrhart; Mayer et al.). Additionally, SL behaviors are associated with reduced

counterproductive work behaviors committed by subordinates (Krebs, 2005), enhanced

leader-member relations (Barbuto & Wheeler, 2005; Liden et al.), improved

subordinates' trust in leaders and organizations (Joseph & Winston, 2005; Reinke, 2004)

and improved organizational climates (Walumbwa, Hartnell, & Oke). These basic

relationships are enlightening but fail to address *how* SL influences followers' motivation

which, then, lend to outcomes. An empirical examination, with a model of leadership

behaviors, follower motivation, and outcomes, will provide a more complete picture of

how SL motivates subordinates to think and act in an organizational context.

Second, this study contributes by establishing basic and complex relationships

amongst the focal constructs. It also demonstrates mechanisms through which SL enables

advantageous workplace outcomes for employees and, indirectly, the organization. SL

has maintained prominence amongst practitioners as a conceptual model of behavior

since it was coined by Greenleaf in 1970, but remains in its infancy as an empirically

defined construct. Providing empirical substantiation and theoretical grounding for the

effectiveness of SL in organizations gives credence to the atheoretical and practice-based

SL philosophy. In addition, there is a mounting interest amongst organizations to promote

ethical behaviors and socially responsible practices in business (Brown, Treviño, &

Harrison, 2005). SL promotes ethical leadership behaviors by prioritizing the welfare and

regenerative growth of employees. Organizations seeking to build a greater ethical

framework would be wise to consider the contribution of SL in light of research

suggesting the power of leadership's cascading effects for an organization's ethical tone (Mayer, Kuenzi, Greenbaum, Bardes, & Salvador, 2009).

Third, this study provides a framework for SDT by demonstrating its utility within industrial and organizational research, an area which has yet to fully integrate SDT as a valuable theory of motivation. SDT argues that motivation, regulated by an inner-intention to act (intrinsic regulation) or prompted by sources external (extrinsic regulation) to the individual but largely congruent with his or her values and beliefs, will maximize well-being and performance (Gagné & Deci, 2005). For the latter conditions to be achieved, the three primary needs of autonomy, competence, and relatedness must be satisfied by the social environment (Deci & Ryan, 2000; Ryan & Deci, 2000). Leaders play a critical role in satisfying needs since they can set the tone for a supportive social environment (Kaiser, Hogan & Craig, 2008; Kozlowski & Doherty, 1989). Despite SDT being a potentially fruitful theoretical explanation for how leaders influence their followers, it has been applied to very few leadership studies. Only one study (Mayer, Bardes, & Piccolo, 2008) has utilized SDT within the literature on SL, though several scholars have defined SL as behaviors which fulfill followers' needs (e.g., Graham, 1991; Liden et al, 2008; Spears, 1995). With regards to SDT, this study will serve as an informative quantitative study, act as an ambassador of SDT for organizational and leadership scholarship, and answer a call by Gagné and Deci (2005) for further research using SDT within organizational contexts. By placing priority with the follower, SL can play a pivotal role in the fulfillment of basic human needs, specifically those defined by SDT which lend to enhanced workplace outcomes.

Servant Leadership

The concept and term "servant leader" was coined by Greenleaf (1970) as an experienced-based, atheoretical conception of best-practices for leadership behaviors. According to Greenleaf, SL promotes followers' well-being by fulfilling basic human needs and emphasizing the necessity of moral safeguards to guide responsible leadership behavior. SL stands in stark contrast to many other typologies of leadership behaviors which place leaders as servants to organizations or followers as servants to their leaders.

Much of the scholarship in leadership has proposed a leader-centric perspective in which followers serve the motives, growth, and success of leaders and their organizations (Stone, Russell, & Patterson, 2004). The leaders' motives, growth, and success place priority with serving the organization over employees, due in part to their ostensible performance being contingent on the performance of the organization (Hogan, Curphy & Hogan, 1994; Smith, Carson, & Alexander, 1984). Such an approach to improved organizational outcomes may fail to manifest the full capabilities and enthusiasm of its employees, if the employees' basic needs and growth are underserved. In contrast to leader-centric perspectives, SL is characterized by behaviors serving followers which promote the followers' growth and need satisfaction through ethical motives and means (Greenleaf, 1970; Graham, 1991; Spears, 1995). Thus, servant leaders espouse a follower-centric leadership approach (Barbuto & Wheeler, 2006; Stone, Russell, & Patterson, 2004) in which followers are valued, in a Kantian sense, as ends rather than merely as means to an end.

Distinguishing SL from other types of leadership. Though other types of leadership behaviors and relationships are associated with each of the criteria examined

in the proposed model (e.g., job performance, subordinate well-being, and social cohesion), they fail to satisfy all the criteria simultaneously. Notably, SL has accounted for incremental variance over similar leadership styles in subordinate outcomes with regard to job performance, prosocial work behaviors, job satisfaction, leader-member exchange, affective organizational commitment and the impact of transformational leadership (Barbuto & Wheeler, 2006; Ehrhart, 2004; Liden et al., 2008). This suggests that, above all else, servant leaders are uniquely effective at promoting the well-being and success of their subordinates and encouraging stewardship within the organization.

Seeking to further define SL as a distinct set of leadership behaviors begs the question, "Do we need yet another construct to describe leader behaviors?" The answer to this is largely contingent on the incremental utility that a leadership style, or group of behaviors, offers when understood in the context of its related counterparts. Past theory and research supports the claim that SL is a unique construct, specifically in the context of three of its closest relatives, transformational leadership, charismatic leadership, and ethical leadership. Social exchange theory (Blau, 1964) and social learning theory (Bandura, 1977, 1986) will be used to buttress the empirical evidence for the discriminant validity of the construct of SL.

Based upon social exchange theory (Blau, 1964), SL followers will be more likely to respond positively to the leader's directives because they are receiving growth and need fulfillment in return for their performance. More specifically, Blau proposed that individuals act according to norms of behavior and self-interest. These are attributed to a norm of reciprocity in which we expect others to respond to us in a similar fashion as we respond to them. Expecting reciprocation from others requires trust. Thus, social

exchange theory argues that in the presence of trust, we will give so long as we are given to (Blau). A primary tenet of SL is the leader's investment in others' success. SL has also been linked with improvements in subordinates' trust in their leader and organization (Joseph & Winston, 2005). Thus, it follows that SL provides an environment of trust in which dyadic exchanges are encouraged as servant leaders invest in their followers and their followers reciprocate the investment. The organismic social exchange between servant leaders and followers also highlights the generative nature of SL, a characteristic not common to other leadership styles.

Based upon social learning theory (Bandura, 1977, 1986), servant leaders serve as models of desired values and behaviors, increasing the odds that followers will internalize and adopt similar values and behaviors. With the passage of time, followers are promoted within organizations and become the organizations' newest leaders. SL boasts a generative approach to the promotion of followers' growth and well-being. According to social learning theory, as past followers seek to achieve success and promotion within an organization, they are likely to model the behaviors of their successful leaders. Thus, servant leaders will foster SL behaviors amongst their followers. With regard to the model proposed in this study, social learning theory and SDT suggests that as followers model and adopt the behaviors of their servant leaders, greater internalization of SL values and behaviors will occur. According to SDT, enhanced follower outcomes will ensue as followers mirror the values and behaviors of a servant leader.

Graham (1991) proposed that leadership guided by a concern for behavioral ethics is a distinctive quality of SL which is not captured by other leadership constructs, such as

transformational and charismatic leadership. The lack of ethical consideration has taken center-stage more recently as scholars (Price, 2003) have attempted to identify transformational and charismatic leadership behaviors which are and are not ethically-driven (e.g. authentic, inauthentic). Though transformational leadership (Avolio & Bass, 1995; Bass, 2000; Bass & Steidlmeier, 1999) seeks to evoke change in followers, it does not require leaders to consider the ethicality of the aims and the actions prescribed by them. According to social learning theory, leaders who are transformational and/or charismatic but lack regard for ethics will be less likely to promote ethical behavior amongst followers. Since the leader is not modeling ethicality, in their values and/or behavior, the follower will not have the opportunity to imitate leader-driven ethicality.

The absence of an ethical focus in transformational and charismatic leadership is also of concern when considering social exchange theory. If the follower does not feel the leader acts ethically, then they may be less likely to engage in exchange relations which are notably ethical or just. Apathy for ethics within social exchanges may extend beyond the leader-follower dyadic relationship and lend to general unethical behavior by followers. This may be manifested in a variety of organizational outcomes, such as higher occurrences of counterproductive work behaviors, reduced commitment and workplace safety and lower levels of corporate social responsibility. As a specific example of this, Walumbwa, Hartnell, and Oke (2010) found that SL behaviors increased prosocial behaviors amongst employees and this relationship was amplified when the organization's procedural justice climate and positive service climate were strong. SL, unlike transformational and charismatic leadership, attends to ethics as a central characteristic of the leader's motivation and behavior. Thus, SL, according to both social

learning theory and social exchange theory, will engender greater ethical behavior amongst followers and within social interactions, respectively.

It should be noted that the initial conceptualization of transformational and charismatic leadership did address ethicality. Burns' (1978) original conceptualization of transformational leadership, which incorporated key characteristics of charismatic leadership, included ethics and just behavior as a component of an effective transformational leader. However, the maintenance of ethics as a transformational leadership characteristic has not been maintained in its contemporary usage, notably one guided by Avolio and Bass (1995). Focusing on ethical behavior, SL provides incremental utility and is notably unique from transformational and charismatic leadership.

Beyond ethics, transformational, charismatic and servant leaders seek to engender change by motivating followers to act based upon an internal desire to do so. The latter assumes followers *want* to or have a *desire* to change. Graham (1991), in his review of various leadership styles including SL, notes that followers of transformational and charismatic leaders may not want to change. Since transformational leadership focuses its primary aims at the organization, with the exception of the idealized consideration dimension which is partially follower-focused, followers have little incentive to intrinsically desire growth and transformation in the direction extrinsically promoted by their transformational leader. Social exchange theory supports the notion that when the leader's organizational goals are not aligned/focused on the followers' personal goals, misalignment occurs. Such a misalignment in aims will lead to fewer opportunities for reciprocation since leaders serving their organization may not serve the follower in such a

way that the follower feels they "owe" something back to the leader. SL however is follower-focused. Thus, servant leaders will be more likely to have their aims aligned with those of the follower, prompting a greater exchange relationship.

In the 1940's and 50', the Ohio State Leadership Study identified two complimentary leadership factors: initiating structure and individualized consideration (Fleishman, 1953). Building on this and Burns' work (1978), Avolio and Bass (1995) developed a model of transformational leadership (as discussed in previous paragraphs). They defined transformational leadership according to four subdimensions, one of which is individual consideration. Contemporary usages of consideration leadership, both as a dimension of transformational leadership and as its own construct, define it as "the degree to which a leader shows concern and respect for followers, looks out for their welfare, and expresses appreciation and support" (Judge, Piccolo, & Ilies, 2004, p. 36). Given its groundings in theoretical precursors to and current usages of transformational leadership, it is believed that consideration leadership is unique from SL in ways mirroring transformational and charismatic leadership.

Similar to SL, a supervisor high in consideration leadership will show explicit concern for and empathize with their subordinates. This behavior should foster a relationship high in trust and liking. Meta-analytic evidence demonstrates that consideration leadership is linked with increased job satisfaction and motivation for followers (Judge, Piccolo, & Ilies, 2004). Social exchange theory would suggest that these outcomes are encouraged by the forging of trust between supervisors and subordinates and the fulfillment of the subordinates' growth needs. However, considerate leaders are defined by their empathy and forging of friendship with their followers, not

necessarily by their active role in enabling the followers' growth and needs fulfillment. The latter are defined as important precursors to a successful social exchange (Blau, 1964). In this way, SL is differentiated from the relationship-based model of consideration leadership. Namely, servant leaders not only empathize and build quality relationships with followers, but servant leaders also actively seek out followers to promote their welfare and growth. Empirical evidence supports this; SL has been linked to behavioral job performance indices (Liden, Wayne, Zhao, & Henderson, 2008) and job attitudes (Barbuto & Wheeler, 2005; Mayer, Bardes, & Piccolo, 2008) whereas consideration leadership is often associated with the latter (job attitudes) and only inconsistently with the former (job performance; Judge, Piccolo, & Ilies). Given these findings, it may be that SL prompts a true exchange relationship by creating a bi-directional and reciprocal relationship between supervisors and subordinates whereas consideration leadership is more unidirectional, with the subordinate serving the supervisor and not vice versa. More specifically, it is unidirectional in that though the considerate leader empathizes with the follower, the follower does not necessary perceive the leader acting on his or her empathy and returning the investment. Consideration leadership may be a necessary component of SL but not sufficient. SL, in this way, describes a higher level of functioning for a leader in which the leader plays an active role in the supervisor-subordinate relationship rather than a passive role.

Social learning theory provides another explanation for why considerate leaders may promote satisfaction and motivation but not performance, whereas SL enables both. Consideration leadership prioritizes the relational aspects of leader-follower interactions above more explicit performance indices. Thus, followers do not necessarily have a

leader exemplifying top performance, but rather high quality relationship building. Without such an example, the follower cannot model high performance behaviors. Conversely, servant leaders exemplify both top performance within and outside of the organization, high standards and relationship building. This provides followers both an environment/organizational culture (e.g., Mayer, Kuenzi, Greenbaum, Bardes, & Salvador, 2009) in which to work and a specific example (e.g. the leader and/or supervisor) of top performance, behavior based on high ethical standards and positive attitudes. Again, this suggests that consideration leadership may be a necessary but not sufficient component of SL, and thus defines a different type of follower-focused leadership behaviors.

Unlike transformational and consideration leadership which circumvent the topic of whether leaders act ethically, ethical leadership is fundamentally defined by the standards that guide a leader. By focusing on ethics, ethical leadership is another construct which closely resembles SL. Ethical leaders value and act with a concern for ethical behavior which encourages followers to pursue ethical ends (Brown, Trevino, & Harrison, 2005). However, ethical leadership fails to capture the empowering and transformational qualities of SL and transformational leadership. From a motivational perspective, though ethical leaders will model appropriate behavior and encourage ethical exchanges between individuals, predicted by social learning and social exchange theories, respectively, they will be less effective at convincing followers to embrace their values. The latter is critical for effective leadership and explains why certain leadership behaviors are considered more effective (e.g. transformational leadership) at prompting

change than others. Thus, while related to ethical leadership via a concern for ethics, SL is unique in its dual-focus on ethical behavior and effective motivational guidance.

In sum, SL can be differentiated from other leadership styles, most notably transformational, charismatic, consideration and ethical leadership (Graham, 1991) in three primary ways. First, servant leaders seek to identify with their subordinates and followers whereas other leadership styles (e.g. transformational leadership, charismatic leadership) prioritize identification with the organization. Second, SL seeks to serve the organization's employees and the greater community. Thus, servant leaders have an outward focus which aims to fulfill needs for relatedness amongst their subordinates by forming collective and relational support networks in an organizational context and in the context of the larger social community/society. Third, SL behaviors are guided by a moral compass which seeks responsibility and accountability. With the exception of ethical leadership, SL presents the only leadership approach claiming a moral motivational component. SL goes beyond ethical leadership by modeling ethical behavior and by prompting motivated change to enhance the welfare of followers by satisfying their basic needs.

Servant Leadership, Needs, and a Framework for Understanding Needs

Central to the philosophy of SL (Graham, 1991; Spears, 1995) and consistent with Mayer, Bardes and Piccolo (2008), servant leaders impact followers' needs by prioritizing the welfare and growth of followers. Thus, it is somewhat surprising that amongst publications on SL, Mayer and colleagues are the only scholars to examine needs as an explanatory mechanism through which servant leaders enhance their followers' welfare.

