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A Meta-analysis: The Full Range of Leadership Model Impacting Policing Organizations

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Abstract

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by

Joseph Stephen Russell

MS, Saint Leo University, 2011

BA, Florida International University, 1982

Dissertation Submitted in Partial Fulfillment

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Abstract

Police leadership has traditionally been dominated by the "commander" style, yet the more recent generation of police officers reject this style of leadership. Little, however, is known about whether the different leadership styles of the full range of leadership model result in positive outcomes in policing organizations. The purpose of this quantitative meta-analysis study was to examine the relationship between transformational, transactional, and laissez-faire leadership styles and the leadership outcomes in a policing context, such as subordinate satisfaction, perception of leadership effectiveness, and exerting extra effort. Data for this research synthesis derived from primary research studies, which included 9 U.S. and international correlational policing studies that together comprised 1,939 police officers who completed the Multifactor Leadership Questionnaire (MLQ) instrument. The meta-analysis provided effect size estimates on the relationship between transformational, transactional, and laissez-faire leadership styles and perception of leadership effectiveness, extra effort, and subordinate satisfaction. The results of this meta-analysis indicate the transformational style has a stronger positive relationship with perception of leadership effectiveness, extra effort, and subordinate satisfaction, than the other 2 leadership styles. The positive social change implications of this study provide recommendations to police executives to include transformational leadership with contemporary law enforcement practices. The transformational style may result in improvements to police officer motivation, performance, and job satisfaction, thus offering opportunities to improve public safety outcomes.

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Dedication

       I have come to understand that the effort and perseverance needed to achieve a satisfactory dissertation can be very trying, and a lonely process along the doctoral journey. I hope that my friends and family will just appreciate and recognize the dedication it takes to accomplish this academic goal. Mom, I usually get things done and yes, better late than never. So, at your request, the doctoral diploma will be placed on your wall.

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Dr. Ferreros, I had the opportunity to learn advanced statistics in one of your classes. From that point forward, I wanted your support on my committee for your passion and knowledge of statistics, and this would best serve my methodological input for the dissertation. Finally, Dr. Ozymy, thank you for your detailed analysis and helpful advice, as I could understand that the alignment of specific dissertation criteria, from start to finish, is what I needed for a satisfactory project.

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Chapter 1: Introduction to the Study

Introduction

This research examined (Bass, 1985) the full range of leadership (FRL) model (transformational, transactional, and laissez-faire leadership styles) and its effectiveness as it relates to police leaders' preferences for leadership styles influencing the performance of subordinate police officers. This included an examination and analysis of the Multifactor Leadership Questionnaire (MLQ), which is a leadership style instrument that was developed by Bass (1985), and later modified by Avolio and Bass (1991) to measure the effectiveness of the transformational, transactional, and laissez-faire leadership styles of the FRL model. From the primary research used in this study, quantitative analysis was needed to investigate how police leaders and subordinate officers correlate the leadership style constructs of the FRL model and the leader outcomes of perception of leader effectiveness, extra effort, and subordinate satisfaction with the leader. This was accomplished by meta-analysis from the included MLQ-related policing studies, to determine and understand what leadership styles (transformational, transactional, and laissez-faire) are preferred as effective and influence the performance levels of subordinate officers that positively impact policing organizations.

The literature on police leadership styles influencing the leader–follower roles is an intricate area of study, especially when considering how police leaders and managers impact their respective agencies and organizations (Densten, 2003; Durić, 2011; Sarver & Miller, 2014; Swid, 2014). This is subject to the differences between what police leaders and subordinate officers consider and prefer as effective leadership styles when

correlated with the leader outcome variables of subordinates being satisfied with the leader, putting forth the extra effort to accomplish organizational objectives, and perception of leader effectiveness (Densten, 2003; Durić, 2011; Sarver & Miller, 2014; Swid, 2014). The problem is associated with the police leader's demonstration of specific leadership styles that reflect the attitudes and commitment of subordinate officers toward organizational policy measures and primarily exhibited through performance levels linked to community policing services (Densten, 2003; Moon, 2006; Sarver & Miller, 2014; Swid, 2014).

In the past, the predominant leadership styles identified with law enforcement organizations were mainly associated with the traditional, authoritarian (directive), and bureaucratic political policing models (Densten, 2003; Sarver & Miller, 2014). In addition, the imperative of traditional policing (synonymous with the task orientation of transactional-type leaders) and the directive style of leadership are currently significant (Moon, 2006; Morreale, 2002; Sarver & Miller). To a degree, the transactional leadership style is primarily still effective in law enforcement organizations, due to a paramilitary structure and operating within crisis-oriented environments (Kubala, 2013; Sarver & Miller, 2014).

However, as a result of changes in environment conditions that influence societal norms and civil laws, numerous police agencies throughout the United States and international policing organizations have incorporated alternative leadership styles (Andreescu & Vito, 2010; Densten, 1999; Moon, 2006; Sarver & Miller, 2014; Swid, 2014). These leadership styles range from democratic, participative, and mutual/shared

leader styles (strongly linked to the characteristics of the transformational leadership style), and which are preferred and considered more effective among many police leaders and managers and subordinate officers (Andreescu & Vito, 2010; Densten, 1999; Moon, 2006; Sarver & Miller, 2014; Swid, 2014). Furthermore (Densten, 1999; Levasseur, 2004; Moon, 2006; Sarver & Miller, 2014), the reliance on the top-down command and authoritarian leader style might be considered inadequate as well as ineffective with meeting the challenges of changing environments. According to the literature, many of the leadership scholars researching law enforcement organizations have identified that the switch to a democratic and participative leader style is directly linked to the characteristics of transformational leaders and the need to improve community/police relations through community oriented policing (Andreescu & Vito, 2010; Densten, 1999; Moon, 2006; Sarver & Miller, 2014).

By conducting this research study based on the constructs of the FRL model, more awareness can result from the impact of effective leadership styles on the leader–follower dyad within law enforcement organizations. The FRL model incorporates a full spectrum of leadership styles and behavioral characteristics, which provide a comprehensive understanding of how police leaders conduct the internal and external business affairs, and this is exemplified within the environment surroundings strongly associated with mechanistic objectives of reacting and responding to maintaining law and order (Bass, 1985; Singer & Singer, 1990). Another imperative for applying the FRL model is ascertaining more knowledge on leadership styles in policing organizations. Its framework is based on the MLQ, an instrument that provides statistical information on

how police leaders and subordinate officers rate leadership styles by correlating them with effective leader outcomes.

The statistics provided by the MLQ instrument are reliable indicators as assessed by police leaders, supervisors, and subordinate officers' responses toward the types of leadership styles supported and considered effective within each policing agency (Bass, 1985). In the police literature that utilizes the MLQ, some of these studies have variances in effect sizes, which are linked to sampling errors and random effects, and significantly impact generalizability (Durić, 2011; Gozubenli, 2009; Kubala, 2013; Morreale, 2002; Singer & Singer, 1990). Subsequently, a salient decision made by this researcher was to apply a meta-analysis research design (Field & Gillett, 2010), which combines and examines the included studies by using statistical analysis, to determine among the observable effect sizes a true effect size from the variables being tested.

Essentially, the statistics gathered from research synthesis can be beneficial by yielding some evidence with the influence of leadership style, reference decision-making in establishing departmental policies and directives that impact how subordinate officers perform their policing duties and responsibilities. The significance of the FRL model associated with leadership styles (transformational, transactional, and laissez-faire), which is being examined within the law enforcement context, can imply specifically, as it relates to positive social change, the police leader's intent or purpose, vision, direction, and impetus in accordance with how effective, the organization will implement and provide community policing services. This primarily reflects on the correlational relationship between each of the leadership styles and effective leader outcomes, and the

willingness of subordinate officers to be compliant with putting forth extra effort and finding satisfaction with the leader's overall leadership style approach.

Background of the Study

This research examined the importance of the leader–follower relationship, as it derives from the FRL model (transformational, transactional, and laissez-faire leadership styles) and the perception of leadership effectiveness, exerting extra effort, and subordinate satisfaction with the leader in a law enforcement context. The transformational leadership style is related to the following five behavioral characteristics, idealized influence (attributed); idealized influence (behavioral); inspirational motivation; intellectual stimulation; and individual consideration (Bass & Avolio, 1997). Moreover, Bass and Avolio (1997) intended for the behavioral aspects of the transformational leadership style to assist leaders with influencing performance, guiding, and motivating their followers through a process of transforming self-interest, as they encourage change for the well-being of the organization.

In addition, Bass (1985) indicated that transformational-style behavioral characteristics seem to surface in leadership when organizations are going through a crisis and need to change. This is ever apparent for police departments throughout the United States, who are experiencing social unrest and civil challenges, and the need to adapt to more friendly community oriented policing policies (Jermier & Berkes, 1979; Moon, 2006). Transformational oriented police leaders are better equipped to meet such challenges with developing new innovative mechanisms that override self-interest by modifying beliefs, attitudes, and values, and establishing vision and direction, which

influence followers to succeed in changing environments (Densten, 1999; Moon, 2006).

On the other hand, transactional leader style behavioral characteristics are linked to contingent reward, management-by-exception (active), and management-by-exception (passive; Bass, 1990). According to Sarver and Miller (2014) "Transactional leaders use a system of rewards and punishment as motivation, and do not attempt to implement change within the organization or their subordinates" (p. 127). Police leaders who demonstrate transactional style behaviors (task oriented and associated with the status quo) do have a significant role in policing because the law enforcement mission often consists of immediate react and respond to crisis-oriented situations (Densten, 2003; Kubala, 2013; Morreale, 2003; Sarver & Miller, 2014).

In addition, the extreme level of transactional leadership closely resembles an authoritarian leader style, with little interaction with subordinate officers and policies that resemble the characteristics of traditional policing, which are linked to a punishment centered and reactive policing function (Densten, 2003; Sarver & Miller, 2014). Previously, in three primary research studies (Durić, 2011; Kubala, 2013; Sarver & Miller, 2014), a network of police chiefs and top police managers rating leadership items on the self-format of the MLQ, conveyed ambivalent responses when correlating leadership styles with effective leader outcomes. A portion of those police chiefs was supportive with associating the transactional leader style characteristic of contingent reward very strongly with leadership effectiveness and exerting extra effort, and just moderately for subordinate satisfaction (Durić, 2011; Kubala, 2013; Sarver & Miller, 2014). On the other hand, a significant portion of those top police leaders (Durić, 2011;

Kubala, 2013; Sarver & Miller, 2014), concurred with correlating all the transformational-style behavioral characteristics (idealized influence (attributed); idealized influence (behavioral); inspirational motivation; intellectual stimulation; and individual consideration) strongly with the perception of leader effectiveness exerting extra effort and subordinate satisfaction with the leader.

When rating the laissez-faire leadership style (passive/avoidant), the consensus among the police leaders was a moderate to strong negative relationship with all phases of leader effectiveness (Alarcon, 2005; Durić, 2011; Gozubenli, 2009; Kubala, 2013; Morreale, 2002; Ozbaran, 2010; Sarver & Miller, 2014; Swid, 2014). In the studies (Gozubenli, 2009; Kubala, 2013; Morreale, 2002) that involved the subordinate officers' ratings on the effectiveness of leadership styles; their support for the transactional-type leaders correlated moderately with exerting extra effort, and weakly with the perception of leader effectiveness and subordinate satisfaction with the leader. However, the preference for transformational-style leaders correlated strongly with the perception of leader effectiveness, exerting effort, and subordinate satisfaction with the leader (Alarcon, 2005; Durić, 2011; Gozubenli, 2009; Kubala, 2013; Morreale, 2002; Ozbaran, 2010; Sarver & Miller, 2014; Singer & Singer, 1990; Swid, 2014). Thus, the ambiguity or problem associated with the impact of leadership styles in policing organizations is determining what leadership styles are preferred when correlated with perception of leadership effectiveness, exerting extra effort, and subordinate satisfaction (Alarcon, 2005; Durić, 2011; Gozubenli, 2009; Kubala, 2013; Morreale, 2002; Ozbaran, 2010; Sarver & Miller, 2014; Swid, 2014).

Problem Statement

This research involved the reality of transformational, transactional, and laissez-faire style police leaders, managers, and supervisors and their ability to influence the performance levels of subordinate officers within law enforcement organizations. This is related to the leader's challenge with demonstrating individual leadership styles regarding the promoting and conveying of the organization's goals, influencing and enhancing standard performance, as well as gaining support from subordinate officers (Densten, 2003; Durić, 2011; Kubala, 2013; Swid, 2014). As such, and a pivotal aspect of this research study, was to carefully examine the complex problem of assessing the ambiguity associated with a police leader's preference of leadership styles, whether it be transformational, transactional, or laissez-faire (Gozubenli, 2009; Kubala, 2013; Sarver & Miller, 2014).

Previously, empirical research has indicated (Gozubenli, 2009; Kubala, 2013; Sarver & Miller, 2014) that in some police agencies, the leaders prefer and demonstrate more of a command and authoritarian leadership style (relevant to the transactional leadership style), which is related to the traditional policing structure. However, over the last few decades, the instrumental leader or commander style associated with traditional policing has been under challenge (being assessed as less efficient) as participative and supportive leadership models were evolving to meet the current environment changes (Alarcon, 2005; Densten, 2003; Gozubenli, 2009; Kubala, 2013; Morreale, 2002). Leaders in policing organizations (Kubala, 2013; Sarver & Miller, 2014; Schwarzwald, Koslowsky, & Agassi, 2001), emphasized more supportive, communicative, participative,

and inspirational leadership styles (associated with transformational leadership) in line with the characteristics related to community and problem-oriented policing. Conversely, the laissez-faire leadership style (nonleadership) is rarely supported within a policing environment (Morreale, 2002; Sarver & Miller, 2014).

In addition, an a priori assessment associated with the gap has determined that there are inconsistencies in the findings of the MLQ policing literature and an understanding of the true relationship between transformational, transactional, and laissez-faire leadership styles and the leader outcomes of perception of leader effectiveness, subordinate satisfaction, and extra effort on behalf of the leader (Alarcon, 2005; Durić, 2011; Gozubenli, 2009; Kubala, 2013; Morreale, 2002; Ozbaran, 2010; Sarver & Miller, 2014; Swid, 2014). There are variations that exist within the included primary research studies' effect sizes due to small sample sizes and sampling design errors, differences in research designs, as well as potential covariates associated with the rank of the top police leader preferences on leadership styles and the type of law enforcement agency (domestic versus international leadership) that limits generalizability. To determine the problem of what leadership styles are preferred and considered influential and efficient in policing organizations, quantitative analysis was utilized to address the unknowns of what relationship transformational, transactional, and laissez-faire leadership styles have on leadership outcomes in a policing context. This included the perception of leadership effectiveness, exerting extra effort, and subordinate satisfaction. Hence, a meta-analytic research design was applied to assess the impact of

the correlational effect sizes for each of the leadership styles and leader effective

outcomes, and to reconcile those differences.

Purpose of the Study

The purpose of this quantitative meta-analysis study was to examine the

relationship between transformational, transactional, and laissez-faire leadership styles

and the leadership outcomes in a policing context, such as subordinate satisfaction,

perception of leadership effectiveness, and exerting extra effort. This purpose was

accomplished by incorporating a meta-analysis research design, which determined the

variances associated with each of the included studies' effect sizes that primarily impact

the correlational relationship between each of the leadership styles based on the FRL

model and efficient leader outcomes. The meta-analytic approach combines the MLQ-

rated police leadership studies and statistically analyzes them for variability (related to

sampling error and random effects) so that a true effect size can be ascertained. Overall,

this meta-analysis produced more clarity with the ambiguity related to the problem of

determining what leadership styles are preferred and rated stronger in association with the

perception of leader effectiveness, subordinate satisfaction, and exerting extra effort.

Research Questions and Hypotheses

The key variables of interest in this study were the transformational, transactional,

and laissez-faire leadership styles (independent) and subordinate satisfaction, the

perception of leadership effectiveness, and exerting extra effort (dependent). To inform

the purpose of this study, which was to establish the relationship between the three

leadership styles and each of the leader outcomes in a law enforcement context, a set of

research questions and hypotheses were constructed to determine the strength and direction of the correlation between each of the variables being tested. In addition, additional research questions and hypotheses assessing the impact of moderating variables (top leader rank and the type of policing agency) on the relationship between the independent and dependent variables have been incorporated as well. A meta-analytic approach provided the foundation for understanding the study's purpose using statistical analysis associated with the gap or variances related to the aggregated studies' effect sizes, and which are linked to the variables being examined.

The meta-analysis determined the magnitude of effect on the relationship between each of the leadership styles (transformational, transactional, and laissez-faire) and each of the leader outcomes (perception of leadership effectiveness, extra effort, and subordinate satisfaction with the leader). This translated to estimating the strength and direction of the correlational relationship (specifically linked to effect size variances) between each of the variables being statistically analyzed, assessing any moderating effects on the relationship between the independent and dependent variables, and determining homogeneity of variance and whether to accept or not accept the null hypothesis (Borenstein, Hedges, Higgins, & Rothstein, 2009). Subsequently, based on ascertaining the type of association between each of the independent and dependent variables, the research questions and hypotheses are as follows:

Research Questions

RQ1–What is the relationship between transactional, transformational, and laissez-faire leadership styles and perception of leader effectiveness in policing

organizations?

RQ2–What is the relationship between transactional, transformational, and laissez-faire leadership styles and exerting extra effort in policing organizations?

RQ3–What is the relationship between transactional, transformational, and laissez-faire leadership styles and subordinate satisfaction in policing organizations?

RQ4–How does the moderator variable, the rank of police chief or the equivalent leadership position affect the strength of the relationship between transformational, transactional, and laissez-faire leadership styles and perception of leadership effectiveness, subordinate satisfaction, and exerting extra effort?

RQ5–How does the moderator variable, type of law enforcement agency (U.S. versus International), affect the strength of the relationship between transformational, transactional, and laissez-faire leadership styles and perception of leadership effectiveness, subordinate satisfaction, and exerting extra effort?

Hypotheses

$H_0 1$–the correlation between transactional leadership style and perception of leader effectiveness as responded to by policing organizations is zero.

$H_a 1$–the correlation between transactional leadership style and perception of leader effectiveness as responded to by policing organizations is not zero.

$H_0 2$–the correlation between transformational leadership style and perception of leader effectiveness as responded to by policing organizations is zero.

$H_a 2$–the correlation between transformational leadership style and perception of leader effectiveness as responded to by policing organizations is not zero.

$H_0$3–the correlation between laissez-faire leadership style and perception of leader effectiveness as responded to by policing organizations is zero.

Ha3–the correlation between laissez-faire leadership style and perception of leader effectiveness as responded to by policing organizations is not zero.

$H_0$4–the correlation between transactional leadership style and exerting extra effort as responded to by policing organizations is zero.

Ha4–the correlation between transactional leadership style and exerting extra effort as responded to by policing organizations is not zero.

$H_0$5–the correlation between transformational leadership style and exerting extra effort as responded to by policing organizations is zero.

Ha5–the correlation between transformational leadership style and exerting extra effort as responded to by policing organizations is not zero.

$H_0$6–the correlation between laissez-faire leadership style and exerting extra effort as responded to by policing organizations is zero.

Ha6–the correlation between laissez-faire leadership style and exerting extra effort as responded to by policing organizations is not zero.

$H_0$7–the correlation between transactional leadership style and subordinate satisfaction with the leader as responded to by policing organizations is zero.

Ha7–the correlation between transactional leadership style and subordinate satisfaction with the leader as responded to by policing organizations is not zero.

$H_0$8–the correlation between transformational leadership style and subordinate satisfaction with the leader as responded to by policing organizations is zero.

*H*a8–the correlation between transformational leadership style and subordinate

satisfaction with the leader as responded to by policing organizations is not zero.

$H_0$9–the correlation between laissez-faire leadership style and subordinate

satisfaction with the leader as responded to by policing organizations is zero.

*H*a9–the correlation between laissez-faire leadership style and subordinate

satisfaction with the leader as responded to by policing organizations is not zero.

$H_0$10–the rank of the police chief or the equivalent leadership position does not

moderate the relationship between the three previously hypothesized relationships

between the independent and dependent variables.

*H*a10–the rank of the police chief or the equivalent leadership position does

moderate the relationship between the three previously hypothesized relationships

between the independent and dependent variables.

$H_0$11–the type of law enforcement agency (U.S. versus International) does not

moderate the relationship between the three previously hypothesized relationships

between the independent and dependent variables.

*H*a11–the type of law enforcement agency (U.S. versus International) does

moderate the relationship between the three previously hypothesized relationships

between the independent and dependent variables.

Theoretical Framework

This research study was based upon the FRL model. As such, this theoretical

framework was initially developed by Burns (1978) to determine how the

transformational and transactional leadership styles related to the leader's behavior and

actions with influencing their followers' performance. In addition, Burns constructed the FRL model with an emphasis on linking specific behavioral characteristics with the transformational and transactional leadership styles. In doing so, Burns had theorized that the transformational and transactional leadership style features were separate leadership elements, in that he identified the status quo and operating within the culture with transactional leaders and organizational modifications and changes with transformational leaders.

The preliminary basis of the FRL framework initiated by Burns was expanded upon by his associate Bass, a behavioral leadership theorist (Avolio, 2011). According to Bass (1985), the transformational leadership style characteristics consisted of idealized influence (attributed), idealized influence (behavioral), inspirational motivation, intellectual stimulation, and individual consideration. The characteristics of the transactional leadership style consisted of contingent reward, management-by-exception (active), and management-by-exception (passive; Bass, 1985). Subsequently, for the final leadership style, laissez-faire was interpreted as a non leadership style (Bass, 1985).

