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LEADERSHIP AND SUBORDINATE ENGAGEMENT: A META-ANALYTIC  
EXAMINATION OF ITS MECHANISMS USING SELF-DETERMINATION THEORY

by

HENRY R. YOUNG  
B.A., University of California, Davis, 2011

A thesis submitted in partial fulfillment of the requirements  
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at the University of Central Florida  
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## **ABSTRACT**

Although past research has suggested ineffective leadership to be the most common reason for low levels of employee engagement, little is known about the mediating mechanisms underlying this relationship. To address this gap in research, I tested a theoretical model based on Self-Determination Theory (SDT; Deci & Ryan, 2000) in which two focal mechanisms, leader-member exchange (LMX) and empowerment, functioned in sequential order to predict the relationship between Full Range Leadership and subordinate engagement. Results showed that transactional leadership had positive and negative indirect effects on engagement, suggesting that transactional leadership comprises a “double-edged sword” as a predictor of subordinate engagement. In contrast, the indirect effects between transformational leadership and engagement were consistently positive. As such, current mediation models used in leadership can benefit by drawing from SDT to investigate the unfolding process of leadership through sequential mediation.

Keywords: engagement, leadership, meta-analysis, empowerment, LMX

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## INTRODUCTION

The leadership sciences have widely embraced the study of Full Range Leadership (Bass, 1985; Bass, 1999), observed by its sustained popularity over the past few decades (Antonakis, Bastardo, Liu, & Schriesheim, 2014). This attention is well-deserved, given that transformational and transactional leadership have been shown through meta-analyses to predict a range of positive outcomes including leader effectiveness (Dumdum, Lowe, & Avolio, 2002; Judge & Piccolo, 2004; Lowe, Kroeck, & Sivasubramaniam, 1996), team performance (Burke et al., 2006), and follower satisfaction with leader (Judge & Piccolo, 2004).

Yet, despite these impressive results, there has been considerably less research examining the processes through which Full Range Leadership leads to effective outcomes (Bass, 1999). In response, later research has suggested that a collection of mediating mechanisms exist, including the followers' attitudes toward leaders (e.g., trust in leader; Podsakoff, MacKenzie, Moorman, & Fetter, 1990), themselves (e.g., self-efficacy; Kark, Shamir, & Chen, 2003), their jobs (Piccolo & Colquitt, 2006), and their groups (e.g., Shamir, House, & Arthur, 2003), which altogether drive the effects through which followers are influenced by their leaders. Indeed, a recent meta-analysis by Gottfredson and Aguinis (2016) identified over 10 competing mechanisms that may explain the relationship between leadership and follower outcomes. The range and variety in these mediating mechanisms is fitting given the complexity of leadership (Yukl, 1998); however, organizational researchers are still left with a scatter of mediating mechanisms that requires an overarching framework to explore *why* these mechanisms are present in current literature. Additionally, this scatter of mediating mechanisms has not sufficiently addressed leadership as a key driver of motivation: "only 36 articles published in 25 years in these top outlets bear directly

on leader's effects on motivational outcomes" (Hiller, DeChurch, Murase, & Doty, 2011, p. 1167).

In light of this fragmentation of literature, it is necessary to draw from theory, especially one that is capable of delivering a parsimonious explanation (Bacharach, 1989). Thus, I return to the fundamentals of human motivation by drawing from Self-Determination Theory (SDT; Deci & Ryan, 2000), a meta-theory that "provides a framework that integrates the phenomena" (Deci & Ryan, 2002, p. 5) that is based on a long established tradition within psychology, philosophy, and biology that views individuals as *organisms*. Here, the organismic perspective of individuals assumes that all individuals have the natural and innate urge for psychological growth to build a unified sense of self (Deci & Ryan, 2002). This impulse for growth is manifested through psychological needs, which comprise "innate psychological nutriment that are essential for ongoing psychological growth, integrity, and well-being" (Deci & Ryan, 2000, p. 229). The three psychological needs, assumed to be universal and necessary for psychological growth, are *autonomy* (i.e., a sense of choice in self-regulating one's own choices), *competence* (i.e., a sense of confidence in what one does) and *relatedness* (i.e., a sense of belongingness and interpersonal connection with others). Together, these psychological needs are requirements to be satisfied in order to maintain and develop well-being (Jacob, 1973). From an organizational perspective, then, employees require support in all three psychological needs in order to establish well-being in the organization. Still, despite the impressive scope of SDT, organizational research has given this theory little attention (Gagné & Deci, 2005; Sheldon, Turban, Brown, Barrick, & Judge, 2003).

Therefore, the purpose of this research is to investigate the three psychological needs suggested by SDT – autonomy, competence, and relatedness – as motivational factors through



which transformational and transactional leaders influence the well-being of their subordinates. Although SDT is an expansive macrotheory that extends well beyond the scope of this paper, I address “perhaps the most important element of contemporary SDT – the concept of psychological needs” (Sheldon et al., 2003, p. 366). Thus, by bringing theory back to the roots of individuals as organisms, this paper provides a uniform perspective that helps to address how Full Range Leadership serves to meet the psychological needs of their followers and in turn, influence follower well-being. In so doing, I follow a prior proposition (that is yet untested) by Sheldon et al. (2003) who suggested “SDT may provide an important part of the explanation” (p. 371) in explaining how Full Range Leadership achieves impressive results.

Given that SDT focuses on well-being as the primary outcome of interest (Sheldon et al., 2003), it is logical to select employee engagement, defined as “employee well-being” (Maslach, Schaufeli, & Leiter, 2001; Schaufeli, Taris, & Rhenen, 2008; Schaufeli, 2013) to represent the criterion of this study (especially given a call for research on employee engagement using a SDT perspective; see Meyer & Gagnè, 2008). Furthermore, engagement is uniquely positioned as a fundamental outcome of leadership, as pioneering work by Burns (1978) famously declared that “the function of leadership is to engage followers” (p. 461). Indeed, a vast area of research in the organizational sciences has shown leadership to be an effective method to promote the motivation of followers (Gerstner & Day, 1997; Judge, Piccolo, & Ilies, 2004); and given that employee engagement has commonly been defined as a motivational construct (Colbert, Mount, Harter, Witt, & Barrick, 2004; Maslach, Schaufeli, & Leiter, 2001), leadership is theorized to have strong implications for the engagement of employees (Buckingham & Coffman, 1999; Wollard & Shuck, 2011). Finally, the need for research on leadership and engagement has been called forth in recent research: Beck and Harter (2015) show that the most common reason for

disengagement is inappropriate leadership, as many leaders may lack the skills needed to motivate employees to engage at work. Therefore, research is needed to investigate the processes through which leadership impacts the engagement of subordinates, and I utilize SDT as a theoretical framework for this investigation.

To conclude, this study provides three contributions to the study of engagement and leadership. First, I provide updated meta-analytic estimates of the relationship between transformational leadership and engagement by providing 35 more studies ( $\Delta N = 11,674$ ) than what was included in the Hoch, Bommer, Dulebohn, and Wu (2016) meta-analysis, and therefore establish more stable meta-analytic estimates of this relationship (Bakker, Albrecht, & Leiter, 2011). Second, in examining Full Range Leadership, attention is needed to better understand the mechanisms of transactional leadership. My attention to transactional leadership is endorsed by Full Range Leadership theory, which asserts that “the best leaders are both transformational and transactional” (Bass, 1999, p. 21). However, relative to transformational leadership, transactional leadership has been studied considerably less often (Judge & Piccolo, 2004); indeed, prior meta-analyses on engagement (Christian, Garza, & Slaughter, 2011; Hoch et al., 2016) included transformational leadership, but did not examine transactional leadership. Additionally, little work has been conducted to examine the mediational pathways through which transactional leadership operates on subordinate outcomes (Yukl, 1999). Several meta-analysis (Dulebohn, Bommer, Liden, & Ferris, 2012; Gottfredson & Aguinis, 2016; Podsakoff, Bommer, Podsakoff & MacKenzie, 2006) initially appeared relevant to addressing this gap, although these authors only examined the contingent reward behavior facet of transactional leadership (passive and active management-by-exception were omitted). Therefore, I add all transactional leadership facet validities to the leadership-engagement model. Third, considerable literature (Avolio, Zhu,

Koh, & Bhatia, 2004; Bono & Judge, 2003; Lord, Brown, & Freiberg, 1999) has called for greater attention to exploring the mechanisms through which transformational and transactional leadership influence follower outcomes. However, no research has addressed how leaders influence follower engagement, and I draw from SDT to model two key mechanisms – specifically, leader-member exchange and empowerment – as untested mediators of this relationship using meta-analytic structural equation modeling (MASEM; Viswesvaran & Ones, 1995). Importantly, MASEM is a powerful technique that offers “the potential to reshape a literature’s development” (Bergh et al., 2016) as it provides a quantitative synthesis of data that comes especially useful for building much-needed theory on the mechanisms of Full Range Leadership. As such, I will draw from SDT to build a conceptual framework on how leadership impacts subordinate engagement. Through these contributions, this paper will provide theoretical and practical knowledge to improve understanding of how leadership impacts subordinate engagement.