According to SDT, there are three basic needs: autonomy, competence and relatedness. When these needs are met, individuals experience maximized performance and well-being (Gagné & Deci, 2005). Servant leaders seek to promote follower autonomy by empowering them to achieve both success and challenging goals via conceptualization (Spears, 1995). Followers' need for competence is supported by servant leaders as they actively listen to their followers, express empathy and awareness of their intrinsic worth and experiences and pursue change through persuasive rather than coercive means. Notably, using persuasive techniques, rather than directives, suggests to followers that their leader values their competence and autonomy as an individual with independent thoughts and desires; coercive techniques imply that the follower is not capable of independent thought. Lastly, servant leaders encourage relatedness by building a community based upon stewardship, empathic concern for others and an interest in the generative growth and success of members of the community (Spears, 1995; Barbuto & Wheeler, 2006).

SDT (Deci & Ryan, 2000; Ryan & Deci, 2000) provides a theoretical explanation (e.g. motivational regulation) and needs-based mechanism (e.g. autonomy, relatedness, competence) for explaining how SL lends to heightened job performance, well-being and cohesive social relationships. According to SDT, when followers experience greater needs fulfillment, they are more likely to act according to intrinsic motivation or wholly internalized extrinsic motivations (e.g., identified and integrated regulation; Deci & Ryan, 1985). Behaviors founded in such self-determined motivations are more likely to lead to positive and intended outcomes for the individual.

Self-Determination Theory

When performing voluntary actions, an individual's motivational state serves as an explanatory mechanism for his or her behaviors. SDT is a needs-based, organismic theory which seeks to explain the relationship between the process of motivational regulation and subsequent acts performed (Deci & Ryan, 2000; Gagné & Deci, 2005). *Motivation* occurs when an individual has the volition to and intends to perform an action or pursue a goal. Conversely, *amotivation* occurs when an individual lacks intentional regulation (intent) and motivation. Intent distinguishes motivated and amotivated regulation.

SDT rests on the assumption that humans pursue existential aims such that they are active and growth-seeking beings regulating behaviors according to intrinsically accepted values and beliefs and extrinsic environmental forces (Deci & Ryan, 1985; 2000). Behaviors are more likely pursued when they are intrinsically enjoyable and allow for interpersonal and intrapersonal feelings of alignment between the self and other values, goals and attitudes. The extent to which individuals have the inner and/or environmental resources to pursue such existential aims depends on the satisfaction of their needs for autonomy, competence and relatedness (also termed connectiveness). When these needs are supported, the individual is free to pursue self-determined intentions. However, when situations are overly-controlling, require awareness or knowledge yet known or are alienating, individuals will experience reduced self-motivation, relying on extrinsic factors to guide and regulate their behavior (Deci & Ryan). The satisfaction of the needs for autonomy, competence and relatedness are a primary means by which servant leaders foster growth and well-being in their followers.

Needs. SDT posits three basic needs: autonomy, competence, and relatedness (Deci & Ryan, 1985; 2005). Ryan, Sheldon, Kasser and Deci (1996) define needs as universal necessities which are not judged by the degree of their consequences but rather by the extent to which a social environment satiates the needs (Gagné & Deci, 2005).

Autonomy's central position within SDT extends beyond the intrinsic/extrinsic motivation regulatory level to also include its primacy amongst the three needs. The satisfaction of an individual's need for autonomy dictates the extent to which motivation is internalized from extrinsic sources or intrinsically regulated. Thus, greater autonomy support lends to greater intrinsic and integrated motivation. *Competence* is characterized by a need to be challenged and experience mastery and efficacy over social and physical interactions (Deci & Ryan, 2000). Fulfilling a need for competence instills a sense of purpose and role fulfillment for individuals. A need for *relatedness* is satisfied when an individual feels a sense of security, attachment, belonging and a level of intimacy with significant others in dyadic pairs and social groups (Deci & Ryan). Relatedness is particularly important when discussing extrinsic motivation since a primary external force motivating individuals originates with significant others in their lives.

In a work setting, organizational climates which encourage fulfillment of and support autonomy, competence, and relatedness needs "will enhance employees' intrinsic motivation and promote full internalization of extrinsic motivation," (Gagne & Deci, 2005, p. 337). Specifically, work climates promoting the three psychological needs are associated with numerous positive work outcomes, such as increased levels of job satisfaction (Deci, Connell, & Ryan, 1989), job performance (Baard, Deci, & Ryan, 2004), organizational trust (Deci, Connell, & Ryan), goal attainment (Koestner, Otis,

Powers, Pelletier, & Gagnon, 2008), organizational commitment (Gray & Wilson, 2008),

physical and psychological well-being (Baard, Deci, & Ryan; Reinboth & Duda, 2006),

and prosocial behaviors (Gagné, 2003).

     Regulatory Motivation. Motivation to pursue a goal or act can arise from either or

both extrinsic and intrinsic sources. Behaviors are *intrinsically motivated* when (1) an

individual has an inherent interest in and enjoys a task and (2) when the intent to perform

a task originates internally (Gagné & Deci, 2005). Conversely, behaviors motivated by

environmental and social forces external to the self are *extrinsically motivated.* Not all

extrinsic motivations are created equal, however. In some instances, the individual may

accept or identify with the motivation prescribed by the externally occurring presses,

whereas in others, the individual may experience dissonance between his or her intrinsic

values and extrinsic motivational sources.

     With time, certain extrinsic motivators may come to be accepted, endorsed, and

internalized by individuals. The process by which individuals (1) identify with the social

regulations, (2) endorse and assimilate extrinsically regulated motivations, and (3) accept

the regulatory process as one congruent with their beliefs and values is termed

internalization (Deci & Ryan, 2000). Thus, an employee may start a job because of its

salary, but over time may come to internalize the norms and values of the company such

that they are no longer motivated solely by salary but also by a heightened sense of

autonomy and intrinsic interest. Importantly, internalized extrinsic motivation is often

just as powerful a motivator as intrinsic motivation for individuals.

     The level of autonomy gauges the extent to which behavior is self-determined. An

individual acting solely according to intrinsic motivation is considered wholly

autonomous. Conversely, when individuals act according to operant contingencies (e.g. seeking reward or avoiding punishment) defined by extrinsic sources, their need for autonomy goes unmet (Gagné & Deci, 2005; Ryan & Deci, 2000) and their motivation is said to be controlled. For example, a supervisor threatening job loss for a subordinate if s/he does not complete a project by a specified deadline will likely result in the subordinate experiencing largely controlled extrinsic motivation. In this example, the extrinsic source of motivation was a "significant other" in a dyadic work-based relationship, namely a supervisor, for the subordinate.

As an important significant other, leaders play a key role in regulating followers' external motivation. Leaders who satiate a follower's needs for autonomy, competence and relatedness will likely see positive outcomes related to the follower's well-being and performance compared to leaders who fail to consider the needs of their followers. For example, Bono and Judge (2003) reported meta-analytic evidence that transformational leaders were effective at promoting autonomy-oriented goals and prompting enhanced work outcomes. This suggests that leadership styles, such as SL and transformational leadership, which promote the internalization of goals by followers, may also foster greater support for SDT needs and resulting organizational outcomes (Gagné & Deci, 2005). Mayer, Bardes, and Piccolo (2008) provide direct support for the relationship between SDT needs fulfillment and SL behaviors by supervisors. Paralleling this finding, Walumbwa, Hartnell, and Oke (2010) found that displays of SL behaviors by supervisors led to increased employee self-efficacy; with efficacy being a component of a need for competence. As an additional empirical foundation for this burgeoning area of research, Washington, Sutton, and Feild (2006) reported that followers who perceived their leader

as valuing empathy, competence and integrity (a form of ethical consideration) also attributed more SL behaviors to the leader. Given these three initial studies' findings, the time is ripe for research establishing relationships amongst SL, SDT needs fulfillment and organizational performance, well-being and social cohesion outcomes.

Organizational Outcomes

In sum, few studies have examined SDT and leadership and how SL relates to organizational outcomes. The relationships between SDT theory and many organizational outcomes are also in need of empirical verification (Gagné & Deci, 2005). Empirical support is mounting for the claim that SL promotes followers' SDT need satisfaction, lending to enhanced organizational outcomes. Specifically, SL is related to several positive employee outcomes, including increased job performance and satisfaction, prosocial work behaviors, leader-member exchange, and affective organizational commitment (Barbuto & Wheeler, 2006; Ehrhart, 2004; Liden, Wayne, Zhao, & Henderson, 2008). Leader-member exchange and organizational commitment are important for building social cohesiveness within an organization. Additionally, SL has been shown to promote greater SDT needs satisfaction amongst employees (Mayer, Bardes, & Piccolo, 2008). As noted previously, employee SDT needs satisfaction has been linked with a number of desirable workplace outcomes (e.g. job satisfaction and performance, commitment, well-being and prosocial behaviors). The relationships supported by previous empirical work are highlighted in Table 1.

Table 1. Empirical relationships amongst SDT needs, SL, and organizational outcomes.

Organizational Outcomes	SL	SDT Needs
Job (task) Performance	X	X
CWB	X	
Prosocial Behaviors	X	X
Physical Well-Being	X	X
Psychological Well-Being		X
Job Satisfaction	X	X
Leader-Member Exchange	X	
Commitment	X	X
Justice Perceptions	X	
Trust in Supervisor/Organization	X	
Goal Attainment		X

Based upon theoretical considerations and previous empirical evidence of relationships amongst constructs, the organizational outcomes examined in this study include: in-role task performance, deviant and prosocial behaviors, physical and psychological well-being, supervisor-subordinate (leader-member) relationship quality, job satisfaction, and affective organizational commitment. These variables were organized into three clusters for conceptual and empirical reasons: job performance, well-being, and social cohesion.

Job Performance includes three indices—in-role task performance, organizational citizenship behaviors, and counterproductive work behaviors—of employees' fulfillment of in-role and extra-role job tasks. *In-role task performance* refers to tasks explicitly stated and formally required by the job role an employee fulfills. Prosocial and deviant work behaviors performed beyond one's assigned job duties are captured by organizational citizenship behaviors and counterproductive work behaviors. *Organizational citizenship behaviors* (OCB) are prosocial behaviors performed by employees which are incremental to an individual's defined job tasks and roles, thus

constituting extra-role voluntary behaviors (Borman, & Motowidlo, 1993; Organ & Ryan, 1995). *Counterproductive work behaviors* (CWB) include any actions which a person intentionally performs (though it need not be performed with the intent to do harm) that harm the organization by distracting from its goals, well-being and/or norms (Spector & Fox, 2005). Thus, taken together, task performance assesses the explicitly specified expectations a supervisor has of his or her employee and CWB and OCB offer measures of extra-role behaviors, both deviant and beneficial, an employee may display on the job. Together, the three criteria lend to an overall assessment of an employee's job performance.

The second cluster of outcome variables includes those addressing the *well-being* of the subordinate within a work context. Physical well-being, psychological well-being and job satisfaction are hypothesized as indicators of a subordinate's overall well-being. *Physical well-being* describes the prevalence of physical/somatic symptoms perceived by an individual such that reduced well-being is contributed to by the prevalence of physical symptoms (e.g., headache; Spector & Jex, 1995). Similarly, *psychological well-being* refers to the psychological components of health as they are perceived by an individual, such as the presence of depression or anxiety. Psychological well-being can be broken down into three subdimensions: depressive symptoms, anxiety symptoms and irritability symptoms (Caplan, Cobb, French, Van Harrison, & Pinneau, 1980). Often, psychological and physical symptoms are intertwined such that the perception of physical symptoms involves a largely psychological component and feeling psychological symptoms may be related to the presence of a physical symptom (e.g. a headache and feeling irritable; Spector & Jex). Job satisfaction is frequently referenced as an index of one's overall life

satisfaction and well-being, with work being a major component of one's life. Thus, one's overall affective experience and appraisal of his or her job, termed *job satisfaction*, is associated with the perception of physical and psychological symptoms. For example, if headaches at work are frequent for an employee, s/he may be less satisfied at work because it takes him or her longer to complete his or her job tasks and s/he must deal with additional psychosomatic stressors throughout the day. Together physical, psychological and job satisfaction are hypothesized to contribute to an overall assessment of a subordinate's well-being.

The final grouping of variables is termed *social cohesion*. This includes the quality of the supervisor-subordinate relationship (leader-member exchange), an employee's affective organizational commitment and prosocial behaviors targeted toward the community. *Leader-member exchange* (LMX) addresses the degree to which a leader and his or her follower share a high quality relationship characterized by mutual trust, support, loyalty, and approval among partners (Graen & Uhl-Bien, 1995). Key antecedents of high-quality LMX include interpersonal liking, fulfilling partners' role expectations, and investing high levels of effort into relationships (Gerstner & Day, 1997; Graen & Uhl-Bien). *Affective organizational commitment* (AOC) involves an emotional attachment to, involvement in, and identification with one's organization (Meyer & Allen, 1991). AOC arises from positive social exchanges between the employee and organization, which are based, in part, on perceptions of support amongst colleagues, supervisor-subordinate dyads and the organization (Eisenberger, Huntington, Hutchison, & Sowa, 1986; Shore, Tetrick, Lynch, & Barksdale, 2006). *Community prosocial behaviors* (CPB) are acts which an individual performs that serve the community within

which his or her organization is located, such as by volunteering at a food bank or

helping to coach little league (Liden, Wayne, & Zhao, & Henderson, 2008). Taken

together, LMX, AOC and CPB indicate an employee's commitment to and perceived

membership (e.g., cohesion) in the organization, larger community and relationships

within the organization.

The three factors of job performance, well-being and social cohesion are

expected, based upon theoretical and empirical rationale, to be predicted by supervisors'

SL behaviors and the fulfillment of the subordinates' SDT needs within their employing

organizations. Thus, the following relationships are proposed:

Hypothesis 1: Servant leadership behaviors will be positively related to the satisfaction of subordinates' self-reported needs for (a) autonomy, (b) competence, and (c) relatedness.

Hypothesis 2: The fulfillment of subordinates' needs will be positively related to subordinates' (a) job performance, (b) well-being, and (c) social cohesion.

Hypothesis 3: The relationship between servant leadership and (a) job performance, (b) well-being, and (c) social cohesion will be mediated by subordinates' needs satisfaction.

Taken together, the relationships proposed by Hypotheses 1-3 are illustrated in

Figure 1. To test this model, survey data from supervisor-subordinate dyads within

several organizations were collected and analyzed using structural equation modeling and

hierarchical regression. Both the use of an applied sample and holistic model analysis

will buttress the utility and validity of the relationships between SL, SDT, and workplace

outcomes.