In addition, Bass (1985) had determined that the transformational and transactional leadership style behaviors were separate and independent, but could be applied simultaneously. Bass conceived that the transactional style leaders could exhibit transformational leadership characteristics dependent on the situation. The FRL framework does embrace the core elements from the contingency theory, situational theory, path–goal leadership theory, and the charismatic leadership theory (Bass, 1996). According to Avolio (2011), a colleague of Bass, leadership effectiveness is predicated

on the full spectrum of leadership style behaviors, which can be demonstrated by the constructs of the FRL model dependent upon the identification of the situation.

An inclusion of police leadership studies was examined based on the effectiveness of the FRL model and leadership styles, to determine the leader's influence and the followers' support concerning organizational performance. The underpinning of the FRL model integrated in this research study was assessed for leadership style preferences of the top police leaders, higher-ranked officers, front-line police supervisors, and the subordinate officers, and how they rate the influence of leadership styles in terms of effective organizational leadership (Avolio, Bass, & Jung, 1999; Bass, 1985; Bass & Avolio, 1997; Densten, 2003; Murphy & Drodge, 2004; Sarver & Miller, 2014). A meta-analytic research design was applied to confirm a number of hypotheses associated with determining the correlational relationship between each of the leadership styles and effective leader outcomes based on the FRL framework.

This study applied the FRL framework as Bass (1985) intended it to be utilized and understood based on the transformational, transactional, and laissez-faire style leadership that influences performance levels in organizational settings. The expectation of researching the FRL model in law enforcement organizations was twofold; the first with obtaining awareness of the types of leadership styles and related behavioral characteristics that have evolved (such as new leadership trends) within a social context of change, and second, with determining the leader–subordinate relationship based on correlating leadership styles with leader effective outcomes in policing organizations. The MLQ-rated police leadership studies included in this research (Alarcon, 2005; Durić,

2011; Gozubenli, 2009; Kubala, 2013; Morreale, 2002; Ozbaran, 2010; Sarver & Miller, 2014; Singer & Singer, 1990; Swid, 2014) provided valuable statistical data derived from the design of the research questions and hypotheses relevant to the problem being examined and the study's purpose.

The pertinent data used for this meta-analysis only include policing studies that are based on the FRL model; measure the leadership style constructs of the FRL model by utilizing the MLQ survey tool (which correlates leadership style factors with particular leader outcomes); address similar research problems and research questions; and use workable effect size metrics (correlations, coefficient of determination, and Cohen's *d*) that can be applied for determining statistical significance in relation to the hypotheses (Alarcon, 2005; Durić, 2011; Gozubenli, 2009; Kubala, 2013; Morreale, 2002; Ozbaran, 2010; Sarver & Miller, 2014; Singer & Singer, 1990; Swid, 2014). Essentially, the hypotheses are directed toward assessing the strength and direction of effect sizes regarding the correlational relationship between each of the leadership styles (transformational, transactional, and laissez-faire) and perception of leadership effectiveness, extra effort, and subordinate satisfaction with the leader. In addition, the meta-analytic approach also determined moderating variables (the top police leadership level and type of law enforcement agency) and their impact on the relationship between leadership styles and effective leader outcomes.

Nature of the Study

The nature of this study was to undertake a meta-analysis by examining the literature on leadership styles and using a quantitative framework. A meta-analysis is a

method that provides a statistical analysis of the aggregated studies observed effect sizes for potential inconsistencies due to sampling errors, random effects, or different research designs, and determines a proportionate weight for each of the sample sizes to obtain a true effect size (Cooper, 2010; Field & Gillett, 2010; Lipsey & Wilson, 2001). The expectations in this present research were to provide a precise measurement for accurately determining the magnitude of the effect size associated with the correlational relationship between each of the leadership styles and effective leader outcomes.

A systematic analysis of the research design for examining and testing the FRL model quantitatively, and reference to the correlational relationship between each of the leadership styles and leader outcomes are provided in Chapter 3. However, a brief discussion on some of the key aspects of applying a meta-analysis, such as collecting data for inclusion criteria, analysis of the sample and target population, as well as examining the relationship between the independent and dependent variables, is presented in this chapter. Accordingly, the meta-analysis begins with collecting data relevant to the research problem (Field & Gillett, 2010). For satisfying the intent of this investigation, only police leadership studies (from U.S. and international policing agencies) based solely on the FRL model and applying the MLQ instrument, as well as utilizing a correlation coefficient effect size statistic (or convertible to this effect size metric) were chosen for inclusion criteria.

The police leadership studies that were analyzed consisted of U.S. and international law enforcement agencies (Alarcon, 2005; Durić, 2011; Gozubenli, 2009; Kubala, 2013; Morreale, 2002; Ozbaran, 2010; Sarver & Miller, 2014; Singer & Singer,

1990; Swid, 2014). The target population was comprised of both U.S. and international law enforcement officers. The sample included for this meta-analysis consisted of U.S. and international top police leaders and managers as well as subordinate police officers. The MLQ rated by police chiefs and police managers (self-format), and the MLQ rated by subordinate officers (rater format), was statistically analyzed to determine from a leader–subordinate perspective, the leadership styles (transformational, transactional, and laissez-faire) that were considered stronger, and positively or negatively correlated with subordinate satisfaction, extra effort, and perception of leadership effectiveness.

The standard effect size statistic extracted from a majority of the included studies was the correlation coefficient effect size statistic, but two studies used a coefficient of determination, and one study applied Cohen's *d* effect size. In this meta-analysis, any different effect size metrics were converted to the correlation coefficient effect size, which is most appropriate for confirming the statistical significance between the independent and dependent variables being tested. It is imperative in this research to measure and analyze participant responses from each of the MLQ police rated studies and then quantitatively ascertain by means of effect sizes the strength and direction of the correlational relationship between each of the leadership styles (derived from the FRL framework) and efficient leader outcomes.

Operational Definitions

This section of the dissertation incorporates and uses relevant leadership terms or concepts that were operationalized throughout this research study. Applicable for this police leadership study, and as described by Patton (Laureate Education Inc., 2009), is

the measurement of concepts through an instrument, which is based on theory to operationalize those concepts, so to test and determine the accountability of the specified theory. Thus, a definition of terms described and employed in this study was based upon an examination of the MLQ as derived from the FRL model, and a systematic analysis of effect sizes through research synthesis.

Effect size statistic–an effect size quantitatively is the magnitude or strength of the phenomenon between the variables of interest (Cumming, 2011).

Exerting extra effort–pertinent to one of the leadership outcomes associated with the MLQ, whereby subordinate officers are more willing to put in extra effort related to their leader's behavior (Bass, 1985).

Full range of leadership (FRL) model–is the theoretical framework for this research study. The FRL is comprised of three leadership styles (transactional, transformational, and laissez-faire) and three leader outcomes (satisfaction with the leader, exerting extra effort for the leader, and leader effectiveness; Bass, 1985; Bass & Avolio, 2004).

Leader Effectiveness–this is one of the three leader outcomes found in the MLQ (Bass, 1985). Moreover, this is applicable regarding subordinate officers' perception of leader effectiveness of the leader meeting the work-related needs of followers (Bass & Avolio, 2004).

Laissez-faire (LF)–this leader style denotes the absence of leadership. Moreover, this leadership characteristic signifies the relinquishing of leader responsibilities as well as avoiding decision-making (Bass & Avolio, 2004).

Multifactor Leadership Questionnaire (MLQ)–the survey instrument utilized to measure the concepts of police leadership styles and behaviors (transformational, transactional, and laissez-faire) and leader outcomes (leader effectiveness, satisfaction with the leader, and exerting extra effort) based on the FRL model (Bass, 1985).

Police leaders–this term denotes the rank of all commanding officers. The police leader ranking command structure consists of police commissioners, chief executives, superintendents, police chiefs, sheriffs, colonels, majors, and captains (Densten, 1999, 2003; Sarver & Miller, 2014; Swid; 2014).

Police officers–the term applies to the scope of the law enforcement arena, and represents all sworn and noncommanding officers (Sarver & Miller, 2014).

Satisfaction with the leader–represents one of the three leader outcomes of the FRL model, and denotes the surveyed responses of subordinate officers toward their police leaders (Morreale, 2002).

Subordinate Officers–signifies all sworn law enforcement officers, who must directly report to a higher-ranking police command position or immediate supervisor (Densten, 1999, 2003; Morreale, 2002; Sarver & Miller, 2014; Swid, 2014).

Supervisors–is attributed to more correctly, sergeants and lieutenants in law enforcement organizations (Morreale, 2002).

Transactional leadership–one of three leadership styles derived from the FRL model (Bass, 1985). This type of leadership style is based on the concept to influence followers with either contingent rewards for meeting work goals and performance standards or punishment for not meeting organizational performance standards (Bass,

2000; Bass & Avolio, 2004).

Transformational leadership–this leadership style and behavioral concept (derived from the FRL) is based on the leader's influence to motivate and often inspire followers to transform beyond their own self-interests to satisfy the objectives that benefit the organization (Bass & Avolio, 2004). Furthermore, the transformational leader enhances and elevates organizational commitment by emphasizing individual learning and growth (attributes that benefit the organization) and, in turn, gains the follower's admiration, respect, and trust (Bass & Avolio, 2004).

Assumptions

The following was assumed from examining and reviewing police leadership criteria of solely MLQ studies concerning police leadership styles impacting policing organizations:

1. It was assumed that the review and evaluation of data on the MLQ-related police leadership styles and leader outcomes are more appropriately secondary data analysis or re-analysis of findings from primary research studies.

2. It was assumed that police leaders, supervisors, and subordinate respondents are honest and upfront with their MLQ survey responses.

3. It was assumed that the MLQ accurately measures the law enforcement participant responses in relation to the FRL model and associated leadership styles (transactional, transformational, and laissez-faire) and the three leader outcomes (leader effectiveness, satisfaction with the leader, and exerting extra effort for the leader).

4. It was assumed that the sample responses from each police leadership study are representative of the law enforcement population being investigated and researched.

5. It was assumed that the smaller sample sizes being applied in this research (from some of the individual primary police leadership studies) indicate accurately the limitations to generalizability.

6. It was assumed through a meta-analysis and examining a combination of police leadership studies, that a proportionately weighted effect size will be accurately assessed by sample size in determining a true effect size.

7. It was assumed that by examination of specific MLQ police leadership studies based on the FRL model, and by applying a meta-analytic research design for potential measurement errors (related to sampling errors and random effects), an overall estimated effect size could be ascertained from the variables being tested.

Scope and Delimitations

At the start of this research, it was determined through an extensive review of the seminal and current leadership style literature that the FRL framework, as developed by Burns (1978) and later expanded by Bass (1985), would be most suitable for the intent of this study. By developing a research problem based on determining the preference, strength, and effectiveness of the transformational, transactional, and laissez-faire leadership styles from a leader–subordinate perspective, and within a policing organizational context, was most appropriate. A major delimitation and reasonable

justification for applying only the FRL model for this study as a theoretical framework (Bass, 1985; Burns, 1978) is that it is wide-ranging and encompasses and underpins many other leadership style theories, such as charismatic, situational, participative, autocratic, and democratic.

Another important factor for utilizing the FRL model is that Bass (1985) developed a leadership instrument tool, the MLQ, to measure the constructs of transformational, transactional, and laissez-faire leadership styles and correlate them with the leader outcomes of subordinate satisfaction with the leader, extra effort, and perception of leader effectiveness. Second, the MLQ is widely used in leadership style studies, and more specifically within a multitude of contexts (Antonakis, Avolio, & Sivasubramaniam, 2003; Muenjohn & Armstrong, 2008). Third, the MLQ has undergone some major revisions (Bass & Avolio, 1993, 1995, 1997), as a result of some validity and reliability concerns, and Antonakis et al. (2003) and Muenjohn and Armstrong (2008) examined some of the leadership factors of the MLQ by utilizing confirmatory structural modeling techniques and found it feasible and effective for homogeneous contexts.

Two other pertinent leadership instruments were considered and excluded from the study, the Leadership Behavior Description Questionnaire (LBDQ), and the Leader–Member Exchange (LMX) model. The LBDQ has been applied to measure and assess effective leader behaviors and skills and have been emphasized in several policing studies (Andreescu & Vito, 2010). Another prominent leadership instrument, the LMX model, is very similar to the construct of the MLQ (Notgrass, 2014). It examines the leadership exchange process based on the quality of the leader–subordinate relationship and a

preferred leadership style.

The other delimitation in this study was to utilize specifically the valid and reliable MLQ instrument, due to the target population consisting of police officers based on a similar context. Second, the MLQ rated policing studies possessed similarities with this study's research problem. Third, the research questions and hypotheses were specifically linked to the MLQ, as the study's variables are associated with the leadership styles based on the FRL model (independent) and the effective leader outcomes (dependent). There were some other policing studies (Adebayo, 2005; Deluga, 1990; Densten, 1999, 2003; Moon, 2006; Schwarzwald, Koslowsky, & Agassi, 2001) that applied some or all the leadership styles based on the FRL model, but were excluded because the dependent variables were different and measured by other leadership instruments or research designs with effect sizes that could not be converted to correlation coefficients. The scope of interest in this study was to maintain the quality and similarity of data, which are based on the objectives (FRL model and MLQ) that align with confirming specific findings about leadership style preference and effectiveness within a homogeneous (policing) context.

Limitations

The limitations to this study are based on the reliability of results through aggregating single studies and assessing effect sizes with a meta-analytic approach, and are dependent on data retrieved from the original sample, research design, and statistical procedures of the primary research studies (Field & Gillett, 2010). Therefore, to address some of the methodological weaknesses, the inclusion of criteria being incorporated into

the study must be carefully considered to minimize bias within the research. Further, Field and Gillett (2010) advocate a precise set of criteria, which must be emphasized all through the study, thereby reducing subjective bias in the analysis.

Consequently, the challenge in this research with conducting a meta-analysis was based on the inclusion criteria, with an emphasis on the "quality and similarity of the included studies" (Field & Gillett, 2010, p. 668). This entails a threat to validity, as the meta-analyst must be aware of the apples and oranges problem when obtaining and utilizing data from different studies (Cooper, 2010; Field & Gillett, 2010). To mitigate this potential threat to the research design, each of the included primary research studies applied the same theoretical framework, utilized the MLQ to respond to research questions and confirm hypotheses, and the target population consisted of police officers.

Another possible bias that was considered with conducting meta-analysis research is the selection of scholarly published studies that are based solely on significant findings and the exclusion of unpublished non-significant studies (Cooper, 2010; Field & Gillett, 2010). This limitation in conducting a meta-analysis is publication bias. It is more common among meta-analysts because significant finding articles are eight times more likely to be accepted by journal publishers and seven times more probable to be published (Field & Gillett, 2010).

The exclusion of the null hypothesis (from unpublished sources) and the resulting implication of publication bias in synthesis research, according to Cooper (2010) "ensures that the size of correlations or differences between the mean scores of groups reported in published works will be larger than the differences you would be likely to

find in all relevant research" (p. 63). In effect, to minimize publication bias, the alternative would be to contact experts within the field and authors by direct email regarding unpublished studies or "by posting a message to a topic specific newsgroup or using LISTSERV" (Field & Gillett, 2010, p. 667). To mitigate publication bias in this research, scholarly and dissertation studies were utilized to reduce the threat of inflating effect sizes.

Significance of the Study

The significance of this study was to fill the gap with providing more understanding of the types of leadership styles that are supported by both police leaders and followers, and that correlate higher with the perception of leader effectiveness, subordinate satisfaction with the leader, and exerting extra effort. In addition, this included how subordinate officers positively support the relationship between the leadership style characteristics of transactional leaders (task oriented with reward and punishment actions), transformational leaders (charismatic, inspirational, visionary, and motivators), and laissez-faire leaders (passive/avoidant). In some of the MLQ-based primary research studies on police leadership, there is a strong association between specific leadership styles (transformational and transactional) and the leader outcome of subordinate job satisfaction (Alarcon, 2005; Durić, 2011; Gozubenli, 2009; Kubala, 2013; Morreale, 2002; Ozbaran, 2010; Sarver & Miller, 2014; Singer & Singer, 1990; Swid, 2014). These leadership styles and their behavioral characteristics are linked with positively promoting the mission and vision of the policing agency, emphasizing officer morale, and influencing organizational commitment and performance (Bass & Avolio,

1997; Densten, 2003; Kubala, 2013; Murphy & Drodge, 2004; Sarver & Miller, 2014; Swid, 2014).

The implications for social change primarily emphasize the effective leadership style characteristics. This reflects on the police leader's behavior, actions, and ability to provide specific guidelines and objectives associated with the policing mission, influence officer performance, and maintain the safety within the organization. In addition, this research provides some empirical evidence as it relates to the FRL model and police leadership. The knowledge obtained on leadership style efficacy can be of interest to leadership scholars, practitioners, and policymakers by introducing an innovative way of thinking to assist in decision-making, and by influencing subordinates in various situations with utilizing particular leadership style behaviors. By conducting research synthesis based on the MLQ within a policing context contributes to the following factors, (a) identifying trends associated with leadership styles and organizational productivity, (b) providing a comprehensive understanding for utilizing the full range of leadership styles, and (c) determining what leadership styles police leaders and their followers support and correlate with effective organizational outcomes and performance.

Summary

This research study addressed the need to understand the influence of leadership styles associated with effectively impacting policing organizations. In addition, Chapter 1 introduced the FRL framework for this study (Bass, 1985), which incorporated the constructs of three distinct leadership styles (transformational, transactional, and laissez-faire) and the three leader outcomes of perception of leader effectiveness, satisfaction

with the leader, and exerting extra effort. In addition, a careful examination of the MLQ, which correlates the leader factors and outcomes associated with the FRL model, provided the data to be statistically analyzed by meta-analysis to inform the problem and purpose of the study. As a result, the problem was related to determining what leadership styles (transformational, transactional, and laissez-faire) are preferred and rated effective such as leaders influencing and improving organizational performance among the subordinates in a policing context.

The purpose of this study was demonstrated by examining the relationship between each of the leadership styles and each of the leader outcomes, and this could provide some understanding about the impetus of influencing leader–follower roles within policing organizations. A meta-analysis was applied to aggregate the MLQ-related policing studies and statistically determine the unknown association that transformational, transactional, and laissez-faire leadership styles have on the leadership outcomes of perception of leadership effectiveness, extra effort, and subordinate satisfaction. The social implications that derive from the analysis of each of the leadership styles (transformational, transactional, and laissez-faire) within the law enforcement context can better enhance the functions and provisional community policing services. The following chapter will thoroughly examine the FRL model (from its origination and development of constructs) and evaluate its theoretical and practical intent in research studies relevant to police leadership. In addition, Chapter 2 will include an analysis of key variables and an examination of a meta-analysis research design.

Chapter 2: Literature Review

Introduction

The literature being examined is based on the Bass and Avolio (2004) FRL model, and the scholarly analysis of understanding the basis of transformational, transactional, and laissez-faire style leaders and their impact on organizational performance. For the intent of this research, a secondary analysis of primarily police leadership studies was incorporated to understand the relationship between leadership styles and purported leader outcomes within a law enforcement organizational context. To comprehend police leadership styles better, an examination of the MLQ (Bass, 1985), designed to correlate leadership factors, provided a statistical assessment for both leaders and subordinates on rating leadership effectiveness in policing organizations.

In pursuit of acquiring more understanding on leadership styles in law enforcement, a problem revealed in the academic literature was that police leaders' preferences differ with supporting particular leadership styles concerning productive leader outcomes (Durić, 2011; Kubala, 2013; Sarver & Miller, 2014). For example, in the Kubala (2013) and Sarver and Miller (2014) studies, reference the MLQ (self) ratings by police chiefs, the transactional leader style characteristic of contingent reward was correlated with a strong relationship to exerting extra effort for the leader and strong with leader effectiveness. In addition, the studies of Kubala (2013), Morreale (2002), Sarver and Miller (2014), and Singer and Singer (1990) have all indicated the demonstration of transactional leadership characteristics (contingent reward and management by active monitoring) by supervisors associated with the responsibilities and tasks of everyday

policing.

The earliest academic research on police leadership styles (Morreale, 2002;

Singer & Singer, 1990) has also shown that police leaders and supervisors who exhibited

transformational leadership qualities were highly supported by their subordinate officers.

For example, Singer and Singer (1990) stated that Australian police officers fully

supported the transformational leader qualities of individual consideration and idealized

influence (behavioral). Morreale (2002) reported that a network of New England police

officers correlated the transformational leadership style very strongly with exerting extra

effort for the leader and subordinate satisfaction with the leader. In addition, Fox (2009)

conducted a study on police officers responding to critical incidents and determined that

these officers strongly supported their incident commanders who demonstrated the

transformational leadership characteristic of individual consideration.

Another matter of importance, which was discovered in the academic literature on

police leadership styles, was that some of the studies (Alarcon, 2005; Sarver & Miller,

2014; Singer & Singer, 1990; Swid, 2014) consist of small sample sizes and others apply

different research designs. This results in variances to individual study effect sizes, which

is indicative of sampling errors and random effects, and is responsible for limiting

generalizability. To reconcile those differences (within-and between-study measurement

errors) assessed with the observed effect sizes from the primary research studies, a meta-

analytic research design was proposed to investigate the variances using statistical

analysis to ascertain an overall estimated effect size.

Hence, this chapter will examine some of the earlier literature on the relevant

leadership theories (such as charismatic, supportive, path–goal, and contingency and situational) and their behavioral components as they relate to the concepts of the FRL model. This provides some evidence on how Bass (1985) and Avolio and Bass (1991) constructed the FRL model based on a full spectrum of leadership style behaviors that equate with and comprise some of the behavioral elements of the leadership theories mentioned earlier. In addition, the chapter will contain a comprehensive review of both seminal and current literature on police leadership styles and behaviors and leader outcomes based on the FRL model.

