Sara L. Ridder, A META-ANALYSIS ON THE MULTIFACTOR LEADERSHIP QUESTIONNAIRE (MLQ) (Under the direction of Dr. Karl Wuensch and Dr. Mark Bowler) Department of Psychology, July 2015

The Multifactor Leadership Questionnaire (MLQ) is one of the most commonly used measures for evaluating a subordinate's perceptions of his/her supervisor's transformational, transactional, and passive leadership behaviors (Avolio, 1995; Bass, 1998; 1997; Bass & Avolio,1995; Dumdum, Lowe, Avolio, 2002; Lowe, Kroeck, & Sivasubramaniam, 1996). Since its original development (Bass, 1985), the MLQ has been regularly used in organizational research, appearing in over 6,000 publications. Although there have been several previously conducted meta-analyses on the MLQ (Leong & Fischer, 2011; Ilies, Nahrgang, & Morgeson, 2007; Harms & Credé, 2010; Kuopplala, 2008), it has been almost 10 years since the last review. Subsequently, the present study sought to update the literature with a novel meta-analysis of the relevant research studies that have been published during the past ten years. Specifically, this study examined the relationship between the MLQ and critical organizational variables such as leadership effectiveness, job satisfaction, organizational commitment, and organizational citizenship. Overall, for followers of transformational leadership was positively related to organizational citizenship behaviors, leadership effectiveness, job satisfaction and organizational commitment whereas, for followers of transactional leadership the results were mixed with the organizational outcomes.

A META-ANALYSIS ON THE MULTIFACTOR LEADERSHIP QUESTIONNAIRE (MLQ)

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I would like to dedicate this research to my late mother, Norma Ridder. She was my biggest

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CHAPTER I: INTRODUCTION

Who was the best leader you ever had? What made this particular individual effective? Take a few moments and think about why this individual was such an effective leader. Hundreds of thousands of individuals have completed this exercise over the years and have identified a transformational leader as being the most effective (Bass, 1998). High levels of transformational leadership is typically considered to both (1) broaden and raise the interests of followers in order to create awareness and support for the overall purpose of the organization and (2) encourage followers look beyond their self-interests for the good of the group (Bass, 1997; Felfe & Schyns, 2004; Jung & Avolio, 2000). First introduced by Burns (1978), transformational leadership is the counterpart to transactional leadership. In contrast to transformational leadership, high levels of transactional leadership is typically considered to simply focuses on the individual exchanges that are made between follower and leader (Ali, Babar, Bangash, 2011; Bass 1985; 1990; 2000; Bass, Avolio, Jung & Berson, 2003; Burns, 1978). Historically, transformational leadership has been considered superior to transactional leadership due to its positive relationship with subordinate satisfaction, performance, motivation, commitment, and ratings of leader effectiveness (cf. Bycio, Hackett & Allen, 1995; Jung & Avolio, 2000; Kane & Tremble, 2000; Lowe, Kroeck & Sivasubramaniam, 1996). In contrast, transactional leadership has been found to be negatively associated with team innovation (Liu, Liu, & Zeng, 2011) and identification (Ruggieri & Abbate, 2013). Thus, as noted by Bass (1985), transformational and transactional leadership are different concepts that are not mutually exclusive.

Without debate, the most commonly used measure of leadership behaviors is the Multifactor Leadership Questionnaire (MLQ; Avolio, 1995; Avolio, Bass, & Jung, 1999;

Bass, 1998; 1997; Bass & Avolio,1995; Dumdum, Lowe, & Avolio, 2002; Lowe, Kroeck, & Sivasubramaniam, 1996). In addition to utilizing a 360-degree format, the MLQ is designed to assess a wide range of leadership behaviors including passive leadership, contingent reward leadership and transformational leadership (Avolio & Bass, 2004; Antonakis, Avolio, & Sivasubramaniam, 2003; Rowold, & Heinitz, 2007). There has been extensive research on the MLQ over the years relating these dimensions to organizationally valued outcomes such as organizational citizenship behaviors (Gilmore, Hu, Wei, Tetrick, & Zaccaro, 2013; Muchiri & Ayoko, 2013; Zacher & Jimmieson, 2013), leadership effectiveness (Casida & Parker, 2011; Groves & LaRocca, 2011; Hur, van den Berg, & Wilderom, 2011; Piccolo et al., 2012), organizational commitment (Dai, Dai, Chen, & Wu, 2013; Ertureten, Cemalcilar, & Aycan, 2013; Mesu, Van Riemsdijk, & Sanders, 2012; Vandenberghe, Stordeur, & D'hoore, 2002), and job satisfaction (Ertureten et al., 2013; Kovjanic, Schuh, Jonas, Quaquebeke, & Dick, 2012; Piccolo et al., 2012; Smith, Koppes, Vodanovich, 2012). Furthermore, several comprehensive meta-analyses by have demonstrated a general stability in these relationships (cf. Dudum et al., 2002; Eagly, Johannesen-Schmidt & Van Engen, 2003; Ilies, Nahrgang, & Morgeson, 2007; Jackson, Meyer, & Wang, 2013; Judge & Piccolo, 2004; Lowe et al., 1996). However, an updated meta-analysis has not been published in over ten years. Subsequently, the purpose of the present study was to utilize meta-analysis to investigate the MLQ's transformational and transactional leadership scales and their relationships with organizational commitment, job satisfaction, organizational citizenship behaviors, and leader effectiveness.

CHAPTER II: LITERATURE REVIEW

One of the initial approaches taken to leadership research focused on the specific traits possessed by an individual and how those related to leadership success (Yukl, 2006; 2012; Zarccaro, 2007). In combination with the early Michigan studies on leader behavior, this approach was quickly subverted by Stogdill (1948; Kenny & Zaccaro, 1983; Lord, De Vader, & Alliger, 1986). Stogdill and Coons (1957) identified two primary elements of leadership behavior: (1) initiating structure, which focuses on the duties that are needed to meet performance goals, and (2) consideration, which focuses on the personal relationship formed between supervisor and subordinate. Similarly, the University of Michigan studies identified two parallel factors of (1) production orientation and (2) employee orientation of leaders (Likert, 1961). Together, the Ohio State and Michigan leadership studies determined that the most effective leaders utilize both task-oriented and relationship-oriented behaviors when interacting with their subordinates (Bowers & Seashore, 1966; Stone, Russell & Patterson, 2004).

Ultimately, this work created a paradigm shift in leadership research that culminated in the development of transformational leadership theory (House, 1988; Hunt, 1999). As outlined by Burns (1978), transformational leadership theory holds that effective leaders must inspire and nurture followers' ability to add to the organization (Eagly et al., 2003). As with the previous research transformational leadership theory places an emphasis on both behaviors and the impact on subordinates, rather than the specific traits of the supervisor (Lowe et al.,1996; Stone, Russell & Paatterson, 2004; Yukl, 2012). Additionally, Burns (1978) outlined a complementary, transactional leadership, in which leaders partake in exchange processes involving followers' immediate self-needs to obtain cooperation and compliance from followers to complete the task. Together, these two theories are the primary foundation of modern leadership research.