Figure 1. Hypothesized model of SL, SDT needs, and organizational outcomes

Job Performance
-Task **
-CWB *
-OCB **

SDT Needs *
-Autonomy
-Relatedness
-Competence

Servant Leadership*

Well-being
-Physical well-being *
-Psychological well-being *
-Job Satisfaction *

Social Cohesion
Interpersonal
-Leader-Member Exchange *
Group
-Affective commitment *
-Community prosocial behavior *
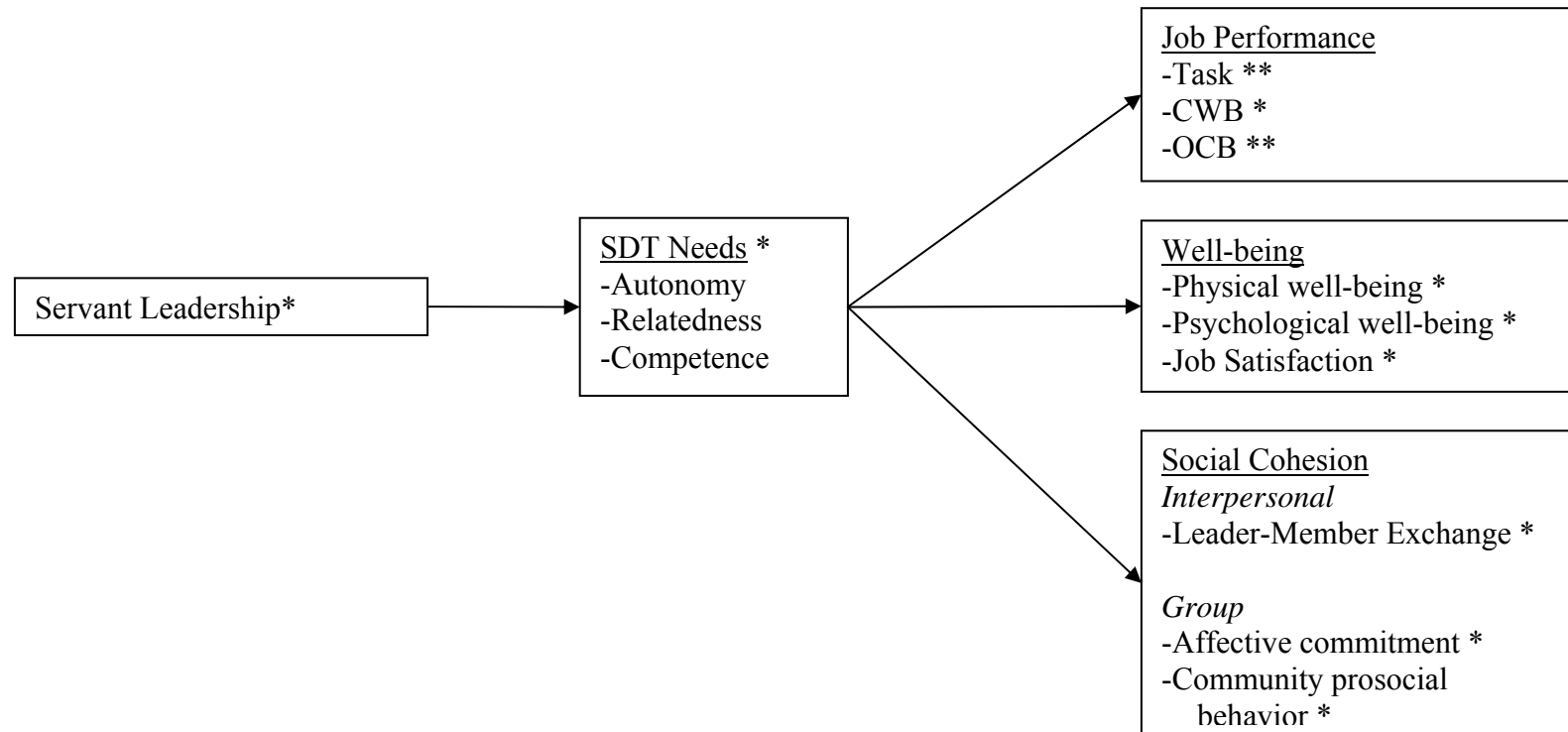
*Subordinate self-report
**Supervisor-rating of subordinate

Method

Participants

Supervisor-subordinate matched dyads were recruited from three businesses in the Southern US agreeing to take part in this study. Diversity was sought when recruiting organizations in order to increase the study's external validity. The three organizations included a private school serving grades kindergarten through 12th-grade (Organization A), a small private college (Organization B), and a medium-sized law firm (Organization C). Additional surveys were distributed to employees who were enrolled in undergraduate courses at a large public university in the Southeastern US (Organization D). All participants worked a minimum of 20 hours each week, with the majority of participants working full-time. Table 2 reports the number of surveys distributed within each organization, the number returned, and the computed response rate. In total, 442 subordinates were contacted via their respective organizational affiliation. Of these, 216 subordinates returned completed surveys, for a response rate of 48.87%. In total, 147 surveys were completed by both a subordinate and his or her supervisor, resulting in an overall response rate (out of the total initially recruited) of 33.26%. Of the 147 useable supervisor-subordinate pairs, 13.61% were from Organization A, 38.10% were from Organization B, 15.65% came from Organization C, and 32.65% were from Organization D.

Table 2. Response rates of recruited participants.

Organization	Total Recruited	# of Subordinates Responding (Response Rate)	# with Supervisor Responses (Response Rate)	Overall Response Rate: Pairs/Total Recruited	# of Supervisors Contacted	# of Supervisors Responding (Response Rate)
A	49	23 (46.93%)	20 (86.96%)	40.82%	4	4 (100%)
B	274	85 (31.02%)	57 (67.06%)	20.80%	41	29 (70.73%)
C	24	24 (100%)	23 (95.83%)	95.83%	14	14 (93.33%)
D	95	84 (88.42%)	47 (55.95%)	49.47%	84	47 (55.95%)
Total	442	216 (48.87%)	147 (68.06%)	33.26%	143	94 (65.73%)

Subordinates were recruited via e-mail through their organizational affiliation to complete a paper and pencil survey packet for this study. Top level administrators (e.g. School Headmaster, College President, Firm Partner) informed their employees at Organizations A, B, and C of their approval and endorsement of this study in order to encourage employees' participation. Previous studies have demonstrated that the support of executive leadership facilitates employees' willingness to participate in extra-role activities at work (Mayer, Kuenzi, Greenbaum, Bardes, & Salvador, 2009), such as participating in a voluntary survey study. Thus, the executive management's support and endorsement of this study were considered critical at the organization level. In exchange for participating in this study, each organization received a technical report with this study's findings and conclusions.

Employees were assured that their organization would not have access to their individual responses and that all results would be presented to their organization as aggregated, unidentifiable findings only. Thus, subordinates and supervisors were assured confidentiality and anonymity. Each survey package was prestamped with a unique identification number. The first page of the survey included information on the study and informed consent. Subordinates agreeing to participate provided their name and signature on this first page along with their supervisor's (i.e., the individual who would complete a performance evaluation of them) name and e-mail. Upon receipt of the surveys, the first page was removed from the survey packet, ensuring the survey responses would only be linked with the subordinates' unique identification numbers and not their names. This method allowed for subordinates' responses to be kept confidential and anonymous. Identified supervisors were then contacted via e-mail to participate. In the e-mail, the

supervisors were instructed to complete a brief online survey using a provided URL, were provided with the subordinate's name and his/her unique identification number, and were assigned an identification number to ensure anonymity on the online survey. The supervisors entered their identification number at the start of the online survey along with the identification number of their subordinates, as prompted by the survey's instructions. The option was given to supervisors in Organization D to complete a paper-and-pencil survey identical to the online version. In the case that a supervisor preferred a paper-and-pencil survey, a survey packet was provided to them along with a preaddressed and – stamped envelope. Supervisors were instructed to mail the survey directly back to the researcher to maintain confidentiality.

Subordinates, with useable data ($N = 147$), were mostly female (72.1%), on average 40.75 years old ($SD = 16.37$ years), were predominantly Caucasian (79.6%; African American: 5.4%; Hispanic: 12.2%, Asian: .7%; Native American = .7%), were employed full-time (67.30%), and worked an average of 35.81 hours per week ($SD = 11.27$). Subordinates worked mostly in an Educational/Academic Industry (49.3%), a professional industry (19.9%), or in a retail/service industry (25.3%). Other industries included Manufacturing (.7%), Technical (1.4%), Government (.7%), and other industries which failed to fit into the provided categories (2.7%). Overall, participants reported a high education level, with 34.7% holding a graduate degree, 20.4% having completed a bachelors degree as their highest level of education, 22.4% an associate's degree, and 21.8% reported high school as their last degree earned. Because Organization D consisted of employed undergraduates, the latter percentage is a reflection of this sample such that most undergraduates have yet to complete a degree beyond high school. Subordinates

reported being employed by their current organization for an average of 7 years and 10 months ($M = 93.94$ months, $SD = 102.85$), working in their current position for 5 years and 10 months ($M = 69.80$ months, $SD = 73.60$), and under their current supervisor for just over 4 years ($M = 48.37$ months, $SD = 52.08$).

Supervisors were mostly female (72.1%), Caucasian (77.3%; African American: 5.0%; Hispanic: 17.0%), highly educated (highest degree earned: High School: 12.2%, Associate's: 6.1%, Bachelor's: 17.0%, Graduate: 59.2%), and were on average 47.97 years old ($SD = 12.64$ years). All but two supervisors worked full-time (98.6%). Supervisors reported working an average of 49.81 hours each week ($SD = 9.24$), and indicated the industry they work in as: Educational/Academic (51.7%), Professional (17.7%), Retail/Service (20.4%), Manufacturing (.7%), Technical (1.4%), or Government (.7%). Supervisors had worked within their current organization an average of 13 and a half years ($M = 161.26$ months, $SD = 117.96$), in their current position 6 years and 8 months ($M = 80.26$ months, $SD = 69.16$), and as the focal subordinate's supervisor for just over 4 years ($M = 50.20$ months, $SD = 48.26$).

Measures

All survey scale responses were made on a 5-point Likert scale (1 = "strongly disagree", 5 = "strongly agree), unless otherwise noted. All scale items are listed in Appendix A with items removed during item-level analyses crossed-out.

Servant leadership. Ehrhart's (2004) 14-item SL scale was completed by subordinates to assess their perceptions of their supervisors' SL behaviors. Of the SL scales published in academic journals, Ehrhart's was determined to be methodologically strongest based upon a validity study (Ehrhart) and its use in recent empirical studies

(Mayer, Bardes, & Piccolo, 2008; Walumbwa, Hartnell, & Oke, 2010). Ehrhart's Servant

Leadership scale demonstrated good discriminate validity by accounting for incremental

variance in work-relevant outcome variables over the conceptually similar constructs of

LMX and transformational leadership. Specifically, Ehrhart reported that SL shared a .62

correlation with LMX and correlations between .53 and .61 for the four dimensions of

transformational leadership. Ehrhart's reported confirmatory factor analysis (CFA) of the

survey items demonstrated adequate fit. From a practical standpoint, the length of other

SL scales distracts from their use within applied organizational settings; specifically Page

and Wong's (2000), Dennis and Winston's (2003) revised version of Page and Wong's

scale, Liden and colleagues (2008), and Barbuto and Wheeler's (2006) each contain 100-

items, 20-items, 28-items, and 23-items, respectively. Thus, Ehrhart's scale is a more

succinct measure of SL.

Contrary to Ehrhart's reported statistics, the SL scale did not fair are well in this

sample. An initial CFA conducted on all 14 items of the scale showed poor fit. Based

upon theoretical and conceptual considerations, a review of the scale's item statistics

from an exploratory factor analysis (EFA), and the factor loadings from the initial CFA,

items 7, 8, 13 and 14 were removed. The revised 10-item scale's internal reliability was

improved by removing these four items ($\alpha = .93$), as was the fit of the CFA based on the

remaining 10 items. An example item is "My supervisor works hard at findings ways to

help others be the best they can be."

SDT needs. Subordinates self-reported their needs satisfaction using a 21-item

Needs at Work scale (Deci, Ryan, Gagné, Leone, Usunov, & Kornazheva, 2001)

comprised of three subdimensions: Autonomy (7-items; "My feelings are taken into

consideration at work."), Competence (6-items; "People at work tell me I am good at what I do.") and Relatedness (8-items; "I get along with people at work."). Poor fit statistics and low factor loadings from a CFA and item statistics from a reliability analysis prompted the formation of a revised version of the SDT scale at the subscale level. The overall SDT scale fared considerably worse than the subscales with regards to the CFA and reliability analysis. Thus, the decision was made to establish the scale's factor structure at the subscale level and, then, to create a composite scale, using subscale means, as an overall indicator of SDT. Items 5 and 11 were removed from the Autonomy subscale and items 7, 16, and 18 were removed from the Relatedness subscale. These items demonstrated poor loadings and item statistics. The latter may be a result of their wording, since they were all reverse-scored items. A common artifact of reverse-scored items is the creation of a second factor and/or reduced loadings when other items are worded counter to reverse-scored items. A CFA for the revised subscales had adequate fit and the internal reliabilities for Autonomy (5 items; $\alpha = .71$), Competence (6 items; $\alpha = .72$), and Relatedness (5 items; $\alpha = .82$) were acceptable. The subscales were used to test the revised version of the hypothesized model with SEM. A composite SDT scale ($\alpha = .84$), using the subscales' means, was created and used to test hypotheses.

Job performance. Subordinates' job performance was measured using task performance ratings and checklists of CWB and OCB. Task performance was reported by supervisors using Williams and Anderson's (1991) 7-item scale ("Performs tasks expected of him/her"). The initial factor structure, based upon a CFA, of the task performance scale demonstrated poor fit. Further item analysis, based upon factor

loadings and a CFA, resulted in the removal of items 1 and 5. A follow-up reliability analysis ($\alpha = .82$) and CFA on the revised 5-item scale demonstrated adequate fit.

CWB was self-reported by subordinates using a modified version of Spector, Fox, Bruursema, Goh, and Kessler's (2006) 33-item short version CWB checklist. The checklist was shortened to consist of 8 items reported on a frequency scale, such as "purposely did your work incorrectly" and "blamed someone at work for error you made" ($\alpha = .65$).

Supervisors rated their subordinates' OCBs using the Organizational Citizenship Behavior checklist (OCB-C) developed by Fox, Spector, Goh, Bruursema, and Kessler (2009). Based upon the original 42-item scale, 8-items were selected for study relevance, such as "offered suggestions for improving the work environment." and "took time to advise, coach, or mentor a co-worker". Further analysis of an initial CFA and item reliability statistics resulted in the removal of item 7, "volunteered for extra work assignment". This item may have been problematic given the sample used since the majority of subordinates were salaried workers. Salaried workers may not view volunteering for an extra work assignment as an extra-role behavior, and rather think of it as part of their in-role job tasks. Scale reliability ($\alpha = .84$) and CFA fit for the revised 7-item scale were acceptable. Supervisors and subordinates were instructed to report how often the subordinate performed each OCB and CWB, respectively, in their current job using a frequency scale (1 = "Never", 2 = "Once or Twice", 3 = "Once or twice per month", 4 = "Once or twice per week", and 5 = "Every day").

Well-being. Subordinates completed self-report measures of physical and psychological well-being and job satisfaction. Physical well-being was measured using

Spector and Jex (1998) 18-item Physical Symptom Inventory (PSI) checklist (α = .81).

Symptoms include "trouble sleeping" and "loss of appetite." Consistent with Kessler,

Spector, Chang, and Parr (2008), responses were modified from the originally validated

dichotomous outcome scale (Spector & Jex) to a Likert-type scale with response options

ranging from 1 ("*less than once per month or never*") to 5 ("*several times per day*").

Psychological well-being was assessed using Caplan, Cobb, French, Van Harrison, and

Pinneau's (1980) 13-item scale, comprised of subscales for work-related Depression (6

items, α = .90; "I feel sad"), Anxiety (4 items, α = .82; "I feel nervous") and Irritation (3

items, α = .83; "I get aggravated"). The scale was modified from its original 4-point scale

to a 5-point Likert-type frequency scale. The same response scale was used for both the

physical and psychological well-being measures.

Job satisfaction was measured using a 3-item self-report scale from the Michigan

Organizational Assessment Questionnaire (Cammann, Fichman, Jenkins, & Klesh, 1983;

α = .89). An example item is: "In general, I like working here."

Social cohesion. LMX, AOC, and CPB were used as indicators of subordinates'

feelings of social cohesion. Subordinates self-reported their relationship quality with their

supervisors using the LMX-7 scale (Graen, Novak, & Summerkamp, 1982, 7-items).

Items 5 and 6 were removed from the scale following an assessment of a CFA and

internal reliability analysis. Both items address ways in which a supervisor and

subordinate feel responsible for the other. These items may not be appropriate in the

organizations sampled since each was comprised of employees operating relatively

autonomously and within horizontal organizations in which subordinates and supervisors

work as colleagues more often than as a hierarchical dyad. The revised 5-item LMX scale

had good internal reliability (α = .91). An example item is "I feel that my immediate supervisor fully recognizes my potential".

AOC was measured with subordinate self-reports using Meyer and Allen's (1997) 6-item affective commitment scale (α = .87; e.g., "This organization has a great deal of personal meaning to me").