This will involve an examination of the origin and basis of transformational and transactional leadership styles as developed by Burns (1978) and their impact on the relationship between leaders and followers. In addition, this is further expanded by the scholar, Bass (1985), whose efforts extended Burns' concepts on transformational and transactional leadership styles by emphasizing leadership within organizational contexts and later by developing the FRL model (Bass & Avolio, 1993). Consequently, the constructs of the FRL model as measured by the MLQ will be incorporated into police leadership studies to determine the effect of each of the leadership styles as defined by their composite behavioral scores in relation to the three purported leader outcomes.

Literature Search Strategy

A fundamental yet pivotal step with conducting secondary data analysis research is the procuring of primary studies that identify with the research topic and include a similar research question(s) (Field & Gillett, 2010). The initial step in conducting a meta-analysis solely depends on a thorough literature search of primarily electronic databases

for scholarly articles from professional journals, but a meta-analyst might also include unpublished sources from LISTSERV and even papers from conference proceedings (Field & Gillett, 2010). In this research study of policing and the FRL model, specific electronic databases were utilized such as ProQuest, Sage, Emerald, Google and Google Scholar, EBSCO, and Wiley. For the archived data sources no longer readily accessible from the 1970s through the 1990s publication dates, online purchases for some of these extant scholarly articles were made available from HeinOnline and Taylor and Francis.

The strategy applied to accommodate the literature search on police leadership styles was to use key terms such as FRL model, MLQ, police leadership styles, FRL model and policing, and MLQ and law enforcement or policing. Another key strategy applied during the literature search was the use of the Boolean command terms (AND or OR). According to Creswell (2014), the Boolean command terms associated with AND or OR terms generate specificity, in that the quest for data sources is multiplied in the search. The terms such as police, police leader, policing, police leadership styles and law enforcement had the applied Boolean command term AND or the term OR with management, MLQ, and the FRL model. Lastly, ProQuest has been used for retrieving dissertation studies, and two conference studies through Google's search were considered because this study employed a meta-analysis research design.

As a result of the literature search, 114 scholarly sources were applied to this research study. There were 31 scholarly articles applied in relation to the MLQ; there were 37 published articles used to describe the intent of the FRL model in the study; another 23 published sources (including scholarly articles and textbooks) were based on

the meta-analysis research design. In addition, the literature search yielded another 27 studies, which were comprised of published articles and dissertations, conference proceedings, and 10 of those independent samples met the inclusion criteria on the methodology applied in this research.

Leadership Theories and Policing

From the early research conducted on police leadership (Jermier & Berkes, 1979; Kukyendall & Unsinger, 1982), it was the prevailing assumption that law enforcement had primarily used a preferred autocratic and impersonal style of leadership. According to Sarver and Miller (2014), "subordinates are not involved in the decision-making process, there is very little to no interaction between the leaders and workers, and fear from the threat of punishment is the chief motivator" (p. 127). The authoritarian type leaders were associated with structured tasks that were linked to established goals, and which equated to an extreme description of transactional leadership (Girodo, 1998; Sarver & Miller, 2014).

The police departments had resembled a quasi military structure (while maintaining a central command) and leaned toward a traditional policing approach (Greene, 2000). Nonetheless, the precipitation of social problems that led to civil unrest with the civil rights movement of the 1970s paved the way for supporting the context of change associated in the development of community policing (Kukyendall & Unsinger, 1982). In addition, at that time, academic research on police leadership was conducted to determine how the new leadership models (charismatic, contingency, situational, and path–goal) would best provide support for adapting to new leadership behaviors over the

instrumental leader style (Allio, 2013; Greene, 2000).

Charismatic Leadership Theory

The theoretical framework of charismatic leadership renders a description for leaders, who are perceived by their followers as possessing heroic and extraordinary qualities (Conger & Kanungo, 1987; Weber, 1947). Charismatic leadership based on a political and sociological context, emphasizes that "these leaders represent revolutionary social forces, and they are responsible for significant social transformations" (Conger & Kanungo, 1987, p. 637). The charismatic leader gains the trust of followers, who in turn, approve and provide support for the mission of the leader, which comprise the overall initiatives into action (Conger & Kanungo, 1987). Weber (1947) legitimized the authority of charismatic leaders based on the followers' recognition of the leader's exceptional characteristics and heroism, and not from a traditional perspective (on positions or rules) or normative patterns.

Based more on an organizational context, Conger and Kanungo (1987) described the followers' interests (such as trust, shared beliefs and values) with charismatic leaders, on a relational basis. This type of relationship is established with the observable behaviors (emphasizing trust and commitment with specified values) demonstrated by the charismatic leader, linked to the attributions (the approved qualities of the leader) adopted by the followers (Conger & Kanungo, 1987; House, 1977). The charismatic leader describes the organizational mission by presenting a vision based on an idealized goal, which is conveyed to inspire and influence (behavioral components) futuristic achievements (Bass, 1997; Conger & Kanungo, 1987).

Bass (1997) incorporated into the FRL model the transformational leader style components of charisma, which delineates the attributed and behavioral aspects of idealized influence. The idealized influence (behavioral) describes the position of the charismatic leader, who exhibits various interpersonal skills (sharing of vision, displaying conviction, formulating and articulating the mission) that embrace and address critical issues impacting the well-being of an organization (Avolio & Yammarino, 2013; Bass, 1997; Conger & Kanungo, 1987; Panopoulos, 1999). On the other hand, the attributed leader characteristic of idealized influence is exemplified by the loyalty and commitment of followers (within the organization) who align with the issues, values, and the shared purpose emphasized by the leader's conviction (Bass, 1997).

In addition, Bass (1997) suggested that the transformational behavioral components of idealized influence (charisma) would be mostly observed within the context of problematic organizations. The charismatic leadership behavior is observed when examining and addressing difficult issues; when incorporating a shared purpose (around idealized goals); when conveying the mission, and articulating a futuristic vision (Bass, 1997). The validation step of this relational process is the followers' acceptance of the leader's shared perspective and idealized vision, and the impetus for organizational change (Bass, 1997; Conger & Kanungo, 1987).

Fiedler's Contingency Model of Leadership

The Fiedler contingency model contends that leadership style and the effectiveness of the leader are moderated in specific situations, whereby the strength of the leader's style demonstrates the influence over a group's behavior (Schriesheim,

Tepper, & Tetrault, 1994). Fiedler developed the least preferred coworker (LPC) scale, an instrument that measures how leaders should be classified based on their rating of the least preferred coworker positively (high LPC) or negatively (low LPC) (Schriesheim et al., 1994). In addition, the LPC scale measures the variables of leader–member relationships, task structure, and position power of the leader, and dichotomizes them into a high- and low-value, eight-cell classification system (octant 1 through octant 8) (Fiedler, 1967).

As a result of the LPC model testing, the individual octant scoring represents levels of being highly favorable to highly unfavorable; correlational values are usually computed separately within each octant, between LPC and group performance, and "the direction and magnitude of the correlations have been examined for conformity to the contingency model's predictions" (Schriesheim et al., 1994, p. 562). The Fiedler contingency model has determined that the low LPC scores of task-oriented leaders do translate to leader effectiveness when involved in situations that are favorable or unfavorable to them (Bass, 1997; Fiedler, 1967). The high LPC scores of relations-oriented leaders are more efficient with situations that are moderately favorable to them, and the level of leadership performance will decrease when leaders are put into situations that are not compatible with their LPC scores (Bass, 1997; Schriesheim et al., 1994).

Hersey–Blanchard Situational Leadership Model

This situational leadership model is predicated on a leader's assessment of a follower's maturity level (Bass, 1997; Hersey & Blanchard, 1969). Therefore, Hersey and Blanchard (1969) proposed for situational leaders to concentrate on the followers' needs

by adopting the following four leadership styles:

- Directing–pivotal during the orientation phase where the leader conveys the roles and importance of meeting goals.

- Coaching–through this maturation period, the leader tends to motivate and offers advice in terms of guidance and direction.

- Supporting–typifies the resolution phase, whereby the leader and followers participate in decision-making.

- Delegating–this is the production phase, the leader can delegate by shifting major responsibilities onto the followers.

Subsequently, situational leaders must examine (by assessing the situational conditions and followers) the demands of their environments to determine an effective leader style approach.

Path–goal Theory of Leadership

The path–goal leadership was developed by House (1971), which describes the leader's process of motivating, supporting, and rewarding their followers, by clarifying a path with removing obstructions toward the accomplishment of goals. The path–goal theory is based on the instrumentality framework, which emphasizes that effective leader behavior is predicated on situational elements and capabilities of the followers (Mathieu & Zajac, 1990). Two vital leadership behavioral aspects have typified the path–goal theory, instrumental, where the leader applies a strong directive approach, and supportive, where the leader is more considerate and demonstrates a concern for the well-being of subordinates (Mathieu & Zajac, 1990).

House (1971) had determined four distinct leadership styles (directive, supportive, participative, and achievement-oriented) that could be applied contingent upon the situation, and could invariably increase leader effectiveness along with subordinate motivation, satisfaction, and performance. The directive type of leader specifies the regulations for subordinates to adhere to; provides the guidelines for subordinates linked to schedules and conveys the timing for completion of tasks; role ambiguity is diminished, and rewards are considered (House, 1971). The supportive leader is considerate, establishes a friendly working environment, assists in the development of subordinates' self-esteem, and work tends to be more interesting (House, 1971). The participative leader consults with and engages followers with decision-making skills and taking specific actions, and the achievement-oriented leader sets high standards regarding task achievement and self-development, and the leader is somewhat assured in the followers' capabilities to succeed (House, 1971).

An early police study conducted by Jermier and Berkes (1979) researched the impact of the path–goal contingency theory concerning three leader style behaviors (directive-role clarification, participative, and supportive). The study involved surveying 158 police officers and the supervisory ranks of sergeants and lieutenants from a midwestern police department (Jermier & Berkes, 1979). It was determined that the role clarification behavior had some positive impact on job satisfaction when subordinates were involved in tasks that were unpredictable or when cooperating and coordinating (jointly) with other officers (Jermier & Berkes, 1979). In addition, when tasks are predictable, the supportive leader style behavior had a positive impact on job satisfaction,

as did the participative leader style when jobs were unpredictable (Jermier & Berkes, 1979).

In a review of the contingent and situational theories of leadership, Bass (1997) stated that they provided some evidence with the motivation of followers and the leader's assessment of situational factors, but the results were mixed. Police leadership studies (Girodo, 1998) do indicate that leadership styles are contingent upon situational factors, and supervisors should be trained to lead during various situations (Sarver & Miller, 2014). Bass argued that leadership style behavior has more impact on the contingent condition rather than the opposite, and acknowledged that the most efficient leadership approach is to combine the task-structured oriented (transactional) and relation-oriented (transformational) leader styles. Subsequently, Sarver and Miller (2104) determined that some law enforcement agencies do employ a mixed-style leadership.

The synthesis of the core components of contingency and charismatic leadership theories, and how they underline supporting characteristics on how effective the FRL model is among the leaders and subordinates in a policing organizational environment, is pertinent to this study. Bass (1997) developed and enhanced the FRL framework to include both the task-oriented (transactional) and relationship-oriented (transformational) style leaders, and the need to exhibit these types of leadership style behaviors contingent upon situational factors. The FRL theory postulates a leadership process of demonstrating (Bass & Hater, 1988) both the transactional style of self-interest exchange based on task clarification and accomplishment for rewards or transforming the goal of self-interest and strengthening the personal identification with the leader's shared vision and mission. As a

result of describing the behavioral attributes for each of the leadership styles associated with the FRL theory, Bass intended for the transactional leadership style to be augmented by the transformational leader style characteristics.

The ideal leadership situation, according to Gozubenli (2009) is "when a leader establishes a good relationship with subordinates, clearly defines the tasks, and possesses authority and power to provide rewards and punishments" (p. 27). In this study, the FRL theory equates to the research questions based on determining what leadership styles (transformational, transactional, and laissez-faire) are preferred and rated as more effective given the situational conditions in a law enforcement context. This relates to determining the effectiveness of the leadership style characteristics exhibited by the police leaders and managers and how they are accepted by subordinate officers in the performance of their policing responsibilities.

Furthermore, this translates to each of the transformational, transactional, or laissez-faire leadership style characteristics having demonstrated among leaders and subordinates a positive or negative relationship to situational outcomes. Second, by acknowledging the predictability of tasks in policing, the hypotheses are predicated on determining the correlational relationship between each of the transformational, transactional, and laissez-faire leadership styles and subordinate satisfaction with the leader, extra effort, and perception of leadership effectiveness. The FRL framework advances the understanding of the type of leadership styles and attributed characteristics that are preferred among police leaders and accepted by subordinate officers and how this translates to organizational performance by subordinate satisfaction and leadership

effectiveness.

The Origin of Transformational and Transactional Leadership

The emphasis on participative leadership led to the origin of transformational or transforming leadership, which was developed by the political scientist, James MacGregor Burns, who was researching political leaders (Muenjohn, n.d.). According to Burns (1978), the process of transforming leadership entails that "leaders and followers help each other to advance to a higher level of morale and motivation" (p. 20). Burns recognized a compatible relationship with Abraham Maslow's Theory of Human Needs (Covey, 2007), and transforming leadership, which is primarily based on a spectrum range of satisfying people's needs. From an organizational sense, Burns conveyed that effective work performance levels are related to meeting the satisfaction of the worker's needs. Upon this theoretical framework, Burns established the two concepts of transformational and transactional leadership.

From transactional leadership, Burns (1978) highlighted the importance of the leader meeting (from a satisfaction perspective), the lower level needs of followers, or better known (Covey, 2007; Muenjohn, n.d.) as a cost–benefit exchange process signifying the transactional leader–follower relationship. As Burns (1978) understood it from a political viewpoint, transactional leaders "approach followers with an eye to exchanging one thing for another: jobs for votes, or subsidies for campaign contributions" (p. 3). In contrast to the transactional leader's behavior of give and take, Burns envisioned transformational leaders to assist followers with meeting the higher-order needs, such as raising the awareness of higher ideals and moral values.

Elucidating further on leadership style and behavior, Bass (1985; 2000) a scholar on leadership theory did expand on Burns' works of transformational and transactional leadership, by applying them more so on the micro-level with organizational environments. However, Bass did not support Burns' opinion on transformational and transactional leadership behaviors being on separate ends of a continuum. Bass (1985) was more inclined to accept leaders exhibiting both transformational and transactional leadership in different situations or "most leaders do both in different amounts" (p. 22). In a similar facet of reasoning, referencing to situational leadership approaches, the contingency model lends support in terms of situational constraints, where the leader applies a specific leadership style (task structure, leader–follower relations, and leader position power) to meet the demands of the situation (Fiedler, 1967; Singer & Singer, 1990).

Avolio (2011), an advocate of the FRL model, had stated that transactional leader behaviors (contingent reward and management-by-exception) are deemed inherently appropriate for specific task-related situations and monitoring supervision. The transformational attributed behaviors, more importantly, emphasize advancing performance with the leader's ideals (individualized consideration, inspirational motivation, and idealized influence) to the development of the followers' potential qualities (Albritton, 1998; Avolio, 2011; Bass, 1985). In addition, Bass expanded on the concepts of transformational and transactional leadership styles by elaborating on their attributed behaviors, which were pivotal leader factors with the development of the MLQ (Judge & Piccolo, 2004).

The Full Range of Leadership Model

The FRL model derives from a Bass (1985) initiative and urgency to modify and go beyond the transactional leader's emphasis on follower goal and role clarification (self-interest) concerning compensating or sanctioning behavior (Antonakis et al., 2003; Morreale, 2002). Bass emphasized "that a paradigm shift was required to understand how leaders influence followers to transcend self-interest for the greater good of their units and organizations to achieve optimal levels of performance" (Antonakis et al., 2003, p. 264). By incorporating the transcendent quality of transformational leadership, Bass proposed to develop a full and comprehensive leadership model.

Essentially, the FRL model as viewed by Avolio (2011) is situated within a spectrum or range of leadership styles along a continuum. This is demonstrated when the transformational leadership style and behaviors enhance or augment the positive aspects of transactional leadership, such as related to contingent reward or management-by-exception (active, Avolio, 2011). Moreover, Antonakis et al. (2003) and Avolio (2011) viewed transactional leaders as limited to a range of behaviors and actions.

According to Avolio (2011), transactional leaders possess a higher proficiency with the fulfilling of task-oriented performances but are less prepared to deal with situations consisting of change and development within organizations. The rationale for applying the FRL constructs, which is based on a full spectrum of leadership style factors, is advantageous if the transactional leader can shift the balance by utilizing transformational behavioral characteristics (such as developing potential or advocating creative and problem-solving thinking), in the necessary situations (Avolio, 2011;

DeParis, 1997). The intended theoretical framework of a fully developed and effectively working FRL model as observed by Avolio (2011), is for leaders to augment the transactional style with specific transformational leader behaviors depending upon the challenges and situational concerns.

Initially, the FRL model consisted of six leadership factors in 1985 (Antonakis et al., 2003). For example, Bass equated transformational leadership with three leader factors (charisma, intellectual stimulation, and individualized consideration; Antonakis et al., 2003; Morreale, 2002; Muenjohn, n.d.). Then Avolio and Bass (1991), replaced the transformational leader behavior, charisma, with idealized influence (attributed and behavioral). The original two leader factors associated with transactional leadership (contingent reward and management-by-exception), would be modified by splitting management-by-exception into an active and passive leader aspect (MBEA and MBEP), and therefore, totaling three leader factors. The final leader factor, laissez-faire, consisted of a passive/avoidant leadership behavior (Avolio & Bass, 1991).

Consequently, Avolio and Bass (1991) modified the FRL model from six to nine leadership factors. The revised version or the current version of the FRL model consists of three leadership typologies: transformational, transactional, and laissez-faire leader styles (Bycio, Hackett, & Allen, 1995; Morreale, 2002; Sarver & Miller, 2014; Swid, 2014). In addition, the nine leadership factors associated with transformational (five factors), transactional (three factors), and laissez-faire (one factor), establish the theoretical basis for this research study, and aid in better understanding the leader–follower relationship of the multilevel rank structure within policing organizations.

Transformational Leadership

The transformational leadership style consists of five leader factors or behaviors: *Idealized influence* (*attributed)*–which denotes a socialized personification of the leader (Antonakis et al., 2003; Avolio & Bass, 1991; Bycio et al., 1995). The leader is perceived as being determined, strong, and possessing moral and ethical conviction, which followers' trust and respect (Antonakis et al., 2003; Avolio & Bass, 1991; Waldman, 1994). *Idealized influence (behavior)*–This type of leader portends toward a charismatic nature and is committed to a set of values, vision, and readily appeals to followers on an emotional basis (Antonakis et al., 2003; Bycio et al., 1995; Morreale, 2003).

The third transformational leader factor: *Inspiration Motivation*–The leader communicates with a positive outlook on the future. The emphasis of this leader behavior is to articulate a vision that inspires and motivates followers to achieve organizational objectives and goals (Antonakis et al., 2003; Avolio & Bass, 1991). The fourth factor attributed to transformational leadership: *Intellectual Stimulation*–The leader emphasis is on problem solving, as followers are intellectually stimulated to apply new ways of thinking to previous situations. In fact, the leader encourages reframing problems with the utilization of innovative ideas and creative thinking, which lead to establishing better ways of satisfaction with organizational tasks (Antonakis et al., 2003; Avolio & Bass, 1991; Bass & Avolio, 1997). The fifth factor of transformational leadership: *Individualized consideration*–Here the leader participates on an individual basis in the capacity of mentor or coach. The leader reaches out, striving with the objective of personal satisfaction and growth of each follower, as the potential for new learning is

supported (Antonakis et al., 2003; Bass & Avolio, 1997; Morreale, 2002; Schafer, 2009).

Transactional Leadership

Bass and Avolio (1990) finally established the criteria for transactional leadership with three leader factors. A prime transactional leader behavior: *Contingent reward*–This factor of leadership denotes a transactional commitment between the leader and follower. The leader establishes an agreement with followers solely based on the premise of meeting organizational objectives. Further, the leader has a set criterion of expectations and initiatives with performing tasks and rewarding followers with incentives when those expectations are satisfied (Antonakis et al., 2003; Avolio & Bass, 1991; Bass & Avolio, 1997; Morreale, 2002; Muenjohn, n.d.).

Bass and Avolio (1990) split the second transactional leader factor into two forms: management-by-exception (active) and management-by-exception (passive). Management-by-exception (active)–this transactional factor or behavior describes a leader who actively engages with followers so as to be able to monitor the performance standards and task accomplishments. This type of leader at his or her discretion can take immediate corrective action if performance standards fall below expectations (Antonakis et al., 2003; Bass, 1990; Bass, Avolio, Jung, & Berson, 2003; Densten, 1999). According to Bass and Avolio (1995), the problem of this type of management is that it thwarts any potential for risk-taking and development of innovative thinking among followers because it may result in not meeting the leader's approval.

The other component of transactional behavior: *Management-by-exception (passive)*–This style of management limits the intervention of the leader with followers.

The leader takes corrective action only if tasks are not completed (Bass & Avolio, 1990). Generally, this type of leader is best described as passive at best, and would prefer to leave things as they are unless, there is a problem or concern demanding intervention (Bass & Avolio, 1997).

Laissez-faire

The ninth and final leadership factor of the FRL model is *Laissez-faire*. This is a *passive/avoidant* leader behavior or non-transactional. The leader fails to lead; abdicates the responsibility of a leader, overall, leadership is not attempted (Antonakis et al., 2003; Bass & Avolio, 1990; Morreale, 2002). Laissez-faire style leaders emphasize a hands-off approach and are rarely involved in decision-making and offering any guidance and direction (Morreale, 2002).