Transactional Leadership

The foundation of transactional leadership behaviors is a quid pro quo relationship within which leaders make clear which behaviors deserve reward and which behaviors deserve punishment (Bass, 1985; Bromley & Kirschner-Bromley, 2007; Judge & Piccolo, 2004). Within this framework, leaders attempt to understand and identify roles and tasks required for subordinates to accomplish the desired outcomes (Bass, 1985; Hollander, 1986; Ravichandran, Gilmore, & Strohbehn, 2007). Transactional leadership clarifies such requirements for subordinates and thus creates the confidence subordinates need to exert the necessary effort (Bass, 1997; Podsakoff, Todor, & Skov, 1982). Furthermore, transactional leadership focuses on the explicit needs and desires of each subordinate and attempts to provide a means by which these can be satisfied via the expenditure of effort. Thus, transaction leadership provides motivation for subordinates to work by offering a clear sense of direction towards the desired set of outcomes (Burns, 1978; Howell & Avolio, 1993).

Within the MLQ, transactional leadership is comprised of three primary components: (1) contingent reward, (2) active management-by-exception, and (3) passive management-by-exception (Avolio & Bass, 2004; Garman, Davis-Lenane, & Corrigan, 2003; Hater & Bass, 1988). Contingent reward leadership clarifies what is expected from followers and what the followers will receive if they meet expected levels of performance (Bass, 1998; Podsakoff, MacKenzie, Podsakoff, & Lee, 2003; Walumbwa, Wu, & Orwa, 2008). Active management-by-exception leader focuses on monitoring task execution for any problems that might arise and correcting those problems to maintain current performance levels (Avolio et al., 1999; Bass & Avolio, 1997; Bass & Riggio, 2006). Passive management-by-exception describes leaders who only correct when something goes wrong (Howell & Avolio, 1993; Yammarino & Bass, 1990;

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Yammarino, Spangler, & Bass, 1993). An additional component typically included is passive-avoidant leadership. Often referred to as laissez-faire leadership, this form is neither transactional nor transformational. Leaders who are passive-avoidant react only after problems have become serious and then may take corrective action or may avoid making any decisions at all (Avolio & Bass, 2004; Howell & Avolio, 1993; Keller, 1993; Xirasagar, 2008).

Transformational Leadership

In order to create long-term development and organizational change, an organization needs to utilize a transformational approach (Bass, 1985; Eisenbach, Watson & Pillai, 1999; Oreg & Berson, 2011; Paulsen, Callan, Ayoko, & Saunders, 2013). Using only a transactional approach may cause performance and satisfaction to suffer in an organization (Bealer & Bhanugopan, 2014; Burns, 1978; Peters & Austin, 1985). Thus, transformational leadership is often used to complement transactional leadership (Bass, Avolio, & Goodheim, 1987; Burns, 2003) and often augments or increases the effect of transactional leadership on organizational outcomes (Bono & Anderson, 2005; Goodwin, Wofford, & Whittington, 2001; Waldman Bass, & Yammarino, 1990). Overall, the augmenting hypothesis has been investigated and supported across several studies (e.g., Hater & Bass, 1988; Howell & Avolio, 1993; Judge & Piccolo, 2004; Yammarino, Spangler, & Bass, 1993). Effective organizations will use transactional leadership and transformational leadership to achieve lower order and higher order objectives (Avolio, Waldman & Einstein, 1988; Bass, 1999; Herman & Chiu, 2014; Levinson, 1980; MacKenzie, Podsakoff, & Rich, 2001;Yammarino & Bass, 1990).

Transformational leadership behaviors motivate followers by transcending their self-interests, elevating their needs, and making them aware of their contribution to the larger organizational mission (Afsar, Badir, Bin Saeed, 2014; Bass, 1999; Burns, 1978; Groves &

LaRocca, 2012). The process of the leader selecting a goal, developing identities, and intellectually stimulating employees goes beyond simple leader-follower transactions (Aarons, 2006; Podsakoff, Bommer, Podsakoff & MacKenzie, 2006; Vandenberghe, Stordeur & D'hoore, 2002). Through transformational leadership, subordinates become leaders due to established goals and objectives. In other words, the goals and objectives help to develop subordinates' capabilities to determine their own course of action (Conger & Kanungo, 1987; Harland, Harrison, Jones & Reiter-Palmon, 2004; McColl-Kennedy & Anderson, 2002).

Transformational leadership is comprised of five primary components: (1) intellectual stimulation, (2) inspirational motivation, (3) idealized attributes, (4) idealized behaviors, and (5) individualized consideration (Avolio & Bass, 2004; Bass, 1985; 1998; Barbuto, 2005). Leaders using intellectual stimulation encourage followers to question the methods and the status quo by re-examining critical assumptions (*al-Dumur & al-Awamilah, 2002; Avolio & Bass, 2004; Waldman, Javidan, Varella, 2004). Inspirational motivation refers to how leaders inspire and motivate followers (Barbuto, 2005; Densten, 2002; Ibrahim, Ghavifekr, Ling, Siraj, & Azeez, 2014). Similarly, idealized influence is the degree to which the subordinates perceive the supervisor as advocating important values, beliefs and a sense of mission (Judge & Piccolo, 2004; Mio, Riggio, Levin, & Reese, 2005). However, there are two components of idealized influence: attributed and behavior (Antonakis et al., 2003; Chen, Hwang, & Liu, 2009). Idealized attributes is the degree to which followers are influenced as a result of their idealization of the leader and the emotional correlates of that idealization (Firestone, 2010; Judge & Bono, 2000; Malloy & Penprase, 2010). In contrast, idealized behavior represents the behaviors of the leader as viewed by the followers (Avolio & Bass, 2004; Guthrie, 1998; Horwitz et al., 2008). Finally, individualized consideration represents the understanding others' developmental needs by

creating an individualized plan for each subordinate to expand and evaluate those needs in order to maximize and develop associates to their full potential (Bass, 1985; Bass & Riggio, 2005; Rainey & Watson, 1996; Yammarino & Bass, 1990).

Transformational and Transactional Leadership Outcomes

Job satisfaction. Research has shown that job satisfaction may lead to employees being more productive and innovative (Ahmad et al., 2013; Sultan, 2012; Venkateswarlu, 2012) and that leadership style plays an integral part in explaining why subordinates are satisfied with their jobs (Rothfelder, Ottenbacher & Harrington, 2012; Vandenberghe, Stordeur & D'hoore, 2002). Job satisfaction is an affective or emotional response to an individual's job (Amoopour, Hemmatpour & Mirtaslimi, 2014; Hugnes, Gonnett, & Curphy, 2006). In other words, job satisfaction consists of a person's positive feelings towards his/her job (Thamrin, 2012; Zhu, 2012). Specifically, researchers have found that transformational leadership has a significant correlation with a subordinate's job satisfaction (Bruch & Walter, 2007; Moss & Ritossa, 2007; Thamrin, 2012; Zahari & Shurbagi, 2012) in that transformational leadership is more likely to increase employees' satisfaction due to four dimensions of influence: develop pride, attention, respect and the feeling to create ideas as a facility for self-actualization (Podsakoff, MacKenzie & William, 1996).