## DEFINITION OF ENGAGEMENT

While a variety of conceptualizations of employee engagement have been forwarded (Macey & Schneider, 2008), I focus on engagement as the “simultaneous investment of personal energies in the experience or performance of work” (Christian et al., 2011, p. 95). This definition conforms to engagement pioneer Kahn (1990) who originally conceived of engagement as the investment of physical, emotional, and cognitive aspects of one’s personal self into the work role. Similarly, a popular definition drawn by Schaufeli, Salanova, Gonzalez-Romá, and Bakker (2002) conceptualizes engagement as a “positive, fulfilling work-related state of mind that is characterized by vigor, dedication, and absorption” (p. 74), which has laid the theoretical foundation for the popular Utrecht Work Engagement Scale (UWES).

In Kahn’s (1990) seminal paper on employee engagement, three psychological conditions— availability, safety, and meaningfulness—are proposed as necessary conditions for employees to engage at work. First, availability refers to the extent to which employees possess sufficient personal resources (i.e., personal energy) to invest into the experience or performance of work. As engaged employees must invest high levels of physical, emotional, and cognitive energy (Kahn, 1990, 1992) into work, engagement is noted to require considerable energy expenditure. Thus, depletion of personal energy limits the extent to which employees are capable of engaging at work, and indicates that employees can only maintain engagement states for so long (Macey & Schneider, 2008). Second, safety describes the degree to which employees can express themselves “without fear of negative consequence to self-image, status, or career” (Kahn, 1990, p. 708); employees who feel safety are comfortable investing personal energy via their preferred self in the working environment. Third, meaningfulness is fulfilled when employees feel that they receive a return for their investment of energy resources into the

working role. That is, employees experience meaningfulness in their work when they judge that there is alignment between work goals and their own internalized standards (Hackman & Oldham, 1980; May, 2003), and when they feel valued and appreciated for their contributions (May, Gilson, & Harter, 2004).

There appear to be many common threads that link Kahn's engagement theory to SDT. Kahn (1990) observes that engaged employees express their preferred self to "yield behaviors that bring alive the relation of self to role" (p. 700). Similarly, under an SDT framework, engaged employees are those who have satisfied their psychological needs, thereby leading to the internalization of the tasks they have been assigned such that they draw a personal connection of the work to themselves (Sheldon et al., 2003). In turn, employees will be "naturally motivated to move towards greater ownership of behavior" (Sheldon et al., 2003, p. 364), which is analogous to Kahn's idea that engaged employees are those who express their personalized selves at work.

Still, there do appear to be differences among Kahn and SDT in prescribing what antecedent conditions are necessary to be satisfied before individuals are capable of bringing their personalized selves into the working role. Namely, SDT psychological need fulfillment suggests that engaged individuals must feel competent at performing the task at hand, interpersonally connected to other individuals, and have sufficient autonomy to self-regulate their tasks at work. These needs are peripherally related to Kahn's requisite engagement conditions (e.g., employees who have attained the sense of competency are self-efficacious, and thereby have additional personal energy resources that boosts psychological availability; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007). As such, they do not necessarily represent competing theories in describing the core of how employee engagement occurs because both Kahn and SDT focus on the core concept of internalization: both theories suggest that

engagement results when individuals draw their personalized selves into the working role, resulting in psychological ownership of the task at hand. Altogether, by applying SDT to employee engagement, I examine a yet unexplored channel in which engagement occurs through the fundamental needs satisfaction of competence, autonomy, and relatedness (rather than availability, safety, and meaningfulness). Indeed, because much is already known about how engagement occurs via Kahn's requisite conditions of availability, safety, and meaningfulness (May et al., 2004; Rich, Lepine, & Crawford, 2010), and considering the immense popularity of the SDT framework, the call for research on SDT as a motivational framework for engagement has been made clear (Meyer & Gagnè, 2008).

## **CLARIFYING TRANSFORMATIONAL-TRANSACTIONAL LEADERSHIP**

Pioneering research by Burns (1978) and Bass (1985) first conceptualized transformational leadership, which has since been developed to represent a motivational style of leadership that drives followers to pursue higher-order needs through the internalization of leader values (Kuhnert & Lewis, 1987; Judge & Piccolo, 2004). This leadership style is comprised of four components: inspirational motivation, idealized influence, individualized consideration, and intellectual stimulation (Bass, 1999). Inspirational motivation refers to communicating visionary goal statements that appeal to subordinates and inspire them to meet higher expectations. Idealized influence, also known as charisma, refers to behaving in a confident manner that stirs emotion and confidence in subordinates. Individualized consideration refers to mentoring and coaching each subordinate, such as through listening and addressing each subordinate's concerns. Intellectual stimulation refers to stimulating subordinate creativity and encouraging the production of novel ideas from subordinates.

In addition to transformational leadership, Burns (1978) and Bass (1985) further conceptualized transactional leadership as an additional leadership style necessary towards representing effective leadership. It is within Full Range Leadership theory that transformational leadership effects are contingent upon the foundation of transactional leadership, where transformational leadership is suggested to build upon the effects of transactional leadership (Avolio, 1999). As such, transformational and transactional leadership should be studied together as joint behaviors part of the full range model (Avolio, Bass, & Jung, 1999; Yammarino & Dubinsky, 1994) as effective leaders are said to exhibit both transformational and transactional behaviors.

Transactional leadership is a style of leadership that governs largely through the exchange of resources between leader and subordinate to meet their own self-interests and is comprised of three components: contingent reward, management by exception (active), and management by exception (passive). Contingent reward refers to granting tangible or intangible resources to subordinates constructively for meeting expectations. Management-by-exception (active) refers to active monitoring of subordinate behavior and correcting behavior when necessary to ensure that problems do not occur. Management-by-exception (passive) refers to intervening upon subordinate behavior only after problems have occurred.

However, perhaps due to the overwhelming popularity of transformational leadership, transactional leadership has been studied significantly less often relative to transformational leadership (Judge & Piccolo, 2004; Yukl, 2012). Other studies that have measured transactional leadership (e.g., Gottfredson & Aguinis, 2016) have only focused on single aspects (e.g., contingent reward) of this leadership style, failing to represent the entire content breadth of transactional leadership completely and potentially leading to omitted variable bias (Antonakis & House, 2014). Therefore, I include not only contingent rewards, but also active and passive management-by-exception within this meta-analysis to represent transactional leadership.

Lastly, although laissez-faire leadership has been suggested to be a part of the Full Range Model (Bass, 1985, 1997), laissez-faire leadership has been conceptualized to be separate from transformational and transactional leadership as it represents nonleadership (Avolio, 1999; Bass, 1998). Therefore, laissez-faire leadership was excluded from the current leadership-engagement model.



## **ESTABLISHING THE LEADERSHIP-ENGAGEMENT MODEL**

I built and tested a theoretical framework addressing the connection between transformational and transactional leadership and employee engagement, using two important mediating variables based on SDT to represent the psychological needs of autonomy, competence, and relatedness. Importantly, I did not examine autonomy, competence, and relatedness, explicitly defined, as insufficient data is available on the relationships between basic needs and leadership styles. Additionally, current research on needs satisfaction scales has been limited as many such scales have not been formally validated or have only recently been developed for use in the workplace setting (e.g., Basic Need Satisfaction at Work Scale; Broeck, Vansteenkiste, Witte, Soenens, & Lens, 2010).

Therefore, after an extensive review of the literature, I chose focal variables for autonomy, competence, and relatedness that have (a) immediate relevance to the workplace, (b) have established measurement scales (c) have been studied within leadership literature (thereby allowing me to draw from already established meta-analytic data). These proxy variables are psychological empowerment (used to measure autonomy and competence) and leader-member exchange (used to measure relatedness). It should be noted that the Basic Need Satisfaction at Work Scale (BNSWS; i.e., the needs scale used most often for the workplace setting; Deci et al., 2001; Ilardi, Leone, Kasser, & Ryan, 1993; Kasser, Davey, & Ryan, 1992) closely mirror items that are found on established empowerment and leader-member exchange scales. For example, with regards to competence and autonomy, the BNSWS contains items such as “I do not feel very competent when I am at work” and “When I am at work, I have to do what I am told”, which closely mirror items on the Spreitzer (1995) empowerment scale, “I am confident about my ability to do my job” and “I can decide on my own how to go about doing my work”

respectively. Similarly, for relatedness, the BNSWS items (e.g., “people at work care about me”) approximate those on the Graen and Uhl-Bien (1995) LMX-7 questionnaire (e.g., “How well does your leader (follower) understand your job problems and needs?”), excluding that the LMX-7 is better suited to measure leader-follower relationships than is the BNSWS.