CPB was assessed using the 7-item Community Prosocial Behavior scale developed by Liden, Wayne, Zhoa and Henderson (2008), α = .82. An example item is "I believe it is important to give back to the community."

Covariates. Age, education, subordinates' tenure with their current organization and their organizational affiliation (e.g. employee at Organization A, B, C, or D) were controlled for as potential covariates in the regression analyses based upon statistical evidence and theoretical rationale. Previous research has related age and organizational tenure to job satisfaction, amongst other focal variables, and has demonstrated that though age and tenure covary as a result of time, the two are distinct in their effects on job satisfaction (Bedeian, Ferris, & Kacmar, 1992). Additionally, focal outcome variables, such as organizational commitment have previously been associated with one's organization tenure such that commitment often increases the longer an individual remains with an organization (English, Morrison, & Chalon, 2010). Education and organizational affiliation were controlled for since the two covary within the sample used. For example, Organization D employees reported a lower level of education than did the employees at Organization B. Examination of the correlations between the demographic data and the focal variables along with follow-up analyses of between group

differences supported the use of organizational affiliation and education as control variables in this study.

 Exploratory relationships. To determine the discriminant validity of SL over and above similar leadership styles, subordinates completed measures of consideration leadership and transformational/charismatic leadership. Consideration leadership was measured using Schriesheim and Stogdill's (1975) Leadership Behavior Description Questionnaire revised version VII (LBDQ-VII). The 10-item scale demonstrated poor fit statistics during an initial CFA. Follow-up analyses examining item-level statistics resulted in the removal of items 3 and 4. The remaining 8-items had adequate internal reliability ($\alpha = .87$) and improved fit statistics. An example item is: "My supervisor treats all group members as his/her equals." Transformational/charismatic leadership was measured using the Global Transformational Leadership Scale (GTL) developed by Carless, Wearing, and Mann (2000). The 7-item GTL scale had good internal reliability, $\alpha = .92$. An example item is: "My supervisor communicates a clear and positive vision of the future."

Results

Zero-order correlations among the focal variables are reported along with descriptive statistics (e.g., means, standard deviations) in Table 3. Relationships were generally in the expected directions. It is worth noting the high, positive correlations amongst the three leadership variables: SL with Consideration Leadership, $r = .80$, $p < .01$, SL with Transformational Leadership, $r = .88$, $p < .01$, and Consideration Leadership with Transformational Leadership, $r = .87$, $p < .01$. These high correlations suggest that it may be difficult to tease apart the differences in how these three constructs operate uniquely with regards to organizational outcomes.

Table 3. Zero-order correlations amongst focal variables.

	Variables	Leadership			SDT Needs				Job Performance			Well-Being				Job Attitudes			CPB
		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.
Ldr	1. SL	(.93)																	
	2. CL	.80	(.87)																
	3. TL	.88	.87	(.92)															
SDT	4. SDT	.47	.46	.49	(.84)														
	5. Autonomy	.48	.45	.51	.90	(.71)													
	6. Competence	.38	.32	.35	.87	.69	(.72)												
	7. Relatedness	.36	.42	.43	.85	.63	.60	(.82)											
J Perf	8. Task Perf.	.20	.12	.22	.04	.07	.05	-.02	(.82)										
	9. CWB	-.13	-.19	-.15	-.15	-.13	-.15	-.12	.20	(.65)									
	10. OCB	.16	.10	.13	.11	.08	.11	.10	.31	.14	(.84)								
W-B	11. Physical	.05	-.13	-.06	-.15	-.04	-.20	-.16	.04	-.02	.20	(.81)							
	12. Depression	-.22	-.26	-.24	-.40	-.29	-.37	-.40	-.12	-.26	.04	.45	(.90)						
	13. Anxiety	.02	-.11	-.06	-.09	-.02	-.08	-.14	.02	-.05	.14	.53	.53	(.81)					
	14. Irritation	-.14	-.20	-.17	-.16	-.11	-.14	-.17	.12	-.09	.14	.34	.38	.45	(.83)				
J Att	15. LMX	.82	.80	.82	.57	.59	.44	.45	.20	-.10	.14	-.02	-.26	-.05	-.09	(.91)			
	16. AOC	.38	.39	.36	.67	.56	.66	.53	.12	-.20	.19	-.13	-.39	-.08	-.12	.37	(.87)		
	17. Job Sat.	.35	.36	.36	.75	.65	.65	.67	.00	-.23	.04	-.18	-.41	-.11	-.18	.44	.71	(.89)	
	18. CPB	.22	.17	.15	.30	.27	.27	.23	-.00	-.17	.10	.02	-.08	-.00	-.03	.13	.38	.25	(.82)
	Mean	4.06	4.09	4.11	4.27	4.14	4.28	4.40	4.67	1.16	3.29	1.50	1.92	2.07	2.34	4.01	3.90	4.44	3.78
	St. Dev.	.79	.67	.78	.56	.70	.61	.62	.57	.23	.81	.37	.87	.92	1.00	.92	.98	.87	.76

Correlations greater than ± .16 are significant at *p* < .05;

Correlations greater than ± .21 are significant at *p* < .01.

N = 147; SL = Servant Leadership, CL = Consideration Leadership, TL = Transformational Leadership, Task Perf = Task Performance, CWB = Counterproductive Workplace Behaviors, OCB = Organizational Citizenship Behaviors, LMX = Leader-Member Exchange, AOC = Affective Organizational Commitment, Job Sat = Job Satisfaction, CPB = Community Prosocial Behavior.

Structural equation modeling (SEM) was used to test the mediation model. A mediated regression was also conducted as a follow-up test of the relationships amongst individual variables. The complexity and use of maximum likelihood estimation in SEM contributes to the need for large sample sizes. Kline (2005) suggests that samples with over 200 participants are large, those with 100 to 200 are medium and adequate, and 100 participants is a small but sufficient sample for many models. Based upon this recommendation and related guidelines concerning the number of needed participants per indicator (5 to 20 depending on the source; Kline, 2005; Nevitt & Hancock, 2004), a sample size of no less than 140 (minimum of 14 hypothesized indicators within the model x 10 = 140) was needed. As discussed below, the proposed model was adjusted based upon item-level and scale-level statistics. The revised model contains 15 indicator variables, suggesting a minimum sample size of 150. The current sample is just shy of 150 supervisor-subordinate pairs. Despite this, a measurement model and SEM were attempted with the understanding that the power to detect effects would be reduced.

Results from the Measurement Models

Prior to conducting tests of the hypotheses, a series of measurement models were examined in order to determine the most appropriate, theoretical and statistical, way to combine mediation and outcome variables into higher-order latent factors. Before conducting analyses, all variables were recoded for the SEM model such that high scores indicate positive outcomes and low scores indicate negative outcomes. For example, CWB was recoded such that high scores indicate low levels of CWB (versus the original scale in which high scores indicate more frequent CWB). CWB and the four well-being

indicators were recoded in this way so that the direction of indicator–factor relationships was consistent across all indicators.

Initial CFAs, using MPlus version 3.13 with maximum likelihood, were conducted on the hypothesized model structure (Figure 1) with latent factors created for job performance (indicators were Task Performance, OCB, CWB), well-being (indicators were Physical, Psychological, Job Satisfaction), and social cohesion (indicators were LMX, AOC, and CPB). The hypothesized measurement model failed to converge, prompting item level analyses and further investigation of the latent factors' structures. Items were removed from measures that: (1) failed to show adequate factor loadings based on scale and latent factor level CFAs, (2) were flagged as problematic during item level reliability analyses and (3) could be conceptually distinct from other items on the measure. Items were removed from the scales for SL, SDT needs satisfaction at work (only for subscales "autonomy" and "relatedness"; "competence" was unchanged), task performance, OCB, and consideration leadership.

The latent factor structure of the model was adjusted to reflect the observed zero-order correlations amongst the revised scales, factor analyzed fit statistics and additional theoretical considerations. This resulted in four outcome variables in the model, three of which were latent factors. The latent factors created were: Job Performance (indicators were Task Performance, OCB, CWB), Job Attitudes (indicators were Job Satisfaction, LMX, AOC) and Well-Being (indicators were Physical Well-Being and the three subdimensions of Psychological Well-Being: depression, anxiety, irritation). In addition, CPB was included as a scale level outcome. The final factor structure was only slightly changed from the hypothesized model, such that CPB was previously an indicator

variable but is now a standalone manifest outcome, the "Social Cohesion" latent factor

was renamed "Job Attitudes" to better capture the nature of its indicators, and job

satisfaction was specified as an indicator of "Job Attitudes" rather than "Well-Being."

Additionally, analyses conducted on the SDT needs at work scale and its subscales

resulted in the decision to use subscales scores as indicators of a higher-order latent SDT

factor. The original 21-item SDT scale had poor fit statistics and low internal reliability

whereas its subscales demonstrated better model fit and internal reliability. Two of the

three subscales were revised, by removing reverse-scored items, to enhance model fit. A

measurement model with the revised items demonstrated improved fit statistics (χ^2 (59) =

160.31, $p < .001$; CFI = .91, RMSEA = .11, SRMR = .11) and overall factor loadings.

Results from the Structural Models

Using the revised scales to create latent factors, an SEM model was tested in

MPlus with structural paths defined for both full and partial mediation (see Figures 2 and

3). With regards to fit statistics, neither the full (full mediation: χ^2 (81) = 318.95, $p <$

.001, CFI = .82, RMSEA = .14, SRMR = .12) or partially (χ^2 (77) = 295.42, $p < .001$, CFI

= .84, RMSEA = .14, SRMR = .12) mediated models were at or near commonly agreed

upon metrics for establishing adequate model fit. Ideally, the SRMR value should be

below .08 (Hu & Bentler, 1999, 1998). More specifically, SRMR is based on discrepancy

between the covariance matrix implied by our model and the observed sample covariance

matrix. Given that this sample size was not very large, the observed discrepancy may be a

result of sampling error. The RMSEA value shows good fit according to Hu and Bentler

(1999) when it is below .06, though this is more conservative than other metrics which

suggest .08 is acceptable. The RMSEA is an absolute fit index which measures the

misspecification in the model by each degree of freedom. A low value for a model indicates that for each degree of freedom, there is a relatively low degree of misspecification in the model. Bentler's CFI is an incremental fit index that tests how much better the proposed model reproduces the sample covariance matrix compared to a baseline model where there are no relationships between the variables. Hu and Bentler's criterion for this index is that it should be no smaller than .95, though .90 is used as a more liberal metric for CFI. Models satisfying these fit indices are said to have good "model fit" such that they depict the relationships amongst variables better than model alternatives.

When used in combination, the cut-offs for the fit indices may be adjusted since they do not react equally to the sample size, distribution and estimators (Hu & Bentler, 1999). For example, when CFI > .96, the type I error rate is not significantly inflated so long as SRMR is less than .10. Similarly, the Type I and Type II error rates are reduced when RMSEA is below .06 and SRMR is below .10. Unfortunately for the models tested in this study and the scale level CFA's, few fit statistics fell within the acceptable cut-off metrics suggesting that, in addition to a small sample size, poor model fit and estimation errors may be present.

Figure 2. Full mediation model with standardized path coefficients
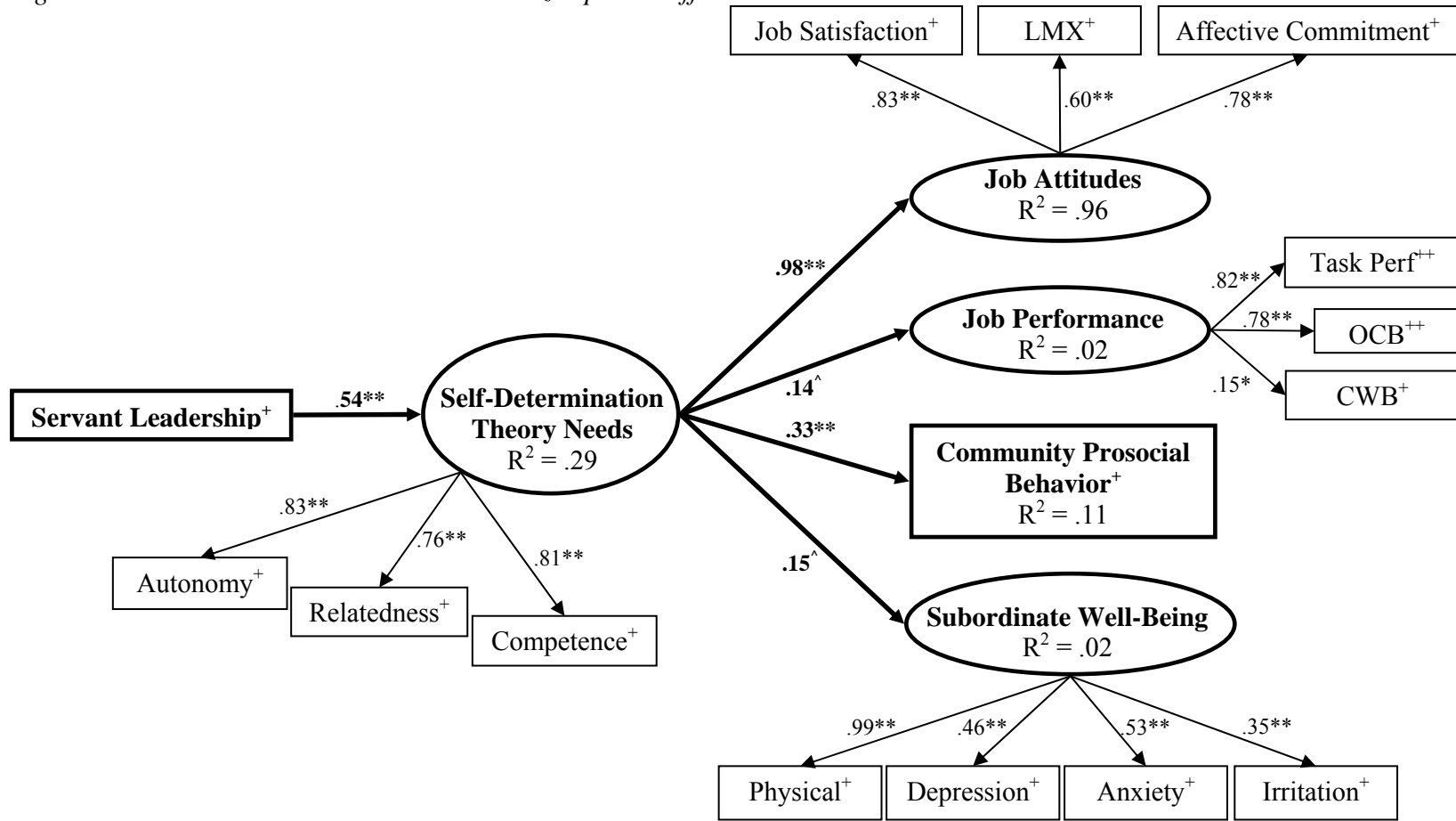
N = 147 dyads; χ^2 (81, 147) = 318.95, *p* < .001, CFI = .82, RMSEA = .14, SRMR = .12
^ *p* < .10; * *p* < .05; ** *p* < .001
[+]Subordinate self-report
[++]Supervisor-rating of subordinate