Transactional leadership has also been found to have a positive, albeit weaker, influence on job satisfaction (Ahmad et al., 2013; MacKenzie et al., 2001; Thamrin 2012). Transformational leadership emphasize more team building which can encourage employees to perform better and entice more creativity (Dionne, Yammarino, Atwater & Spangler, 2004; Kahai, Sosik & Avolio, 2003; Morgeson, DeRue & Karam, 2010), but transactional leadership focuses more on how the organization is functioning and does not consider employees'

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development and learning ability (Liu et al., 2011; Vera & Crossan, 2004). Whereas transformational leadership aims to create relationships between subordinates that can increase employee's motivation and morality, transactional leadership is strictly about the exchange between the leader and the employees (Ghadi, Fernando & Caputti, 2013; Northouse, 2009). Subsequently, job satisfaction is an important outcome to investigate with transformational and transactional leadership:

Research Question 1a: Transactional leadership will have a positive relationship with job satisfaction.

Research Question 1b: Transformational leadership will have a positive relationship with job satisfaction.

Organizational citizenship behaviors. Organizational citizenship behaviors (OCBs) are 'extra role' behaviors which are not directly or explicitly recognized by the formal reward system that promotes the effective functioning of the organization (Jahangir, Akbar & Haq, 2004; Organ, 1988; Ravichandran et al., 2007). There are five types of OCBs: altruism, conscientiousness, sportsmanship, courtesy, and civic virtue (Organ, 1988; Podsakoff, MacKenzie, Paine & Bachrach, 2000). Altruism refers to self-sacrificing voluntary actions that help another person with a problem (Nahum-Shani & Somech, 2011; Zhang, 2014). Conscientiousness consists of behavior that is beyond minimal required levels of attendance (Organ, 1997). The dimension of sportsmanship refers to not complaining or grieving when there is an inconvenience or imposition (Omar, Zainal, Omar, & Khairudin, 2009). Courtesy is typically viewed as discretionary behaviors that aim to prevent workplace problems (LePine, Erez, & Johnson, 2002). Finally, civic virtue is characterized by behaviors that take a constructive involvement in the process of the organization (Robinson & Morrison, 1995).

As voluntary behaviors, OCBs are beneficial and desirable from an organizational perspective (Dai et al., 2013; Foote & Li-Ping, 2008). Specifically, OCBs have been found to be related to group cohesion and task accomplishment (Cohen, Ben-Tura & Vashdi, 2012; Jiao, Richards & Zhang, 2011; Randel, 2003). High levels of OCBs in organizations are extremely valuable in that OCBs can contribute to better performance and can create more competitive advantage (Alizadeh, Darvishi, Nazari & Emami 2012; Nemeth & Staw, 1989; Nielsen, Bachrach, Sundstrom & Halfhill, 2012).

Previous research has found transformational and transactional leadership behavior to be predictive of OCBs (Dai et al., 2013; Koys, 2001). Transactional leaders reward subordinates based on successful performance of in-role functions, but most often the success of in-role performance is due to subordinates performing extra-role tasks. Subordinates of a transactional leader will exhibit more citizenship behaviors in an attempt to enhance their in-role functions successfully with the overall goal of obtaining more rewards (Podsakoff et al., 2000).

As for transformational leadership, studies have found it to be positively related to all five dimensions of citizenship behaviors (Jiao et al., 2011; Piccolo & Colquit, 2006; Podsakoff, Mackenzie, Moorman & Fetter, 1990; Zacher & Jimmieson, 2013). Transformational leaders motivate followers by encouraging them to internalize and prioritize a larger collective cause over individual interests (Cohen et al., 2012; Nahum-Shani & Somech, 2011; Podsakoff et al., 2000). Subsequently, as transformational leaders' both inspire and stimulate subordinates, the following research questions are proposed:

Research Question 2a: Transactional leadership will have a positive relationship with OCBs.

Research Question2b: Transformational leadership will have a positive relationship with OCBs.

Organizational commitment. Organizational commitment is an important outcome to examine, as one of its results is reduced turnover intentions (Jehanzeb, Rasheed, & Rasheed, 2013; Joo & Park, 2010; Wells & Welty Peachey, 2011). Organizational commitment is typically regarded as something that ties or links an individual to an organization (Mathieu & Zajac, 1990; Meyer & Allen, 1997). Meyer and Allen (1991) operationalized organizational commitment as having three primary components: (a) affective commitment, which refers to an individuals' level of emotional attachment, identification, and involvement with the organization; (b) continuance commitment, which refers to an employees' knowledge of the personal costs of leaving the organization; and (c) normative commitment, which is the feeling that one is obligated to stay with the organization.

Transformational and transactional leadership behaviors have been found to be positively related to organizational commitment (Ali, Babar, & Bangash, 2011; Othman, Mohammed, & D'Silva, 2013). Transformational leaders treat subordinates as important members of the organization and place an emphasis on the subordinate's psychological and development needs (Avolio, 2004; Bass, 1985; Gillet & Vandenberghe, 2014). Per the social exchange theory, Blau (1964) suggests that followers will increase their emotional attachment to the organization due the favorable treatment received from their supervisor. Furthermore, transformational leaders connect their follower's beliefs and values with those of the organization's (Bono & Judge, 2003). In turn, this makes the followers feel as though they contribute to a larger cause and the overall success of the organization (Bass, 1985; Dumdum, Lowe, & Avolio, 2002; Kelloway & Barling, 1993). Subsequently:

Research Question 3a: Transactional leadership will have a positive relationship with organizational commitment.

Research Question 3b: Transformational leadership will have a positive relationship with organizational commitment.

Leader effectiveness. Leadership effectiveness is often operationalize via the degree to which leaders can encourage followers to engage in organizational strategies (Hur, Van den Berg, & Wilderom, 2011; Hogg et al. 2005; Bruno & Lay, 2006). Leader effectiveness is considered to be a critical element to an organization's success and it relies on the result of the leaders' activities for followers and organization (Carter, 2009; Sadeghi & Pihie, 2012; Yukl, 2006). To be an effective leader requires a strong relationship with followers and should improve followers' well-being and work performance (Bottomley, Burgess & Fox, 2014; Hogg et al., 2005; Zhang, Li & van Dick, 2013). Transformational leaders will be more effective than other type of leaders because of their ability to create relationships with followers (Dionne et al., 2004; MacKenzie, Podsakoff & Rich, 2001; Sadeghi & Pihie, 2012).