Thus, the first mediating variable of the relationship between leadership and engagement is psychological empowerment, which is a key antecedent of engagement suggested by Macey and Schneider (2008) and has further been linked to transformational leadership (e.g., Full Range Leadership theory states that transformational leaders empower their followers; Bass, 1985). Psychological empowerment has been defined as a motivational state that affects task motivation through the cognitive enhancement of perceived meaningfulness, impact, competence, and self-determination (Spreitzer, 1995; Thomas & Velthouse, 1990). Meaningfulness refers to the weight an individual assigns to work based on a sense of purpose or personal connection (Mishra & Spreitzer, 1998; Hackman & Oldham, 1980). Self-determination refers to the individual’s sense of autonomy of how work can be initiated and performed (Deci, Connell & Ryan, 1989). Impact refers to perceptions that one’s individual work inputs can influence organizational outcomes to make a difference (Ashforth, 1989). Competence refers to self-efficacy, which is a self-belief that individuals hold regarding their capabilities in succeeding or performing a specific task well (Bandura, 1977; Gist, 1987). Altogether, my choice of psychological empowerment as a mediating variable was motivated by SDT (Deci & Ryan, 2000), given that psychological empowerment is a work-related construct (Spreitzer, 1995) that encompasses autonomy and competence, two of the three psychological needs thought to be fundamental to well-being under SDT. Bono and Judge (2003) confirm that “psychological empowerment has direct links to self-determination theory”(p. 556), although psychological empowerment extends

beyond the fundamental needs covered under SDT through not only the inclusion of autonomy (i.e., self-determination) and competence, but also meaningfulness and impact. Still, although SDT does not refer to meaningfulness and impact as explicit fundamental drives of needs satisfaction, both are relevant to the fundamental core principle of SDT that refers to individuals as organisms in need of psychological growth (Deci & Ryan, 2000). Indeed, meaningfulness and impact reasonably serve as nutriment for boosting the psychological growth and well-being of individuals — individuals who perceive that their actions have both a personal connection to themselves (i.e., meaningfulness), and that their actions lead to impactful consequences in the environment (i.e., impact) are likely better able to internalize the tasks that they are assigned. In turn, this internalization fuels psychological growth, through which the organismic integration perspective suggests that the most mature employees are those who have fully internalized important duties regardless of their unpleasantness (Sheldon & Kasser, 2001). As such, all facets of empowerment have direct ties to motivation and function reasonably well within the framework of SDT.

Next, in line with SDT, I selected leader-member exchange as a secondary mediator of the leadership-engagement relationship to represent the need for relatedness (given that leader-member exchange was developed specifically to represent the degree of relatedness between leader and follower). Indeed, research has shown that the domain of leadership includes not only the leader, but also the follower and the respective relationship between leader and follower (Graen & Uhl-Bien, 1995). Theorized as leader-member exchange (LMX; Graen & Uhl-Bien, 1995), leaders are thought to establish different quality of exchange relationships with their followers. Additionally, from a leadership perspective, research has called for integration of transformational-transactional leadership and LMX theory (Avolio, Sosik, Jung, & Berson,

2003) as the quality of the leader and follower relationship has been found to influence follower attitudes and emotions (Gerstner & Day, 1997). Lastly, it should be noted that recent meta-analytic research (Gottfredson & Aguinis, 2016) has found empirical evidence suggesting LMX to be perhaps the single most critical mechanism for linking leadership to follower performance (although engagement was not examined as an outcome).

Furthermore, the inclusion of both LMX and empowerment together as multiple mediators of the leadership-engagement model offers a comparative test of the magnitude of their indirect effects for theory testing (Hayes, 2013), essentially addressing the question of which psychological needs are best satisfied by transformational and transactional leadership behaviors as well as their subsequent effects on engagement. Finally, because past research (Likert, 1961; Liden et al., 2000; Aryee & Chen, 2006), has indicated LMX leads to psychological empowerment, I added a causal pathway from LMX to empowerment. This additional pathway leads to the construction of a serial multiple mediation model (Hayes, 2013), which offers rich contributions to current work on leadership. Leadership is a complex process (Yukl, 1999) — thus, not only is it possible that multiple mechanisms exist, but also that these mechanisms operate as a causal chain within the model to sequentially predict follower outcomes. This meta-analysis provides one of the first investigations into the unfolding process through which leaders influence their followers.

The serial multiple mediation model is illustrated in Figure 1. To examine these suggested relationships, I provide theory to establish all linkages necessary for mediation. First, linkages are provided between the leadership styles and the mediators (i.e., how transformational and transactional leadership influence LMX and empowerment). Next, linkages are provided between the mediators themselves (i.e., how LMX and empowerment are related). Lastly, I

establish relationships between the mediators and outcome (i.e., how empowerment and LMX predict engagement), and conclude with supporting rationale to hypothesize mediational effects.

### **Transformational Leadership and LMX**

Transformational leadership behaviors tend to be satisfying for followers (Bass & Riggio, 2006), and as a result are predictive of high quality LMX. Specifically, transformational leaders display heightened charisma and persuasive appeal (Wang et al., 2005), which can lead to boosts in affection and loyalty from their followers (Dienesch & Liden, 1986). Furthermore, transformational leaders give close personalized attention to their followers (Avolio & Bass, 2002), which helps to establish the unique dyadic relationships that serve as a foundation for building high quality social bonds. This notion is consistent with past meta-analytic work that has found strong relationships between transformational leadership and LMX ( $\rho = .73$ ;  $\rho = .71$ ; Dulebohn et al., 2012; Hoch et al. 2016). Thus, from a SDT framework, transformational leadership practices are interpersonally satisfying for subordinates and therefore satisfies their need for relatedness.

*Hypothesis 1: Transformational leadership is positively related to LMX.*

### **Transformational Leadership and Empowerment**

Transformational leadership has often been distinguished as a leadership style through which leaders empower their followers (Bass, 1985; Burns, 1978; Dust, Resick, & Mawritz, 2014). Indeed, transformational leadership appears to enhance all aspects of psychological empowerment (i.e., meaningfulness, impact, competence, and self-determination; Spreitzer, 1995). Notably, transformational leaders use their charismatic appeal to persuade subordinates to align their goals and values with those of the organization (Kark et al., 2003) to heighten their subordinates' perceptions of meaningfulness. Furthermore, transformational leaders coach

subordinates to be confident in their abilities to boost subordinates' sense of competency (Shamir et al., 1993). Transformational leaders stimulate creative thinking in their subordinates to encourage self-determination and inspire them to think on their own (Dvir, Eden, Avolio, & Shamir, 2002). Lastly, transformational leaders enhance their subordinates' sense of impact by communicating how their contributions to the organization will have prosocial benefits to recipients of their products and services (Grant, 2012). Thus, from an SDT framework, transformational leaders empower their subordinates and in so doing, meet their subordinates' fundamental needs of competence and autonomy.

*Hypothesis 2: Transformational leadership is positively related to empowerment.*

### **Transactional Leadership and LMX**

With regards to transactional leadership, Graen and Uhl-Bien (1995) have suggested that its focus on material exchange and contingencies of behavior is analogous to low-quality LMX, presumably as followers perform these behaviors out of self-interest and obligation to the leader. Thus, it appears that transactional leadership likely does not advance the leader-follower relationship beyond stranger and acquaintance dyads.

Furthermore, transactional leaders engage in active and passive management-by-exception, which may hinder the development of quality exchanges with their followers. Management-by-exception in its active form, for example, involves monitoring subordinates mechanically for mistakes in order to modify their behavior (Skinner, 1953). Additionally, passive management-by-exception seemingly involves little exchange between leader and follower, as the leader only intervenes to interact with followers when mistakes are made. As such, the need for relatedness is likely not satisfied for subordinates through active or passive

management-by-exception, as the quality of these exchanges between transactional leaders and their followers is thought to be poor.

However, contingent reward behavior has been found to positively predict higher-quality LMX (Howell & Hall-Merenda, 1999; Wayne, Shore, Bommer & Tetrick, 2002), perhaps as contingent rewards lead to clarified expectations about the working relationship. Additionally, contingent rewards can help leaders fulfill social exchange expectations (Blau, 1964) by offering rewards to subordinates in return for their heightened in-role performance (Wayne et al., 2002). Lastly, it is advantageous for followers to have positive relationships with their transactional supervisors as the supervisors control the distribution of desired organizational resources (e.g., rewards, promotions; Aryee & Chen, 2006). Thus, despite prior theorizing by Graen and Uhl-Bien, 1995), it is likely that contingent rewards enhance the social exchange quality between leaders and followers.

*Hypothesis 3a: Active management-by-exception is negatively related to LMX.*

*Hypothesis 3b: Passive management-by-exception is negatively related to LMX.*

*Hypothesis 3c: Contingent rewards is positively related to LMX.*

### **Transactional Leadership and Empowerment**

Transactional leadership is viewed as a less effective leadership style than transformational leadership (Bass, 1985), presumably because transactional leaders govern their subordinates through contractual self-serving obligations that focus on reward and punishment as a means of meeting performance standards. Here, I reference Cognitive Evaluation Theory (Deci & Ryan, 1985), which asserts that intrinsic motivation is impacted by the degree to which an individual feels competent and autonomous. Both competence and autonomy have been found to

be especially influenced by feedback and rewards (Gagné & Deci, 2005), which are the primary behaviors of transactional leaders.

More specifically, among the transactional leadership behaviors, active management-by-exception appears to drastically reduce follower autonomy; leaders who display this behavior vigorously monitor the behavior of their followers to ensure that their followers meet performance standards, which may lead to “pressure to think, feel, or behave in particular ways” (Deci & Ryan, 2008, p. 182). Additionally, the active monitoring of subordinate behavior may signal to the subordinates that their mistakes are probable, leading to diminished sense of follower competency (e.g., it may give the impression that followers who are incompetent need to be watched for mistakes). However, for passive management-by-exception, it is possible that the impassive nature of this leadership style may encourage follower autonomy; this leadership behavior essentially gives free rein to subordinates to act as they choose in meeting the performance standards of their leader. Thus, it appears that active management-by-exception may diminish empowerment to a much greater extent compared to passive management-by-exception.