Figure 3. Partial mediation model with standardized path coefficients
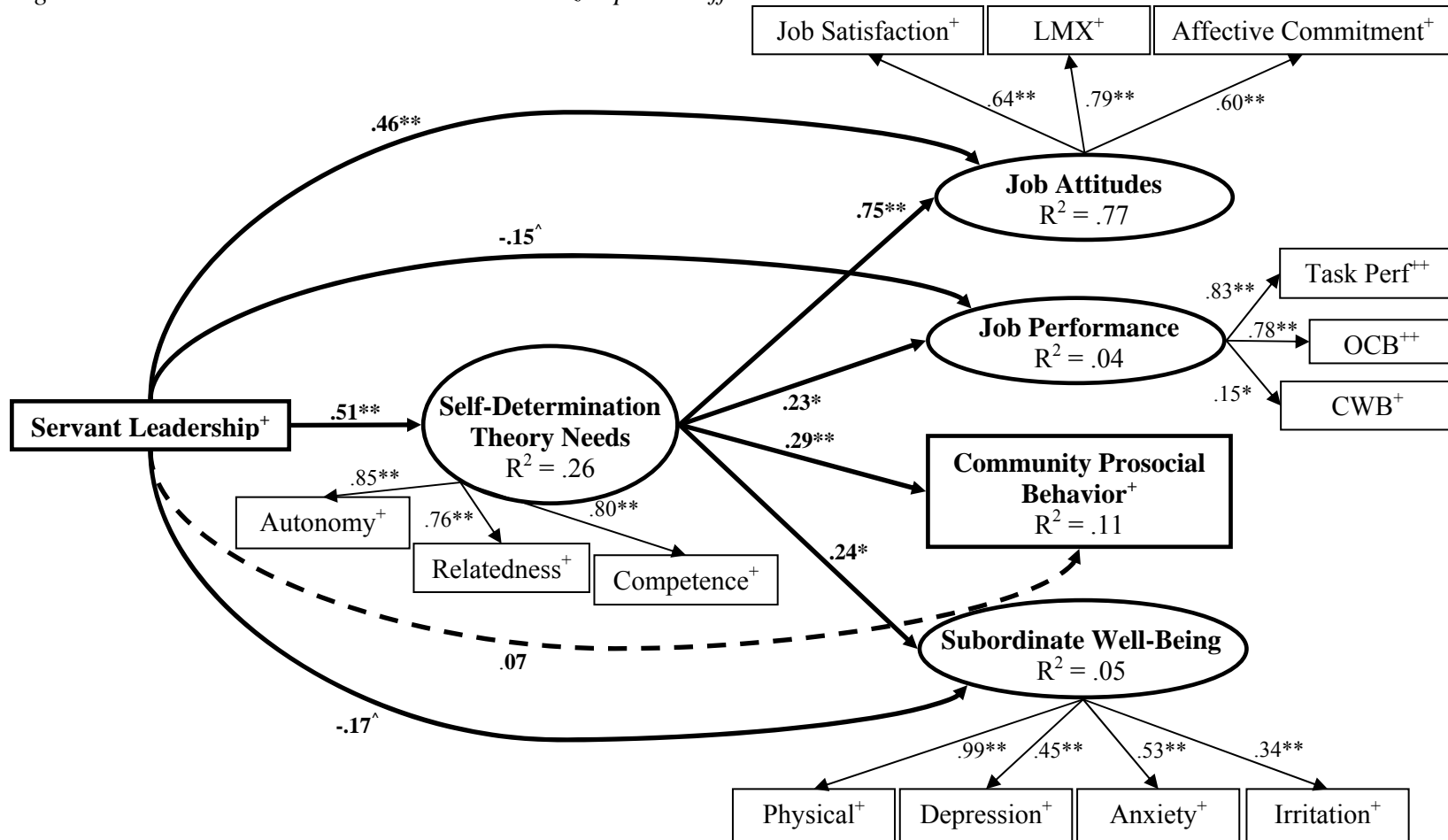
N = 147 dyads; χ^2 (77, 147) = 295.94, CFI = .84, RMSEA = .14, SRMR = .12
^ *p* < .10; * *p* < *.05*; ** *p* < .001
[+]Subordinate self-report
[++]Supervisor-rating of subordinate

Based upon the standardized beta-weights reported in the SEM analysis and zero-order correlations, support was found for hypothesis 1 which states that a significant and positive relationship exists between SL behaviors and the fulfillment of SDT needs for autonomy, competence and relatedness. Hypothesis 2 was partially support. Both Job Attitudes and CPB factors shared significant and positive relationships with the fulfillment of SDT needs. Job Performance and Well-Being were significant at an alpha level of .10, but did not meet the criteria of significance at .05. All relationships were in the expected direction, with an increase in needs satisfaction lending to an increase in job performance, CPB, well-being and job attitudes.

Hypothesis 3 predicted that the fulfillment of SDT needs would mediate the relationship between a supervisor's SL behaviors and subordinate outcomes such that SL's relationship with the outcomes would be strengthened in the presence of needs fulfillment. To test this, the fit of a fully mediated SEM (Figure 2; χ^2 (81) = 318.95, p < .001, CFI = .82, RMSEA = .14, SRMR = .12) was compared to the fit of a partially mediated model (Figure 3; χ^2 (77) = 295.94, p < .001, CFI = .84, RMSEA = .14, SRMR = .12). Both models had nearly equivalent fit indices, neither of which met the typical cut-offs (CFI > .95/.90, SRMR < .08/.10, CFI < .06) for acceptable fit (Hu & Bentler, 1999). To test whether the partially mediated model provides a better description of the data than the fully mediated model, a test of the chi-square difference was performed. The partially mediated model did not include a direct path from SL to CPB because this relationship was not significant. When direct paths from SL to the outcomes were added, the fit of this partially mediated model was significantly better than the fit of the fully mediated model. Thus, it appears that the relationships that SL has with these criteria are not owing

entirely to need satisfaction. The overall poor fit of the partial and full mediation models may be due to artifacts within the sample itself, since many of the scales' items did not behave as expected during scale level CFAs. The poor fit may also be contributed to by scales which fail to capture the construct of SL itself. Thus, hypothesis 3 received weak support since the full mediation model contains relationships in the expected directions and at an acceptable level of significance ($p < .05$) but failed to satisfy SEM fit indices cut-offs. Interestingly, of the outcomes, SL had the strongest relationship with Job Attitudes ($\beta = .98, p < .001$) suggesting that SDT needs fulfillment may have the greatest influence on employee's job satisfaction, supervisor-subordinate relationships and affective commitment.

As a follow-up to the proposed SEM analyses and in light of the high zero-order correlation between LMX and SL ($r = .82$), another partially mediated model was tested in which the non-significant path from SL to CPB was removed along with LMX as an indicator of the Job Attitudes latent factor. This revised partial mediation model ($\chi^2 (65) = 158.08, p < .001$, CFI = .92, RMSEA = .10, SRMR = .11) still did not have adequate fit but did have significantly better fit to the data than did the fully mediated model and partially mediated model tested previously (alpha-level was .01). This finding suggests that needs satisfaction and SL behaviors have an impact on the outcomes and that LMX as an outcome statistically blurs the relationships amongst SL, needs satisfaction and other outcome variables. At a theoretically level, this is likely due to both SL and LMX addressing the relational strength of and affinity between the supervisor and subordinate.

Results from the Regression Models

A series of hierarchical regressions were performed as a follow-up to the SEM model, in light of the poor model fit, in order to examine mediated relationships at the scale level. Results from the mediated regressions are reported in Tables 4 and 5. In step 1, age, education, the subordinates' tenure with their current organization and organizational membership (i.e. employee at Organization A, B, C, or D) were entered as covariates. As a categorical variable, organizational membership was dummy coded. In step 2, SL was entered followed by the SDT needs at work scale in step 3. The SDT needs scale was a composite variable computed from the mean values of the original 21-item SDT scale's subscales for Autonomy, Competence and Relatedness. This allowed for all three subscales to be equally weighted in the regression equation, paralleling their use as indicators of a latent SDT needs factor in the SEM model proposed. Given the number of regressions run with the predictor and mediator, a more conservative alpha value of .01 was adopted to determine significance, thus countering an increase in the Type I error rate due to the number of analyses conducted.

Table 4. Hierarchical mediated regressions for Job Attitudes and Job Performance outcomes

	Criteria					
	Job Attitudes			Job Performance		
Predictors	Job Sat	LMX	AOC	Task Perf	OCB	CWB
Step 1: Covariates						
Age	.24	.04	.40**	-.02	.32	-.29
Education	-.11	-.04	-.04	-.02	.03	.06
Tenure with Current Organization	.03	-.11	.11	.15	.08	.08
Org Affiliation: A	.10	-.05	.08	.14	-.46**	.07
Org Affiliation: B	.31	.08	.16	.12	-.39	-.10
Org Affiliation: C	.20	-.04	.10	-.09	-.46**	-.06
F	4.88***	.35	10.12***	1.37	3.74**	2.14*
R^2	.19	.02	.29	.04	.16	.09
Step 2: Servant Leadership	.32***	.85***	.35***	.20*	.19*	-.09
Δ *F*	18.23***	287.15***	28.72***	5.39**	5.36*	1.17
Δ R^2	.10	.68	.12	.04	.04	.01
Step 3:Servant Leadership	.00	.71***	.13*	.27**	.17	-.06
SDT Needs at Work	.71***	.29***	.48***	-.15	.04	-.07
Δ *F*	120.86***	29.69***	50.90***	2.14	.18	.42
Δ R^2	.35	.06	.16	.02	.00	.00
Model F	27.66***	48.82***	24.02***	2.02*	3.57***	1.80
R^2	.62	.74	.61	.12	.19	.10

*$p < .05$, **$p < .01$, ***$p < .001$

Note: N = 147 supervisor-subordinate pairs; Standardized regression coefficients are reported in the table. Regression coefficients reflect value at each step. Job Sat = Job Satisfaction, LMX = Leader-Member Exchange, AOC = Affective Organizational Commitment, Task Perf= Task Performance, OCB = Organizational Citizenship Behaviors, CWB = Counterproductive Workplace Behaviors. Tenure was reported in months, Organizational Affiliation was dummy coded as 1 = member, 0 = nonmember

Table 5. Hierarchical mediated regressions for Well-Being and Community Prosocial Behavior outcomes

| | | Criteria | | | |
| | | Well-Being | | | |
Predictors	Physical	Depression	Anxiety	Irritation	CPB
Step 1: Covariates					
Age	-.31	-.48**	-.55***	-.49**	.24
Education	-.14	.10	.09	.06	.02
Tenure with Current Organization	.05	.05	.02	.12	-.12
Org Affiliation: A	.06	.12	.27	.23	.07
Org Affiliation: B	.09	.14	.29	.25	.26
Org Affiliation: C	-.08	.11	.15	.33**	.12
F	2.66*	2.30*	2.61*	2.25*	3.41**
R^2	.11	.10	.11	.10	.14
Step 2: Servant Leadership	.08	-.20*	.05	-.13	.19*
ΔF	.90	5.44*	.29	2.31	5.16*
ΔR^2	.01	.04	.00	.02	.03
Step 3:Servant Leadership	.15	-.02	.07	-.07	.13
SDT Needs at Work	-.14	-.38***	-.06	-.10	.12
ΔF	2.03	16.21***	.29	.88	1.39
ΔR^2	.01	.10	.00	.01	.01
Model F	2.37*	4.79***	2.01*	2.10*	3.47***
R^2	.13	.24	.11	.12	.18

*p < .05, **p < .01, ***p < .001*

Note: N = 147 supervisor-subordinate pairs; Standardized regression coefficients are reported in the table. Regression coefficients reflect value at each step. Depression, Anxiety and Irritation are each a subscale from Psychological Well-Being; High Well-Being scores indicate more negative symptoms. CPB = Community Prosocial Behavior. Tenure was reported in months, Organizational Affiliation was dummy coded as 1 = member, 0 = nonmember.

In the absence of SDT needs, SL shared few significant relationships with the criteria (at $p < .01$). Thus, hypothesis 1 was only partially supported such that the only significant relationships present between SL and the outcome variables were observed for job satisfaction ($\beta = .32$, $p < .001$), LMX ($\beta = .85$, $p < .001$), and AOC ($\beta = .35$, $p < .001$). Thus, supervisors displaying more SL behaviors tended to have subordinates who reported more favorable job attitudes. SDT needs, when entered in step 3, were significantly related to job satisfaction ($\beta = .71$, $p < .001$), LMX ($\beta = .29$, $p < .001$), AOC ($\beta = .48$, $p < .001$), and the depression subscale of psychological well-being ($\beta = -.38$, $p < .001$). Thus, fulfillment of SDT needs is associated with increased job attitudes and decreased perceptions of depressive psychological symptoms. Similar to Hypothesis 1, Hypothesis 2 received partial support since only a subset of the outcome variables were significantly related to SDT needs fulfillment.

To test for mediation, Baron and Kenny (1986) recommend four criteria be met: (1) the predictor and outcome variables are correlated, (2) the predictor and mediator variables are correlated, (3) the mediator and outcome variables are correlated, and (4) the effect of the predictor on the outcome is attenuated in the presence of the mediator variable. Full mediation is present if the relationship between the predictor and outcome is non-significant when the mediator variable is controlled for. If the predictor variable is still significant, then partial mediation is present. To determine what outcome variables were eligible for a mediation analysis, a more liberal p-value of .05 was adopted to maximize the inclusion of variables. Additionally, not all statisticians agree that the first criteria must be met in order for mediation to be present. The latter provides further

justification for a more liberal *p*-value despite the large number of analyses conducted
and potential for Type I error inflation.

Zero-order correlations and beta-weights were examined to determine which
variables fulfilled the first three criteria of mediation at *p* < .05. Job satisfaction, LMX,
AOC, Psychological Well-Being: Depression and CPB shared significant correlations
with the predictor (SL) and the mediating variable (SDT needs). In addition, SDT needs
(composite scale) and SL share a significant correlation. A Sobel test was used to assess
the presence of mediation for the five outcome variables identified as relevant. Full
mediation is concluded when (1) the Sobel test is significant, which means that the
unstandardized b-weight from the regression for SL was significantly reduced when SDT
needs were entered into the regression equation in step 3, and (2) when the beta-weight
for SL is no longer significant in step 3. Partial mediation is concluded if (1) the Sobel
test is significant (i.e., the b-weight for SL is significantly reduced in the presence of SDT
needs) but (2) the beta-weight for SL remains significant in step 3. The relationships of
SL with job satisfaction (Sobel test = 5.35, *p* < .001), LMX (Sobel test = 4.65, *p* < .001),
AOC (Sobel test = 4.65, *p* < .001), and depression (Sobel test = -3.64, *p* < .001) were
significantly attenuated when SDT needs were added to the regression equation, as
indicated by a significant Sobel test. The beta-weights from the regression analysis were
examined to determine whether full or partial mediation was present for each of these
four outcomes. Full mediation was observed in the case of job satisfaction and
depression, whereas partial mediation was observed in the case of LMX and AOC (see
Tables 4 and 5). The Sobel test was not significant for the relationship between SL and

CPB in the presence of SDT needs, meaning mediation was not present for the outcome of CPB.

Similar to the results of the SEM, outcome variables associated with job attitudes (job satisfaction, LMX and AOC) were mediated by SDT needs. In addition, the subscale of depression was affected by the presence of SDT needs fulfillment. The results of the hierarchical mediated regressions provided partial support for hypothesis 3, which stated that SL and the outcome variables would be mediated by SDT needs.

Exploratory Analyses. A series of hierarchical regressions were performed to test whether SL accounted for incremental variance compared to consideration leadership and transformational leadership. If SL accounts for a significant proportion of unique variance, then it suggests that there is value added in considering SL in addition to consideration and transformational leadership. To test this, covariates (same as used previously) were entered in step 1 of a regression, consideration and transformational leadership were entered in step 2 and SL was entered in step 3. If the change in R^2 is significant following step 3, it can be concluded that SL accounts for variance in the criterion incremental to the other two types of leadership (entered in step 2).