The Application of the FRL Model

Analogous to this police leadership styles and behavior study, the FRL model was applied to a military leadership context (Atwater & Yammarino, 1993). For example, the FRL model was introduced and applied by Bass and associates (Avolio et al., 1999; Bass, 1996, 1998; Bass & Avolio, 2000; Bass et al., 2003; Hater & Bass, 1988; Yammarino & Bass, 1990) attempting to understand the challenges of ranking military officers leading subordinate troops, and assessing the correlation of transformational and transactional leadership behaviors with leader effectiveness and satisfaction with the leader. Mainly, Bass (1985) related the transformational leadership style as reflecting on the social values that arise during times of tension and changes, whereas the transactional leadership style was more applicable and fitting in a well-ordered society.

In one of the military studies, Bass et al. (2003) researched a group of U.S. Army platoon leaders and sergeants. The study included the MLQ Form 5X, in which the purported sampled respondents (72 light infantry rifle platoon leaders) were surveyed on assessing the relationship between transformational and transactional leadership styles and behaviors with unit potency, cohesion, and performance during times of stressful conditions (Bass et al., 2003). The study's results determined that transformational leadership and the contingent reward behavior of transactional leadership style positively predicted a cohesive and well-coordinated effort concerning the platoon leaders' responses (Bass et al., 2003).

In another military study (Waldman, Bass & Yammarino, 1990; Yammarino & Bass, 1990), the MLQ was used by 793 U.S. Navy senior subordinates on rating 186 of their immediate supervising officers. The study primarily focused on a range of leader–follower interactions by comparing the entire spectrum of leader factors associated with the FRL model (Waldman, Bass & Yammarino, 1990; Yammarino & Bass, 1990). When compared with both transactional and laissez-faire leadership styles, transformational leadership was rated higher by the subordinate officers when correlated with the leader outcome variables of perception of leader effectiveness, satisfaction with the leader, and exerting extra effort (Waldman, Bass & Yammarino, 1990; Yammarino & Bass, 1990).

Although Bass (1998) invested much research concentrating on leadership within a military context, there are a fair number of resemblances with police cultures. For example, Morreale (2002) noted, "many police organizations were modeled after the American military, in structure, rank, discipline, communications and chain of command,

a more transactional style" (p. 35). In addition, police agencies employ many military veterans by using their background experiences (Morreale, 2002). In a study conducted by Deluga and Souza (1991), it was noted that the contextual factor of policing has some relevance with the paramilitary environment "with structured reporting relationships, deference to ranks, and military honor/courtesy codes" (p. 54). Consequently, there is a supportive amount of seminal and current scholarly studies (particular with the FRL model and the development of the MLQ) applied in this research on police leadership styles, and which substantiates the theoretical foundation for this study.

The FRL Model and Early Police Leadership Studies

In some of the earlier research conducted by scholars on acquiring knowledge of the characteristics associated with police leadership styles, the FRL model was applied to advance the understanding of the kind of impact transformational and transactional leaders had on subordinate police officers. For example, Singer and Singer (1990) researched a small sample of 60 New Zealand police officers (constables and sergeants) to determine whether a mechanistic organization predominantly supported a transactional leadership style. As a result of using the Bass (1985) measuring instrument, MLQ, it was determined that transformational leaders had a stronger relationship with the leader outcome of subordinate satisfaction than were the transactional leaders (Singer & Singer, 1990).

Deluga and Souza (1991) conducted a study involving an East Coast law enforcement agency in the United States. From a small agency size of 117 police officers, only 53 of the officers were used in the study sample. The research included the older

version of the MLQ, which used only three transformational leader factors (charisma, intellectual stimulation, and individual consideration) and two transactional leader factors (contingent reward and management-by-exception). Deluga and Souza were attempting to assess the impact that transformational and transactional leadership style had on influencing subordinate performance behavior. The study's results indicated that the subordinate officers were more influenced by transformational leaders (Deluga & Souza, 1991).

In 2001, Schwarzwald et al. (2001) conducted research on an Israeli Police force (280 sample size) based on the FRL model. Schwarzwald et al. (2001) wanted to assess the correlation between the three leadership styles (transformational, transactional, and laissez-faire) and the leader outcome variable, satisfaction with the leader. This study found a stronger association between the transformational leadership style and satisfaction with the leader than did the other leadership styles of the FRL model.

The FRL model was applied by Alarcon (2005), who conducted a dissertation study involving the Bexar County Sheriff's Department. Alarcon had administered the MLQ to a sample of 373 police officers, which he compared the three leadership styles (transformational, transactional, and laissez-faire) with numerous categories of satisfaction (job, other fellow officers, promotion, and salary), and also included satisfaction with the leader style of supervision. The statistical analysis from the study confirmed a strong positive relationship between transformational leadership and satisfaction with the leader (Alarcon, 2005).

The FRL Model and Current Police Leadership Studies

The results of the earlier research based on the FRL model can be compared to the findings of the more current leadership style studies as they are very similar. For example, Sarver and Miller (2014) conducted research involving a network of 161 Texas Police Chiefs to ascertain a relationship between transformational, transactional, and laissez-faire leadership styles and the leader outcome of perception of leader effectiveness and exerting extra effort. The study confirmed that transformational leaders correlated higher with leader effectiveness than transactional leaders, and the laissez-faire leader style leaders had a negative relationship with exerting extra effort (Sarver & Miller, 2014).

Swid (2014) sampled 124 Middle Eastern police/military personnel to determine if there was a relationship (negative or positive) with the three leadership styles of the FRL model and the leader outcome of satisfaction with the leader. Swid assessed that transformational and transactional leadership styles had a positive relationship with subordinate satisfaction. The laissez-faire leadership style had a negative relationship with being satisfied with the leader (Swid, 2014).

Kubala (2013) conducted a dissertation study involving police chiefs and subordinate police officers from rural areas of Kentucky. The research used both the 360 evaluation (subordinate rater) and leader (self) of the MLQ Short Form 5X, which allowed for a comprehensive understanding of how police leaders view their leadership agendas, as well as subordinate officer preferences toward leadership styles and behaviors (Kubala, 2013). The study resulted in major differences between leader and

subordinate views on leadership styles (agreeing on one of nine leader factors–

management-by-exception [active]), and there was a strong correlation with

transformational leadership (all five factors) and the transactional style (contingent

reward) with all the leader outcomes (Kubala, 2013).

As mentioned earlier, police leadership studies (past and current) have

demonstrated that particular types of leadership styles are preferred within the law

enforcement parameters. This is even evident with the connection of the transactional

leadership style associated with law enforcement activities and incidents (Engel, 2003).

By applying the theoretical framework of transformational, transactional, and laissez-

faire leadership styles within a homogeneous context, as this research portends to do,

increases the understanding of what leadership styles are supported and their impact on

police leaders and subordinate officers in relation to organizational productivity and

public safety services.

The Development of the MLQ

The MLQ was developed in 1980 by Bass (1985) to measure the results of

effective leader outcomes associated with the transformational, transactional, and laissez-

faire leadership style characteristics based on the FRL model. After a few revisions,

(Yukl,1999), the most current version (3rd edition) of the MLQ survey consisted of 36

items (describing leadership style behaviors), 20 of those items being linked to the

transformational leadership behavior scales of Idealized Influence (Attributed), Idealized

Influence (Behavioral), Inspirational Motivation, Intellectual Stimulation, and

Individualized Consideration. The transactional leadership behavior scales of Contingent

Reward, Management-by-exception (active), and Management-by-exception (passive) include 12 items and the Laissez-faire leader behavior scale of Passive/Avoidant, consists of only four items (Avolio & Bass, 2004).

In addition, the MLQ contains nine items explicitly linked to the three leader outcome scales of perception of leadership effectiveness, exerting extra effort, and subordinate satisfaction with the leader (Alsayed, Motaghi & Osman, 2012; Avolio & Bass, 2004; Swid, 2014). Police participants respond to each item by means of a five-point Likert scale: (0)–not at all; (1)–once in a while; (2)–sometimes; (3)–fairly often; and (4)–frequently, if not always (Avolio, 1999; Avolio & Bass, 2004). Overall, the MLQ includes 45 items that rate the association of leadership style behaviors to the specified effective leader outcomes.

The construct of the MLQ 5X-Short Form includes several items for each of the composite leadership style behavioral characteristics by which the participant will indicate a preference toward a specific leader quality. This refers to either a police leader's preference (self-format) for using a specific leadership style behavior or a subordinate officer's preference (subordinate rater format) of choosing a favorable leadership style characteristic. For example, a response to the transformational leader behavior of Idealized Influence (Attributed) would entail the sample item: "Go beyond self-interest for the good of the group" or the transformational behavior of Idealized Influence (Behavior), with reference to the sample item "talks about their most important values and beliefs" (Swid, 2014, p. 585). For the transactional leader behavior of Contingent Reward, one of the sample items would consist of rewards when tasks meet

performance levels and when goals are achieved (Swid, 2014).

A sample item for the laissez-faire leader behavior (Passive/Avoidant) would consist of noninvolvement when key issues arise (Morreale, 2002). For the three effective outcomes concerning leadership style, the perception of leader effectiveness would suggest an item such as "Is effective in promoting organizational performance" (Gozubenli, 2009 p. 71). The leader outcome for exerting extra effort would imply a participant's response to an item that consists of the willingness to do extra on behalf of the leader (Gozubenli, 2009). For the subordinate satisfaction with the leader, a sample item might contain leadership methods that are satisfying to subordinates (Gozubenli, 2009).

The Origin of the MLQ into Leadership Studies

The MLQ was initially included in two pivotal studies, which involved the responses of 70 South African senior executives and U.S. Army colonels (Judge & Piccolo, 2004). The first study was based on a business context (inclusive of executives' statements) related to charisma and contingent reinforcement (Bass, 1997). Eventually, Bass (1985) put together the original version of the MLQ Form 1, a questionnaire comprised of 141 statements. Form 1 of the MLQ was the first version to rate the components of the transformational leadership style (charisma, intellectual stimulation, and individual consideration) and the transactional leadership style (contingent reward), and was initially administered to U.S. Army officers (Bass, 1997). Shortly thereafter, Bass (1997) administered the MLQ to business sectors (to business executives and agency administrators) to ascertain the frequency observed on behalf of their superiors,

exhibiting transformational and transactional leadership styles and attributed behavioral characteristics.

An Analysis of the MLQ and Police Leadership

As mentioned earlier, Bass (1985) mainly developed the MLQ to measure the leadership constructs of the FRL model and specific leader outcomes associated with the business and military sectors. Primarily, the MLQ as applied in this research will be examined and analyzed based on the nine-factor leader construct of the FRL model to establish the influence of leadership styles associated with leader efficacy in policing organizations. The application of the MLQ is a relatively straightforward approach as examined in police leadership studies, whereby the measurement of each leadership style with the associated leader behavior subscales are correlated with the purported leader outcome scales (Avolio & Bass, 1991). As a result, an examination of the MLQ (from a police context) will provide the foundation for the study's research questions using research synthesis, which aggregates the included studies and statistically analyzes them to determine the correlational relationship between each of the leadership styles and the three specified leader outcomes.

By examining and identifying the problem more thoroughly with assessing a preferred effective leadership style within a law enforcement context, each of the extant police leadership studies will contribute quantitatively, on the correlational relationship between each of the leadership styles and leader outcomes. For example, Morreale (2002), conducted a law enforcement study that examined what was the most preferred leadership style among a group of New England police officers from different police and

sheriff departments. Similar to early research linking the transactional leadership style synonymously with a paramilitary context, Morreale, focused on comparing the three leadership styles (transformational, transactional, and laissez-faire) to assess their relationship with effective leader outcomes. From a sample size of 182 police officers, Morreale had determined that the transformational leadership style had the highest correlation with leadership effectiveness (.88), extra effort (.89), and subordinate satisfaction with the leader (.86), and disconfirming the predominance of the transactional leadership style in a policing context.

In the Densten (2003) study, the Stratified System Theory (SST) was utilized to ascertain the relationship with rank and leadership styles and effective leader outcomes. A sample size of 480 Australian police officers, and specifically, the top-ranked leaders, Chief Executives and Superintendents, identified with both transformational and laissez-faire leadership styles (Densten, 2003). For example, the transformational leader style characteristic of inspirational motivation was a positive predictor of both leader effectiveness (0.49) and extra effort (0.50), and the laissez-faire leadership style was also a positive predictor of extra effort (0.23) for Australia's top-ranked police leader positions (Densten, 2003).

Moreover, Durić (2011) conducted a leader-rated MLQ study that demonstrated similar results with the transformational leadership style and correlation to leader outcomes (satisfaction with the leader, leader effectiveness, and extra effort). The research included the survey responses of police managers at the local, regional, and state levels of the Slovenian Police (Durić, 2011). From an overall sample size of 486 police

managers, it was indicated that the transformational leadership style correlated relatively highly with leader effectiveness (.574), satisfaction with the leader (.413), and extra effort (.630; Durić, 2011). The next highest rated leadership style, transactional leadership, had correlated scores of leadership effectiveness (.316), satisfaction with the leader (.257), and extra effort (.349; Durić, 2011). Subsequently, the laissez-faire leadership style had the weakest correlation with leader effectiveness (−.255), satisfaction with the leader (−.091), and extra effort (−.230; Durić, 2011).

The MLQ Tested for Reliability and Validity

In some of the research studies, progress was made for testing the validity and reliability of the MLQ (Antonakis et al., 2003; Avolio & Bass, 2004; Muenjohn & Armstrong, 2008). To test the construct validity of the leader factor structure of the MLQ, and whether it was consistent across a different set of samples, Antonakis et al. (2003) applied confirmatory structural equation modeling techniques using a sample size of 6,525, incorporated from a review of 18 independent studies. Construct validity is interpreted as a test or instrument that measures what it purports to measure (Creswell, 2014), and the confirmatory factor analysis indicated that nine single-order factors best represent the MLQ (Antonakis et al., 2003; Avolio & Bass, 2004).

Antonakis (2001) had confirmed that "the nine-factor model best represented the data under conditions of strict factorial invariance or factor structure invariance, suggesting that the factor structure and measurement model of the MLQ was invariant across independent homogeneous groups" (p. 221). The MLQ's leadership factor constructs produce valid and stable results when samples consist of or within

homogeneous contexts (Antonakis et al., 2003; Avolio & Bass, 2004; Tejeda, Scandura & Pillar, 2001). To a similar extent, Muenjohn and Armstrong (2008) tested the nine-factor model (examining the structural validity) by applying confirmatory factor analysis to a variety of organizations consisting of 138 cases in Thailand and London.

Muenjohn and Armstrong (2008) determined that with the use of AMOS software (specific for the statistical analysis of structural equation modeling) the modification indices did impact the structural validity of the nine-correlated factor model (full range leadership model) without any major adjustments. The combined statistical results accounted for a significant chi-square (540.18); degrees of freedom (474); the ratio of chi-square to the degrees of freedom (1.14); goodness of fit (.84); adjusted goodness of fit index (.78) and the root mean square error of approximation (.03) (Muenjohn and Armstrong, 2008). The data indicated that the MLQ's nine-correlated leader model was "most appropriately and adequately capturing the factor constructs of transformational leadership" (Muenjohn & Armstrong, 2008, p. 3). The primary relative interest for this research, as indicated by the Antonakis et al. (2003) confirmatory factor analysis study; the MLQ measures consistently the nine-correlated factors associated with the FRL model from a homogeneous context as evidenced by the frequencies of leadership behavior and situations when correlated with performance outcomes.

In addition, the MLQ as a leadership instrument has been examined and measured for reliability by Cronbach's Alpha (α). The reliability of an instrument, when measuring its subscales, must generally produce a Cronbach's Alpha score of at least .70 (Creswell, 2014). Consequently, when an instrument utilizing the Cronbach's Alpha score is close to

1, then it is considered to be consistent with what it attempts to measure (Creswell, 2014).

For example, a meta-analysis was conducted by Lowe, Kroeck, and Sivasubramaniam

(1996), who reviewed and examined 75 studies, to establish the reliability of the MLQ

subscales.

The results demonstrated that the MLQ subscales produced adequate internal

consistency and acceptable reliability with Cronbach's Alpha scores in the region of .70

(Lowe et al., 1996). Moreover, Avolio and Bass (2004) conducted a large study

consisting of 12,118 participants from various organizations (such as the health sector,

public organizations, and the military) to establish a normative database. The study's

results indicated that the MLQ subscales generated reliable internal consistency with the

Cronbach's Alpha (α) scores ranging from .74 to .96 (Avolio & Bass, 2004).

A Quantitative Analysis of Key Variables by Meta-Analysis

An examination of leadership styles through quantitative analysis on the ratings of

police leaders and subordinate officers is pivotal in determining how the constructs of the

FRL model are correlated with the purported leadership outcomes. This methodological

approach provides some insight into understanding the influence of transformational,

transactional, and laissez-faire leadership style (key independent variables) leaders on

organizational performance. In addition, this is predicated on what specific leadership

styles subordinate officers' support, and how they correlate them with the leader

outcomes of perception of leader effectiveness, extra effort, and subordinate satisfaction

(key dependent variables). This implies that an analysis of the MLQ will provide a

quantifiable measure for obtaining more awareness on effective leadership styles in

policing organizations.

The research methodology used by a majority of leadership scholars with understanding the relationship between transformational, transactional, and laissez-faire leaders and effective leader outcomes was correlational analysis (Durić, 2011; Kubala, 2013; Levasseur, 2004; Swid, 2014). Generally, researchers base their types of research questions on how leader and subordinate participants correlate each of the leadership style characteristics with specific leadership outcomes (Levasseur, 2004). Accordingly, the approach to assessing the key variable relationships linked with leadership styles and leader outcomes are predicated on the strength of association between the independent and dependent variables.

In this research study, a meta-analysis research design was applied to impact the quality of analysis and enhance the strength of the key variables that are being examined, and provide a quantitative estimate of leadership style effectiveness for policing organizations. Distinctive with this methodological approach, a meta-analysis based on a policing context, should provide an understanding on the effectiveness of the FRL model to the current literature on leadership styles. Previously, a few meta-analysis studies consisted of leadership research on the FRL model (Bass, 1985), but those studies derived from dissimilar homogeneous contexts (Castanheira & Costa, 2011; Chin, 2007; Harms & Crede, 2010). In addition, much of the earlier meta-analysis research on leadership styles involved a mix of contextual environments (from both the private and public organizational settings; DeGroot, Kiker, & Cross, 2000; Eagly & Johannesen-Schmidt, 2003; Levasseur, 2004; Lowe et al., 1996).

Based on an education context, Castanheira and Costa (2011) focused their meta-analysis research on six previous studies (associated with the analysis of 727 MLQ questionnaires) involving school management in Portugal. This study investigated the impact of the transformational leadership style (when compared with the transactional and laissez-faire leadership styles) with the school leaders and management, and how the characteristics of each of those three leadership styles correlated with leader effectiveness, extra effort, and satisfaction. The study's findings indicated that both the transformational leadership style (inspirational motivation and individual consideration) and the transactional leadership style (contingent reward) had strong positive relationships with extra effort and leader effectiveness, whereas the laissez-faire leader style had a negative relationship with satisfaction (Castanheira & Costa, 2011).

From another educational context, Chin (2007) provided research synthesis for 28 independent studies that investigated the relationship between transformational school leadership, and the leader outcome measures of subordinate job satisfaction, the perception of leader effectiveness, and student achievement. The sampled population consisted of both elementary and secondary schools in Taiwan and the United States. The summary of the meta-analytic research demonstrated that transformational school leadership correlated very strongly with job satisfaction of teachers (.707); very strongly with school effectiveness (.695), and strongly with student achievement (Chin, 2007).

In another meta-analysis that aggregated studies on transformational leaders from a heterogeneous context, DeGroot et al. (2000) examined the strength of the transformational leadership style (specifically the visionary and charismatic

characteristics) and subordinate performance and satisfaction. The results of this study provided some evidence that the individual level (0.21) and group level (0.49) differed when correlating transformational leadership style and follower performance (DeGroot et al., 2000). In addition, this research provided evidence of transformational leaders having a strong positive relationship (correlation of 0.77) with influencing subordinate job satisfaction, but more importantly, this research synthesis provided some evidence on how leadership styles (aspects of the FRL model) impact organizations (DeGroot et al., 2000).

Levasseur (2004) constructed research synthesis on DeGroot et al.'s (2000) meta-analysis results, which emphasized the need for more research on transformational leadership (visionary and charismatic components) and its impact on subordinate satisfaction and organizational performance. Levasseur (2004) generated 34 studies for his research, of which 27 applied a correlation coefficient and 7of those studies were experimental and used the standard mean difference for an effect size statistic. The overall statistical results yielded a moderate to strong positive relationship between the transformational leadership style and follower performance and subordinate satisfaction (Levasseur, 2004).

Lowe et al. (1996) combined studies of heterogeneous samples of leaders from both the private sector and public institutions (military, educational, manufacturing, and religious). One of the hypotheses in this meta-analytic study involved the moderator–public or private sector, with leader effectiveness and transformational and transactional leadership. The study's findings indicated that the transformational leadership style and

effectiveness were stronger in the private sector than in public organizations (Lowe et al., 1996).

Regardless of the contextual factors that underlie the facets of research on particular leadership styles (transformational, transactional, and laissez-faire; Lowe et al., 1996), a meta-analysis research design can strengthen the relationship between the key variables being statistically analyzed. This often implies which leadership style can influence and impact organizational performance. In addition, the data from numerous meta-analyses (both homogeneous and heterogeneous contexts) that utilize the constructs of the FRL model have suggested the transformational leadership style and its behavioral characteristics account for high consistency in relation to leader efficacy and organizational performance (Castanheira & Costa, 2011; Chin, 2007; DeGroot et al., 2000; Levasseur, 2004; Lowe et al., 1996).

Furthermore, this research study on police leadership styles, can benefit from quantitative analysis, based on the assessment of what type of leadership styles (transformational, transactional, and laissez-faire) correlate with leadership effectiveness, satisfy subordinates, and influence organizational performance. As important, the application of a meta-analysis can enhance the statistical predictability and validity of the primary research (Cooper, 2010). More knowledge is obtained from individual studies (about the choices and practices of police leaders and the leadership preferences of subordinate officers) as a meta-analysis can emphasize the weaknesses associated with previous studies and provide informative suggestions for implementing future policies (Cooper, 2010; Russo, 2007).