Research has found transformational leadership to be positively correlated with leadership effectiveness and laissez-faire leadership was found to be negatively correlated (Erkutlu, 2008; Sadeghi & Pihie, 2012; Skogstad, Einarsen, Torshein, Aasland & Hetland, 2007; Spreitzer & Xin, 2005). Transformational leadership is effective at influencing subordinate perceptions of leadership effectiveness (Eagly et al., 2009; Fuller, Patterson, Hester, & Stringer, 1996; Lowe et al., 1996) because of the leader's ability to transcend follower's goals and develop lasting relationships (Afsar et al., 2014; Bass, 1997; Carlos Pastor & Mayo 2008).

Contingent reward, a factor of transactional leadership, has been found to be positively associated with leader effectiveness whereas MBE-Passive and laissez-faire leadership were

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negatively correlated (Lowe et al., 1996; Judge & Piccolo, 2004; Rowold, 2006). Within

transactional leadership the primary premise is to set clear expectations and goals and reward

subordinates for goal achievement (Bass & Avolio, 1994; Hamstra, Van Yperen, Wisse &

Sassenberg, 2014; Sadeghi & Pihie, 2012). Subsequently:

> *Research Question 4a*: Transactional leadership will have a positive relationship with
>
> leader effectiveness.

> *Research Question 4b*: Transformational leadership will have a positive relationship with
>
> leader effectiveness.

Purpose of the Research

The primary purpose of this study was to update and extend the meta-analysis of research

on the MLQ by including that published 2002 through 2013. The current study investigated

effectiveness outcomes and how the factors of the MLQ relate. The study investigated how the

outcomes of job satisfaction, organizational commitment, OCBs, and leader effectiveness relate

to the factors of the MLQ.

CHAPTER III: METHODS

Inclusion Criteria

The most recent meta-analysis on the MLQ only included studies published through 2001 (Dumdum et al., 2002). Subsequently, this study only included articles published between 2002 and 2013. Additionally, for a study to have been included it must have used the MLQ 5X Short form to measure leadership style and must have had one or more measures of leader effectiveness (i.e., organizational citizenship behaviors, organizational commitment, leadership effectiveness and job satisfaction). Additionally, the sample size and a Pearson correlation coefficient between leadership style and effectiveness must have been reported. Finally, as with previous meta-analyses, direct subordinates had to be the rating source (Dumdum et al., 2002).

Literature Search

Studies were located using PsycINFO and PsycARTICLES. Search terms included "Multifactor Leadership Questionnaire," 'MLQ," "transformational leadership," and "transactional leadership." The initial search yielded over 1,300 articles. After applying the standards noted above, 61 studies met the criteria for inclusion. Specifically, all articles were published in a peer-reviewed journal, (i.e. Journal of Applied Psychology, Journal of Leadership & Organizational Studies, and the Journal of Organizational Behavior; see References for complete list).

Coding of Information

Studies that met all the criteria were reviewed, and the data regarding performance effectiveness and satisfaction was coded. The studies were coded by the researcher only. The coding sheet required the following to be coded: date study was coded, reference,

year of study, article ID, the sample ID, Pearsons correlation coefficient, leadership dimension being measured, effectiveness dimension, and the effectiveness measure used. (see Appendix). If a study had multiple measures of effectiveness and satisfaction all of the measures of effectiveness, and all the measures of satisfaction were coded.

Meta-Analytic Analyses

Sample-weighted means and effect sizes were first calculated by transforming Pearson r correlation coefficients to Fisher's z with corresponding sampling variances. Utilizing the metaphor package in R, a multivariate random effects model including all outcome variables was collapsed across all transformational and transactional scales. The method of estimation used was Restricted Maximum Likelihood Estimation (REML) with each outcome variable was fit as a moderation analysis for all transformational and transactional scales. Confidence intervals were calculated for each mean effect size to determine accuracy and significance of the mean effect size. Variance components were also calculated for each moderation analysis to control for effect size nested within any particular article/study. The OCB moderation analysis could only be fit to an overall transformational and transactional scale due to the limited number of studies. In other words, while all other outcome variables were tested as moderation analyses of both transformational and transactional leadership, OCBs were tested as a moderation of the two forms combined.

Publication Bias

To examine the possibility of publication bias, a funnel plot was conducted using the metaphor package in R. To control for multiple effect sizes, each outcome variable was fit as a moderator, plotting the residuals in the funnel plot. A symmetric funnel plot will have the studies cluster towards the mean effect size, and all studies will lie within the funnel. Larger studies will

be located at the top of the plot and the smaller studies will be located towards the bottom of the

graph and will be more dispersed across a range of values. Thus, giving it its funnel shape. In

contrast, if publication bias does exist, there would be a larger concentration of studies on the

bottom of the graph and one side of the mean or studies that lie outside of the funnel. To

determine how much publication bias exists within a funnel plot a rank correlation test was also

calculated.

CHAPTER IV: RESULTS

Overall Meta-Analysis

The results of the overall meta-analysis, which combined all the measurement outcomes, are displayed in Table 1. The measurement outcomes were combined based on the previous meta-analysis. All of the transformational leadership scales were found to be highly and positively significant with the combined satisfaction/effectiveness outcomes. The overall transformational scale had the largest effect size, with idealize-influence attributed having the next highest effect size.

The overall transactional leadership scale and the contingent reward scale were positively correlated with the combined satisfaction/effectiveness outcomes. Management-by-exception passive and laisse-fare scales were negatively related to the overall satisfaction/effectiveness outcomes. Management-by-exception active was not significantly related to the overall satisfaction/effectiveness outcomes.

Job Satisfaction

Job satisfaction was found to be positively correlated will all of the transformational scales. The individualized consideration scale had the largest effect size with job satisfaction. Contingent reward was the only transactional scale, other than the overall transactional scale, that was positively associated with job satisfaction. Laissez-faire leadership was negatively related to job satisfaction. Management-by-exception active and passive failed to reach significance with job satisfaction.

Organizational Citizenship Behaviors

There were limited studies or zero studies that were conducted on the scales of the MLQ. There were, however, enough studies to conduct an analysis on overall transformational and overall transactional leadership scales. Transformational leadership and transactional leadership both were positively related to OCB outcome. This confirms research questions 2a and 2b.

Organizational Commitment

All of the transformational leadership scales were positively related to the outcome of organizational commitment. The overall transactional leadership scale was positively related to organizational commitment. Thus, confirming research questions 3a and 3b. Of the transactional scales, only contingent reward and management-by-exception active were positively related to organizational commitment. Management-by-exception passive and laissez-faire were negatively related to the organizational commitment outcome, but these findings were not significant. Laissez-faire was likely not significant due to the limited number of studies.

Leadership Effectiveness

All transformational leadership scales were highly and positively related to the outcome of leader effectiveness. Idealized influence attributed had the highest correlation with leader effectiveness. The overall transactional leadership was also found to be positively related to leader effectiveness, and this confirms research questions 4a and 4b. The contingent reward and management-by-exception active scales were positively related to leader effectiveness. Contingent reward depicted the highest effect size correlation of the transactional scales. Management-by-exception passive and laissez-faire leadership styles were negatively related to leadership effectiveness.