Consideration and transformational leadership accounted for a significant amount of variance in job satisfaction ($\Delta R^2 = 9.47$, $p < .001$), LMX ($\Delta R^2 = 174.34$, $p < .001$), AOC ($\Delta R^2 = 9.61$, $p < .001$), task performance ($\Delta R^2 = 4.64$, $p < .05$), and the depression subscale of psychological well-being ($\Delta R^2 = 4.73$, $p < .01$). Interestingly, consideration leadership was negatively related to indices of job performance (task performance, $\beta = -.33$; OCB, $\beta = -.18$; CWB, $\beta = -.25$) and well-being (physical, $\beta = -.28$; depression, $\beta = -.31$; anxiety, $\beta = -.29$; irritation, $\beta = -09$) whereas both SL and

transformational leadership generally shared positive relationships with these outcomes. SL accounted for incremental variance beyond that explained by consideration and transformational leadership for LMX ($\Delta R^2 = 11.34$, $p < .001$), AOC ($\Delta R^2 = 9.41$, $p < .01$), physical well-being ($\Delta R^2 = 11.91$, $p < .001$), the anxiety subscale of psychological well-being ($\Delta R^2 = 5.83$, $p < .05$), and CPB ($\Delta R^2 = 6.24$, $p < .01$). Results are mixed as to the incremental validity of SL over and above consideration and transformational leadership (Tables 6 and 7). Conclusions drawn concerning the incremental validity of any of the three leadership constructs are tempered given the extremely high, positive correlations (between .80 and .90) amongst SL, consideration leadership and transformational leadership. Across all analyses, SL appears to be closely associated with job attitudes and has a more complex relationship with the other outcome variables examined.

Table 6. Leadership hierarchical regressions for Job Attitudes and Job Performance outcomes

		Criteria				
		Job Attitudes			Job Performance	
Predictors	Job Sat	LMX	AOC	Task Perf	OCB	CWB
Step 1: Covariates						
Age	.23	.04	.40**	-.02	.32	-.29
Education	-.11	-.04	-.04	-.02	.03	.06
Tenure with Current Organization	.03	-.11	.11	.15	.08	.08
Org Affiliation: A	.10	-.05	.08	.14	-.46**	-.06
Org Affiliation: B	.31	.08	.16	.12	-.39*	-.10
Org Affiliation: C	.20	-.04	.10	-.09	-.46***	.07
F	4.88***	.35	10.12***	1.37	3.74**	2.14*
R^2	.19	.02	.32	.06	.16	.09
Step 2: Leadership						
Consideration Leadership	.22	.35***	-.07	-.33	-.18	-.25
Transformational Leadership	.13	.54***	.36*	.50*	.33	.10
ΔF	9.47***	174.34***	9.61***	4.64*	2.60	2.06
ΔR^2	.11	.72	.09	.07	.04	.03
Step 3: Consideration Leadership	.16	.24*	-.22	-.40*	-.28	-.31
Transformational Leadership	.03	.34**	.09	.38	.16	-.01
Servant Leadership	.16	.33***	.46**	.20	.29	.18
ΔF	.84	11.34***	9.41**	1.08	2.28	.89
ΔR^2	.02	.02	.04	.01	.02	.01
Model F	3.48***	44.15***	6.74***	2.12*	3.42***	2.00*
R^2	.30	.76	.46	.14	.21	.13

*p < .05, **p < .01, ***p < .001

Note: N = 147 supervisor-subordinate pairs; Standardized regression coefficients are reported in the table. Regression coefficients reflect value at each step. Tenure was reported in months, Organizational Affiliation was dummy coded as 1 = member, 0 = nonmember.

Table 7. Leadership hierarchical regressions for Well-Being and Community Prosocial Behavior outcomes

| | Criteria | | | | |
| | Well-Being | | | | |
Predictors	Physical	Depression	Anxiety	Irritation	CPB
Step 1: Covariates					
Age	-.31	-.48*	-.55***	-.49**	.24
Education	-.14	.10	.09	.06	.02
Tenure with Current Organization	.05	.05	.02	.12	-.12
Org Affiliation: A	.06	.12	.27	.23	.07
Org Affiliation: B	.09	.14	.29	.25	.26
Org Affiliation: C	-.08	.11	.15	.33**	.12
F	2.66*	2.30*	2.61*	2.25*	3.41*
R^2	.11	.10	.11	.10	.14
Step 2: Servant Leadership					
Consideration Leadership	-.28	-.31	-.29	-.09	.11
Transformational Leadership	.22	.06	.23	-.09	-.00
ΔF	1.28	4.73**	1.34	2.30	.90
$ΔR^2$	.02	.06	.02	.03	.01
Step 3: Consideration Leadership	-.49**	-.33	-.44*	-.15	-.04
Transformational Leadership	-.15	.03	-.03	-.19	-.27
Servant Leadership	.62***	.06	.45*	.16	.46**
ΔF	11.91***	.10	5.83*	.74	6.24**
$ΔR^2$	.08	.00	.04	.01	.04
Model F	3.57***	2.67**	2.78**	2.12*	3.27***
R^2	.21	.16	.17	.13	.52

^$p < .05$, *$p < .01$, ** $p < .001$

Note: N = 147 supervisor-subordinate pairs; Standardized regression coefficients are reported in the table. Regression coefficients reflect value at each step. Depression, Anxiety and Irritation are each a subscale from Psychological Well-Being; High Well-Being scores indicate more negative symptoms. Tenure was reported in months, Organizational Affiliation was dummy coded as 1 = member, 0 = nonmember

Exploratory Leadership Dominance Analysis. The relative contribution of each of the three leadership behaviors for relevant predictors was assessed by calculating dominance analysis weights (Azen & Budescu, 2003). Dominance analysis is a statistical technique in which R^2 values are assessed using all possible subsets of multiple regression models to rank-order predictor variables according to their relative contribution to outcomes. The relative contributions of transformational, consideration and servant leadership were assessed using a dominance analysis using LeBreton's version 4.4 Excel spreadsheet. The relative importance of the leadership predictors were assessed for the composite measure of needs satisfaction, each of the three subscales of needs satisfaction (e.g., autonomy, competence, relatedness), and for 4 outcome variables (job satisfaction, AOC, LMX, and psychological well-being: depression). Selection of the outcome variables was based upon the presence of significant correlations and mediation. The dominance weights and re-scaled dominance weights are reported in Tables 8 (SDT needs satisfaction) and 9 (outcome variables). The rescaled dominance weight is a percentage value calculated by dividing the predictor's dominance weight by the total model's R^2. Across all outcome variables, the three leadership behaviors displayed little to no variability in terms of their differential importance in accounting for the variance explained in the criterion (R^2). Paralleling previous conclusions drawn from the analyses, it appears a more general leadership factor or "good" leadership behaviors are driving the relationship between the predictor and criteria rather than SL alone.

Table 8. Dominance Weights Analysis of Three Leadership Predictors for Model SDT Needs Satisfaction

	Composite		Autonomy		Competence		Relatedness	
Predictors	DW	%	DW	%	DW	%	DW	%
Servant Leadership	.19	33.25	.28	32.29	.20	37.39	.16	30.35
Consideration Leadership	.18	31.44	.17	30.22	.16	30.05	.19	35.11
Transformational Leadership	.21	35.31	.21	37.49	.18	32.56	.19	34.55
Model R^2	.58		.56		.54		.54	

Note: RW = Dominance weights; % = Rescaled dominance weights (DW divided by model R^2). Composite = SDT needs satisfaction composite scale.

Covariates were included in the dominance analysis but are not reported in the table.

Table 9. Dominance Weights Analysis of Three Leadership Predictors for Model Outcome Variables

	W-B: Depression		LMX		AOC		Job Satisfaction	
Predictors	DW	%	DW	%	DW	%	DW	%
Servant Leadership	.12	30.60	.29	33.62	.25	36.47	.18	33.67
Consideration Leadership	.15	37.92	.28	32.42	.21	31.21	.18	33.67
Transformational Leadership	.13	31.47	.30	33.96	.22	32.32	.18	32.66
Model R^2	.40		.87		.67		.55	

Note: DW = Dominance weights; % = Rescaled dominance weights (DW divided by model R^2). W-B: Depression = psychological well-being: depression subscale, LMX = Leader-Member Exchange, AOC = Affective Organizational Commitment.

Covariates were included in the dominance analysis but are not reported in the table.

Discussion

Theory and limited empirical support (Mayer, Bardes, & Piccolo, 2008) suggest SDT needs may play a critical mediating role between supervisors' SL behaviors and their subordinates' work-relevant outcomes. This study sought to further our understanding of if and why SL translates into critical subordinate-level work criteria. Specifically, this study examined criteria organized into four outcome categories: job performance (i.e., task performance, OCB, CWB), well-being (i.e., physical and psychological related to depression, anxiety and irritability), job attitudes (i.e., job satisfaction, LMX and AOC) and prosocial behaviors direct towards the community within which an organization is established (CPB). Correlations suggest that supervisors exhibiting more SL behaviors tended to have employees with more favorable levels, generally, on all of these variables. Thus, the answer to *if* SL behaviors are related to enhanced outcomes for subordinates at work is "yes". To examine *why* SL behaviors are related to these outcomes, it was proposed that supervisors who exhibit more SL behaviors fulfill their subordinates' basic needs for autonomy, competence, and relatedness. Self-determination theory posits (Deci & Ryan, 2000) and empirical evidence suggests (e.g., Baard, Deci, & Ryan, 2004) that when these three needs are met, subordinates exhibit improved experiences at work. This study tested a model using SEM and mediated regression examining whether the fulfillment of subordinates' SDT needs

mediates the relationship between supervisor-performed SL behaviors and subordinate organizational outcomes.

Three primary hypotheses were proposed to establish the relationships amongst SL, SDT needs fulfillment and outcomes. Hypothesis 1 predicted a positive relationship between supervisor SL behaviors and subordinates reporting the fulfillment of their SDT needs for autonomy, competence and relatedness. This hypothesis was fully supported across all analyses. Increased SL behaviors amongst supervisors, as they were perceived and reported by subordinates, were associated with reports by subordinates of higher levels of their SDT needs being met, when examined both overall and at the level of each of the three needs. This finding is consistent with Mayer, Bardes and Piccolo (2008) who proposed a model in which supervisory SL behaviors were a direct and indirect (mediated by justice perceptions) antecedent to subordinates reporting that each of their needs were met for competence, autonomy and relatedness. The relationship between SL behaviors and needs fulfillment supports theoretical and conceptual arguments for SL being a follower-centric, generative approach to leadership and supervisor-subordinate relationships in which supervisors prioritize the welfare and success of their subordinates (Barbuto & Wheeler, 2006; Graham, 1991; Stone, Russell, & Patterson, 2004). Fulfillment of SDT needs for subordinates should in turn foster more favorable organizational outcomes (Gagné & Deci, 2005).

Hypothesis 2 predicted a positive relationship between subordinates reporting their SDT needs for autonomy, competence and relatedness were met and enhanced workplace outcomes. The workplace outcomes were grouped, in the final revised model, into four factors: job performance, well-being, job attitudes and community prosocial

behaviors. Hypothesis 2 was partially supported such that, across all statistical analyses, when SDT needs fulfillment was rated as high, subordinates reported lower perceptions of depressive psychological well-being symptoms, and higher levels of LMX, AOC, job satisfaction and CPB. These relationships were consistent when SDT was examined globally and when assessed at the level of individual needs. Amongst the outcome factors, SDT needs fulfillment was associated with higher levels of overall job attitudes such that subordinates reporting they felt autonomous, competent and connected (related) at work also reported higher levels of satisfaction with their job, emotional connectedness and commitment to their organization and higher quality relationships with their supervisors. Along similar lines, reduced depressive symptoms were reported when needs were met. Since depressive symptoms were significantly and negatively associated with all of the job attitudes indicators, it may be that an overall positive experience at work lends to reductions in depressive feelings and symptoms at and outside of work.

The only behavioral manifestation which was upheld, of those hypothesized, was a greater frequency of CPB being performed when needs were fulfilled. These results suggest that needs fulfillment may operate more at an attitudinal and affective level which does not always translate into measureable behavioral indices. The relationship present between SDT needs fulfillment and job attitudes, depressive symptoms and CPB support previous empirical findings and theorization with regards to social exchange theory (Blau, 1964) and SDT (Ryan & Deci, 2000; Deci & Ryan, 2000). A social exchange theory perspective would argue that when employees feel their organization and supervisors satiate their basic needs, they reciprocate this investment by affectively committing to the organization and the relationships existing within the organization.

Empirical studies examining the mechanisms by which SL differentially impacts affective workplace experiences, as opposed to workplace behaviors, are warranted given the trends identified in this study. Additionally, research integrating social exchange theory at a more foundational level, when studying SL behaviors, would allow scholars the ability to better conceptualize the nature of the dyadic supervisor-subordinate relationship.

Hypothesis 2 receiving only partial support poses complications for SDT since previous empirical work has linked needs satisfaction with several of the outcomes which were not found to be significantly related here. Specifically, SDT needs satisfaction has been previously related to job performance (Baard, Deci, & Ryan, 2004), physical and overall psychological well-being (Baard, Deci, & Ryan; Reinboth & Duda, 2006) and prosocial organizational behaviors (Gagne, 2003). Job performance, physical well-being, two of the subscales of psychological well-being (e.g., anxiety and irritability), and OCB did not share noteworthy relationships with the fulfillment of SDT needs. Despite this, some relationships previously reported in the literature were upheld, such as organizational commitment (Gray & Wilson, 2008) and job satisfaction (Deci, Connell, & Ryan, 1989). These discrepancies suggest that the holistic claims of the theory of SDT and its relationships to enhanced job outcomes for employees may be more nuanced in reality, at a measurement and theoretical level, than conceptually conceived. When examining the fulfillment of SDT needs, it would be wise to consider how needs are differentially related to outcomes and whether an overall assessment of needs is better or worse than relating other constructs to the subscales of SDT needs. Understanding the

interplay of the three needs would allow for a more nuanced understanding of SDT and also could explain the inconsistent outcomes amongst studies.

Hypothesis 3 proposed that SDT needs mediate the relationship between SL behaviors and the outcome factors of job performance, well-being, job attitudes and community prosocial behaviors. The proposed model did not provide an adequate depiction of the actual relationships amongst the variables; this prevents the interpretation of a holistic model of the motivational mechanisms by which SL behaviors lend to enhanced job experiences. Despite the proposed mediation model failing to describe the relationships as a whole, tentative conclusions can be drawn from individual relationships present within the model. Amongst all four outcome factors, job attitudes benefitted the most from SL behaviors and needs fulfillment, followed by CPB. These results compliment those describing the direct relationships between SL behaviors and the outcomes and SDT needs fulfillment and the outcomes.

Follow-up analyses using mediated regression provide further and more substantive evidence for the relationships suggested in the revised SEM model (with SDT needs mediating the relationships between SL behaviors and subordinate outcomes). Specifically, the relationships between increased SL behaviors and improved job attitudes and reduced depressive psychological symptoms were mediated by needs fulfillment such that job attitudes were enhanced and depressive symptoms attenuated when SDT needs were fulfilled. Unlike the trends in hypothesis 1 and 2 for CPB, the relationship between SL behaviors and CPB was not significantly changed when SDT needs were fulfilled for employees, suggesting SL is a primary driver of employees participating in prosocial behaviors targeting the community outside the walls of the organization. This supports

SL conceptually as a form of leadership which promotes ethical and community-oriented action (Graham, 1991; Spears, 1995). Social learning theory (Bandura, 1977, 1986) would argue that servant leaders exemplify the importance of CPB and, as a result, their subordinates follow their example and engage in similar behaviors, regardless of other intervening factors such as needs being fulfilled. The outcomes which were mediated, namely job satisfaction, LMX, AOC and depressive psychological symptoms, all have affective components which, again, suggest that SDT needs fulfillment is acting at an affective level.

The mediation of SL behaviors and job attitudes by the fulfillment of SDT needs has interesting applied implications. Generally, given that some effects of SL are transmitted through need fulfillment, it may be that some of SL's positive outcomes can be nurtured by simply focusing on followers' needs. More specifically, when effective leadership and SL behaviors are lacking within an organization, employees' job attitudes may still be enhanced through an intervention that targets the satisfaction of the employees' needs for autonomy, competence and relatedness. Since not all supervisors are "leaders", such an intervention may be critical. Thus, even supervisors who are not necessarily servant leaders might be able to foster favorable job attitudes, amongst other outcomes, among their employees if they take steps to ensure that autonomy, competence, and relatedness are being met through non-leadership factors.