Summary

By examining and analyzing the scholarly literature on selected MLQ-related police leadership studies, a determination was made through the leader–follower preferences on the impact that leadership styles have on leader efficacy and organizational performance. The MLQ was developed by Bass (1985) to measure the constructs of the FRL model quantitatively. This more accurately establishes how the three leadership styles (transactional, transformational, and laissez-faire) correlate with the three leader outcomes (perception of leader effectiveness, extra effort, and subordinate satisfaction with the leader; Bass & Avolio, 1997).

The primary research associated with police leadership styles indicate a trend toward participative or democratic style police leaders. This equates to as reported by the quantitative analysis of the MLQ's survey results, the preference for police leaders and supervisors to exhibit more transformational leadership style characteristics. This also considers the opinions of subordinate officers, who indicate more compliance with transformational-style leaders as well as perceiving them as being more effective. On the other hand, the MLQ also accounts for participant responses with the transactional leadership style behaviors (more specifically contingent reward and to a slighter extent, management-by-exception), and has indicated some significance in numerous studies with the leader outcome variable, exerting extra effort for the leader or supervisor.

However, what was not known in the discipline (due to single study research) is the relationship transformational, transactional, and laissez-faire leadership styles have on the leadership outcomes of perception of leadership effectiveness, extra effort, and

subordinate satisfaction in a policing context. Therefore, the applied studies (Alarcon, 2005; Durić, 2011; Gozubenli, 2009; Kubala, 2013; Morreale, 2002; Ozbaran, 2010; Sarver & Miller, 2014; Singer & Singer, 1990; Swid, 2014) were aggregated, weighted (depending on sample size), and statistically analyzed (within- and between-studies measurement errors) to ascertain the existence of variance from the included studies' effect sizes, to estimate a true effect size between the variables being tested. Accordingly, by applying a meta-analysis research design (Cooper, 2010; Noar, Benac, & Harris, 2007), it is more reliable with providing stronger evidence and generalizability than statistically accounted for within individual studies, and a potential gap can be filled with leadership styles in policing in the literature. Moving forward, Chapter 3 will provide information on meta-analysis research design and data analysis methods for determining the unknown relationship between leadership styles (independent variables) and effective leadership outcomes (dependent variables) in law enforcement organizations.

Chapter 3: Research Method

Introduction

The purpose of this quantitative meta-analysis study was to examine the relationship between transformational, transactional, and laissez-faire leadership styles and leadership outcomes in a policing context, such as subordinate satisfaction, the perception of leadership effectiveness, and exerting extra effort. An assessment of the study's independent and dependent variables through quantitative analysis was conducted to ascertain what the unknown relationship between transformational, transactional, and laissez-faire leadership styles have on the leadership outcomes of perception of leadership effectiveness, exerting extra effort, and subordinate satisfaction in a policing setting. A meta-analysis was applied to determine a variance of the observed effect sizes (included studies) to assess a true effect size, which affects how leadership styles correlate with leadership outcomes. This chapter provides a description of a meta-analysis research design, and this included problem formulation, which is an analysis of the study's variables (Cooper, 2010; Field & Gillett, 2010); a literature search or data collection; choosing inclusive criteria; population and sample data; data analysis methods, and compliance with ethical procedures.

Research Design

By means of a quantitative methodological approach, MLQ police-related studies (U.S. and international agencies) based on the FRL theory were examined to determine the correlational relationship (strength and direction) between the transformational, transactional, and laissez-faire leadership styles (independent variables) and subordinate

satisfaction with the leader, extra effort, and perception of leadership effectiveness (dependent variables). In addition, two moderator variables were examined, the rank of a police chief or equivalent leader position and the type of law enforcement agency to determine their impact on the relationship between leadership styles and effective leader outcomes. The study's research questions align with learning what association transformational, transactional, and laissez-faire leaderships have on the leadership outcomes in a policing context, such as the perception of leadership effectiveness, exerting extra effort, and subordinate satisfaction, as well as understanding the influence of moderators, so a meta-analysis was selected.

The intent of applying a meta-analysis in this study, as informed by the design of the research questions, was to understand the impact of leadership styles (based on the FRL theory), which influence subordinate support and performance in a policing organizational context. This translates to a research design that determines the correlational effect (strength of the association) between each of the leadership styles and leader outcomes, and which emphasizes the willingness of satisfied subordinates to support an effective leadership style of their leader. In addition, a meta-analysis can ascertain from the observed effect sizes any variance over and above sampling errors, which is an indication of moderators that can influence the relationship between the independent and dependent variables (Field & Gillett, 2010).

In addition, there are other key factors for applying a meta-analysis in this study, it generates more comprehensive results because it aggregates primary research studies to produce a larger sample size and through the process of statistical analysis, emphasizes

precision for estimating the effect size in the population (Borenstein et al., 2009; Cooper, 2010; Field & Gillett, 2010; Sjoberg, 2014). Second, the statistical power is higher when combining studies through research synthesis, as opposed to single studies where the statistical power varies due to their difference in sample sizes (Borenstein et al., 2009; Field, 2005). Third, a weighted average is calculated (for each of the included studies) based on sample size, so that the larger sample sizes will have more of a weighted influence (a more accurate reflection of the sampling population), and determine the direction (positive or negative) of the overall effect size (Borenstein et al., 2009; Cooper, 2010; Field & Gillett, 2010).

Steps for Conducting a Meta-analysis

The framework for a meta-analytic research design, according to Cooper (2010) and Field and Gillett (2010), entails formulating the problem; searching the literature to collect data to ascertain what is appropriate for inclusion criteria; conducting a statistical analysis (to include publication bias and moderator variables), and a summary of the results. The initial step of this research synthesis required a thorough analysis of the problem. Cooper stated that formulation of the problem consists of identifying the concepts, the relevant variables considered for analysis of the problem, used in the research and how those concepts can be operationalized and expressed. For this meta-analytic study, the conceptual framework involves an examination and analysis of three leadership styles (transformational, transactional, and laissez-faire) and three leader outcomes (leader effectiveness, exerting extra effort, and subordinate satisfaction) based on the FRL model. Overall, this equates to understanding the magnitude of effect that

each of the leadership styles has on each of the leader outcomes in policing organizations.

A correlational effect size statistic was the standard measure extracted from the included primary research and dissertation studies, and which was applied for the purpose of this meta-analysis to ascertain the relationship between the independent and dependent variables quantitatively. Levasseur (2004) mentioned that the use of the correlation coefficient, or Pearson's correlation coefficient, is quite common when conducting leadership survey research. However, since some of the primary research utilized a different effect size metric (Cohen's d or coefficient of determination found in this research), an attempt was made to convert those effect size measures to a correlation coefficient. Another significant factor considered was the potential for underlying variables that could moderate the relationship between the leadership styles (independent variables) and the leader outcomes (dependent variables). As a result, this study investigated the 360-degree version of the MLQ, by examining the leadership ratings of both the police leaders and subordinate officers, to assess if the leadership preferences and perceptions moderated the relationship between the independent and dependent variables.

Literature Search or Data Collection

It is essential that the included data for a meta-analysis be obtained from similar studies that relate to the research questions (Borenstein et al., 2009; Cooper, 2010; Field & Gillett, 2010). A meta-analyst must carefully examine each study to be applied "to ensure the quality and similarity of the included studies" (Field & Gillett, 2010, p.668). This meta-analysis incorporated only law enforcement leadership studies that utilized the

MLQ's leadership survey ratings. This provided the challenge for the study's research questions, on how the various policing organizations (domestic and abroad) rate their leadership preferences on leader efficacy when assessing the correlational relationship between transformational, transactional, and laissez-faire leadership styles and the leader outcomes (perception of leader effectiveness, exerting extra effort, and subordinate satisfaction with the leader).

The literature search on police leadership and the MLQ produced 27 studies, of which nine were examined and assessed to have met the seven criteria points for inclusion. Four of these studies were published in scholarly journals, and the remaining five were comprised of dissertation studies (unpublished). In addition, nine of the studies reported statistically measuring the leadership outcome variable, subordinate satisfaction with the leader, and five of the studies reported statistically measuring the leadership outcome variables, exerting extra effort and perception of leader effectiveness. As mentioned in Chapter 2, the Kubala (2013) study contains two independent samples (police leaders and subordinates), so 10 samples will be computed to determine an overall population effect size.

In addition, this meta-analysis has included both published and unpublished studies, which helps with minimizing publication bias or the file-drawer problem. Field and Gillett (2010) stated that professional journals are more likely to publish studies with significant findings (portending toward higher effect sizes) than that of statistically insignificant studies (having smaller effect sizes), which highly contributes to the file-drawer problem. Hunter and Schmidt (1990) mentioned that there are two issues

associated with publication bias: (a) Availability bias–the average researcher is more apt to have access to published studies than unpublished ones, and (b) Source bias–researchers are predisposed to professional journals producing significant results or specific methodology types.

Inclusion Criteria

From some of the MLQ police-related leadership studies, the following data were selected as inclusion criteria for this research study:

- Each leadership study that is applied statistically for this research must derive from a law enforcement context.

- Each police force or organization that is being used for the purpose of this research study must have applied the FRL model.

- From each of the studies included in this research, the MLQ instrument must have been used quantitatively to measure the responses and preferences (pertinent leadership qualities and components) of police leaders, supervisors, and subordinate officers.

- Both the MLQ's self and subordinate rater formats must have been utilized to determine the relationship between the independent and dependent variables and suffice the purpose of this study.

- Each police leader study must have included a statistical analysis of at least two of the three leadership styles (transactional, transformational, and laissez-faire). In addition, the applied leadership styles must have been measured to determine the correlational relationship with at least one of the MLQ's leader

outcome variables (perception of leader effectiveness, exerting extra effort, and subordinate satisfaction with the leader).

- Each study must have reported using a correlation effect size statistic or a study statistic that can be converted to a correlation when ascertaining the relationship between the independent variables (leadership styles) and the dependent variables (leader outcomes).

- For the purpose of reducing publication bias, unpublished studies (dissertations) were applied in this research.

Population and Sample Characteristics

In a meta-analysis, it is imperative to specify the target population from each study included, and also to examine the setting or where the sampling of participants originated (Cooper, 2010). In addition, with research synthesis, according to Cooper (2010), "the target population includes all the studies that test the hypothesis or address the problem" (p. 47). Consequently, each study in this research must have included an estimate of the target population size; the sample size utilized for data analysis; the study statistic, and the type of sampling strategy that was applied.

All of the participants (police leaders, managers, and subordinate officers) that were utilized in this research study derived from policing backgrounds and experiences. This included either domestic police departments residing in the United States (based solely on the MLQ-related responses of sworn police officers) or International law enforcement agencies that are located in Australia, New Zealand, Turkey, Slovenia, and Middle Eastern countries (Alarcon, 2005; Durić, 2011; Gozubenli, 2009; Kubala, 2013;

Morreale, 2002; Ozbaran, 2010; Sarver & Miller, 2014; Singer & Singer, 1990; Swid,

2014). The advantage of researching a multitude of police agencies around the world

(aggregated sample) contributes to a body of knowledge that provides more awareness on

the effectiveness of the FRL framework related to the leader–follower dyad in a policing

context.

An analysis of the target population and sampling data applied in this research

was based on a total of nine studies (Alarcon, 2005; Durić, 2011; Gozubenli, 2009;

Kubala, 2013; Morreale, 2002; Ozbaran, 2010; Sarver & Miller, 2014; Singer & Singer,

1990; Swid, 2014), and which were examined from a domestic (United States) and

international policing context. Simply, the sampling data varies when aggregated between

the United States law enforcement agencies and the individual policing agencies

researched from the International countries. From police leader research conducted in the

United States (Alarcon, 2005; Gozubenli, 2009; Kubala, 2013; Morreale, 2002; Sarver &

Miller, 2014), there was a sample total of 1,073 sworn law enforcement officers, which

consisted of 223 police chiefs/sheriffs and 853 subordinate officers (from the rank of

deputy chief down to patrol officer). Note, the reported summary of U.S. police officers,

which consists of police chiefs and subordinate officers, is located in Table 1.

Table 1

Summary Table for United States Police Officers

Citation	*N*	Police Chiefs	Subordinate Officers
Sarver & Miller (2014)	161	161	0
Kubala (2013)	141	47	94
Gozubenli (2009)	219	0	219
Alarcon (2005)	373	0	373
Morreale (2002)	182	15	167
Total Sample =	1,076	223	853

The sampled information for the international policing context consisted of four MLQ police leadership studies (Durić, 2011; Ozbaran, 2010; Singer & Singer, 1990; Swid, 2014), and the incorporation of such research data does somewhat differ in ranking structure from policing organizations in the United States. For example, the top leader positions are categorized as police managers within the individual international policing agencies reported in this study. As a result, there was a total sample of 866 police officers, which included 506 police managers (Durić, 2011; Ozbaran, 2010; Singer & Singer, 1990; Swid, 2014). The total sample size that was statistically correlated (determining how the variables are related) in this meta-analysis was 1,939 police participants. Further, the sample of 1,939 derives from a target population size of 5,444 (which included participants from domestic and international policing contexts) and which yielded an MLQ survey response rate of 36%. Note, the reported summary of

international police officers, which consists of police managers (the equivalent of police chiefs in the U.S.) and subordinate officers is located in Table 2.

Table 2

Summary Table for International Police Officers

Citation	*N*	Police Managers	Subordinate Officers
Singer & Singer (1990)	60	0	60
Ozbaran (2010)	196	0	196
Durić (2011)	486	486	0
Swid (2014)	124	20	120
Total Sample =	866	506	360

Data Analysis Procedures

In a meta-analysis, once the studies have been aggregated and recognized for inclusive criteria, a common effect size must be extracted to determine the magnitude of the relation between two variables (Cooper, 2010; Cumming, 2011; Field & Gillett, 2010). According to Cumming (2011) an effect size is "whatever conveys the magnitude of the phenomenon of interest appropriate to the research context" (p. 38). In some studies, this could entail the difference in means, utilizing proportions to ascertain an odds ratio, and reporting the strength and direction of the relationship between two variables, as with correlations (Borenstein et al., 2009; Cumming, 2011). The Pearson product-moment correlation is applicable for conveying the interest in this research study.

This is based on the previous and current literature utilizing the FRL framework and the

relationship between each of the leadership styles (independent variables) and efficient

leader outcomes (dependent variables) within a policing environment (Durić, 2011;

Gozubenli, 2009; Kubala, 2013; Morreale, 2002; Ozbaran, 2010; Singer & Singer, 1990).

In the case where the primary research reported a different effect size statistic,

such as Cohen's *d* (standard mean difference), an effort was made to convert the study

statistic into a product-moment correlation. In addition, according to Cumming (2011),

conversion between effect size measures must be understood as making conceptual sense,

"and also check that any necessary assumptions are reasonable" (p. 236). The formula

(Borenstein et al., 2009; Cooper, 2010) for converting a standardized mean difference,

Cohen's *d*, to correlation (*r*) is as follows:

$$r = \frac{d}{\sqrt{d^2 + a}}$$

This meta-analysis research study incorporates a correlation effect size statistic

based on the nature of leadership styles and leader outcomes from a similar context

(policing organizations). This study's utilization of the product-moment correlation

statistic (pertaining solely to leadership styles) aligns with the previous meta-analysis

studies (DeGroot et al., 2000; Lipsey & Wilson, 2001), who researched the correlational

relationship between each leadership style and effective leader outcomes. The research

findings have also indicated that DeGroot et al. (2000) and Lipsey and Wilson (2001)

primarily obtained the sampled data from different types of organizations.

Consequently, the correlation coefficient, *r*, is a standardized measure signifying

the covariance and the strength of the relationship between two variables (Field & Gillett, 2010). The impact of the correlation coefficient statistic as an effect size in social science studies is $r = .10$ (small effect or 1% variance); $r = .30$ (moderate effect or 9% variance), and $r = .50$ (large effect or 25% variance; Cooper, 2010; Cumming, 2011; Field & Gillett, 2010). The formula for the Pearson product-moment correlation is as follows:

$$r = \frac{n\sum xy - (\sum x)(\sum y)}{\sqrt{n(\sum x^2) - (\sum x)^2}\sqrt{n(\sum y^2) - (\sum y)^2}}$$

The emphasis or goal of conducting a meta-analysis is to aggregate the study's effect sizes to estimate the effects in the population (Field & Gillett, 2010). By obtaining the inclusive articles, along with the individual calculated effect sizes for each of the studies, a meta-analysis is ready to be conducted (Borenstein et al., 2009; Field & Gillett, 2010). Accordingly, at this step in the process of analysis, a meta-analyst would ascertain the population mean by proportionately assigning weighted effect sizes from each of the individual studies' sample sizes (Cooper, 2010; Field & Gillett, 2010; Lipsey & Wilson, 2001). The larger studies (by sample size) are given more weight as they provide more information contributing to the estimates of the overall effect (Borenstein et al., 2009; Cumming, 2011).

In addition, it is imperative to construct a confidence interval around the estimate of the summary or population effect (Borenstein et al., 2009; Field & Gillett, 2010). For example, a meta-analyst would compute the raw weight (mainly provided by sample size)

in the research study to determine the precision of the effect size by assessing the width

of the confidence interval (Borenstein et al., 2009). Therefore, when the confidence

interval is narrower, the precision of the effect size will increase, and when it is wider

(commonly associated with the random effects model), the accuracy will decrease

(Borenstein et al., 2009). As a result, the width of the confidence interval and the point

estimate (computed from the relative weight) provide the researcher with essential

information on the magnitude of the effect size and its impact on the research hypotheses

(Borenstein et al., 2009; Cooper, 2010; Cumming, 2011). According to Field and Gillett

(2010, p. 678) the confidence interval (CI) around the population effect is calculated by

multiplying the standard error by the critical value of a normal distribution (1.96 for a

95% CI), and the upper and lower bounds of the CI are calculated by applying the

average effect size and adding or subtracting its standard error multiplied by 1.96:

$$95\% \ CI_{upper} = \bar{z}_r + 1.96 \ SE(\bar{Z}_r)$$

$$95\% \ CI_{lower} = \bar{z}_r - 1.96 \ SE(\bar{Z}_r)$$

Another major data analysis step, the homogeneity of variance assumption, will

be included in this meta-analysis, to determine whether the observed variation within

each study is associated, solely, with sampling error (Cooper, 2010; Lipsey & Wilson,

2001). By utilizing homogeneity analysis, a meta-analyst must determine "is the observed

variance in effect sizes statistically significantly different from that expected by sampling

error alone?" (Cooper, 2010, p. 185). Therefore, if the effect sizes are not determined to

be homogeneous (based on random effects over and above sampling error), then the null

hypothesis is rejected, and a further analysis is explored to determine the unexplained

variance from the population mean or true effect size (Borenstein et al., 2009; Cooper, 2010; Lipsey & Wilson, 2001). On the other hand, if the effect sizes are determined to be homogeneous (having the same underlying effect) than any variance in the effect sizes is due to sampling error alone (Borenstein et al., 2009; Lipsey & Wilson, 2001).

As a result, the meta-analyst must apply the *Q* statistical test to establish the results of the homogeneity variance assumption and determine if the individual primary studies utilized in the meta-analysis are homogeneous (Cooper, 2010). Moreover, the *Q* statistic is a weighted measure of squared deviations and is based on the ρ value, and will inform on the presence of heterogeneity among the study's effect sizes, but it will not address the extent of dispersion or variability (Borenstein et al., 2009; Cooper, 2010). Consequently, if the ρ value of the *Q* statistical testing reveals statistically insignificant results, then the homogeneity assumption is confirmed, and any variance in effect sizes is solely linked to sampling error alone (Borenstein et al., 2009). Subsequently, the *Q* statistic formula (combines a chi-square distribution with *k* − 1 degrees of freedom (df)) and applied by the *r*-index utilized in this meta-analysis is as follows:

$$Q = \sum_{i=1}^{k} W_{1\,(Zr_1 - Z_r)^2}$$

However, if the ρ value of the *Q* statistical testing is statistically significant, then a further analysis with applying the *I* squared index (I^2), which is associated with the *Q* statistic must be considered to ascertain the percent of heterogeneity or pattern of variance in the true effect sizes (Borenstein et al., 2009). In addition, two other *Q* statistic measures are applied to determine the true dispersion or unexplained variance between

effect sizes. The first is τ^2, which establishes the inter-studies variance and τ, which determines the between-studies standard deviation (Borenstein et al., 2009). In the case of a heterogeneous distribution of effect sizes (the homogeneity of variance assumption is false), a meta-regression (moderator analysis) would be conducted to ascertain whether there is an association between the study characteristics and the variability in effect sizes (Borenstein et al., 2009; Cooper, 2010, Field & Gillett, 2010; Lipsey & Wilson, 2001).

Random Effects Model

To determine accurately any moderating influence and variability between the independent and dependent variables in this research, and which could impact the relationship between leadership styles and effective leader outcomes, a random effects model was an appropriate selection for this meta-analysis. According to Borenstein et al. (2009), when applying the Q statistic test to examine the variability associated with the homogeneity assumption, and if the ρ value results are statistically significant, an assumption must be considered that any variance in the study's population (effect sizes) are due to random effects, which is over and above any difference related to sampling error alone. This is followed by the I^2 statistic, which interprets the percentage of dispersion in the true effect sizes and T^2, which determines the amount of variance between each of the studies' effect sizes (Borenstein et al., 2009; Cooper, 2010).