Second, a review of meta-analytic literature on the relationship between rewards and motivation (see Lepper, Henderlong, and Gingras, 1999) has concluded that rewards, especially when given in a contingent manner (as reflected in transactional leadership) are linked to reductions in intrinsic motivation. Specifically, the pursuit of these rewards is often accompanied by restrictions in autonomous behavior (i.e., follower behavior is limited to meeting a performance standard devised by the leader). Relatedly, Deci and Ryan (1985) found that organizations that utilize rewards to control behavior also tend to engage in active monitoring and evaluation of subordinates in the distribution of contingent rewards —these practices lead to



lower autonomy and competence for the follower. Thus, contingent rewards “have been consistently and reliably shown to undermine intrinsic motivation presumably because their controlling function is salient” (Deci & Ryan, 1987, p. 1026). However, despite these limitations to the autonomy and competence of followers, Spreitzer (1995) suggested that contingent rewards convey substantial competence information and should thus be positively related to psychological empowerment. Similarly, Judge and Piccolo (2004) further found through meta-analysis that contingent rewards are positively related to follower motivation. The literature on the effectiveness of contingent rewards is decidedly mixed (Sheldon et al., 2003), although SDT appears to offer a more thorough theoretical framework for explaining why contingent rewards should lower empowerment (e.g., Spreitzer, 1995 did not acknowledge the autonomy-reducing implications of contingent rewards).

Thus, despite the mixed literature on contingent rewards and empowerment, SDT clearly emphasizes that contingent rewards lead to diminished empowerment. Additionally, transactional leaders engage in active and passive management-by-exception, which lead to lower perceived autonomy and competence for followers (although it is possible that passive management-by-exception may not diminish empowerment as strongly). In short, the large restrictions of control that transactional leader behaviors inflict upon their subordinates leads to diminished empowerment at work.

*Hypothesis 4a: Active management-by-exception is negatively related to empowerment.*

*Hypothesis 4b: Passive management-by-exception is negatively related to empowerment.*

*Hypothesis 4c: Contingent reward is negatively related to empowerment.*

## **LMX and Empowerment**

Establishing the causal order of LMX and empowerment has important implications for model results. Here, past evidence (Likert, 1961; Liden et al., 2000; Aryee & Chen, 2006) has been amassed to indicate that the most likely causal pathway consists of LMX leading to empowerment (i.e., rather than empowerment leading to LMX). For example, Liden et al. (2000) has suggested that the leader plays an important role in determining subordinate empowerment, as the quality of exchange between supervisor and subordinate can benefit the subordinate through enhanced feelings of self-worth and increased responsibility to make job-related decisions (i.e., otherwise known as qualities necessary for empowerment; Thomas & Velthouse, 1990). In contrast, while it is plausible that empowered followers are more likely to establish high quality LMX, the causal ordering of this path has not been supported by past research, perhaps because many elements of empowerment are best known to be outcomes of leadership rather than antecedents; Liden & Graen, 1980; Keller & Dansereau, 1995; Liden, Sparrowe, & Wayne, 1997).

Importantly, from the perspective of SDT, the three basic needs are all observed to be equally fundamental, innate, and essential for well-being (Deci & Ryan, 2000). These basic needs further lack a hierarchical structure, such that there is no particular order in which the needs must be met; and indeed, I do not emphasize the satisfaction of any need to be greater than any other. However, the addition of the LMX to empowerment pathway in the engagement-leadership model proposes that the manifestation of needs satisfaction occurs sequentially as a result of leadership. First, followers experience varying quality of exchanges with their leaders (i.e., satisfy relatedness needs); afterwards, followers develop perceptions of empowerment (i.e., satisfy perceptions of competence and autonomy) based on the quality of exchange with their

leaders. This sequential process highlights the temporal order in which basic needs are satisfied through leadership.

*Hypothesis 5: LMX is positively related to empowerment.*

## **LMX and Engagement**

Subordinates who develop high-quality LMX with their leaders establish relationships that align their values and beliefs with their leaders (Wang, Law, Hackett, Wang, & Chen, 2005), thus providing alignment of the personal self to the working self and thereby leading to subordinate engagement. Relatedly, past meta-analytic work has revealed a moderate relationship between LMX and employee engagement ( $\rho = .31$ ; Christian et al., 2011), presumably as high quality LMX serves to satisfy the need for relatedness (i.e., one of the three fundamental needs under SDT). Indeed, the need for relatedness has been recognized to be especially prominent as a volume of past research (see Baumeister & Leary, 1995 for a review) has stressed that individuals have a fundamental drive to maintain close and positive interpersonal relationships, whereas the lack of supportive interpersonal relationships will lead to “severe deprivation and cause a variety of ill effects” (Baumeister & Leary, 1995, p. 497). Subordinates in high-quality LMX relationships have likely established this need for belonging, as these subordinates receive emotional support, greater attention, and direction of information from their leaders (Sparrowe & Liden, 1997). In turn, subordinates who have high quality LMX are likely to possess the necessary personal resources for engaging at work (Saks & Gruman, 2014).

Additionally, Organizational Support Theory (Eisenberger, Huntington, Hutchinson, & Sowa, 1986) stresses that subordinates view their supervisors to be representatives of their respective organizations. Thus, subordinates who have positive relationships with their

supervisors will perceive that they have the support of their organization (i.e., fulfilling the need to belong), leading to boosts in self-esteem and social identity (Eisenberger, Cummings, Armeli, & Lynch, 1997) and enhancing personal resource availability for engagement. Given this prior theorizing, it should come as no surprise that research (e.g., Schaufeli & Bakker, 2004) has recognized the importance of social support as a method to improve engagement at work.

*Hypothesis 6: LMX is positively related to subordinate engagement.*

### **Empowerment and Engagement**

Psychological empowerment has been broadly defined as the process through which leaders grant power and control to their subordinates (Conger & Kanungo, 1988), in essence fulfilling subordinate intrinsic needs for autonomy and competence (Deci, 1975). Indeed, subordinates who have been psychologically empowered not only have increased competence and autonomy (i.e., two of the three fundamental needs covered under SDT), but also perceive their actions to be meaningful and impactful. Thus, subordinates will be better able to draw personal relevance to the task at hand (i.e., internalization of their tasks), leading to psychological ownership through which “people draw on their selves to perform their roles” (Kahn, 1990, p. 692) to increase their engagement at work. Other research by Thomas and Velthouse (1990) has broadly defined empowerment as increased intrinsic task motivation (Thomas & Velthouse, 1990), which has direct implications for enhancing subordinate engagement (e.g., given the proximal connection of engagement to motivation; Maslach et al., 2001). Therefore, it is likely that psychological empowerment will enhance engagement.

*Hypothesis 7: Subordinate engagement is positively related to empowerment.*

## **Transformational Leadership and Engagement**

The notion that transformational leaders engage their followers has roots that reach as far back as Burns (1978) who first conceived this linkage in his seminal introduction of transformational leadership. It is then unsurprising that transformational leadership has been found through meta-analyses (Christian et al., 2011; Hoch et al., 2016) to be moderately related to engagement. The mechanisms explaining this relationship are drawn from SDT to suggest that transformational leaders satisfy all fundamental subordinate needs (i.e., autonomy, competence, relatedness) by enhancing leader-subordinate relationships and empowering subordinates.

Therefore, this rationale brings me to forward the following hypothesis:

*Hypothesis 8: LMX and empowerment mediate the relationship between transformational leadership and engagement.*

## **Transactional Leadership and Engagement**

Transactional leadership is expected to impact autonomy, competence, and relatedness through LMX and empowerment, albeit in different magnitudes and varying directionalities compared to transformational leadership. The research summarized thus far suggests that contingent reward behaviors negatively influence empowerment, but positively boost the quality of exchange between leader and follower. Additionally, active and passive management-by-exception are expected to reduce follower empowerment and similarly lower the quality of exchange between leader and follower.

However, despite the likelihood that transactional leader behaviors reduce follower empowerment and LMX, followers must maintain a minimum level of engagement in their work to meet the stringent working standards of transactional leaders (i.e., transactional leaders likely intervene when follower engagement levels become too low to meet organizational standards),

and to gain the appropriate level of leader approval necessary to gain contingent rewards. Therefore, it is likely that transactional leadership predicts follower engagement, although to a lesser extent than transformational leadership. Lastly, because SDT suggests that the satisfaction of autonomy, competence, and relatedness needs are the primary mechanisms for internalized motivation, it is logical to expect mediation via empowerment and LMX for the relationship between all transactional leadership facets and engagement.

*Hypothesis 9: Empowerment and LMX mediate the relationship between all transactional leadership facets and engagement.*

## METHOD

### Literature Search

I used a variety of databases including PsycInfo, ProQuest Dissertations & Thesis Global, Google Scholar, and Web of Science to conduct an extensive search for primary articles containing data on leadership and engagement. I performed the search using the following combination of keywords: *leadership, engagement, transformational leadership, transactional leadership, charismatic leadership*. Other keywords (e.g., *empowerment, LMX, multifactor leadership questionnaire, Utrecht work engagement*) were included as part of a wide meta-analytic search effort to identify all potential articles that reported relationships between leadership and employee engagement. Additionally, I searched reference lists of key articles (e.g., Judge & Piccolo, 2004; Christian et al., 2011) to add relevant studies to my meta-analytic database. Lastly, I searched through the Society of Industrial and Organizational Psychology conference database for submissions that had unpublished data on leadership and engagement.