This idea is consistent with the substitutes-for-leadership theory (Kerr & Jermier, 1978), which posits that changes in certain individual-level, task or environmental factors can enhance, neutralize or serve as a substitute for leadership; thus, enabling many of the positive effects that are generally attributed to leadership. Specifically, Kerr and Jermier

argue that for types of leadership like SL, subordinates' intrinsic satisfaction (a task-level substitute), need for independence (an individual-level substitute), "professional" orientation, and presence within a cohesive and connected work group (an environmental-level substitute) can serve as substitutes for leadership when leadership is absent or lacking. Notably, the last three substitutes parallel SDT needs for autonomy, competence and relatedness, respectively. When these substitutes are available, leadership may not hold the same influence as when mediating factors, such as the fulfillment of needs, are not present. Support for the substitutes-for-leadership theory has been mixed (Avolio, Walumbwa, & Weber, 2009), though job satisfaction has maintained some consistency as an outcome variable for which leadership substitutes are successful (Podsakoff, MacKenzie, & Bommer, 1996; Podsakoff, MacKenzie, & Fetter, 1993; Pool, 1997). The results of this study support the latter findings that job attitudes are influenced by leadership substitutes and also the claims of Avolio and colleagues regarding the mixed effects of leadership substitutes since the satisfaction of needs did not mediate the relationship between leadership and either job performance or well-being indices.

The discrepancies between what outcomes were and were not influenced by mediating "substitution" factors may also lend credence to critics of the substitution-for-leadership theory. For example, Dionne, Yammarino, Atwater, and James (2002) argue, via theory and empirical results, that the moderators and mediators proposed in the substitution-for-leadership theory fail to substitute and/or trump the effects of leadership. They conclude that leadership does matter, and that prior mixed findings in support of the theory can be attributed to statistical artifacts, specifically the use of one- or two-

independent sources for ratings of leadership and leadership-substitutes. If same-source bias does drive some of the findings regarding the effectiveness of leadership substitutes, it may explain why job attitudes and SL were mediated by needs fulfillment (as a substitute), whereas job performance indices and SL were not mediated by needs. Notably, job attitudes were all self-reported by subordinates whereas job performance included indices rated by multiple sources—the subordinate and the supervisor. Future studies employing multiple sources (e.g., supervisor, subordinate, work group, coworkers) may elucidate whether needs satisfaction is truly acting as a substitute for leadership or whether it is a statistical artifact, as argued by Dionne and colleagues, of same-source bias.

In light of previous research and theory, it is also interesting to note what SL and SDT needs satisfaction were not related to in this study. SL is uniquely defined from other leadership styles by its follower-focus, generative organizational approach and concern for ethics. The latter concern for ethics is noteworthy since SL behaviors did not share relationships with OCB or CWB. Presumably these are two areas in which "ethical concern" and a generative environment (e.g., mentoring or helping a colleague with a project) would manifest themselves, yet this is not the case presently. Previous studies have reported that SL is related to ethical consideration and prosocial behaviors (Ehrhart, 2004). The latter suggests that additional factors may be at play, such as an individual's trait levels of regulatory focus (Neubert, Kacmar, Carlson, Chonko, & Roberts, 2008) or organizational climate (Walumbwa, Hartnell, & Oke, 2010). Similarly, SDT needs are boasted to relate to higher levels of several job performance indices, such as task performance, and well-being (Baard, Deci, & Ryan, 2004; Reinboth & Duda, 2006).

However, such relationships between SDT, well-being and job performance indices were not present for the employees surveyed in this study.

The relationship between SL, SDT needs, and the outcomes were closely paralleled by both the reported transformational leadership behaviors and consideration leadership behaviors of the supervisors. Exploratory analyses to investigate the discriminant validity of SL behaviors were less conclusive than previous studies which have cleanly demonstrated SL's incremental predictive validity for organizational outcomes over and above other leadership styles (Barbuto & Wheeler, 2006; Ehrhart, 2004; Liden Wayne, Zhao, & Henderson, 2008). This study found that SL predicted physical well-being, LMX and AOC incremental to both consideration and transformational leadership. However, SL did not provide any added predictive power for the other outcomes beyond what was accounted for by transformational and consideration leadership. One explanation for the lack of discrimination between the constructs is the large correlations, ranging between .80 and .90, shared amongst these three leadership constructs. The large correlations suggest that great conceptual overlap exists when subordinates rate their supervisors' leadership behaviors.

Aside from the indicators of subordinate well-being, SL, consideration leadership and transformational leadership shared nearly identical relationships with the outcome and mediator variables. This may arise for one or more of the following reasons: (1) the constructs for each leadership type are ill-defined, (2) the items within the measures for each leadership type fail to capture the construct and distinguishing behaviors, and/or (3) the leadership constructs are all moderated by whether a subordinate has a positive or negative appraisal of the supervisor such that a "big L" type factor exists underlying

positive leadership behaviors. The latter case is further substantiated by the high

correlation LMX shares (.80 to .82) with the three leadership constructs suggesting that

the quality of subordinates' relationship with their supervisors is very closely related to

their appraisal of the type of behaviors the supervisors exhibit. Unexpectedly, the

exploratory analysis which aimed to demonstrate the discriminant validity of SL may

have prompted an argument for revising and reducing the number of leadership typology

constructs to reflect a more general appraisal of "good" versus "bad" leadership.

Ultimately it may be that "good" leaders focus on their followers' needs which not only

demonstrates to followers their worth, but also fulfills certain basic needs, such as those

prescribed by SDT. This then could lend to enhanced experiences (e.g., performance,

attitudes, well-being) at work. Rather than focusing on specific leadership constructs,

future research should seek to understand how the different constructs relate to each

other, in what ways they are different and whether a broader perspective on leadership

with it defined as "good" versus "bad" or some other moderating, appraisal dichotomy

would better serve leadership research.

Limitations

Several limitations of this study have already been noted, such as the lack of

discriminant validity of the SL measure when compared to similar leadership constructs.

Relatedly, several of the scales, including for SL, failed to demonstrate adequate item

analyses and thus were revised for this study. This may have altered some of the

relationships amongst variables such that previously validated scales were changed and

assumed to behave in the same manner as the original scale did in previous studies. By

revising the scales and removing items, this study may have been prevented from seeing results paralleling past empirical research.

In addition to the revision of scales, drawing meaningful conclusions from the results may be made more difficult if the scales themselves fail to measure the construct it purports to. For example, given the high correlations amongst the leadership constructs, it may be that the scale for SL does not adequately capture the behaviors of a servant leader. Thus, there is debate as to whether the items on some of the scales were problematic due to the specific sample used presently, the lack of scale validation rigor, or for conceptual/theoretical reasons. In addition to this, the possibility for response biases to impact how supervisors and subordinates responded to the survey is worth further investigation. Specifically, employees were recruited through their organization and, generally, completed the survey while at work. Some subordinate and/or supervisors may have been uncomfortable responding truthfully about CWBs, for example, while at work since they are seen as negative, socially undesirable behaviors. Related to the limitations of the scales and construct definitions, the size of the sample was adequate but could have been increased. More supervisor-subordinate pairs may result in improved or better defined results as the power to detect effects increases.

Since supervisor-subordinate dyads were recruited to participate, common method bias is not a critical concern or limitation since both supervisor and subordinate rated the subordinate's experiences. Though this study can boast multi-source data, supervisors provided information for only two of the outcome variables. Both of the variables supervisors responded to, in-role task performance and OCB, were grouped in the job performance factor. This means that all the other constructs were self-report and from a

single source. Future research could increase the rigor of this study by including more other-rated (i.e. rated by supervisors or coworkers) measures of the subordinates' experiences. Different perspectives may also shed light on the differences between internal attitudinal outcomes and externally manifested, explicit behaviors at work.

Conclusion

This study proposed that the satisfaction of SDT needs serves as a mediating mechanism between supervisory SL behaviors and subordinates' organizational outcomes. The outcomes which were investigated and hypothesized to relate to SL behaviors and the fulfillment of SDT needs for autonomy, competence and relatedness were organized into four outcome categories: job performance, well-being, job attitudes and community prosocial behaviors. Results indicated that SL behaviors relate to the fulfillment of SDT needs but not necessarily to all of the outcomes. With regards to SDT needs and the outcomes, predominantly attitudinal outcomes (LMX, job satisfaction, AOC and depressive psychological symptoms) related to SDT needs. SDT needs related to only one behavioral outcome—CPB. Additionally, SDT needs were found to moderate the relationship between SL behaviors and attitudinal outcomes. Interestingly, neither SDT needs nor SL behaviors shared relationships with many of the outcomes despite prior empirical work suggesting relationships exist. The discrepancy in results between this study and previous research suggests the relationships may be more nuanced than previously acknowledged. The discrepant findings should also prompt discussion as to how the constructs of SL and other leadership behaviors are defined and measured.

This study sought to build on previous research by proposing and testing a comprehensive model of SL, SDT needs and important organizational indices. The

results of this study should serve as a call for researchers to better define leadership

constructs and the measurement of them, understand the nuances of both SL and SDT

needs within a work context, and to consider whether having a multitude of different

leadership typologies is necessary.

List of References

Avolio, B. J. & Bass, B. M. (1995). Individual consideration viewed at multiple levels of analysis: A multi-level framework for examining the diffusion of transformational leadership. *Leadership Quarterly, 6*(2), 199-218.

Avolio, B. J. & Gardner, W. L. (2005). Authentic leadership development: Getting to the root of positive forms of leadership. *Leadership Quarterly, 16*, 315-338.

Avolio, B. J., Walumbwa, F. O., & Weber, T. J. (2009). Leadership: Current theories, research, and future directions. *Annual Review of Psychology, 60*, 421-449.

Azen, R., & Budescu, D. V. (2003). The dominance analysis approach for comparing predictors in multiple regression. *Psychological Methods, 8*(2), 129-148.

Baard, P. P., Deci, E. L., & Ryan, R. M. (2004). Intrinsic need satisfaction: A motivational basis of performance and well-being in two work settings. *Journal of Applied Social Psychology, 34*(10), 2045-2068.

Bandura, A. (1977). *Social Learning Theory*. New York: General Learning Press.

Bandura, A. (1986). *Social Foundations of Thought and Action: A Social Cognitive Theory*. Englewood Cliffs, NJ: Prentice-Hall.

Barbuto, J. E. & Wheeler, D. W. (2006). Scale development and construct clarification of servant leadership. *Group Organization Management, 31*, 300-326.

Baron, R. M., & Kenney, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology, 51*, 1173-1182.

Bass, B. M. (2000). The future of leadership in learning organizations. *Journal of Leadership Studies, 7*, 18-40.

Bass, B. M. & Steidlmeier, P. (1999). Ethics, character, and authentic transformational leadership. *Leadership Quarterly, 10*, 181-217.

Bedeian, A. G., Ferris, G. R., & Kacmar, K. M. (1992). Age, tenure, and job satisfaction: A tale of two perspectives. *Journal of Vocational Behavior, 40*, 33-48.

Blau, P. (1964). *Exchange and Power in Social Life*. New York: Wiley.

Bono, & Judge, T. (2003). Self-concordance at work: Toward understanding the motivational effects of transformational leaders. *Academy of Management Journal, 46*(5), 554-571.

Borman, W. C., & Motowidlo, S. J. (1993). Expanding the criterion domain to include elements of contextual performance. In N. Schmitt, & W. C. Borman (Eds.), *Personnel selection in organizations* (pp. 71-98). San Francisco: Jossey-Bass.

Brown, M. E., Treviño, L. K., & Harrison, D. A. (2005). Ethical leadership: A social learning perspective for construct development and testing. *Organizational Behavior and Human Decision Processes, 97*, 117-134.

Burns, J. M. (1978). *Leadership*. New York: Harper and Row.

Cammann, C., Fichman, M., Jenkins, D., & Klesh, J. (1983). Assessing the attitudes and perceptions of organizational members. In S. Seashore, E. Lawler, P. Mirvis, & C. Cammann (Eds.), *Assessing Organizational Change: A Guide to Methods, Measures and Practices.* New York: John Wiley, p. 84.

Caplan, R. D., Cobb, S., French, J. R. P., Van Harrison, R., & Pinneau, S. R. (1980). *Job Demands and Worker Health.* Ann Arbor: University of Michigan, Institute for Social Research, p. 274.

Carless, S. A., Wearing, A. J., & Mann, L. (2000). A short measure of transformational leadership. *Journal of Business and Psychology, 14*(3), 389-405.

Deci, E. L., Connell, J. P., & Ryan, R. M. (1989). Self-determination in a work organization. *Journal of Applied Psychology, 74*(4), 580-590.

Deci, E. L. & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*(4), 227-268.

Deci, E. L. & Ryan, R. M. (1985). *Intrinsic Motivation and Self-Determination in Human Behavior*. New York: Plenum.

Deci, E. L., Ryan, R. M., Gagné, M., Leone, D. R., Usunov, J., & Kornazheva, B. P. (2001). Need satisfaction, motivation, and well-being in the work organizations of a former eastern bloc country: A cross-cultural study of self-determination. *Personality and Social Psychology Bulletin, 27*(8), 930-942.

Dennis, R. & Winston, B. E. (2003). A factor analysis of Page and Wong's servant leadership instrument. *Leadership & Organization Development Journal, 24*(8), 455-459.

Dionne, S. D., Yammarino, F. J., Atwater, L. E., & James, L. R. (2002). Neutralizing Substitutes for Leadership Theory: Leadership effects and common-source bias. *Journal of Applied Psychology, 87*(3), 454-464.

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

Eisenberger, R., Huntington, R., Hutchison, S., & Sowa, D. (1986). Perceived organizational support. *Journal of Applied Psychology, 71,* 500-507.

English, B. Morrison, D., & Chalon, C. (2010). Moderator effects of organizational tenure on the relationship between psychological climate and affective commitment. *Journal of Management Development, 29*(4), 394-408.

Fleishman, E. A. (1953). The description of supervisory behavior. *Journal of Applied Psychology, 37,* 1-6.

Fox, S., Spector, P. E., Goh, A., Bruursema, K., & Kessler, S. R. (2009). The deviant citizen: Clarifying the measurement of organizational citizenship behavior and its relation to counterproductive work behavior. Loyola University Chicago.

Gagné, M. (2003). The role of autonomy support and autonomy orientation in prosocial behavior engagement. *Motivation and Emotion, 27*(3), 199-223.

Gagné, M. & Deci, E. L. (2005). Self-determination theory and work motivation. *Journal of Organizational Behavior, 26,* 331-362.

Gerstner, C. R., & Day, D. V. (1997). Meta-analytic review of leader-member exchange theory: Correlates and construct issues. *Journal of Applied Psychology, 82,* 827-844.

Graen, G. B., & Uhl-Bien, M. (1995). Relationship-based approach to leadership: Development of leader-member exchange (LMX) theory of leadership over 25 years: Applying a multi-level multi-domain perspective. *Leadership Quarterly, 6*(2), 219-247.

Graen, G. B., Novak, M. A., & Summerkamp, P. (1982). The effects of leader-member exchange and job design on productivity and satisfaction: Testing a dual attachment model. *Organizational Behavior and Human Performance, 30,* 109-131.

Graham, J. W. (1991). Servant-leadership in organizations: Inspirational and moral. *Leadership Quarterly, 2*(2), 105-119.

Gray, C. E. & Wilson, P. M. (2008). The relationship between organizational commitment, perceived relatedness and intentions to continue in Canadian track and field officials. *Journal of Sport Behavior, 31*(1), 44-68.

Greenleaf, R. K. (1970). *The Servant as Leader*. Indianapolis, IN: The Robert Greenleaf Center.

Greenleaf, R. K. (1991). *Servant Leadership: A Journey into the Nature of Legitimate Power and Greatness*. New York: Paulist Press.