Some other important factors for applying the random effects model over the alternative fixed effects model for this research study, it is appropriate for interpreting moderating variables, which can explain the variation in the true effect sizes; any inferences made can be generalized beyond the studies included in this meta-analysis,

and there is less of chance or risk of committing Type 1 errors–between 5% to 28% (Borenstein et al., 2009; Field & Gillett, 2010; Hunter & Schmidt, 2000). In addition, a moderator analysis was considered when examining the level of the police chief and the equivalent leadership position and the type of law enforcement agency (U.S. or international) for any variation of observed effect sizes within the primary research studies. Subsequently, by using the comprehensive meta-analysis (CMA) version 3 software as developed by Borenstein et al. (2009), a meta-regression was statistically applied to interpret the proportion of variance (R^2) or the moderating effect on the relationship between leadership styles (independent variables) and leader effective outcomes (dependent variables).

Threats to Validity

A comprehensive examination of a homogeneous nature (policing context) and thorough analysis of statistical evidence is a pivotal goal for the meta-analyst when conducting research synthesis. In addition, the meta-analyst must also consider that each of the included studies being gathered from the primary research should be assessed for quality and similarity (Field & Gillett, 2010; Lipsey & Wilson, 2001). However, with considering quality studies when performing a meta-analysis, the meta-analyst is dependent upon the research quality and reliability of the primary researcher(s) (Cooper, 1998; Lipsey &Wilson, 2001).

Cooper (1998) devised a "threats to validity" approach, specifically developed for the meta-analysis research design, as it consists of the following five phases: (1) problem formulation; (2) literature search/data collection; (3) evaluation of data; (4) data analysis;

and (5) public presentation. For the first phase, problem formulation, the threats to validity are associated with variation concerning the conceptual identification of defining variables. This is attributable to synthesists, who differ in the conceptual broadness of variable definitions, and invariably, could lead to dissimilarities (different conclusions) in research operations (Cooper, 1998).

For this research study, there is a clear understanding of the variables (leadership styles and effective leader outcomes) of interest and conceptual definitions associated with the FRL model (Bass & Avolio, 1994). In the case of moderating variables, a thorough analysis of the primary studies was included. As a result, an effort was made to determine any variance due to "study characteristics" and mitigate the potential threat to validity associated with problem formulation, which could influence the relational outcome of the study's variables (Cooper, 2010).

The second phase entails the data collection process of the meta-analysis. The threat to validity for the meta-analyst when retrieving primary research data is it can be difficult to find enough adequate studies regarding the research problem (Cooper, 2010). According to Cooper (2010), this type of threat, the collection of data, is very realistic when the retrieved studies vary between the groups and individuals of interest and are combined to examine the research problem. In addition, this is also a concern for the meta-analyst who has limited studies about the topic of interest (Cooper, 2010). For this meta-analysis, an attempt was made to mitigate this type of threat to validity (the data collected; Cooper, 2010) by applying the broadest sources of information, which primarily consisted of domestic and international police officers within a homogeneous

(policing) context.

Another threat to validity with the collection of data deals with the representativeness of individuals in the target population. The inclusion of studies in this meta-analysis involved participants that were acting police leaders or managers and subordinate law enforcement officers from domestic and international policing agencies and was representative of the target population. Accordingly, this threat of validity is more pertinent to meta-analysts who cannot retrieve from previous research studies enough adequate samples or participants to represent the target population (Cooper, 2010).

The third phase of determining a threat to validity for the researcher is the data evaluation process. Cooper (2010) emphasizes an eight-step categorical format for coding, evaluating, and assessing individual studies for quality criteria. This includes the coding characteristics (not applicable in the study); the sources to be examined, such as journals, dissertations, and conference papers; information on how the variables were utilized and measured; the study's setting; data on participant and sample characteristics, and the included effect sizes and resulting statistical analysis (Bracht & Glass, 1968; Cooper, 2010).

The threats to validity approach developed by Cooper (2010) was applied for this meta-analysis. The evaluative process aided in minimizing the threat to validity with the data evaluation process by examining each of the leadership style studies for methodological quality. Moreover, caution must be taken against confirmatory bias, which can be a problem with research synthesis as Lipsey and Wilson (2001) have noted

"methodological quality is something that seems to exist in the eye of the beholder" as "researchers do not generally agree on what methods and procedures are superior in a given area of study in lieu of generating and applying a personal list of criteria for methodological quality" (p. 22). To mitigate this potential threat to validity, the included policing studies do possess similar methodologies with the application of the MLQ instrument based on the FRL model, and the use of a correlation coefficient effect size to determine the relationship between leadership styles and leader outcomes.

The fourth phase in threats to validity is the data analysis process. The meta-analyst in the data analysis phase utilizes a rule of inference, which is based on the assumption of statistical tests to summarize the research results (Cooper, 2010). To limit the threat to validity and apply valid statistical inferences, only documented statistical tests that make use of a correlation effect size metric (to measure the relationship between variables) and not inferences of causality were utilized in this meta-analysis.

The fifth phase with the threats to validity approach for research synthesists entails aspects of how the meta-analysis should be presented. According to Cooper (2010), there are two threats of validity presented here: (a) relates to the overall omission of details that encompass a well-written meta-analysis, and (b) the omission of evidence usually described in the relationship between the study's variables. When sufficient details are not provided by the meta-analyst, there is limited evidence to support and replicate the study's conclusion (Cooper, 2010; Graham & Perin, 2007).

More importantly, Cooper (2010) emphasizes a meta-analytic strategy for reducing those threats to validity by incorporating pivotal detailed steps into the research

synthesis. The steps include a thorough account of the search criteria for an extensive

literature review, data collection procedures in search of inclusive studies, data analysis

for making valid statistical inferences, and a detailed summary and description of the

study's findings (Cooper, 2010; Field & Gillett, 2010). To limit the threat of validity with

the "omission of evidence," the research synthesist must address and provide details on

the relation between variables (including moderating variables) because reviewers find

this area of inquiry to be essential and important to the nature of the meta-analytic study

(Cooper, 2010).

Another major threat to validity when conducting a meta-analysis is publication

bias. According to Rothstein, Sutton, and Borenstein (2005), publication bias is a major

concern for the meta-analyst because it appears that "the published literature is

systematically unrepresentative of the population of completed studies" (p. 1). This in

part, is due to scholarly studies with significant findings that are much more likely to be

published (eight times) than studies that do not reject the null hypothesis (Field & Gillett,

2010).

More importantly, publication bias poses a significant threat for the research

synthesist; it compromises the validity of results by not incorporating unpublished

studies, therefore overestimating the population effect (Field & Gillett, 2010). This matter

is not so trivial when considering, for example, medically researched studies as noted by

Rothstein et al. (2005), with the adverse effect of Vioxx, an arthritis drug, which was

recalled. On the other hand, to minimize the threat of publication bias, Field and Gillett

(2010) have suggested incorporating conference papers, dissertation studies and

contacting experts in specified fields through email or in-person for knowledge of unpublished studies. To reduce the potential threat of publication bias in this meta-analysis, dissertation studies were included along with the scholarly published articles.

Ethical Procedures and Research Compliance

The American Psychological Association has developed guidelines (APA publication manual) comprised of ethical codes and the legal standards for conducting scholarly research and writing. To enhance further the ethical and professional efforts of academic research, three primary goals have been established by the American Psychological Association: (1) to ensure the accuracy of scientific knowledge; (2) to protect the rights and welfare of research participants, and (3) to protect intellectual property rights (American Psychological Association, 2010, p. 11). Similarly, this researcher did seek institutional review board approval (IRB #7-14-16-0315036) from the Office of Research Ethics and Compliance at Walden University, which expects the same adherence and compliance to the APA Ethics Code Standards that underlie the perfunctory and ethical principles of scholarly research and writing. To be in compliance with Walden University's ethical standards concerning the conducting of scholarly research, the APA Ethics Code Standard 8.11, on plagiarism, was closely monitored as was the APA Ethics Code Standards 4.1 and 4.2, for maintaining confidentially and gaining informed consent (American Psychological Association, 2010).

It was implied by collecting data with the use of the MLQ instrument, and with informed consent during the primary research of policing agencies, none of the human participants were subjected to harm (Alarcon, 2005; Gozubenli, 2009; Kubala, 2013;

Morreale, 2002; Ozbaran, 2010; Sarver, 2008). For example, the Sarver (2008) research study exemplified the informed consent necessity when researching human participants, by adding "that their participation was completely voluntary, confidential, and anonymous, and the possible discomforts, risks, and benefits to participating in the study" (p. 48). Thus, in all of the dissertation studies that were included in this meta-analysis, each of the authors enclosed within their leadership study packets, a requested signature (cover letter) as proof for understanding the purpose of the survey and research guidelines (Alarcon, 2005; Ozbaran, 2010; Gozubenli, 2009; Kubala, 2013; Morreale, 2002; Sarver, 2008).

Another stringent and research ethical prerequisite associated with university-related research, and this applies to all of the dissertations used for satisfying the purpose of this study, had to seek prior approval (meeting the ethical codes and legal standards for conducting scholarly research) from their respective institutional review boards (Alarcon, 2005; Gozubenli, 2009; Kubala, 2013; Morreale, 2002; Ozbaran, 2010; Sarver, 2008). In addition, the APA Ethics Code Standards was adhered to for the other scholarly leadership studies used in this research (Durić, 2011; Sarver & Miller, 2014; Singer & Singer, 1990; Swid, 2014). For example, one of the major concerns for researchers with survey research is assuring the anonymity of participants, and this understanding was essential with reviewing literature that emphasized the assurance of confidentiality for participant responses (Durić, 2011; Sarver & Miller, 2014; Singer & Singer, 1990; Swid, 2014).

Summary

In Chapter 3, the emphasis was on describing just how a meta-analysis research design would be most appropriate for examining the research problem (leadership style preference based on leader–subordinate responses) and the relationship between each of the leadership styles (independent variables) and effective leader outcomes (dependent variables) in a law enforcement context. This chapter provided several pivotal and detailed steps in conducting a meta-analysis, which were as follows, (1) performing a thorough literature search relevant to the research problem; (2) data collection for aggregating studies and assessing inclusive criteria; (3) steps associated with statistical analysis for determining a common effect size, conducting a basic meta-analysis; and (4) weighting each study based on sample size to establish a population mean or true effect size.

The next or fifth step includes a post hoc analysis, only when the ρ value of the *Q* statistical test is statistically significant or the homogeneity of variance assumption is false, then a random effects model and a meta-regression would be utilized to determine moderating variables. If not, and the homogeneity analysis is statistically confirmed (a post hoc analysis is not needed) then a fixed effects model based on sampling error alone is used for the meta-analysis study. The fifth step was for determining the actual moderating variables and assessing any publication bias. The sixth step was applied for interpreting the results (the write-up) of the meta-analysis, and the seventh step, threats to validity approach, was developed by Cooper (2010), to mitigate any potential validity concerns with conducting research synthesis. Chapter 4 consisted of applying each of the

essential meta-analysis steps to interpret and assess the strength of the results.

Chapter 4: Results

Introduction

This chapter demonstrates how each step of the meta-analytic process was applied and provides the findings based on the study's research questions and hypotheses. This includes how the aggregated studies from the data collected were incorporated into a composite weighted sample and analyzed for within-study and between-studies variance, which estimates and determines the percentage of heterogeneity and the statistical model (random effects) used to calculate the overall population effect size. In addition, this statistical approach guided the analytic process during the results stage in the research, with determining the unknown (correlation strength and direction) relationship that transformational, transactional, and laissez-faire leadership styles have on the leadership outcomes of perception of leadership effectiveness, subordinate satisfaction, and extra effort, and potential moderating effects that inevitably influenced the meta-analytic results.

Data Collection

As mentioned briefly in Chapter 3, the data collected and utilized for this research consisted of four primary studies and five dissertations (Alarcon, 2005; Durić, 2011; Gozubenli, 2009; Kubala, 2013; Morreale, 2002; Ozbaran, 2010; Sarver & Miller, 2014; Singer & Singer, 1990; Swid, 2014). The total sample size from these nine studies was 1939 participants from both the United States and International policing agencies. Moreover, from the U.S. police departments, there was a total sample size of $N = 1,073$ sworn police officers, and the international policing agencies contained a total sample of

N = 866 law enforcement officers.

When combining studies to increase the overall sample size as with research synthesis, the overall consequences of estimating effects will be less biased than depending on individual studies with smaller samples (Field & Gillett, 2010; Lipsey & Wilson, 1993). In addition, six of the previously researched studies utilized the correlational coefficient effect size statistic (which was applied as the common effect size statistic; Alarcon, 2005; Durić, 2011; Gozubenli, 2009; Kubala, 2013; Morreale, 2002; Singer & Singer, 1990). Further, there were two studies (Ozbaran, 2010; Swid, 2014) that applied a coefficient of determination effect size statistic, and another primary research study (Sarver & Miller, 2014), used Cohen's *d*. Both of these effect sizes were converted to correlations as displayed in Table 3, along with the number of U.S. and International studies, sample sizes as well as their study effect size statistics.

Table 3

Meta-analytic Studies including the Sample, Effect Size, and Policing Agency

#	Author	*N*	Effect Size Statistic	Agency
1	Singer & Singer 1990	60	Correlation	International
2	Morreale 2002*	182	Correlation	United States
3	Alarcon 2005*	373	Coefficient of determination**	United States
4	Gozubenli 2009*	219	Correlation	United States
5	Ozbaran 2010*	196	Correlation	International
6	Durić 2011	486	Correlation	International
7	Kubala 2013*	141	Correlation	United States
8	Sarver & Miller 2014	161	Cohen's *d***	United States
9	Swid, 2014	124	Coefficient of determination**	International

Note. *Unpublished Dissertations. **Coefficient of determination and Cohen's *d* converted to correlation statistic. *N* = sample size.

Calculation of Effect Sizes

Before conducting the actual meta-analysis, a determination was made from some of the correlational studies collected from a policing leadership styles context, which the utilization of a correlation coefficient as the common effect size statistic, would be most appropriate statistically for responding to the research questions and hypotheses. According to DeGroot et al. (2000), the correlation coefficient has been previously applied in leadership styles and leader outcome studies, as researchers use this standardized *r* statistic to ascertain the covariance between two variables (Field & Gillett, 2010). In addition, another important determination that was made in this research for

studies that used a different effect size metric would be transformed to a correlation coefficient.

In two studies (Alarcon, 2005; Swid, 2014) that utilized a coefficient of determination effect size statistic, which denotes the proportion of variance from one variable on the other variable (Cumming, 2011), a conversion was made to a correlation coefficient. According to Lipsey and Wilson (2001) and Borenstein et al. (2009), from the point of a meaningful analysis, the effect size metrics must be comparable to one another, and there must be relevance in what is being measured (or the same thing). As such, the conversion was established by taking the square root of the coefficient of determination and transforming this statistic into a correlation coefficient (Cumming, 2011). In the Sarver and Miller (2014) study, a Cohen's *d* effect size was transformed into a correlation coefficient, so that leadership style behaviors would not be compared, but rather correlated with assessing their relationship to the leadership outcomes.

The Application of a Meta-Analytic Research Design

To conduct a statistical analysis of the study's correlation effect sizes, two factors were initially considered for conceptualizing meta-analytic data: (a) the selection of the method (Hedges & Olkin, 1985), which was utilized for accurately calculating the population effect size, and (b) the selection of a random effects model (Borenstein et al., 2009; Field & Gillett, 2010). In the first step of the meta-analysis, the Hedges and Olkin (1985) method was applied, as this computational formula (incorporated into the CMA software version 3) was used for calculating sample sizes based on an estimate of a weighted mean that reflects the population effect size (Field & Gillett, 2010).

As a result, the correlation (*r*) effect sizes were initially converted into a standard normal metric through Fischer's *r* to *z* transformation, from which a weighted average was calculated from those transformed scores (Borenstein et al., 2009). Next, the Z_r modified scores were converted back to correlational statistics to ascertain the population effect size (Field & Gillett, 2010). Note: the *r* represents the correlation effect size statistic, and the $\log_e$ represents the natural logarithm (Borenstein et al., 2009; Lipsey & Wilson, 2001).

$$Zr_i = \frac{1}{2} log_e \left(\frac{1 + r_i}{1 - r_i} \right)$$

$$r_i = \frac{e^{2z_{ri}} - 1}{e^{2z_{ri}} + 1}$$

Research Questions/Analysis

The purpose of this quantitative meta-analysis study was to examine the relationship between leadership styles and leadership outcomes in a policing context and determine the rating of leader efficacy by the responses and perceptions of police leaders and subordinate officers. The purpose was accomplished by aggregating and quantitatively analyzing MLQ-related police leadership studies by a meta-analysis research design. In effect, this translates to examining the strength and direction of effect size variance between studies and determining a true effect size between the variables being tested (Borenstein et al., 2009; Wilson, 2001).

Research Question 1

What is the relationship between transactional, transformational, and laissez-faire

leadership styles and perception of leader effectiveness in policing organizations?

Leadership styles and perception of leadership effectiveness. There were two scholarly articles and three dissertations (Durić, 2011; Gozubenli, 2009; Kubala, 2013; Morreale, 2002; Sarver & Miller, 2014) used to calculate the effect sizes for transactional, transformational, and laissez-faire leadership styles and perception of leader effectiveness. The Kubala (2013) dissertation consisted of two independent samples (one for police chiefs and the other for subordinate officers), so each was computed as individual study samples. There were 1,189 police participants used in the sample for the transactional and laissez-faire leadership styles and 1,186 officer respondents for the transformational leader style. The correlation effect size (*r*) applied in this study was calculated as N_r/N, to determine the point estimate or true effect size. The individual studies' effect sizes for each of the leadership styles and the perception of leader effectiveness are reported in tables located in Appendix A.

Next, an upper and lower 95% CI was calculated based on the random effects model, which corrects for two types of measurement error (within- and between-studies) and results in a wider interval (Borenstein et al., 2009; Cumming, 2011). In addition, the *P*-value is applied to determine whether the homogeneity of variance is false (the existence of variability between effect sizes) or statistically confirmed (the existence of a common effect size). In the case of variability between the observed effect sizes (Borenstein et al., 2009; Cooper, 2010; Field & Gillett, 2010), the *Q* statistic was computed to determine the assumption of heterogeneity between effect sizes.

Transactional leadership style and perception of leadership effectiveness. The

point estimate or true effect size (located in Table 4) is 0.196 for the transactional

leadership style and perception of leader effectiveness. This is an indication that the

transactional leadership style has a positive relationship with the perception of leader

effectiveness but is weakly correlated. In addition, there is a 95% chance that the true

effect size parameter could be as low 0.108 or as high as 0.285. As observed in Table 4,

the *P*-value is .000, so the homogeneity of variance is false and the null hypothesis is

rejected, and a further examination is needed to ascertain the heterogeneity of variance

for the between-study effect sizes.

Next, in Table 5, the Q statistic is 10.957, which is applied to determine heterogeneity or

any variance in the true dispersion of effect sizes over and above sampling error. The *P*-

value is .052 or nonsignificant with ascertaining the heterogeneity of variance. This is an

indication that any variation of heterogeneity even with I^2 at 54%, which determines the

percent of the true dispersion, is strictly based on sampling error alone. Thus, there is no

moderating effect for the transactional leader style and perception of leader effectiveness.

Transformational leadership style and perception of leadership effectiveness.

As observed in Table 4, the point estimate or true effect size is 0.695 for the

transformational leadership style. This indicates that the transformational leadership style

has a positive relationship and strongly correlates with the perception of leader

effectiveness. In addition, there is a 95% chance that the true effect size parameter could

be as low as 0.505 or as high as 0.821, which is considered a wide interval. The *P*-value

is .000, as observed in Table 4, so the homogeneity of variance is false and the null

hypothesis is rejected, and a further examination is needed to ascertain the heterogeneity

of variance for the between-study effect sizes.

Next, in Table 5, the Q statistic is 121.693, which is applied to determine any variance in the true dispersion of effect sizes over and above sampling error, and the *P*-value is .000 or statistically significant. This is an indication that the pattern of dispersion with I^2 at 95%, that there is variance over and above sampling error as observed by τ^2 at .134. Thus, there are potential random or moderating effects associated with the transformational leadership style and perception of leadership effectiveness.

Laissez-faire leadership style and perception of leadership effectiveness. Observed in Table 4, the point estimate or true effect size for the laissez-faire leadership style is –0.524. This is indicative that the laissez-faire leadership style has a negative relationship and is very lowly correlated with the perception of leader effectiveness. In addition, there is a 95% chance that the true effect size parameter could be as low as –0.701 or as high as –0.286. The *P*-value is .000 as revealed in Table 4, so the homogeneity of variance is false and the null hypothesis is rejected, and a further examination is needed to ascertain the heterogeneity of variance for the between-study effect sizes.

The Q statistic for this analysis (as observed in Table 5) is 110.545, and is indicative of between-study variance and potential moderators. Next, the *P*-value at .000 is statistically significant (revealed in Table 5) concerning the heterogeneity of variance. This is an indication that the pattern of dispersion with I^2 at 95%, that there is variance over and above sampling error as observed by τ^2 at .121. Therefore, there are random or moderating effects associated with the laissez-faire leadership style and perception of

leader effectiveness.

Table 4

The Meta-Analysis Summary Table for Perception of Leadership Effectiveness

Leadership Style	K	N	Point Estimate	95% Lower	95% Upper	P-value
Transactional	6	1,189	0.196	0.108	0.285	.000
Transformational	6	1,186	0.695	0.505	0.821	.000
Laissez-faire	6	1,189	−0.524	−0.701	−0.286	.000

Note: K = number of studies. N = sample size. 95% Lower and Upper = CI

Table 5

Summary Table for Heterogeneity and Perception of Leadership Effectiveness

Leadership Style	Q-value	Df (Q)	P-value	I^2	τ^2
Transactional	10.957	5	.052	54.365	.007
Transformational	121.693	5	.000	95.891	.134
Laissez-faire	110.545	5	.000	95.477	.121

Research Question 2

What is the relationship between transactional, transformational, and laissez-faire leadership styles and exerting extra effort in policing organizations?