### Inclusion Criteria

I established the following inclusion criteria based on previous work by Christian et al. (2011). First, articles were required to provide data needed to compute a correlation between a measure of engagement and at least one of my constructs of interest (e.g., transformational leadership, transactional leadership, empowerment), which needed to be explicitly labeled as such in the primary study to be included. Second, as recommended by Christian et al. (2011), the measure of engagement was required to refer to individuals' psychological investment in actual work performed, rather than attitudes towards job features or the organization itself (Maslach et al., 2001). Third, the sample described in the study had to be composed of employees.

In total, my search resulted in 2,726 articles, of which 47 articles met all inclusion criteria and were included in the primary meta-analysis. An additional 31 other articles were used for independent meta-analyses needed to complete the meta-analytic correlation matrix. Articles included were published and unpublished work (i.e., master's theses and dissertations). I double-coded studies with a post-doctoral researcher who holds a PhD degree in Industrial-Organizational Psychology. The agreement rating was 99.99%, and all disagreements were resolved collaboratively.



## STATISTICAL ANALYSIS

I used the Hunter-Schmidt method of meta-analysis to create a weighted mean of the raw correlation coefficient (Hunter, Schmidt & Jackson, 1982; Schmidt & Hunter, 2014). Multiple effect sizes presented in a single sample (e.g., the relationship between transformational leadership and separate measures of engagement) were estimated as a composite correlation (Nunnally, 1978). Reliability estimates for composited measures were calculated using the Spearman-Brown formula. When reliabilities were missing from primary studies, I imputed reliabilities from other work (Christian et al., 2011 for engagement; Judge and Piccolo, 2004 for transformational and transactional leadership) or substituted sample weighted reliabilities that I calculated following recommendations by Sánchez-Meca, López-López, and López-Pina (2013).

**Mediation Analysis.** Meta-analysis is restricted to examining a relationship between two variables (Yu, Downes, Carter, & O'Boyle, 2016). Therefore, to test my multivariate model examining empowerment and LMX as mediators of the leadership-engagement relationship, I utilized meta-analytic structural equation modeling (MASEM). Landis (2013) recommended an alternative testing procedure of two-stage structural equation modeling (TSSEM; Cheung & Chan, 2005) as it helps to address limitations of MASEM (e.g., ignores second-order sampling error). However, TSSEM requires that at least one study provides a complete correlation matrix of all variables of interest included in the model, and I identified no studies in my meta-analytic database that met this requirement. Therefore, I used MASEM for model building to test the viability of empowerment and LMX as mediators of the leadership-engagement relationship.

Table 2 displays the meta-analytic correlation matrix used to conduct all mediation analysis. To build this correlation matrix, I first drew from published studies that already had established meta-analytic data on several needed relationships. Judge and Piccolo (2004) was

utilized for its meta-analytic effect sizes reported for the relationships between transformational leadership and transactional leadership. Additionally, meta-analytic effect sizes between empowerment, LMX, and transformational leadership were borrowed from Dulebohn et al. (2012). Lastly, independent meta-analyses were conducted for all other missing cells to complete the meta-analytic correlation matrix.

After constructing the meta-analytic matrix, I followed prior recommendations (Bergh et al., 2016; Vandenberg & Grelle, 2009) to build and test alternative plausible theoretical models when utilizing MASEM. To determine which alternative models should be tested, I referred to past research to determine the plausibility of causal orderings between all variables. First, research has been in agreement that Full Range Leadership is typically an antecedent to follower outcomes (Bass & Riggio, 2006; Howell & Hall-Merenda, 1999). Therefore, in all alternative models, transformational and transactional leadership were depicted as antecedent variables. Second, research on engagement has commonly depicted engagement as either a mediator (Christian et al., 2011; Saks, 2006) or an outcome (e.g., Tims, Bakker, Xanthopoulou, 2011). Third, research has been in agreement that empowerment is best viewed as an outcome of LMX (Chen, Kirkman, Kanfer, Allen, & Rosen, 2007; Martin, Guillaume, Thomas, Lee, & Epitropaki, 2016; Liden et al., 2000), but it also possible there is no sequential mediation of LMX resulting in empowerment, such that both relational and motivational mechanisms operate in completely independent pathways.

Therefore, four plausible models were tested: First, I tested the (1) hypothesized multiple serial mediation model in which LMX and empowerment, in sequential fashion, transmit the influence of leadership onto engagement (several other modifications to the model were performed as a test for mediation), (2) a parallel mediation model in which LMX and

empowerment operate independently as mechanisms of the leadership-engagement relationship; and (3) a model depicting engagement as a mediator whereas empowerment and LMX are specified as its outcomes (i.e., followers become empowered and develop higher quality LMX as a result of being engaged by their leader).

## RESULTS

I present meta-analytic correlations of leadership style and employee engagement in Table 1. Engagement was moderately and positively related to transformational leadership ( $\rho = .40$ , 95% CI [.36, .45]). Facet level relationships for transformational leadership were also included, although none of these facets showed differential relationships with engagement (i.e., all confidence intervals overlapped).

For the transactional leadership facets, contingent reward was positively related to engagement ( $\rho = .33$ , 95% CI [.19, .46]), but passive management-by-exception was negatively related to engagement ( $\rho = -.12$ , 95% CI [-.20, -.03]). Lastly, active management-by-exception was unrelated to engagement ( $\rho = .05$ , 95% CI [-.02, .12]; confidence interval included zero). Thus, with these initial meta-analytic relationships between leadership and engagement established, I next moved to testing the viability of the leadership-engagement model.

### Mediation Analyses

I used Mplus version 7.0 (Muthén & Muthén, 2012) to conduct MASEM and build all of the aforementioned theoretical models. The harmonic mean of 1723 was used for all analyses.

**Goodness of Fit.** I first examined the statistical fit of the hypothesized mediation model (i.e., Model 1) using common guidelines on fit indices by Hu and Bentler (1999). The fit statistics of this model indicated strong model fit, TLI = .941, CFI = .984, SRMR = .026, RMSEA = .096. It should be noted that multicollinearity is less of an issue in MASEM, given that this approach can take into account multiple complex relationships, including interrelated constructs (Bergh et al., 2016).

However, due to concerns of multicollinearity between the leadership dimensions as seen in the meta-analytic correlation matrix (e.g., contingent rewards and transformational leadership

have a corrected meta-analytic coefficient of .80; Judge & Piccolo, 2004), I estimated Model 1 separately for transformational and transactional leadership (see Figure 3 and 4) which I labeled as Model 1b and 1c respectively. The model fit for transformational leadership alone (i.e., Model 1b) was acceptable, CFI = .987, TLI = .919, SRMR = .026, RMSEA = .144. It should be noted that the RMSEA was inflated as this model only had one degree of freedom, and therefore should be ignored as a fit indicator (Kenny, Kaniskan, & McCoach, 2015). Next, conducting the mediation analysis on transactional leadership alone (i.e., Model 1c) similarly indicated acceptable fit, CFI = .992, TLI = .958, SRMR = .0242, RMSEA = .0795. Because both models indicated acceptable fit, I then examined the change in the path estimates when modeling transformational and transactional leadership separately compared to a combined model depicting transformational and transactional leadership together. Overall, the direction and significance of the path estimates among these models were very similar, although the estimate of the relationship between transformational leadership and LMX changed most dramatically when both leadership styles were included within the same model (i.e., change from an estimate of .73 to an estimate of .28). However, for all other relationships, multicollinearity did not largely distort the path estimates, and I therefore retained transformational and transactional leadership together within the same model.

I then tested the fit of Model 2 and Model 3 to rule these models out as plausible theoretical explanations. Model 2 (i.e., LMX and empowerment are independent mediators of the leadership-engagement relationship) showed poor fit, CFI = .870, TLI = .609, SRMR = .0535, RMSEA = .246. Modification indices showed that model fit could be improved substantially by adding a pathway from LMX to empowerment. Next, Model 3 (i.e., engagement is a mediator whereas LMX and empowerment are its outcomes) was estimated to reveal poor fit, CFI = .841,

TLI = .702, SRMR = .091, RMSEA = .215, suggesting serious misspecifications in the model. Therefore, it appears that LMX and empowerment do not operate as independent mechanisms of the leadership-engagement relationship. Furthermore, although engagement is commonly positioned as a mediator (e.g., Saks, 2006), LMX and empowerment are unlikely to be outcomes of engagement within this model.

**Parameter Estimates.** Figure 2 displays the path coefficients for all hypothesized paths. I identified a positive relationship between transformational leadership and LMX ( $\beta = .28, p < .05$ ) and between transformational leadership and empowerment ( $\beta = .12, p < .05$ ), giving support to both Hypothesis 1 and 2 respectively.