Hogan, R., Curphy, G. J., & Hogan, J. (1994). What we know about leadership: Effectiveness and personality. *American Psychologist, 49*(6), 493-504.

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*(1), 1-55.

Hu, L., & Bentler, P. M. (1998). Fit indices in covariance structure modeling: Sensitivity to underparameterized model misspecification. *Psychological Methods, 3,* 424-453.

Joseph, E. E. & Winston, B. E. (2005). A correlation of servant leadership, leader trust, and organizational trust. *Leadership & Organization Development Journal, 26*(1), 6-22.

Judge, T. A., Piccolo, R. F., & Ilies, R. (2004). The forgotten ones? The validity of consideration and initiating structure in leadership research. *Journal of Applied Psychology, 89*(1), 36-51.

Kaiser, R. B., Hogan, R. & Craig, S. B. (2008). Leadership and the fate of organizations. *American Psychologist, 63*(2), 96-110.

Kerr, S. & Jermier, J. M. (1978). Substitutes for leadership: Their meaning and measurement. *Organizational Behavior and Human Performance, 22*, 375-403.

Kessler, S. R., Spector, P. E., Chang, C. –H., & Parr, A. D. (2008). Organizational violence and aggression: Development of the three-factor Violence Climate Survey. *Work & Stress, 22*(2), 108-124.

Kline, R. B. (2005). *Principles and practice of structural equation modeling* (2nd ed.). New York: Guilford.

Koestner, R., Otis, N., Powers, T. A., Pelletier, L., & Gagnon, H. (2008). Autonomous motivation, controlled motivation, and goal progress. *Journal of Personality, 76*(5), 1201-1230.

Kozlowski, S. W. J. & Doherty, M. L. (1989). Integration of climate and leadership: Examination of a neglected issue. *Journal of Applied Psychology, 74*(4), 546-553.

Krebs, K. D. (2005). Can servant-leaders be safety indicators? Development and test of a model linking servant-leadership to occupational safety. Unpublished doctoral dissertation, DePaul University.

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.

Lord, R. G., & Brown, D. J. (2004). *Leadership processes and follower self-identity.* Mahwah, NJ: Lawrence Erlbaum Associates.

Mayer, D. M., Bardes, M., & Piccolo, R. F. (2008). Do servant-leaders help satisfy follower needs? An organizational justice perspective. *European Journal of Work and Organizational Psychology, 17*(2), 180-197.

Mayer, D. M., Kuenzi, M., Greenbaum, R., Bardes, M., Salvador, R. (2009). How low does ethical leadership flow? Test of a trickle-down model. *Organizational Behavior and Human Decision Processes, 108*, 1-13.

Meyer, J. P. & Allen, N. J. (1997). *Commitment in the Workplace: Theory, Research and Application.* Thousand Oaks, CA: Sage Publications.

Neubert, M. J., Kacmar, K. M., Carlson, D. S., Chonko, L. B., & Roberts, J. A. (2008). Regulatory focus as a mediator of the influence of initiating structure and servant leadership on employee behavior. *Journal of Applied Psychology, 93*(6), 1220-1233.

Nevitt, J. & Hancock, G. R. (2004). Evaluating small sample approaches for model test statistics in structural equation modeling. *Multivariate Behavioral Research, 39*, 439-478.

Organ, R. W., & Ryan, K. (1995). A meta-analytic review of attitudinal and dispositional predictors of organizational citizenship behavior. *Personnel Psychology, 48*(4), 775-802.

Page, D. & Wong, P. T. P. (2000). A conceptual framework for measuring servant-leadership. In Adjubolosoo, S. (Ed.), *The Human Factor in Shaping the Course of History and Development*, Lanham, MD: University Press of America.

Podsakoff, P. M., MacKenzie, S. B., & Fetter, R. (1993). Substitutes for leadership and management of professional. *Leadership Quarterly, 4*(1), 1-44.

Pool, S. W. (1997). The relationship of job satisfaction with substitutes for leadership, leadership behaviors, and work motivation. *The Journal of Psychology, 131*(3), 271-283.

Price, T. L. (2003). The ethics of authentic transformational leadership. *The Leadership Quarterly, 14*, 67-81.

Reinboth, M. & Duda, J. L. (2006). Perceived motivational climate, need satisfaction and indices of well-being in team sports: A longitudinal perspective. *Psychology of Sport and Exercise, 7*, 269-286.

Reinke, S. J. (2004). Service before self: Towards a theory of servant-leadership. *Global Virtue Ethics Review, 5*(3), 30-57.

Ryan, R. M. & Deci, E. L. (2000). Self-Determination Theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*(1), 68-78.

Ryan, R. M., Sheldon, Kasser, & Deci, E. L. (1996). All goals were not created equal: An organismic perspective on the nature of goals and their regulation. In P. M. Gollwitzer & J. A. Bargh (eds.), *The Psychology of Action: Linking Cognition and Motivation to Behavior* (pp. 7-26). New York: Guilford.

Schriesheim, C. A. & Stogdill, R. M. (1975). Differences in factor structure across three versions of the Ohio State Leadership Scales. *Personnel Psychology, 28*, 189-206.

Shore, L. M., Tetrick, L. E., Lynch, P., & Barksdale, K. (2006) Social and economic exchange: Construct development and validation. *Journal of Applied Social Psychology, 36(4),* 837-867.

Smith, J. E., Carson, K. P. & Alexander, R. A. (1984). Leadership: It can make a difference. *Academy of Management Journal, 27*(4), 765-766.

Spears, L. (1995). *Reflections on Leadership: How Robert K. Greenleaf's Theory of Servant Leadership Influenced Today's Top Management Thinkers.* New York: John Wiley & Sons.

Spector, P. E. & Fox, S. (2005). Chapter 7: The stressor-emotion model of counterproductive work behavior. In Fox, S. & Spector, P. E. (Eds.) *Counterproductive work behavior***:** *Investigations of actors and targets*. Washington, DC: American Psychological Association, pp. 151-174.

Spector, P. E., Fox, S., Penney, L. M., Bruursema, K., Goh, A., & Kessler, S. (2006). The dimensionality of counterproductivity: Are all counterproductive behaviors created equal? *Journal of Vocational Behavior*, *68*, 446-460

Spector, P. E. & Jex, S. M. (1998). Development of four self-report measures of job stressors and strain: Interpersonal conflict at work scale, organizational constraints scale, quantitative workload inventory, and physical symptoms inventory. *Journal of Occupational Health Psychology, 3*, 356-367.

Stone, A. G., Russell, R. F., & Patterson, K. (2004). Transformational versus servant leadership: A difference in leader focus. *Leadership & Organization Development Journal, 25*(3/4), 349-361.

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*(3), 517-529.

Washington, R. R., Sutton, C. D., & Field, H. S. (2006). Individual difference in servant

  leadership: The roles of values and personality. *Leadership & Organization*

  Development Journal, 27(8), 700-716

Williams, L. J., & Anderson, S. E. (1991). Job satisfaction and organizational

  commitment as predictors of organizational citizenship and in-role behaviors.

  Journal of Management, 17, 601-617

Appendices

Appendix A: Predictor Survey Scales

Servant Leadership Scale
(Ehrhart, 2004)

1. My supervisor spends the time to form quality relationships with his/her employees.
2. My supervisor creates a sense of community among his/her employees.
3. My supervisor's decisions are influenced by his/her employees' input.
4. My supervisor tries to reach consensus amongst his/her employees on important decisions.
5. My supervisor is sensitive to his/her employees' responsibilities outside the work place.
6. My supervisor makes the personal development of his/her employees a priority.
7. ~~My supervisor holds his/her employees to high ethical standards.~~
8. ~~My supervisor does what she or he promises to do.~~
9. My supervisor balances concern for day-to-day details with projections for the future.
10. My supervisor displays wide-ranging knowledge and interests in finding solutions to work problems.
11. My supervisor makes me feel like I work with him/her, not for him/her.
12. My supervisor works hard at finding way to help others be the best they can be.
13. ~~My supervisor encourages his/her employees to be involved in community service and volunteer activities outside of work.~~
14. ~~My supervisor emphasizes the importance of giving back to the community.~~

SDT Needs: Basic Need Satisfaction at Work
(Deci, Ryan, Gagné, Leone, Usunov, & Kornazheva, 2001)

When I am at work...
 1. I feel like I can make a lot of inputs to deciding how my job gets done.
 2. I really like the people I work with.
 3. I do not feel very competent when I am at work.
 4. People at work tell me I am good at what I do.
 5. ~~I feel pressured at work.~~
 6. I get along with people at work.
 7. ~~I pretty much keep to myself when I am at work.~~
 8. I am free to express my ideas and opinions on the job.
 9. I consider the people I work with to be my friends.
10. I have been able to learn interesting new skills on my job.
11. ~~When I am at work, I have to do what I am told.~~
12. Most days I feel a sense of accomplishment from working.
13. My feelings are taken into consideration at work.
14. On my job I do not get much of a chance to show how capable I am.
15. People at work care about me.
16. ~~There are not many people at work that I am close to.~~
17. I feel like I can pretty much be myself at work.
18. ~~The people I work with do not seem to like me much.~~
19. When I am working I often do not feel very capable.
20. There is not much opportunity for me to decide for myself how to go about my work.
21. People at work are pretty friendly towards me.

Subscale items:
Autonomy: 1, ~~5~~, 8, ~~11~~, 13, 17, 20
         Reverse-coded: items 5, 11, 20
Competence: 3, 4, 10, 12, 14, 19
         Reverse-coded: items 3, 14, 19
Relatedness: 2, 6, ~~7~~, 9, 15, ~~16~~, ~~18~~, 21
         Reverse-coded: items 7, 16, 18

Appendix B: Job Performance Scales

Task Performance
(Williams & Anderson, 1991)

1. Adequately completes assigned duties
2. Fulfills responsibilities specified in job description
3. Performs tasks that are expected of him/her
4. Meets formal performance requirements of the job
5. Engages in activities that will directly affect his/her performance evaluation
6. Neglects aspects of the job he/she is obligated to perform
7. Fails to perform essential duties

Reverse-coded: items 6, 7

Counterproductive Work Behaviors checklist (CWB-C)
(Spector, Fox, Penney, Bruursema, Goh, & Kessler, 2006)

1. Purposely wasted your employer's materials/supplies.
2. Purposely did your work incorrectly.
3. Been nasty or rude to a client or customer.
4. Insulted someone about their job performance.
5. Put in to be paid for more hours than you worked.
6. Blamed someone at work for error you made.
7. Started an argument with someone at work.
8. Insulted or made fun of someone at work.

Organizational Citizenship Behavior checklist (OCB-C)
(Fox, Spector, Goh, Bruursema, & Kessler, 2009)

1. Drove, escorted, or entertained company guests, clients, or out-of-town employees.
2. Took time to advise, coach, or mentor a co-worker.
3. Helped co-worker learn new skills or shared job knowledge.
4. Lent a compassionate ear when someone had a work problem.
5. Offered suggestions for improving the work environment.
6. Came in early or stayed late without pay to complete a project or task.
7. Volunteered for extra work assignments.
8. Informed manager of co-worker's excellent performance.

Appendix C: Well-Being Scales

Physical Well-being (Physical Symptoms Inventory)
(Spector & Jex 1998)

During the past 30 days, did you have...?
1. An upset stomach or nausea
2. A backache
3. Trouble sleeping
4. A skin rash
5. Shortness of breath
6. Chest pain
7. Headache
8. Fever
9. Acid indigestion or heartburn
10. Eye strain
11. Diarrhea
12. Stomach cramps (Not menstrual)
13. Constipation
14. Heart pounding when not exercising
15. An infection
16. Loss of appetite
17. Dizziness
18. Tiredness or fatigue

Psychological Well-Being: Work-Related Depression, Anxiety, and Irritation
(Caplan, Cobb, French, Van Harrison, and Pinneau, 1980)

1. I feel sad
2. I feel unhappy
3. I feel good
4. I feel depressed
5. I feel blue
6. I feel cheerful
7. I feel nervous
8. I feel jittery
9. I feel calm
10. I feel fidgety
11. I get angry
12. I get aggravated
13. I get irritated or annoyed

Subscale items:
        Depression: items 1-6
        Anxiety: items 7-10
        Irritation: items 11-13
Reverse-coded: items 3, 6, 9

Job Satisfaction
(Cammann, Fichman, Jenkins, & Klesh, 1983)

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

Reverse-coded: item 2

Appendix D: Social Cohesion Scales

Leader-Member Exchange (LMX-7)
(Graen, Novak & Summerkamp, 1982)

1. I always know where I stand with my immediate supervisor.
2. I feel that my immediate supervisor completely understand my problems and needs.
3. I feel that my immediate supervisor fully recognizes my potential.
4. Regardless of how much formal authority my immediate supervisor has built into his or her position, s/he would not hesitate to use her/his power to help me solve problems in my work.
5. ~~Again, regardless of the amount of formal authority my immediate supervisor has, I can count on him/her to 'bail me out' at his/her expense when I really need it.~~
6. ~~I have enough confidence in my immediate supervisor that I would defend and justify her/his decisions if s/he were not present to do so.~~
7. I would characterize my working relationship with my immediate supervisor as very effective.

Affective Commitment
(Meyer & Allen, 1997)

1. I would be happy to spend the rest of my career in this organization.
2. I really feel as if this organization's problems are my own.
3. I do not feel like "part of the family" at my organization.
4. I do not feel "emotionally attached" to this organization.
5. This organization has a great deal of personal meaning to me.
6. I do not feel a strong sense of belonging to my organization.

Reverse-coded: items 3, 4, 6

Community Prosocial Behavior
(Liden, Wayne, Zhoa & Henderson, 2008)

1. I am involved in community service and volunteer activities outside of work.
2. I believe it is important to give back to the community.
3. I take into consideration the effects of decisions I make in my job on the overall community.
4. I believe that our company has the responsibility to improve the community in which it operates
5. I encourage others in the company to volunteer in the community.
6. When possible, I try and get my organization involved in community projects that I am involved in.
7. I believe that an organization is obligated to serve the community in which it operates.

Appendix E: Exploratory Leadership Scales

Consideration Leadership
(Schriesheim & Stogdill, 1975)

1. My supervisor lets group members know what is expected of them.
2. My supervisor tries out his/her ideas with the group.
3. ~~My supervisor does little things to make it pleasant to be a member of the group.~~
4. ~~My supervisor refuses to explain his/her actions.~~
5. My supervisor treats all group members as his/her equals.
6. My supervisor is willing to make changes.
7. My supervisor is friendly and approachable.
8. My supervisor puts suggestions made by the group into operation.
9. My supervisor gives advance notice of changes.
10. My supervisor looks out for the personal welfare of group members.

Reverse coded: item 4

Transformational Leadership
(Carless, Wearing, & Mann, 2000)

1. My supervisor communicates a clear and positive vision of the future.
2. My supervisor treats staff as individuals, supports and encourages their development.
3. My supervisor gives encouragement and recognition to staff.
4. My supervisor fosters trust, involvement and cooperation among team members.
5. My supervisor encourages thinking about problems in new ways and questions assumptions.
6. My supervisor is clear about his/her values and practices what s/he preaches.
7. My supervisor instills pride and respect in others and inspires me by being highly competent.

About the Author

Kristin N. Saboe is a doctoral student in the Industrial/Organizational Psychology program in the Department of Psychology of the University of South Florida in Tampa, Florida and is a NIOSH Occupational Health Psychology trainee. Her primary research areas, for which she is published and given numerous presentations on, include: leadership, motivation and occupational health psychology. Kristin graduated summa cum laude, with honors in Psychology, from Austin College in Sherman, Texas in 2007 with a B.A. in Psychology and Philosophy. In addition to researching leadership, Kristin has received extensive leadership training and experience as a community leader and as a distinguished graduate of the Posey Leadership Institute—a selective 4-year leadership fellowship at Austin College. Kristin is a member of Phi Beta Kappa Society and is a Rotary International Paul Harris Fellow.