Table 1

Meta-Analysis for the Multifactor Leadership Questionnaire

Scale	Number of Unique Articles	Number of Unique ES	N	Pearson r	p Value	95% CI
Transformational Leadership (TFL)						
Overall	50	75	16749	.51	<.001	.45-.57
OCB	10	10	2816	.54	<.001	.42-.64
Org. Commitment	28	35	10093	.42	<.001	.37-.54
Job Satisfaction	17	20	7730	.46	<.001	.37-.54
Leader Effectiveness	9	9	2603	.76	<.001	.68-.82
Idealized Influence-Attributes (IA)						
Overall	9	12	3088	.62	<.001	.51-.72
OCB						
Org. Commitment	3	4	1654	.38	<.001	.24-.51
Job Satisfaction	2	3	570	.50	<.001	.34-.63
Leader Effectiveness	5	5	986	.84	<.001	.75-.89
Idealized Influence- Behaviors (IB)						
Overall	9	12	3088	.51	<.001	.38-.63
OCB						
Org. Commitment	3	4	1654	.34	<.001	.19-.47
Job Satisfaction	2	3	570	.46	<.001	.30-.60
Leader Effectiveness	5	5	986	.70	<.001	.57-.80
Intellectual Stimulation (IS)						
Overall	15	21	5039	.46	<.001	.35-.56
OCB	2	2	757			
Org. Commitment	6	7	3097	.30	<.001	.18-.41
Job Satisfaction	5	6	2015	.41	<.001	.28-.53
Leader Effectiveness	6	6	1071	.73	<.001	.62-.81
Individualized Consideration (IC)						
Overall	15	21	5039	.52	<.001	.41-.61
OCB	2	2	757			
Org. Commitment	7	7	3097	.36	<.001	.24-.47
Job Satisfaction	6	6	2015	.45	<.001	.32-.56
Leader Effectiveness	6	6	1071	.78	<.001	.69-.85
Inspirational Motivation (IM)						
Overall	10	14	3385	.54	<.001	.41-.64
OCB	1	1	212			
Org. Commitment	3	4	1654	.34	<.001	.20-.47
Job Satisfaction	2	3	570	.46	<.001	.30-.60
Leader Effectiveness	6	6	1071	.74	<.001	.63-.82

Note. N is sum of unique studies within the meta-analysis.

Table 1 Continued

Scale	Number of Unique Articles	Number of Unique ES	N	Pearson r	p Value	95% CI
Transactional Leadership (TSX)						
Overall	14	18	4070	.33	<.001	.20-.45
OCB	4	4	760	.36	<.001	.23-.47
Org. Commitment	6	6	2247	.34	<.001	.22-.45
Job Satisfaction	4	4	1618	.37	<.001	.24-.49
Leader Effectiveness	4	4	967	.46	<.001	.24-.63
Contingent Reward (CR)						
Overall	12	19	4668	.44	<.001	.32-.54
OCB	1	1	545			
Org. Commitment	6	7	3315	.29	<.001	.17-.41
Job Satisfaction	5	5	2064	.37	<.001	.25-.49
Leader Effectiveness	6	6	1353	.73	<.001	.63-82
Management-by-Exception: Active (MBEA)						
Overall	10	15	3603	.13	.08	-.02 - .27
OCB	1	1	545			
Org. Commitment	5	5	2605	.22	.001	.09 - .34
Job Satisfaction	4	4	2398	.13	.07	-.01-.28
Leader Effectiveness	5	5	998	.25	.03	.03-.48
Management-by-Exception: Passive (MBEP)						
Overall	10	15	3603	-.29	<.001	-.42 to -.15
OCB	1	1	545			
Org. Commitment	5	5	2605	-.02	.73	-.16 - .11
Job Satisfaction	4	4	1709	-.19	.008	-.33 to -.05
Leader Effectiveness	5	5	998	-.46	<.001	-.62 to -.26
Laissez-Faire (LF)						
Overall	9	13	2296	-.47	<.001	-.58 to -.33
OCB	2	2	673			
Org. Commitment	2	2	808	-.15	.12	-.33 - .04
Job Satisfaction	3	3	1022	-.25	.003	-.40 to -.09
Leader Effectiveness	6	6	1360	-.56	<.001	-.67 to -.41

Table 2

Variance of the Random Effects

Model	Article τ^2	n	Effect Size τ^2	n
Overall Effectiveness	.043	57	.057	237
OCB	.068	19	.006	26
Org. Commitment	.041	30	.009	86
Job Satisfaction	.050	22	.007	66
Leader Effectiveness	.00	13	.060	63

Publication Bias by Moderator

   Job satisfaction. The funnel plot in Figure 1 reveals an asymmetric distribution with

clusters of data to the left of the mean with a few outliers outside of the funnels, suggesting

potential publication bias. A significant rank correlation test was found for publication bias, τ

=.188, p = .03. Thus, revealing there is a relationship between smaller studies and larger effect

sizes within the job satisfaction moderator.