In examining the transactional leadership facets, negative relationships were found between active management-by-exception and LMX ( $\beta = -.25, p < .05$ ) and between passive management-by-exception and LMX ( $\beta = -.32, p < .05$ ). In contrast, a positive relationship was found between contingent reward and LMX ( $\beta = .54, p < .05$ ). These results supported Hypothesis 3a, 3b, and 3c respectively. Furthermore, consistent with predictions, a negative relationship was identified between contingent rewards and empowerment ( $\beta = -.32, p < .05$ ). Unexpectedly, the relationship between empowerment and active management-by-exception was slightly positive ( $\beta = .10, p < .05$ ), and the estimate was even more positive between passive management-by-exception and empowerment ( $\beta = .39, p < .05$ ). Thus, Hypothesis 4c was supported, but Hypothesis 4a and 4b were not predicted in the expected directions. Lastly, support was found in predicting a positive relationship between LMX and empowerment ( $\beta = .85, p < .05$ ); between LMX and engagement ( $\beta = .17, p < .05$ ); and between empowerment and engagement ( $\beta = .48, p < .05$ ), supporting Hypothesis 5, 6, and 7 respectively.

Next, to test for the significance of the indirect effects of LMX and empowerment in transmitting the influence of leadership to engagement, I used the Monte Carlo method (Preacher & Selig, 2012) to construct 95% confidence intervals of the indirect effect. In evaluating the significance and effect size strength of the mediational pathways in the leadership-engagement model, Preacher and Hayes (2008) recommend that investigations of multiple mediation should be done in two parts: (1) investigating the total indirect effect of the set of mediators and (2) examining the specific indirect effects of each individual mediator within the multiple mediator model. All indirect effect sizes are presented in Table 3.

First, it should be specified that the total indirect effect refers to the sum of all of the mediational pathways. These indirect effects include not only the sequential mediation of LMX and empowerment, but also incorporate the indirect effects in which LMX and empowerment operate as single mediators within each of their respective pathways of the leadership-engagement relationship. Results showed the total indirect effect was largest for the relationship between transformational leadership and engagement (95% CI [.149, .283]), followed by the relationship between contingent rewards and engagement (95% CI [.050, .269]). Thus, both transformational leadership and contingent rewards have significant indirect effects on engagement. Active management-by-exception was revealed to have a negative total indirect effect on engagement, 95% CI [-.153, -.045], and lastly, passive management-by-exception did not have a significant total indirect effect on engagement (95% CI [-.065, .066]).

Second, in examining the specific indirect effects, transformational leadership consistently transmitted positive influence on engagement through LMX and empowerment, supporting Hypothesis 8. However, for transactional leadership, there appeared to be inconsistent mediational effects that indicated LMX and empowerment had both positive and negative

indirect effects. Due to the novelty of these findings, I highlight the specific indirect effects of each transactional leadership facet below, which altogether support Hypothesis 9.

For contingent rewards, the positive effect of LMX on engagement (95% CI [.066, .116]) is offset by the negative effect of empowerment on engagement (95% CI [-.192, -.115]). However, if the pathway from contingent reward to engagement follows sequentially from contingent reward → LMX → empowerment → engagement, then the strength of the indirect effect is positive (95% CI [.120, .325]). Thus, if the mediational chain includes LMX within the sequential pathway, the negative effect of contingent rewards on empowerment appears to dissipate.

A similar pattern of finding is extended to active management-by-exception. Here, when examining LMX within a single mediating pathway, LMX carries negative influence (95% CI [-.055, -.031]) from active management-by-exception to engagement. In contrast, when examining empowerment alone, the indirect effect of active management-by-exception on engagement is positive (95% CI [.029, .069]). However, when considering LMX and empowerment together in sequential fashion, active management-by-exception has an indirect negative influence (95% CI [-.152, -.057]) on engagement.

Lastly, for passive management-by-exception, the inconsistent mediation of the specific indirect effects led to a null total indirect effect size (MacKinnon, Fairchild, & Fritz, 2007). Specifically, although the indirect effect of empowerment in itself on engagement was positive (95% CI [.159, .215]), it was offset by the negative indirect effect of LMX on engagement (95% CI [-.069, -.039]). Thus, the sequential mediation pathway incorporating both LMX and empowerment was negative (95% CI [-.193, -.072]). Altogether, when LMX and empowerment



are taken together into consideration, there is a negative indirect effect for both active and passive management-by-exception on engagement.

## DISCUSSION

The results of this meta-analysis offer new insights towards the study of leadership and engagement. First, I identified that SDT (Deci & Ryan, 2000) provides a parsimonious conceptual model for exploring the mechanisms through which transformational and transactional leadership predict engagement. Specifically, SDT frames the worker as an organism in need of psychological growth, suggesting that the degree to which the fundamental needs of competency, autonomy, and relatedness are satisfied is an important determinant of employee engagement at work. Thus, this model explores the viability of an alternative framework (i.e., needs satisfaction), contrasting that of Kahn (1990) who instead suggest availability, meaningfulness, and safety to be key determinants of engagement at work. In turn, I selected focal variables (i.e., psychological empowerment and LMX) to test the viability of SDT as mechanisms for explaining the leadership and engagement relationship; and in so doing, modeled empowerment and LMX as not only parallel mediators, but sequential mediators to establish a suggested sequential pathway by which leaders influence the engagement of their followers. Given that acceptable model fit was found for this parallel multiple mediation model, it appears that leaders engage their followers by enhancing their relationships with their followers (i.e., satisfying the subordinates' need to belong), and as a result, empowering their subordinates (i.e., satisfying the subordinates' need for autonomy and competence) to ultimately influence subordinate engagement. Notably, the sequential mediation identified in this paper provides an extension beyond Aguinis and Gottfredson (2016) by clarifying the role of motivation within leadership (i.e., they limited their examination of motivation to role conflict and role ambiguity). I found support in their notion that LMX plays a pivotal role as a mechanism of leadership and subordinate outcomes, but empowerment should be considered in

addition to LMX as part of the causal chain when engagement is the outcome variable. Given that I identified acceptable fit for the hypothesized mediation model, the addition of empowerment to LMX within the same model provides a strong conceptual explanation for how leadership indirectly predicts follower engagement. Below, I discuss the implications of this theoretical model in detail.

### **Theoretical Contributions**

The principle of parsimony has long been affirmed as a standard practice of good science (Bacharach, 1989). Thus, in line with this principle, although leadership has a broad array of mechanisms (Yukl, 1999), these mechanisms are perhaps better explained with one overarching theory (i.e., SDT) rather than the combination of multiple theories. Drawing from SDT gave a clear direction in the selection of mediating mechanisms by suggesting that engagement is the result of satisfying the fundamental needs of relatedness, autonomy, and competence; and indeed, the findings provide support for the role of LMX and empowerment as mediators of the relationship between Full Range Leadership and subordinate engagement. Examination of the specific indirect mechanisms reveals the interplay between LMX and empowerment as parallel and sequential mediators. For transformational leadership, the findings were none too surprising: consistent with expectations, transformational leadership indirectly predicted engagement through a mediational chain in which transformational leadership improved leader-follower relationships, which further lead to empowered followers and subsequent improved subordinate engagement. However, under transactional leadership, there appeared to be many instances of inconsistent mediation, as the inclusion of LMX and empowerment reveal both positive and negative indirect effects of transactional leadership on engagement (i.e., transactional leadership functions as a “double-edged sword”).

Indeed, research has indicated that seemingly positive leadership behaviors can function as a double-edged sword by simultaneously emitting positive and negative consequences onto subordinates. For example, a study by Diebig, Bormann and Rowold (2016) found that transformational leadership behaviors communicate high performance expectations that infuse confidence in their followers, but have a hidden cost: expectations that are perceived as unrealistic by followers result in a number of consequences including role ambiguity, mental overload, and increased strain. Although these negative effects have been identified for transformational leadership, no research has yet examined this double-edged sword of transactional leadership. This gap in literature is surprising, as from a theoretical and empirical standpoint, transactional leadership appears to offer the quintessential definition of double-edged leadership, given that differential levels of effectiveness have been found across its facet dimensions. Specifically, prior literature (Bass & Avolio, 1994; Derue et al., 2011; Judge & Piccolo, 2004) has described contingent reward to be the only effective behavior, whereas active and passive management-by-exception are largely seen as ineffective behaviors. Thus, this study is the first to reveal *why* transactional leadership serves as a double-edged sword. I discuss the findings in further detail below.

Although organizational psychology has commonly expounded the benefits of contingent rewards in motivating employees (e.g., Maslach et al., 2001; Spreitzer, 1995; Rynes, Gerhart, & Minette, 2004), this area of literature directly contrasts what SDT insistently predicts: under Cognitive Evaluation Theory (Deci & Ryan, 1985), contingent rewards have been consistently found to negatively impact motivation through lowered follower autonomy and competence (e.g., Deci & Ryan, 1987). My results perhaps shed light on this debate. Indeed, contingent rewards did have a negative indirect effect on engagement via diminished psychological

empowerment (i.e., reduced follower autonomy and competence). However, the negative indirect effect via empowerment was offset by the positive indirect effect of contingent rewards on engagement when LMX was included as a sequential mediator within the model. Thus, consistent with recommendations by Gottfredson and Aguinis (2016) to study LMX as a key mediating variable, it appears that the positive effects of contingent rewards on engagement are revealed when LMX is included along with empowerment as part of the mediational chain.