Leadership styles and extra effort. There were two scholarly articles and three dissertations (Durić, 2011; Gozubenli, 2009; Kubala, 2013; Morreale, 2002; Sarver & Miller, 2014) used to calculate the effect sizes for transactional, transformational, and laissez-faire leadership styles and extra effort. The Kubala (2013) dissertation consisted

of two independent samples (for police chiefs and the other for subordinate officers), so each was computed as individual study samples. There were 1,189 police participants used in the sample for the transactional and laissez-faire leadership styles and 1,186 officer respondents for the transformational leader style. The correlation effect size (r) applied in this study was calculated as Nr/N, to ascertain the point estimate or true effect size. The individual studies' effect sizes for each of the leadership styles and extra effort are reported in tables located in Appendix B.

      Transactional leadership style and extra effort. For the relationship between the transactional leadership style and extra effort, the results found in Table 6 indicate a positive and slightly moderate correlation with a true effect size of 0.235. In addition, there is a 95% chance that the true effect size parameter could be as low 0.153 or as high as 0.314, which is a narrow interval. Furthermore, as observed in Table 6, the *P*-value is .000, so the homogeneity of variance is false and the null hypothesis is rejected, and a further examination is needed to ascertain the heterogeneity of variance for the between-study effect sizes.

      Next, in Table 7, the *Q* statistic is 9.389, which is rather a small measured value with determining heterogeneity or any variance in the true dispersion of effect sizes over and above sampling error. The *P*-value is .095 or nonsignificant with ascertaining the heterogeneity of variance. This is an indication that any variance of heterogeneity even with I^2 at 47%, which determines the percent of the true dispersion, is strictly based on sampling error alone. There is no moderating effect between the transactional leader style and extra effort.

Transformational leadership style and extra effort. As indicated in Table 6, the transformational leadership style has a positive relationship and strongly correlates with extra effort, with a point estimate or true effect size of 0.695. In addition, there is a 95% chance that the true effect size parameter could be as low as 0.508 or as high as 0.820, and is a wide interval for the transformational leadership style and extra effort. In addition, as observed in Table 6, the P-value is .000, so the homogeneity of variance is false and the null hypothesis is rejected, and a further examination is needed to ascertain the heterogeneity of variance for the between-study effect sizes.

Next, in Table 7, the Q statistic is 119.420, which is a large measured value with determining heterogeneity or any variance in the true dispersion of effect sizes over and above sampling error. The P-value is .000 and statistically significant with ascertaining the heterogeneity of variance. This is an indication that the pattern of dispersion with I^2 at 96%, that there is variance over and above sampling error as observed by τ^2 at .121. Consequently, there are random or moderating effects linked to the transformational leadership style and extra effort.

Laissez-faire leadership and extra effort. As observed in Table 6, the point estimate or true effect size was –0.436. Thus, the laissez-faire leadership style has a negative relationship and extremely low correlation with extra effort. There is a 95% chance the true effect size parameter could be as low as –0.600 or as high as –0.237, and more specifically, a very wide interval between the laissez-faire leadership style and extra effort. In addition, as observed in Table 6, the P-value is .000, so the homogeneity of variance is false and the null hypothesis is rejected, and a further examination is needed

to ascertain the heterogeneity of variance for the between-study effect sizes.

Next, in Table 7, the Q statistic is 67.236, which is the measured value for determining heterogeneity or any variance in the true dispersion of effect sizes over and above sampling error. The P-value is .000 and statistically significant with ascertaining the heterogeneity of variance. This is an indication that the pattern of dispersion with I^2 at 93%, that there is variance over and above sampling error as observed by τ^2 at .071. As a result, there are potential random or moderating effects associated with the laissez-faire leadership style and extra effort.

Table 6

The Meta-Analysis Summary Table for Extra Effort

Leadership Style	K	N	Point Estimate	95% Lower	95% Upper	P-value
Transactional	6	1,189	0.235	0.153	0.314	.000
Transformational	6	1,186	0.695	0.508	0.820	.000
Laissez-faire	6	1,189	−0.436	−0.600	−0.237	.000

Note: K = number of studies. N = sample size. 95% Lower and Upper = CI

Table 7

Summary Table for Heterogeneity and Extra Effort

Leadership Style	Q-value	Df (Q)	P-value	I^2	τ^2
Transactional	9.389	5	.095	46.746	.005
Transformational	119.420	5	.000	95.813	.131
Laissez-faire	67.236	5	.000	92.563	.071

Research Question 3

What is the relationship between transactional, transformational, and laissez-faire leadership styles and subordinate satisfaction with the leader in policing organizations?

Leadership styles and subordinate satisfaction with the leader. There were two scholarly articles and three dissertations (Durić, 2011; Gozubenli, 2009; Kubala, 2013; Morreale, 2002; Singer & Singer, 1990) used to calculate the effect sizes for the transactional leader style. There were four additional studies (Alarcon, 2005; Ozbaran, 2010; Sarver & Miller, 2014; Swid, 2014) applied to the transformational leadership style, as well as utilized for the laissez-faire leadership style, excluding the Singer and Singer (1990) study for the subordinate satisfaction with the leader. The Kubala (2013) dissertation consisted of two independent samples (leader and subordinate), so each was computed as individual study samples. There were 1,088 police participants used in the sample for the transactional leadership style; the laissez-faire leadership style had 1,839 participants, and 1,939 officer respondents for the transformational leader style. The correlation effect size (r) applied in this study was calculated as N_r/N, to determine the

point estimate or true effect size. The individual studies' effect sizes for each of the leadership styles and subordinate satisfaction with the leader are reported in tables located in Appendix C.

Transactional leadership style and subordinate satisfaction with the leader. As observed in Table 8, the point estimate or true effect size for the relationship between the transactional leadership style and subordinate satisfaction with the leader was 0.147. Such results indicate that the transactional leadership style has a positive relationship and is weakly correlated with subordinate satisfaction with the leader. In addition, there is a 95% chance that the true effect size parameter could be as low 0.062 or as high as 0.230, and is a narrow interval between this leadership style and leader outcome. Furthermore, as observed in Table 8, the *P*-value is .000, so the homogeneity of variance is false and the null hypothesis is rejected, and a further examination is needed to ascertain the heterogeneity of variance for the between-study effect sizes.

Next, in Table 9, the *Q* statistic is 8.305, which is rather a small measured value with determining heterogeneity or any variance in the true dispersion of effect sizes over and above sampling error. The *P*-value was .140 or non-significant with ascertaining the heterogeneity of variance. This is an indication that any variance of heterogeneity even with I^2 at 40%, which determines the percent of the true dispersion, is strictly based on sampling error alone. Accordingly, there is no moderating effect for the transactional leader style and subordinate satisfaction with the leader.

Transformational leadership style and subordinate satisfaction with the leader. As observed in Table 8, the point estimate or true effect size for the

transformational leadership style was 0.615. This is indicative of a positive relationship and strong correlation for the transformational leadership style and subordinate satisfaction with the leader. In addition, there is a 95% chance that the true effect size parameter could be as low as 0.467 or as high as 0.729. In addition, as revealed in Table 8, the P-value is .000, so the homogeneity of variance is false and the null hypothesis is rejected, and a further examination is needed to ascertain the heterogeneity of variance for the between-study effect sizes.

Next, in Table 9, the Q statistic is 183.164, which is a large measured value with determining heterogeneity or any variance in the true dispersion of effect sizes over and above sampling error. The P-value is .000 and statistically significant with ascertaining the heterogeneity of variance. This is an indication that the pattern of dispersion with I^2 at 95%, that there is variance over and above sampling error as observed by τ^2 at .107. Thus, there are random or moderating effects associated with the transformational leadership style and subordinate satisfaction with the leader.

Laissez-faire leadership style and subordinate satisfaction with the leader. For the relationship between the laissez-faire leadership style and subordinate satisfaction with the leader, there was a point estimate or true effect size of –0.406, as indicated in Table 8. Such results do suggest that the laissez-faire leadership has a negative and very low correlation with the subordinate satisfaction with the leader. In addition, there is a 95% chance the true effect size parameter could be as low as –0.570 or as high as –0.211, and is considered a wide interval for the laissez-faire leadership style and subordinate satisfaction with the leader. In addition, as observed in Table 8, the P-value is .000, so the

homogeneity of variance is false and the null hypothesis is rejected, and a further examination is needed to ascertain the heterogeneity of variance for the between-study effect sizes.

Next, in Table 9, the Q statistic is 169.505, which is the measured value for determining heterogeneity or any variance in the true dispersion of effect sizes over and above sampling error. The P-value was .000 and statistically significant with ascertaining the heterogeneity of variance. This is an indication that the pattern of dispersion with I^2 at 95%, that there is variance over and above sampling error as observed by τ^2 at .103. As a result, there are random or moderating effects associated with the laissez-faire leadership style and subordinate satisfaction with the leader.

Table 8

The Meta-Analysis Summary Table for Subordinate Satisfaction with the leader

Leadership Style	K	N	Point Estimate	95% Lower	95% Upper	P - Value
Transactional	6	1,188	0.147	0.062	0.230	.000
Transformational	10	1,939	0.615	0.467	0.729	.000
Laissez-faire	9	1,839	–0.406	–0.570	–0.211	.000

Note: K = number of studies. N = sample size. 95% Lower and Upper = CI

Table 9

Summary Table for Heterogeneity and Subordinate Satisfaction with the leader

Leadership Style	Q-value	Df (Q)	P-value	I^2	τ^2
Transactional	8.305	5	.140	39.799	.004
Transformational	183.164	9	.000	95.086	.107
Laissez-faire	67.236	5	.000	92.563	.103

Research Question 4

How does the moderator variable, the rank of a police chief or the equivalent leadership position, affect the strength of the relationship between transformational, transactional, and laissez-faire leadership styles and perception of leadership effectiveness, subordinate satisfaction with the leader, and exerting extra effort?

In this meta-analysis, it has been determined through analysis of the homogeneity of effect sizes that enough variability exists among studies that the results cannot be generalized. This is justification for applying the random effects model (examines two types of measurement error) to assess moderator variables around the distribution of effect sizes. A meta-regression analysis was utilized to determine systematically the moderating effect of the covariate level of leadership position (by dummy coding categorically the self vs. subordinate rater formats of the MLQ) on the FRL model and effective leader outcomes.

First, the inclusive studies from the rank of police chief and its equivalent rank (Durić, 2011; Kubala, 2013; Sarver & Miller, 2014) and the subordinate police officers (Alarcon, 2005; Gozubenli, 2009; Kubala, 2013; Morreale, 2002; Ozbaran, 2010; Singer & Singer, 1990; Swid, 2014) were applied for this moderator analysis. It was determined that effect sizes were heterogeneous across those studies (Q-value of 183.164; I^2 is 95.086; T^2 is 0.107; τ is .327; df = 9, and P-value is .000), and this was achieved by using version 3 of the CMA software (Borenstein et al., 2009). Next, with the application of the meta-regression model I (Borenstein et al., 2009), the formula for explaining the covariance around the effect size was as follows:

$$R^2 = \frac{\text{Explained (c)}}{\text{Total (a)}} = \frac{0.0337}{0.1070} = 0.31$$

According to Borenstein et al. (2009), the statistical method for assessing covariance is to run the regression applying all of the studies without the covariates to determine the total variance; then run the regression with the covariates, and then subtract their values to ascertain the differences, which are equated to the variance explained by the model. To establish statistically the covariance for model I of the meta-regression, the statistic 0.0337 (explained by the model - c) was divided by 0.1070 or the total variance in true effects (a), and in effect, determined the variance, $R^2 = 0.31$, which was explained by the model. This explains that the rank of the police chief and the equivalent leadership position, when compared with subordinate officers' leadership style preferences, would account for a 31% difference when rating and correlating transformational, transactional, and laissez-faire leadership styles with the leader outcomes of leadership effectiveness, extra effort and subordinate satisfaction.

Table 10

Moderator Analysis for the Rank of Police Chief or Equivalent Leadership Position

Statistics for Model 1	R^2	τ^2	τ	I^2	Q statistic	df	P - value
Test of the model					5.61	1	0.0179
Goodness of fit		0.0734	0.2709	92.27%	103.55	8	0.0000
Between-study variance		0.1070	0.3272	95.09%	183.16	9	0.0000
Proportion of variance	0.31						

Research Question 5

How does the moderator variable, type of law enforcement agency (U.S. versus international), affect the strength of the relationship between transformational, transactional, and laissez-faire leadership styles and perception of leadership effectiveness, the subordinate satisfaction with the leader, and exerting extra effort?

A second moderator variable, type of law enforcement agency, was examined to determine any portion of the study characteristics or unexplained variance on the relationship between the FRL model and effective leader outcomes. The covariate, type of law enforcement agency was dummy coded (categorically consisting of U.S. v. International policing agencies) to determine the moderating effect of the independent and dependent variables. Next, a moderator analysis involving the U.S. agencies (Morreale, 2002; Alarcon, 2005; Gozubenli, 2009; Kubala, 2013; Sarver & Miller, 2014)

and the International agencies (Singer & Singer, 1990; Ozbaran, 2010; Durić, 2011;

Swid, 2014), determined that effect sizes across studies were heterogeneous.

In addition, the Q statistic was 183.164; the I^2 statistic was 95.086 or 95% of

dispersion in true effect sizes; T^2 was 0.107; τ was 0.327; df = 9, and the P-value was

0.000. A meta-regression analysis was conducted to establish the proportion of variance

(R^2), which the moderator variable could explain concerning the study's independent and

dependent variables. To establish the covariance for model II of the meta-regression, the

statistic 0.0134 was divided by 0.1070 or the total variance in true effects (a), and in

effect, determined a variance of $R^2 = 0.13$, which was explained by the model. The model

could only account for 13% of the variance associated with the moderator variable, the

type of law enforcement agency, on the overall true effect size.

Table 11

Moderator Analysis for the Covariate Type of Law Enforcement Agency

Statistics for Model 2	R^2	τ^2	τ	I^2	Q statistic	df	P - value
Test of the model					1.42	1	0.2329
Goodness of fit		0.0936	0.3060	93.98%	132.94	8	0.0000
Between-study variance		0.1070	0.3272	95.09%	183.16	9	0.0000
Proportion of variance	0.13						

Analysis of Hypothesis Results

This study examined and quantitatively tested the relationship between the leadership styles of transformational, transactional, and laissez-faire and perception of leader effectiveness, extra effort, and subordinate satisfaction with the leader. This section consists of analyzing the individual hypotheses to determine how each of the leadership styles correlated with each of the leadership outcomes. In addition, included in the analysis, are the moderator variables and their explained variance associated with the independent and dependent variables.

$H_0 1$–the correlation between transactional leadership style and perception of leader effectiveness as responded to by policing organizations is zero.

$H_a 1$–the correlation between transactional leadership style and perception of leader effectiveness as responded to by policing organizations is not zero.

$H_0 4$–the correlation between transactional leadership style and exerting extra effort as responded to by policing organizations is zero.

$H_a 4$–the correlation between transactional leadership style and exerting extra effort as responded to by policing organizations is not zero.

$H_0 7$–the correlation between transactional leadership style and subordinate satisfaction with the leader as responded to by policing organizations is zero.

$H_a 7$–the correlation between transactional leadership style and subordinate satisfaction with the leader as responded to by policing organizations is not zero.

In relation to hypotheses 1, 4, and 7, the correlation between the transactional leadership style and the three leader outcome variables, the perception of leader

effectiveness, extra effort, and subordinate satisfaction with the leader as responded to by

policing organizations was statistically significant and as a result, the relationship

between variables is not zero. The correlation effect size statistics were low (0.198 and

0.147) with the leader outcomes of perception of leader effectiveness and subordinate

satisfaction with the leader, but the transactional leadership style produced a moderate

correlation (0.235) in association with extra effort. In addition, an interesting statistic

supported by the results of this research, the CIs were narrow for the transactional

leadership style, and as such, the point estimate for the generated effect sizes represent

more accurately, the transactional relationship that exists between police leaders and their

subordinates within a law enforcement context.

$H_0$2–the correlation between transformational leadership style and perception of

leader effectiveness as responded to by policing organizations is zero.

Ha2–the correlation between transformational leadership style and perception of

leader effectiveness as responded to by policing organizations is not zero.

$H_0$5–the correlation between transformational leadership style and exerting extra

effort as responded to by policing organizations is zero.

Ha5–the correlation between transformational leadership style and exerting extra

effort as responded to by policing organizations is not zero.

$H_0$8–the correlation between transformational leadership style and subordinate

satisfaction with the leader as responded to by policing organizations is zero.

Ha8–the correlation between transformational leadership style and subordinate

satisfaction with the leader as responded to by policing organizations is not zero.

For the hypotheses 2, 5, and 8, the correlation between the transformational leadership style and the leader outcome variables of perception of leader effectiveness, extra effort, and the subordinate satisfaction with the leader as responded to by policing organizations was statistically significant, and the relationship between variables is not zero. The correlational effect size statistics (0.615, 0.695, and 0.695), were rated high concerning the leader outcomes of subordinate satisfaction with the leader, perception of leader effectiveness, and extra effort. Although the transformational leadership style is highly supported by police leaders and subordinates, the CIs were somewhat wide. This is an indication of the heterogeneity of variance between-study effect sizes as a result of the random effects.

$H_0$3–the correlation between laissez-faire leadership style and perception of leader effectiveness as responded to by policing organizations is zero.

Ha3–the correlation between laissez-faire leadership style and perception of leader effectiveness as responded to by policing organizations is not zero.

$H_0$6–the correlation between laissez-faire leadership style and exerting extra effort as responded to by policing organizations is zero.

Ha6–the correlation between laissez-faire leadership style and exerting extra effort as responded to by policing organizations is not zero.

$H_0$9–the correlation between laissez-faire leadership style and subordinate satisfaction with the leader as responded to by policing organizations is zero.

Ha9–the correlation between laissez-faire leadership style and subordinate satisfaction with the leader as responded to by policing organizations is not zero.

For the hypotheses 3, 6, and 9, the correlation between the laissez-faire leadership style and the leader outcome variables, the perception of leader effectiveness, extra effort, and subordinate satisfaction with the leader as responded to by the policing organizations was statistically significant and the relationship between variables is not zero. The correlational effect size statistics (–0.524, –0.436, and –0.406) were rated extremely low with the leadership outcomes of perception of leader effectiveness, extra effort, and subordinate satisfaction with the leader. Consequently, the passive/avoidant behavioral characteristic associated with the laissez-faire style leadership is not very supported or commonplace within a law enforcement environment.

$H_0$10–the rank of the police chief or the equivalent leadership position does not moderate the relationship between the three previously hypothesized relationships between the independent and dependent variables.

Ha10–the rank of the police chief or the equivalent leadership position does moderate the relationship between the three previously hypothesized relationships between the independent and dependent variables.

For the moderator variable in hypothesis 10, the rank of the police chief or the equivalent leadership position did moderate the relationship of the three previously hypothesized relationships between the independent and dependent variables and was statistically significant. Moreover, the 2-sided P-value was .0179, and the alpha level set at 0.05, so meta-regression analysis was utilized with the aid of the CMA software and did establish that the moderator variable, the rank of police chief and the equivalent position, could explain around $R^2 = 0.31$or 31% variability in relation to the three

leadership styles. The 31% variance in effect sizes is imperative because it demonstrates just how the top police leaders and managers valued and rated the transformational, transactional, and laissez-faire leadership styles and leader outcomes of leadership effectiveness, extra effort, and subordinate satisfaction when compared with subordinate officers' preferences and opinions.

$H_0$11–the type of law enforcement agency (U.S. versus International) does not moderate the relationship between the three previously hypothesized relationships between the independent and dependent variables.

Ha11–the type of law enforcement agency (U.S. versus International) does moderate the relationship between the three previously hypothesized relationships between the independent and dependent variables.

For the moderator variable in hypothesis 11, the type of law enforcement agency (U.S. versus International) does moderate the relationship of the three previously hypothesized relationships between the independent and dependent variables were statistically significant. The two-sided P-value was .000 and alpha level was set at 0.05, which indicated that the results from the analysis of the meta-regression model could only support an $R^2 = 0.13$ or 13% explained variance between leadership styles and leader outcomes. As such, the covariate, type of law enforcement agency (U.S. versus International) could not provide much statistical support that might determine comparable leadership style differences with any moderating impact on the independent and dependent variables.

Summary

This chapter presented the findings from a meta-analysis research design that included a statistical analysis (based on the study's research questions and hypotheses) to determine what the unknown (the strength and direction) or correlational relationship between transformational, transactional, and laissez-faire) have on the leader outcomes of leadership effectiveness, extra effort, and subordinate satisfaction with the leader. As a result of this analysis on the FRL model in policing organizations, it was found that the transformational leadership style has a positive relationship and correlates very strongly with the leadership outcomes of perception of leadership effectiveness, extra effort, and subordinate satisfaction. In addition, this takes into account (Morreale, 2002; Sarver & Miller, 2014; Swid, 2014) that law enforcement work is directly associated with transactional responsibilities, as demonstrated by the narrow CIs.

The transactional leadership factor of contingent reward was rated as positive with a moderate correlation with extra effort. The other two leader factors attributed to the transactional leadership style (active and passive management) did have a positive relationship but weakly correlated with leadership effectiveness and subordinate satisfaction. The laissez-faire leadership style had a negative relationship and was extremely weak when correlated with leadership effectiveness, extra effort, and subordinate satisfaction with the leader. Furthermore, one significant moderator variable assessed by the meta-regression in this study, the rank of the police chief and the equivalent leadership position, did explain 31% of the variance in terms of leadership style preferences and effective leader outcomes when the ratings of police leaders and

subordinate officers were compared.