Figure 1

Job Satisfaction Moderation Funnel Plot
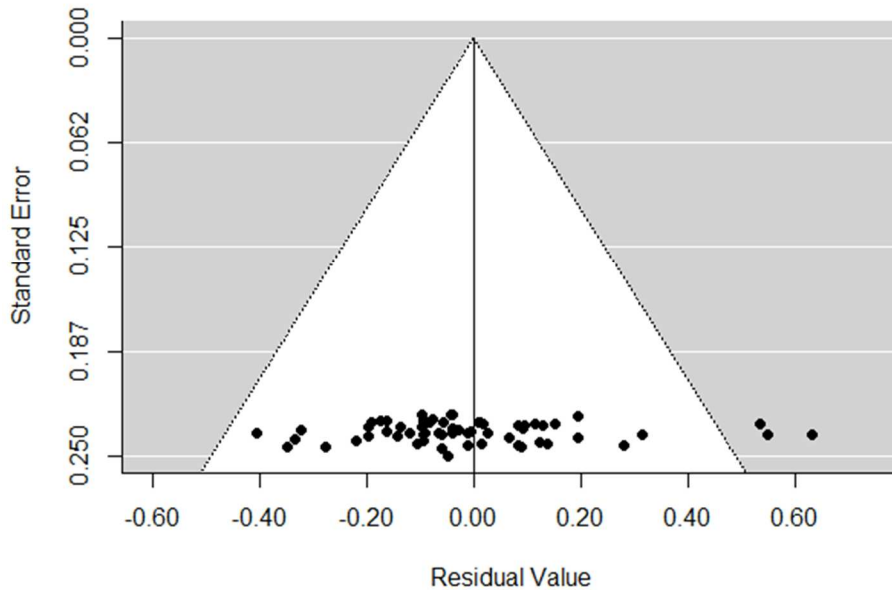
Organizational citizenship behaviors. As shown in Figure 2, a few of the data points lie outside of the funnel revealing an asymmetric distribution. A rank correlation test was conducted and failed to reach significance, $\tau = .059$, $p = .675$. Revealing publication bias is absent, and the asymmetric funnel plot may be due to small study effects.
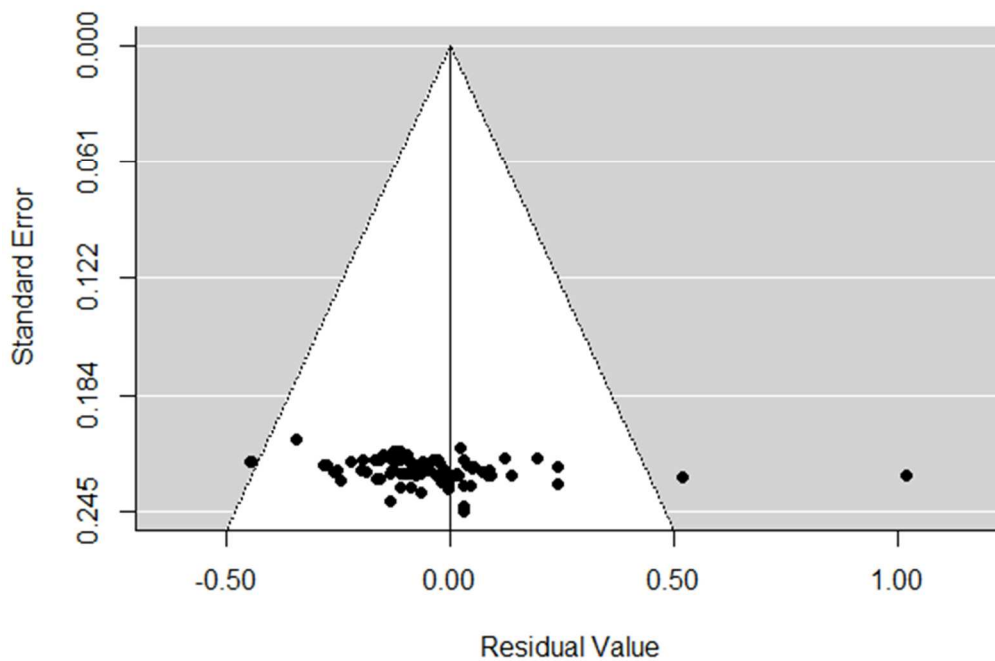
Figure 2

Organizational Citizenship Behaviors Moderation Funnel Plot
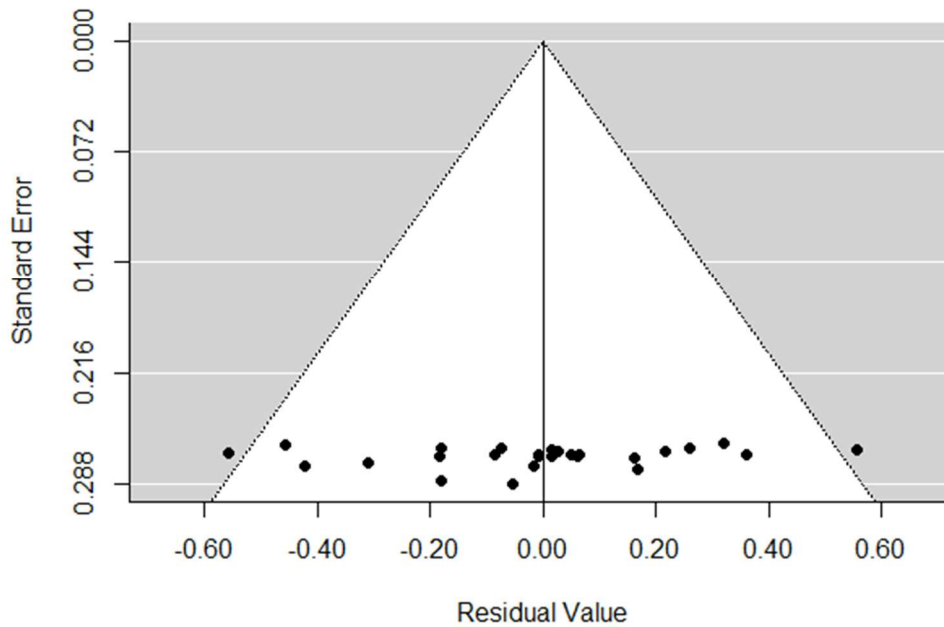
Organizational commitment. As shown in Figure 3, a large concentration of data is gathered at the bottom left of the plot with one major outlier, displaying an asymmetric distribution. A significant rank correlation test was found for publication bias, $\tau = .276$, $p = .0002$, but this could also be due to the outlier. Thus, revealing there may be a relationship between smaller studies and larger effect sizes within the organizational commitment moderator.

Figure 3

Organizational Commitment Moderation Funnel Plot

Leadership effectiveness. The majority of the data in Figure 4 is located at the bottom of the plot, but it does not appear to be any major clustering on either side of the mean. The funnel plot appears to be asymmetric, and a rank correlation test was conducted to determine publication bias. The rank correlation test failed to reach significance, $\tau = -.122$, $p = .176$, indicating that the asymmetry is not due to publication bias.

Figure 4

Leadership Effectiveness Moderation Funnel Plot
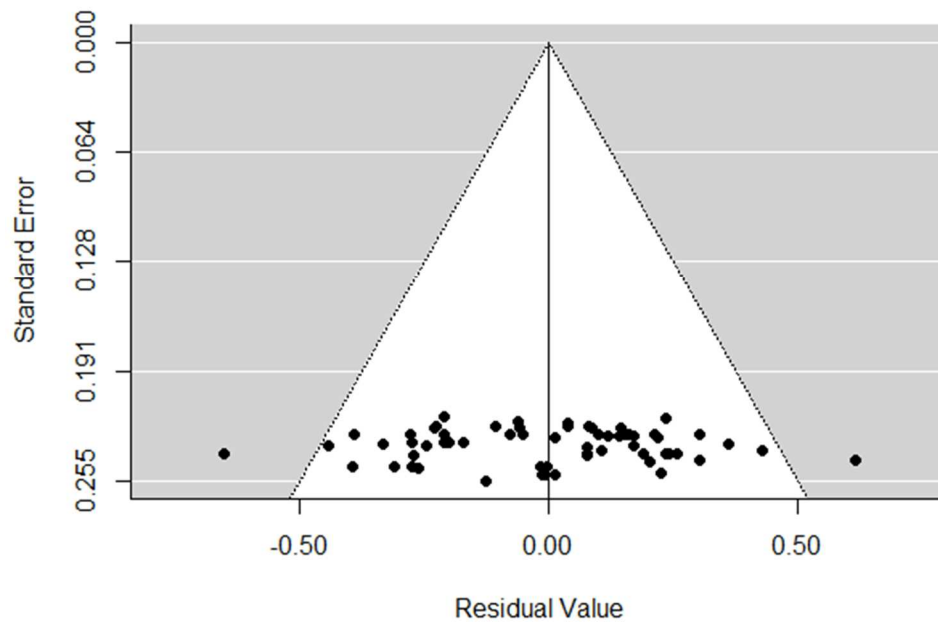
CHAPTER V: DISCUSSION

Results of the meta-analysis support the notion that transformational leadership and transactional leadership is associated with work effectiveness/satisfaction. All transformational leadership scales showed a significant positive relationship with the effectiveness/satisfaction outcomes (i.e., leadership effectiveness, OCBs, job satisfaction and organizational commitment). The results were more mixed between effectiveness/satisfaction outcomes and the transactional leadership scales.