This “double-edged sword” effect is similarly mirrored in passive and active management-by-exception. Specifically, when empowerment functions as a single mechanism within the mediational pathway, passive management-by-exception appears to indirectly enhance engagement. Although unexpected, these results can be explained from the perspective of SDT: passive management-by-exception is associated with leader passivity, such that follower autonomy is uninhibited because these leaders do not seek to rigorously control their followers (with the exception that followers deviate from leader expectations). A positive boost in empowerment is also found for active management-by-exception, although to a much lesser degree (e.g., given that leaders who display this behavior are more active in monitoring their subordinates, diminishing follower perceptions of autonomy and competence). However, these positive boosts in empowerment are offset by the negative effects of passive and active management-by-exception on LMX. Specifically, when adding LMX within the mediational chain, it becomes clear that any motivational boosts of passive and active management-by-exception on empowerment dissipate due to poor leader-follower exchange, which altogether leads to negative indirect relations on subordinate engagement.

Overall, these results show that transactional leadership yields a variety of double-edged sword effects upon subordinates. Furthermore, given that these mediated effects in the

transactional-engagement model had opposite signs (Tzelgov & Henik, 1991), LMX and empowerment appear to operate as suppressor effects when considering engagement as an outcome. Suppressor variables represent “a variable which increases the predictive validity of another variable (or a set of variables) by its inclusion in a regression equation” (Conger, 1974, pp. 36-37), and provide a valuable addition to current research on leadership and engagement. Thus, the results of this study provide much needed clarity in the mechanisms through which transactional leaders influence their followers.

### **Implications for Practice**

Given that Beck and Harter (2015) show that leadership is a leading determinant of subordinate disengagement, these findings highlight the importance of utilizing a transformational leadership style over a transactional leadership style to boost levels of follower engagement. However, given that transactional leaders are thought to be much more common than transformational leaders (Burns, 1978), I highlight several of my findings regarding the use of transactional leadership as a method of increasing subordinate engagement.

Importantly, contingent reward appears to be the only transactional behavior that indirectly and positively predicted follower engagement. Although contingent rewards lead to reduced empowerment for followers, contingent rewards also play a valuable role in establishing high quality relationships between leaders and followers; as such, any negative effects of transactional leadership on follower empowerment are offset by the boost in quality of leader-member relationships. Furthermore, whereas passive and active management-by-exception empower followers to a degree, these leader behaviors are detrimental to leader-follower relationships, and as such, offset any initial motivational boosts.

Therefore, transactional leaders who manage their followers primarily through the use of contingent rewards should make extra effort to utilize other leader behaviors that support their followers' perceptions of autonomy and competence. Additionally, transactional leaders who engage in passive and active management-by-exception should take special care to engage in other leadership practices (e.g., individualized consideration) that develop high quality social exchanges with their followers. In total, these findings indicate that leadership is an important determinant of engagement because leadership influences the satisfaction of subordinate needs for autonomy, competence, and relatedness. Thus, leaders who wish to develop an effective and engaged workforce must play an active role in developing high quality interpersonal relationships with subordinates, which will then empower them to engage at work.

### **Limitations and Future Directions**

There are several limitations of this work that future research on leadership and engagement may wish to address. First, the basic needs of relatedness, autonomy, and competence were not measured explicitly defined. Although LMX and empowerment were chosen as proxy variables to represent these needs, future research should address if the use of needs satisfaction scales (e.g., Basic Need Satisfaction at Work Scale; Broeck et al., 2010) to measure autonomy, competence, and relatedness might lead to similar conclusions as drawn in this meta-analysis.

Second, although the search for articles was conducted exhaustively, the primary study count for independent meta-analyses concerning transactional leadership was generally low (e.g.,  $k = 3$  for MBEA and employee engagement). However, this primary study count was justified given that few studies measure transactional leadership (Judge & Piccolo, 2004; Yukl, 2012) and even fewer reported facet level data. Furthermore, the number of studies necessary to conduct a

meta-analysis has been reported to be only two studies (Valentine, Pigott, & Rothstein, 2010), and even small meta-analyses provide meaningful information (Schmidt et al., 1985). This is consistent with past meta-analyses (e.g., Bono & Judge, 2004; Christian et al., 2011; Gerstner & Day, 1997; Knight, Patterson, & Dawson, 2016) that have reported similar number of primary studies in their meta-analytic databases.

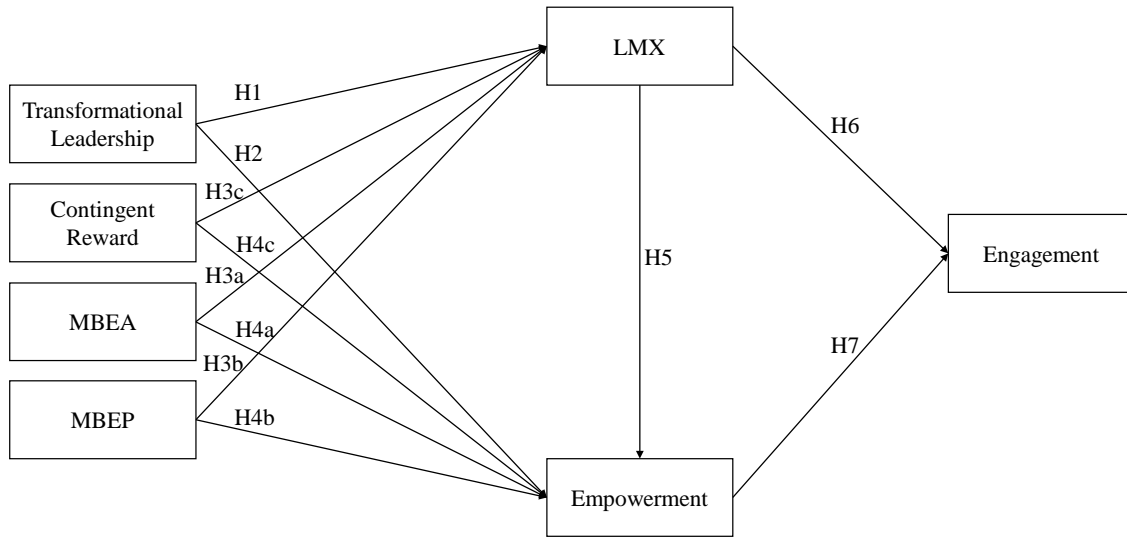
Third, I did not examine moderator conditions of the leadership-engagement relationship, although the width of the credibility intervals suggest that moderators may be present. Thus, future research may wish to examine boundary conditions of this relationship, such as how job demands and strains (Bakker & Demerouti, 2008) might attenuate or augment the leadership-engagement relationship. For example, followers who are vulnerable to experiencing severe job demands (e.g., stress) may face a depletion of personal energy that perhaps even high quality leadership will be unable to overcome, attenuating the degree to which positive leadership behaviors can enhance engagement indirectly through LMX and empowerment.

### **Conclusion**

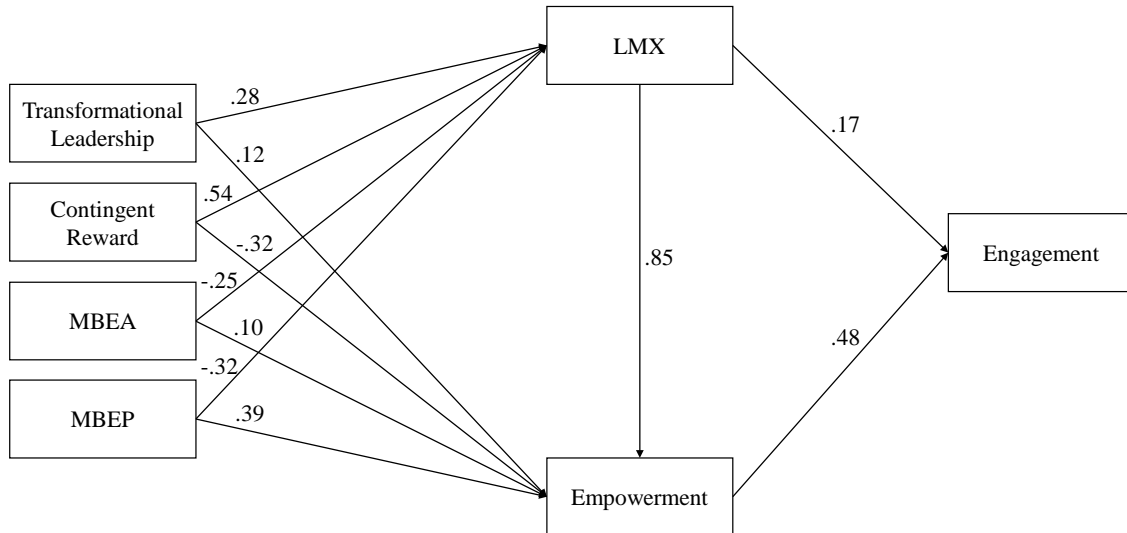
Given the complexity of leadership, SDT provides a useful framework for clarifying the mechanisms through which Full Range Leadership predicts subordinate engagement. Two focal mechanisms, LMX and empowerment, both functioned as key mediators of this relationship by indicating that leaders impact engagement by improving leader-follower relations and empowering subordinates. Additionally, findings revealed that transactional leadership comprises a “double-edged sword” that simultaneously emits positive and negative effects to influence follower engagement. Lastly, as implied, transformational leadership had consistent and positive indirect effects on engagement. These findings provide guidelines for how leaders can maximize the engagement of their subordinates at work.



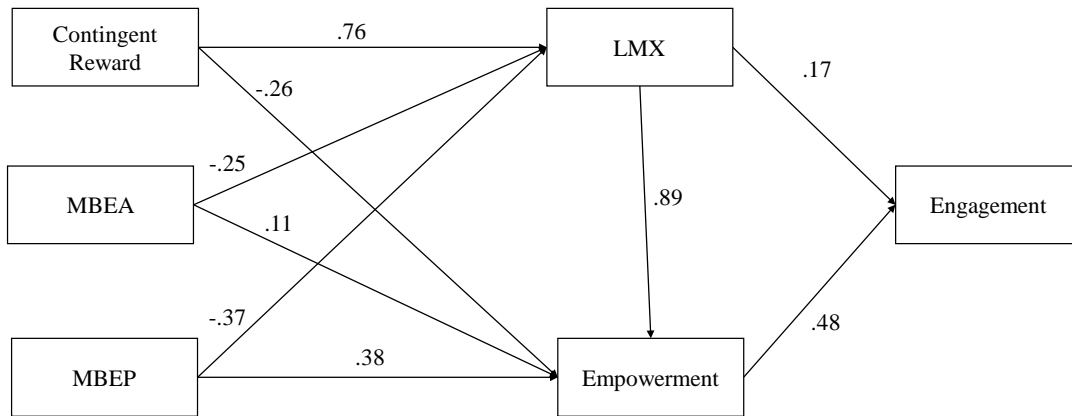
## **APPENDIX: FIGURES**



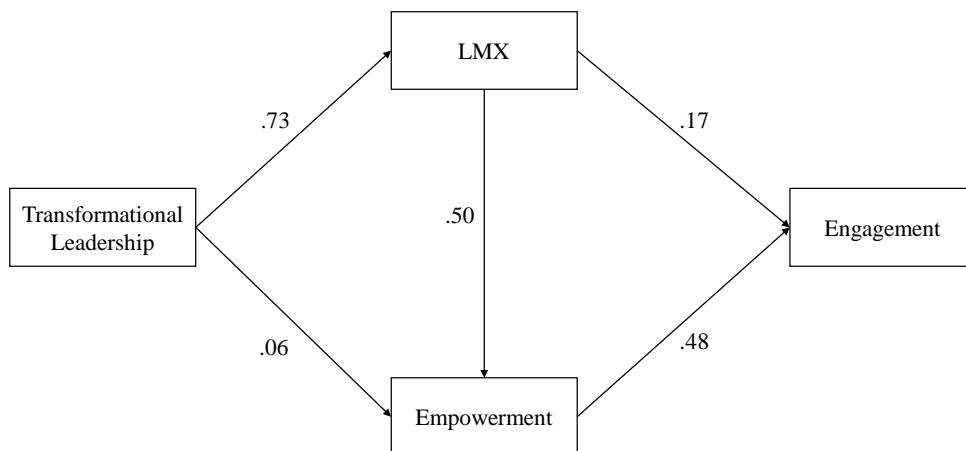
*Figure 1.* Hypothesized Mediational model depicting LMX and empowerment as mechanisms through which Full Range Leadership predicts engagement.



*Figure 2.* Estimated Mediational model depicting LMX and empowerment as mechanisms through which Full Range Leadership predicts engagement. Standardized estimates. All paths in structural model were significant at  $p < .05$ . All predictors were allowed to intercorrelate. root-mean-square-error of approximation = .096, comparative fit index = .984, Tucker-Lewis index = .941, standardized root-mean-square residual = .026 (model fit is good).



*Figure 3.* Estimated Mediational Model depicting LMX and empowerment as mechanisms through which Transactional Leadership predicts engagement. Standardized estimates. All paths in structural model were significant at  $p < .05$ . All predictors were allowed to intercorrelate. root-mean-square-error of approximation = .080, comparative fit index = .992, Tucker-Lewis index = .958, standardized root-mean-square residual = .024 (model fit is good).



*Figure 4.* Estimated Mediation model depicting LMX and empowerment as mechanisms through which Transformational Leadership predicts engagement. Standardized estimates. All paths in structural model were significant at  $p < .05$ . All predictors were allowed to intercorrelate. root-mean-square-error of approximation = .144, comparative fit index = .987, Tucker-Lewis index = .919, standardized root-mean-square residual = .026 (model fit is good).

**APPENDIX: TABLES**

Table 1. Meta-analytic results for leadership styles and employee engagement

<i>Leadership Style</i>	<i>k</i>	<i>N</i>	<i>r</i>	$\rho$	<i>SD<sub>p</sub></i>	95% CI		80% CrI	
						<i>LL</i>	<i>UL</i>	<i>LL</i>	<i>UL</i>
<b>Transformational</b>	49	16,974	.38	.40	.14	.36	.45	.22	.59
Idealized Influence	11	2,351	.36	.41	.12	.33	.49	.26	.56
Inspirational Motivation	8	1,847	.41	.47	.14	.36	.57	.28	.65
Individualized Consideration	8	1,847	.37	.43	.10	.35	.51	.30	.56
Intellectual Stimulation	8	1,847	.40	.45	.11	.37	.54	.31	.60
<b>Transactional</b>	11	1,947	.16	.18	.15	.08	.29	-.01	.38
Contingent Reward	5	1,145	.29	.33	.14	.19	.46	.15	.50
Management-by-Exception (Active)	4	818	.04	.05	.00	-.02	.12	.05	.05
Management by Exception (Passive)	3	757	-.10	-.12	.05	-.20	-.03	-.18	-.06

Table 2. Meta-analytic correlation matrix

Variable	1	2	3	4	5	6	7
1. Employee engagement							
2. Leader-member exchange	.42						
<i>k</i> studies	17						
<i>N</i> total observations	6255						
3. Transformational leadership	.40	.73 <sup>a</sup>					
<i>k</i> studies	49	20					
<i>N</i> total observations	16974	5451					
4. Contingent Reward	.33	.73 <sup>a</sup>	.80 <sup>b</sup>				
<i>k</i> studies	5	6	87				
<i>N</i> total observations	1145	1900	22369				
5. MBEA	.05	-.09	.17 <sup>b</sup>	.19 <sup>b</sup>			
<i>k</i> studies	4	5	60	20			
<i>N</i> total observations	818	836	12600	4795			
6. MBEP	-.12	-.39	-.20 <sup>b</sup>	-.05 <sup>b</sup>	-.05 <sup>b</sup>		
<i>k</i> studies	3	4	50	17	13		
<i>N</i> total observations	757	743	10928	4253	2762		
7. Empowerment	.57	.54 <sup>c</sup>	.42 <sup>c</sup>	.39	-.03	.04	
<i>k</i> studies	12	n/a	n/a	5	4	3	
<i>N</i> total observations	5094	7331	4628	1010	827	653	

Note: <sup>a</sup>Dulebohn et al. (2012). <sup>b</sup>Seibert, Wang, & Courtright (2011). MBEA = Management-by-exception (active). MBEP = Management-by-exception (passive). n/a = data not reported in original meta-analysis.



*Table 3.* Indirect effects of empowerment and LMX on the leadership and engagement relationship

Mechanism	LL	UL
TL → Empowerment → Engagement	.023	.088
TL → LMX → Engagement	.032	.061
TL → LMX → Empowerment → Engagement	.061	.168
Total indirect effect	.149	.283
CR → Empowerment → Engagement	-.192	-.115
CR → LMX → Engagement	.066	.116
CR → LMX → Empowerment → Engagement	.120	.325
Total indirect effect	.050	.269
MBEA → Empowerment → Engagement	.029	.069
MBEA → LMX → Engagement	-.055	-.031
MBEA → LMX → Empowerment → Engagement	-.152	-.057
Total indirect effect	-.153	-.045
MBEP → Empowerment → Engagement	.159	.215
MBEP → LMX → Engagement	-.069	-.039
MBEP → LMX → Empowerment → Engagement	-.193	-.072
Total indirect effect	-.065	.066

Note. LL= 95% Monte Carlo lower confidence interval; UL=95% Monte Carlo upper confidence interval. 20,000 repetitions inputted for simulation

TL = Transformational Leadership. CR = Contingent Reward. MBEA = Management-by-exception (active). MBEP = Management-by-exception (passive). LMX = leader-member exchange.

Table 4. Fit indices for alternative models.

Measurement Model	Chi-square	df	TLI	CFI	SRMR	RMSEA
Model 1	67.27	4	.941	.984	.026	.096
Model 1b	36.79	1	.919	.987	.026	.144
Model 1c	35.628	3	.958	.992	.024	.080
Model 2	525.13	5	.609	.870	.054	.246
Model 3	642.12	8	.702	.841	.091	.215

Note: TLI = Tucker-Lewis Index. CFI = comparative fit index. SRMR = standardized root-mean-square residual. RMSEA = root-mean-square-error of approximation.

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