In contrast, relationships between the transactional scales and effectiveness were more ambiguous. For example, both contingent reward and the overall transactional leadership scale displayed a significant positive relationship with all outcomes with the relationship of contingent reward typically displaying an overall higher effect size compared to the overall transactional leadership scale. This is congruent with previous research supporting the notion of contingent reward having positive relationships with work outcomes (Lowe et al., 1996; Walumbwa, Wu & Orwa, 2008). Furthermore, active management-by-exception demonstrated a small positive relationship with the outcome variable but failed to reach significance for job satisfaction and the overall analysis. Management-by-exception passive and laissez-faire leadership scales showed a negative relationship with all the effectiveness outcome.

Overall, the current research supports previous meta-analysis findings on the MLQ by Dumdum and colleagues (2002; see Table 3). Dumdum and colleagues (2002) found similar results in their overall meta-analysis. The consistent pattern of results is reassuring considering the results are similar across time, not tied to one particular version of the MLQ or influenced by particular outcome variables.

Table 3

Comparison of Overall Effectiveness

Scale	Current Meta-Analysis Pearson *r*	Dumdum et al. (2002) Pearson *r*
Transformational Leadership	.51	.46
Idealized Influence - Attributes	.62	.66
Idealized Influence - Behaviors	.51	.66
Intellectual Stimulation	.46	.52
Individualized Consideration	.52	.55
Inspirational Motivation	.54	.56
Transactional Leadership	.33	.20
Contingent Reward	.44	.56
Management-by-Exception: Active	.13	.05
Management-by-Exception: Passive	-.29	-.34
Laissez-Faire	-.47	-.38

Note: Idealized Influence was one scale in Dumdum et al. (2002) study

Although there are several similarities between the two meta-analyses there are some noticeable differences between studies. It should be noted that the current study used a different version of the MLQ compared to the previous study. Thus, the item composition may have impacted the outcomes of both studies. Also, publication bias may have also played a part in differences between studies because only published studies were used in this research whereas the two previous meta-analyses used unpublished studies. Using only published studies may have biased the effect sizes and exaggerated overall correlations.

The current meta-analysis also examined the relationship of transformational and transactional leadership with individual outcome variables: OCB, job satisfaction, organizational commitment, and leadership effectiveness. The current study found a significant relationship, *r* =.54, between transformational leadership and OCBs and *r* = .36 for the relationship with transactional leadership. Muchir and Ayoko (2013) found a similar correlation *r* = .40 for

transformational leadership and OCBs. Dai and colleagues (2013) found similar results with transactional leadership and OCBs compared to the current study $r = .38$. Considering there were limited studies with OCBs and transformational and transactional leadership, it does provide support that transformational leadership has a strong positive relationship with OCBs. Transactional leadership was also shown to be positively related with OCBs in the workplace.

Berhard and O'Driscoll (2011) in their study investigated the relationship of transformational and transactional leadership with job satisfaction. In their study, transformational leadership was found to have a strong correlation with job satisfaction $r = .55$ and transactional leadership found to have a significant relationship as well, $r = .37$. The current meta-analysis found a similar relationship between transformational leadership $r = .46$ and transactional leadership $r = .37$ with job satisfaction. The current meta-analysis does show a lower correlation compared to Berhard and O'Driscoll, (2011) for transformational leadership, but displays the same relationship for transactional leadership. However, Smith and colleagues (2012) found the relationship between transformational leadership and job satisfaction more around the current meta-analyses $r = .42$. Considering the results of the current study compared to previous studies it seems fair to say that transformational leadership has a strong relationship to job satisfaction, across different job satisfaction scales and time. Therefore, it may be important for leaders to learn to develop more transformational leadership styles and some transactional leadership styles, as well.

Kara and colleagues (2013) found similar results to the current study for the relationship between transformational leadership $r = .40$ and transactional leadership $r = .37$ with organizational commitment. The current meta-analysis found a slightly higher correlation between transformational leadership and organizational commitment $r = .42$ and a slightly lower

correlation with transactional leadership r = .34. However, Kovjanic and colleagues (2012) found r = .53 between transformational leadership and organizational commitment and Berhard and O'Driscoll (2011) found r = .35 for transactional leadership. Even though the current meta-analysis does display slight variations in the relationship between organizational commitment, it provides substantial support that transformational leadership has a strong positive relationship with organizational commitment along with transactional leadership.

Leader effectiveness was the last outcome variable investigated with transformational and transactional leadership. The current meta-analysis found a strong relationship between transformational leadership and leader effectiveness r = .76 and found a positive relationship between transactional leadership and leader effectiveness r = .46. Casida and Parker (2012) found a very similar relationship with transformational leadership and leader effectiveness r = .89 and transactional leadership r = .28. The current meta-analysis displayed a lower correlation for transformational leadership, but a stronger relationship for transactional leadership compared to Casida and Parker's (2012). Even though the current meta-analysis displayed a higher correlation with leader effectiveness and transactional leadership, it does seem to be what other researchers have found, such as Rowold and Heinitz (2007) r = .41. However, the current study's relationship between transformational leadership and leader effectiveness is an almost perfect correlation. Therefore, the high correlation does raise some alarm considering the main instrument to measure leader effectiveness is from the MLQ5X. Thus, there may be some item overlap between the transformational leadership and leader effectiveness scales. This could potentially explain the high relationship. Otherwise, the current study does provide strong support to make the case that transformational leadership style is very effective at engaging followers in organizations.

Theoretical Implications

The present study makes several important contributions and updates to research for the MLQ and the transformational-transactional field. As noted earlier, there has not been an updated meta-analysis on the MLQ in over 11 years. The current study reaffirms that transformational leadership behaviors in managers will elicit changes in employers which are more highly related to effectiveness and satisfaction outcomes than the first order changes from transactional leadership behaviors (Dumdum et al., 2002; Lowe et al., 1996). Considering the development of effective and long-lasting leadership is a central concern for organizations, developing a transformational leadership curriculum would potentially provide organizations with the most utility. In addition, this research suggests how organizations should select and recruit managers. Specifically, interviewing procedures may want to give a special focus on transformational experiences. Previous research has found transformational leadership to be important at all levels of management (Lowe et al., 1996), and this can be beneficial for all levels of management.

The transactional leadership scales of the MLQ exhibited important implications for future research. Contingent reward had comparable effect sizes compared to several of the transformational leadership scales (Burke, Stagl, Klein, Goodwin, Salas, & Halpin, 2006; Judge & Piccolo, 2004; Piccolo & Colquit, 2006). Indicating a potential conflict considering other research has found that contingent reward is effective but not as effective to transformational leadership (Avolio & Bass, 2004; Hamstra, et al., 2014; Judge & Piccolo, 2004). However, considering transformational leadership and the augmentation hypothesis transactional leader does play a very important role for manger's leadership style.

Even though management-by-exception active demonstrated positive relationships with the majority of the outcomes in the present research, it is not a recommended approach for leadership. Previous research has found a decrease in job satisfaction and attitudes towards supervisors (Fasola, Adeyemi, & Olowe, 2013; Ivey & Kline, 2010). In addition, the current research found higher effect sizes from transformational and transactional leadership scales, and it makes more sense to utilize these styles. Organizations should also discourage utilizing laissez-faire and management-by-exception passive leadership styles considering their negative impact on organizational outcomes. Laissez-faire leadership has been linked to bullying at work and increased distress in followers (Skakon, Nielsen, Borg, & Guzman, 2010; Skogstad, Einarsen, Torsheim, Aasland & Hetland, 2007). As stated previously, organizations should screen individuals based on leadership style and especially screen out individuals who have an inclination toward management-by-exception active and passive and laissez-faire leadership.

Limitations and Future Research

One of the main limitations of the current study is the inability to utilize thesis and dissertations and unpublished research. This bias has been coined as the "file drawer problem" or the bias to publish positive results but not publish negative or non-confirmatory results. The current research assessed for publication bias by utilizing a funnel plot and then a ranked correlation test.

The OCB and leadership effectiveness data had asymmetrical funnel plots but were not found to be significant of publication bias. The asymmetrical plots may have been due to systematic differences between large and small studies or small study effects. However, there were two moderators, job satisfaction and organizational commitment that were found to have small to moderate amount of publication bias. There are two main approaches to eliminate

publication bias: (1) the trim and fill method and (2) the cumulative meta-analysis. The basis of the trim and fill method is to first remove the smaller studies that are causing the funnel plot asymmetry. Then use the newly trimmed data to estimate the true center of the funnel and finally fill in the missing data around the center. The trim and fill method does come with its limitation in that this method does not take into account other potential reasons for an asymmetric funnel plot. The best approach to address publication bias is to conduct a cumulative meta-analysis and gather all published and unpublished literature. Then compare the effects of unpublished research to published research. This method does require substantial time and resources, but future research should investigate unpublished research and theses/dissertations from 2002-2013 in order to obtain a comprehensive and unbiased look into the MLQ.

Another limitation of the current study is only using one rater to code all the studies. Most meta-analyses have at least two coders and have intracoder reliability. Having multiple coders help to identify articles to be included in the study and what information should be included as well. Thus, better equipped at guarding against bias. Future research should have multiple coders rate the articles in order to reduce bias and obtain more reliable and valid results.

Additionally, the current study could only accommodate so many measures of workplace effectiveness and satisfaction. The four measures were chosen based on overall use in the past and knowing these measures have been researched heavily and have well-known scales for use. Still there are several measures such as emotional intelligence, extra effort, and leader satisfaction which should be investigated for future meta-analyses. It is important to understand how different measures of effectiveness and satisfaction may moderate the MLQ and how these outcomes impact the leader-follower relationship.

Researchers for the next meta-analysis should also investigate how different MLQ scales impact organizational citizenship behaviors. Transformational and transactional leadership scales of the MLQ were the only scales that were investigated with OCBs. There were limited studies which investigated how the individual scales of the MLQ interacted with OCBs in the workplace between 2002-2013. It may be wise for researchers to look at how all the scales of the MLQ relate with OCBs on subordinates.

Considering the correlation between transformational leadership and leader effectiveness was so high, this may be an important relationship for researchers to investigate further. The main instrument to measure leader effectiveness is developed by the MLQ5X and, therefore, may have very similar items with the transformational leadership scale. Researchers may want to consider using a different leader effectiveness measure in conjunction with the MLQ5X's measure when using the MLQ5X to measure transformational and transactional leadership.

Finally, this current meta-analysis was based on subordinates' ratings only even though the MLQ also has the ability to assess self-reported leadership styles. The researcher was unable to collect the self-report data, but it would be valuable information to include for the next meta-analysis a comparison between the self-report measures and the subordinate's ratings. Adding this additional dimension may allow for a better understand of how transformational, transactional and laissez-faire leaderships think about their leadership style.

In summary, this meta-analysis contributed to existing leadership literature by updating and extending how transformational and transactional leadership scales of the MLQ relate to effectiveness and satisfaction outcomes. The scales of transformational leadership seem to generalize across many different outcomes. The current study reaffirms the importance of

transformational leadership in the workplace and continues to show its superiority compared to

other leadership styles.

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Appendix: A

Human participants were not utilized in the current study. Only research articles on the Multifactor Leadership Questionnaire was use and therefore IRB approval was not required.

Appendix: Meta-Analysis Coding
Multifactor Leadership Questionnaire Meta-Analysis Coding Sheet

Coded by: _____   Date: _____

A. APA Reference	
B. Coding	Article ID _____ Sample ID _____
C. Predictor Measure	

D. Participants	Relationship to Ratee:
	   o Peer
	   o Manager
	   o Subordinate

E. Predictor Dimension	o Transformational Leadership (TFL) o Idealized Influence-Attributes (IA) o Idealized Influence- Behaviors (IB) o Intellectual Stimulation (IS) o Individualized Consideration (IC) o Inspirational Motivation (IM) o Transactional Leadership (TSX) o Contingent Reward (CR) o Management-by-Exception: Active (MBEA) o Management-by-Exception: Passive (MBEP) o Laissez-Faire (LF) o Other: _____

F. Outcome Measure / Outcome Dimension	Org. Commitment $r =$ $n =$	Measure:
	Job Satisfaction $r =$ $n =$	Measure:
	Leader Effectiveness $r =$ $n =$	Measure:
	OCB $r =$ $n =$	Measure:

Specific Coding Rules	
Coded By	Please fill in your information (3 initials or name)
Date	Date the article was coded
Reference	Enter complete reference as found on the article, using APA style
B. Coding	Enter the article number and the sample number within the article. If more than one sample per article fill out an additional coding sheet.
C. Predictor Measure	Enter the predictor measure (i.e. Multifactor Leadership Questionnaire). Ensure that
D. Participants	Mark the relationship to the ratee.
E. Predictor Dimension	Identify the scale being measured.
F. Outcome Measure / Outcome Dimension	Identify the outcome variable and the scale used. The outcome variable must be one of the four listed in the above sheet. Also, put in the Persons correlation coefficient and the sample size.