In the following chapter, an overview of the meta-analysis as a research design will be discussed regarding its effectiveness associated with the purpose of the study and the interpretation of the findings. This will also include an analysis of the FRL model and its strengths and limitations associated with understanding the efficacy of leadership styles in the policing context. In addition, a discussion on the implication of social change will address an important aspect of this research. This chapter also provided some statistical evidence that can be translated into a few plausible recommendations based on the leader–subordinate dyad with influencing and improving organizational performance in policing organizations.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The intent of this study was to examine the relationship between the transformational, transactional, and laissez-faire leadership styles and the leader outcomes of leadership effectiveness, extra effort, and subordinate satisfaction with the leader in a policing context. This would provide some understanding of the effectiveness and influence of leadership styles (based on the FRL model) and their impact on organizational performance within a policing setting. It was indicated by Bass (1985) that the FRL model should be examined from an organizational perspective, and this research fully supported such reasoning by exploring the leadership style preferences of both police leaders and their subordinates. In addition, it was observed by a priori analysis of the scholarly literature associated with police leadership styles that potential problems had existed with sampling-related errors, different research designs, and other random effects. As a result of those similar errors from the primary research studies observed effect sizes, a meta-analysis research design was proposed.

A random effects model was selected to provide a comprehensive analysis associated with the meta-analysis research design. According to Field and Gillett (2010), the random effects model is purported to assess any variances beyond sampling-related errors or dispersion to the observed effect sizes and is appropriate for ascertaining moderating variables. This quantitative strategy was necessarily useful during the research for determining and understanding the impact of moderating effects (effect size variances), to the study's independent and dependent variables.

Ten MLQ primary research studies (comprised of the leader and subordinate rater formats), were examined to determine the correlational relationship between the independent variables of transformational, transactional, and laissez-faire leadership styles and the dependent variables of perception of leader effectiveness, exerting extra effort, and subordinate satisfaction with the leader. For example, the key findings from the aggregated studies related to the transactional leadership style revealed lower correlational scores than the transformational leadership style with all three of the effective leader outcomes. The findings based on the MLQ survey instrument indicated that the police leaders and subordinate officers associated the transactional leader style rather weakly to moderately effective in achieving organizational tasks (Durić, 2011; Gozubenli, 2009; Kubala, 2013; Sarver & Miller, 2014).

Overall, the correlation of the transactional leadership style and subordinate satisfaction with the leader was rated weakly (.147), but it did appear, though, that the rating of contingent reward linked to the transactional style was moderately (.235) correlated with exerting extra effort (Gozubenli, 2009; Kubala, 2013; Morreale, 2002). For the transformational leadership style, the correlation with the leader outcomes of perception of leadership effectiveness, extra effort, and subordinate satisfaction with the leader, were significantly rated higher between the police leaders and subordinate officers. For example, the correlation between the transformational leadership style and perception of leadership effectiveness was .695; for extra effort .695, and for the subordinate satisfaction with the leader was .615, which were all rated highly (Alarcon, 2005; Gozubenli, 2009; Kubala, 2013; Morreale, 2002; Ozbaran, 2010; Singer & Singer,

1990; Swid, 2014).

The laissez-faire leadership or nonleadership style had the weakest correlation with all of the effective leadership outcomes within a law enforcement context. Although its presence is lightly supported by the ranks equivalent to police chiefs, and as Densten (2003) noted, it is primarily based on the fact that responsibilities differ within the stratum of policing ranks. One thing is for certain, as observed with the MLQ survey instrument, is that subordinate officers who are involved with daily policing activities do not fundamentally support the purpose of laissez-faire style type leaders (Alarcon, 2005; Durić, 2011; Gozubenli, 2009; Kubala, 2013; Morreale, 2002; Ozbaran, 2010; Sarver & Miller, 2014; Swid, 2014).

Another key finding that was determined during this research, a moderating influence, the rank of the police chief and its equivalent leadership position, was statistically significant and had an effect on the study's independent and dependent variables. The 31% explained variance related to the total variance in true effects, demonstrated that when the top leaders' ratings were compared with the subordinate officers' leadership style preferences and leader outcomes, the ratings slightly differed. For example, this could explain the police leaders and managers' strong correlation with the transactional leadership factor of contingent reward and extra effort, and light support for laissez-faire leadership style. In contrast, the subordinate officers rated contingent reward just slightly moderate with extra effort and negatively correlated the laissez-faire leadership style with leadership effectiveness, extra effort, and subordinate satisfaction. The other moderating effect, the type of law enforcement agency, was statistically

significant and could only explain 13% variance of the total variance between the U.S. and International policing agencies, and this statistical data translated to only a small portion of variance, and was not very clear in terms of the types of random effects that could explain the subtle differences between the domestic and international policing agencies.

Interpretation of the Findings

In analyzing the correlational relationships between transformational, transactional, and laissez-faire leadership styles and perception of leadership effectiveness, extra effort, and subordinate satisfaction with the leader, some leadership style factors were confirmed. By a quantitative method of aggregating selected MLQ police leadership studies and statistical analysis, it was confirmed that the transactional leadership style (contingent reward) had a positive relationship and moderately correlated with extra effort as rated by both police leaders and subordinate officers. In addition, there was even less support for the transactional leadership style when correlated with perception of leader effectiveness and subordinate satisfaction with the leader (Alarcon, 2005; Durić, 2011; Gozubenli, 2009; Kubala, 2013; Morreale, 2002; Ozbaran, 2010; Sarver & Miller, 2014; Swid, 2014).

The statistical data from the meta-analysis indicated a narrow CI for the transactional leadership style and was confirmed by Morreale (2002) that police work is inherently associated with tasks that are purported for the transactional style characteristics. In addition, the moderating effect of the position of police captain and equivalent rank did extend some knowledge that the top police leaders are firmly rooted

in using the transactional style behaviors (contingent reward and active monitoring), even though this leadership style was determined to be weaker than the transformational leadership style when correlated with each of the leadership outcomes (Alarcon, 2005; Durić, 2011; Gozubenli, 2009; Kubala, 2013; Morreale, 2002; Ozbaran, 2010; Sarver & Miller, 2014; Swid, 2014). According to Moon (2006), police leaders base their policy goals on fighting crime by reducing criminal activities, so the impact of traditional reactive policing is firmly equated to the law enforcement tasks related to the transactional leadership style. The other key leadership factor that was confirmed (Densten, 2003) was that top-ranked police leaders lightly supported the laissez-faire leadership style even though it was weakly correlated with extra effort.

This study also confirmed that the transformational leadership style was highly correlated with the perception of leader effectiveness, extra effort, and subordinate satisfaction with the leader (Alarcon, 2005; Durić, 2011; Gozubenli, 2009; Kubala, 2013; Morreale & Ortmeier, 2004; Ozbaran, 2010; Sarver & Miller, 2014; Singer & Jonas, 1987; Swid, 2014). According to Dobby, Anscombe and Tuffin (2004), the efficacy of the transformational leadership style, especially within a policing environment, was acknowledged as early as 1990, and widely accepted throughout the ranks since then. However, this meta-analysis revealed wider CIs for the transformational leadership style and the purported leader outcomes. This is normally indicative of the between-study variances (corrects for two types of measurement errors) with potential random effects, which could potentially lessen the impact of the overall total effect size concerning the transformational leadership style. Consequently, the weakest leadership style based on

the FRL model, the laissez-faire style, has been negatively correlated with all of the leader outcomes from the primary studies, and this research confirmed its weak relationship and influence within a policing context.

Limitations of the Study

One major limitation with conducting this meta-analysis was that there was not a sufficient number of similar policing studies that identified with the research problem or research question(s). Although this research consisted of a limited number of statistically examined studies (10), at the very least, most of these studies had moderate to large sample sizes. According to Borenstein et al. (2009), a few studies would be adequate for applying a meta-analysis; yet, it is the amount of information provided by those studies that could certainly limit the generalizability of the results.

By the included studies used in this research, there was only one study (Densten, 2003) that measured each of the particular police ranks with that of the purported leadership outcomes. Densten (2003) gathered important statistical data by measuring the leadership style preferences of the specific ranks associated with leadership effectiveness and extra effort. The problem with applying leadership instruments such as the MLQ (mainly observed in the primary research studies) is that it usually pertains to and examines only the top police leader style preferences (self-format) or the subordinates' selections (rater format) without any recognition of the other police ranks.

Another limitation observed during this research was that too few studies combined the top leadership position (self format) and subordinate officers (rater format) from the MLQ primary research examined. It would be imperative to understand just how

the police leaders lead and subordinate officers perceive the effectiveness of their leaders and the impact of leadership style within the department. In addition, more robust information on the FRL model is needed to understand leadership styles and organizational performance from a regional and national policing perspective.

An additional limitation with the MLQ was the purported leadership styles of transformational, transactional, and laissez-faire, are essential components that Avolio (2011) has equated with an augmentation relationship. Further, Avolio intended for the transactional leadership style to be enhanced by utilizing the transformational-style characteristics when needed during specific situational experiences. However, the MLQ's limiting factor here is with the framing of leadership questions corresponding to the transactional and transformational augmentation relationship, which has not been translated to influence organizational outcomes.

Recommendations for Future Research

Future academic research endeavors should consider and gain more understanding of the influence of the FRL model within a policing environment. An ideal recommendation for conducting police leadership research is to survey an independent sample of police leaders (police chiefs, sheriffs, and police managers) and another independent sample for their subordinate officers. Sarver (2008) addressed this point as a limitation in her study of Texas police chiefs. Sarver (2008) recommended "future research should focus on comparing both the self and rater reports to ensure that the police chief is indeed leading the way he/she states they are leading" (p. 141). Moreover, the Sarver (2008) study was limited to an MLQ sample of police chief preferences on

leadership styles, and to enhance more awareness of leadership style influence in policing organizations, the responses of their subordinate officers should be included.

Kubala (2013) conducted a dissertation study that included one independent sample consisting of a network of rural Kentucky Police Chiefs (47) and another independent sample associated with their police subordinates (94). This type of research strategy (two studies in one) should provide more robust leadership style information on the demographics of regional police chiefs and sheriffs and their subordinate police officers and deputies. The Durić (2011) study did consist of an MLQ survey of local, regional, and state Slovenian police leaders' preferences, but there was no emphasis on how their subordinate officers rated leadership styles. Much more understanding can be achieved by researching a combined network of police leaders and their subordinate officers, and how the influence of the FRL model impacts the performance levels within policing organizations (Sarver & Miller, 2014; Wood, 2014).

Another important factor that needs to be addressed with conducting a meta-analysis on police leadership styles, is finding and collecting data from primary research studies that are limited within the literature. One pivotal suggestion with applying the leadership constructs of the FRL model is to include an additional leadership survey that examines different outcomes or dependent variables based on the context of the research study. Yet, another alternative and recommended approach (Field & Gillett, 2010), is to find relevant unpublished studies and conference papers from either experts in the field or regional or national law enforcement organizations.

One major leadership policing association, the International Association of Chiefs

of Police (2016), supports academic research on leadership, sponsors conference proceedings that provide excellent resources such as relevant conference papers on leadership topics, and also offers guidance on contacting policing organizations, police professionals, and authors that have published leadership articles. By applying a combination of published and unpublished studies on police leadership, the meta-analyst does not violate the "publication bias" assumption and provides statistically reliable information concerning the FRL model. Consequently, it might be suggested as recommendations for researchers to use this study (as a preliminary foundation for contributing to the scholarly literature) so as to comprehend better the leadership style trends and influences (based on the FRL model) of future police leaders within law enforcement organizations.

Implications of the Study

Practical Implications

The previous research on meta-analytic studies (Castanheira & Costa, 2011; Chin, 2007; Harms & Crede, 2010) from different environmental contexts as well as a mix of homogeneous studies (DeGroot et al., 2000; Eagly & Johannesen-Schmidt 2003; Hawkins & Dulewicz, 2009; Levasseur, 2004; Lowe et al., 1996; Orole, Gadar & Hunter, 2014) has demonstrated the positive relationship between the transformational leadership style behaviors and increased performance and satisfaction with the leader. However, a meta-analysis on understanding the impact of leadership styles based upon the FRL model in policing organizations does not currently exist within the literature. The benefits of this study based on the FRL model, did include a quantitative analysis of the positive

relationship and influence of leadership styles and their impact on leadership effectiveness, subordinate satisfaction and performance levels in policing organizations. In addition, this study provided an analysis of the types of leadership styles that were negatively associated with leadership effectiveness and least preferred and do not serve the better interests of law enforcement.

The results of this study indicate that the transformational behavioral characteristics (idealized influence (behavioral and attributed); inspirational motivation; intellectual stimulation; and individualized consideration) were clearly more effective in policing organizations. This implies a leadership trend toward law enforcement leaders developing a more transformational-style or relationship-oriented behavior among subordinate officers. For example, Fox (2009) indicated in his study on critical incident commanders (who generally exhibited more transactional style behaviors), that when the transformational characteristic of individual consideration was demonstrated, the police commanders were considered more effective by the satisfaction of their subordinate police officers. Thus, a practical implication essential for positive social organizational change, is to encourage police leaders to incorporate more transformational style characteristics, as they are proactive and more adept at promoting new visions and making changes that shift provisional policing services in meeting the situational concerns relative to public safety (Gozubenli, 2009; Greene, 2000; Kubala, 2013; Morreale, 2002).

In addition, with the beneficial leader factors associated with the transformational leadership style (Durić, 2011; Kubala, 2013; Moon, 2006; Morreale, 2002), police chiefs

and managers should engage in more supportive and participative management (or less top-down and more bottom-up service strategies) that encourages and enables their subordinates to be more autonomous with decision-making and problem-solving responsibilities in the communities they serve. However, this meta-analysis did reveal moderating effects (Durić, 2011; Gozubenli, 2009; Kubala, 2013; Morreale, 2002; Sarver & Miller, 2014; Singer & Singer, 1990) in relation to top police leaders and managers supporting the transactional leader style of contingent reward and to a lesser extent management-by-exception (active). This translates to police chiefs, managers, and supervisors providing leadership accountability through task-related accomplishments and active supervision when required during specific situational occurrences (Kubala, 2013; Morreale, 2002; Singer & Singer, 1990). It is advantageous for the top police leaders to rely primarily on all of the transformational leadership characteristics (idealized influence (behavioral and attributed); inspirational motivation; intellectual stimulation, and individualized consideration), and also include the transactional style characteristics of contingent reward and the active monitoring of specific incidents when defining the mission and developing organizational policies.

Theoretical Implications

According to Bass and Avolio (2004), the FRL model is predicated on leaders exhibiting both the transactional and transformational leadership styles (augmentation effect) dependent upon the situation and organizational context. In the law enforcement environment, this translates (Greene, 2000; Morreale, 2002) to police leaders defining the transactional responsibilities and objectives relevant to the agency mission, and then

augmenting with the transformational style (Sarver & Miller, 2014), as this type of

leadership style supports and encourages subordinates "to create and achieve higher

goals, perform above the standards, and discover what is important so they may

maximize their potential" (p. 127). The meta-analytic findings in this study do indicate

that the transformational leadership style highly correlates with the positive effects of

extra effort, the subordinate satisfaction with the leader, and perception of leader

effectiveness. In addition, the transactional leadership style of contingent reward was

moderately strong when correlated with extra effort, and as such, implies that police

leaders establish goals and set the organizational standards (transactional), and then

provide the transformational leadership components (inspiring, motivating, and setting

the vision) in accomplishing policy agendas.

Conclusion

From the initial basis in Chapter 1, with conducting research on police leadership,

it was essential to examine the effectiveness of leadership styles (based on the FRL

model) and understand how police leaders, managers, and supervisors influenced

subordinate officers and organizational performance. This was accomplished by the

application of research synthesis and statistical analysis of the unexplained variances

related to the observed studies effect sizes. This study provided empirical support for the

transformational-style characteristics being strongly correlated with the outcome

variables of leadership effectiveness, exerting extra effort, and subordinate satisfaction

with the leader.

The findings also indicated that the transactional leadership style is weakly rated

with leader efficacy and the laissez-faire leadership style is not significantly supported by subordinate officers. However, the transactional leadership characteristic of contingent reward is moderately strong when correlated with extra effort (Kubala, 2013; Moon, 2006; Morreale, 2002; Sarver & Miller, 2014), and a significant aspect of policing responsibilities consists of traditional police response to crime and exigent conditions. As a result of conducting meta-analysis research based on the FRL model in policing, there appears to be more potential for the transformational-style leaders with subordinate officer satisfaction and overall organizational performance than there is for that of the transactional and laissez-faire style leaders.

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Appendix A: A Data Analysis for the Study's Leadership Styles and Perception of

Leadership Effectiveness

This appendix consists of three tables (A1 through A3) that report the statistical

analysis for each of the leadership styles–transactional, transformational, and laissez-faire

(independent variables) and perception of leader effectiveness (dependent variable).

Furthermore, the data analysis consists of individual cited study sample sizes and effect

sizes. In addition, a raw weight was computed from each of the included sample sizes, by

combining the within- and between-study variances. Subsequently, this analysis also

considered residuals greater than 1.96, to ascertain the observance of outliers.

Transactional Leadership and Perception of Leadership Effectiveness

There were five studies (cited in Table A1) aggregated and quantitatively

analyzed to determine the correlational relationship between the transactional leadership

style and perception of leader effectiveness. The sample sizes ranged from a low of 47 to

a high of 486, and the asterisk attached to the Kubala dissertation in Table A1 represents

two individual samples computed instead of one overall sample. For the raw weights, the

Durić (2011) study had the largest sample size and the highest weighted score (112.59)

and contributed the most information to the study, whereas, the Kubala (2013) study had

the smallest sample size and weighted score (33.85), and contributed the least

information and influence on the direction of the effect size. The correlational effect sizes

for the transactional leadership style and perception of leader effectiveness ranged from a

very low .072 to a moderately high .310, and there were no residuals greater than 1.96,

thus, there were no observable outliers to report.

Table A1

Studies on Transactional Leadership and Perception of Leadership Effectiveness

Citation	*N*	*ESS*	*RW*	Residual
Morreale (2002)	182	0.072	80.66	−1.28
Gozubenli (2009)	219	0.140	87.41	−0.62
Durić (2011)	486	0.310	112.59	1.47
Kubala (2013) (r)*	94	0.169	56.18	−0.24
Kubala (2013) (s)*	47	0.152	33.85	−0.29
Sarver & Miller (2014)	161	0.265	76.10	0.68

*Note. *Kubala Dissertation–two independent samples applied (r–subordinates, s–police leaders). N = sample. ESS is used for the individual study effect sizes. RW is used for raw weight.*

Transformational Leadership and Perception of Leader Effectiveness

There were five studies (cited in Table A2) aggregated and quantitatively analyzed to determine the correlational relationship between the transformational leadership style and perception of leader effectiveness. The sample sizes ranged from a low of 47 to a high of 486, and the asterisk attached to the Kubala dissertation in Table A2 represents two individual samples computed instead of one overall sample. For the raw weights, the transformational leadership style is much more evenly distributed, ranging from a low score of 6.39 to a high score of 7.36, which maximizes the contribution of information from all of the studies. The correlational relationship between the transformational leadership style and perception of leader effectiveness is rated as very strong with effect sizes ranging from a low of 0.396 to a very high 0.886. In addition, there were no residuals greater than 1.96, thus, there were no observable outliers

to report.

Table A2

Studies on Transformational Leadership and Perception of Leadership Effectiveness

Citation	*N*	*ESS*	*RW*	Residual
Morreale (2002)	182	0.886	7.17	1.60
Gozubenli (2009)	219	0.798	7.22	0.69
Durić (2011)	486	0.574	7.36	–0.61
Kubala (2013) (r)*	94	0.771	6.90	0.47
Kubala (2013) (s)*	47	0.486	6.39	–0.90
Sarver & Miller (2014)	161	0.396	7.13	–1.29

*Note. *Kubala Dissertation–two independent samples applied (r–subordinates, s–police leaders). N = sample. ESS is used for the individual study effect sizes. RW is used for raw weight.*

Laissez-faire Leadership and Perception of Leader Effectiveness

There were five studies (cited in Table A3) applied for this meta-analysis to determine the correlational relationship between the laissez-faire leadership style and perception of leader effectiveness. The sample sizes ranged from a low of 47 to a high of 486, and the asterisk attached to the Kubala dissertation in Table A3 represents two individual samples computed instead of one overall sample. For the raw weights, the laissez-faire leadership style is also evenly distributed, ranging from a low score of 6.57 to a high score of 8.15, which allows for all of the studies equally to contribute information to the meta-analytic study. The correlational relationship between the laissez-faire leadership style and perception of leader effectiveness is extremely weak in the policing environment with effect sizes ranging from a low of –0.720 to a high of –0.220.

In addition, there were no residuals greater than 1.96, thus, there were no observable

outliers to report.

Table A3

Studies on Laissez-faire Leadership and Perception of Leadership Effectiveness

Citation	*N*	*ESS*	*RW*	Residual
Morreale (2002)	182	−0.713	7.92	−0.96
Gozubenli (2009)	219	−0.720	7.98	−1.01
Durić (2011)	486	−0.225	8.15	1.11
Kubala (2013) (r)*	94	−0.660	7.59	−0.63
Kubala (2013) (s)*	47	−0.220	6.57	1.03
Sarver & Miller (2014)	161	−0.396	7.87	0.50

*Note. *Kubala Dissertation–two independent samples applied (r–subordinates, s–police leaders). N = sample. ESS is used for the individual study effect sizes. RW is used for raw weight.*

Appendix B: A Data Analysis for the Study's Leadership Styles and Extra Effort

This appendix consists of three tables (B1 through B3) that report the statistical analysis for each of the leadership styles–transactional, transformational, and laissez-faire (independent variables) and the leader outcome of extra effort (dependent variable). Furthermore, the data analysis consists of individual cited study sample sizes and effect sizes. In addition, a raw weight was computed from each of the included sample sizes, by combining the within- and between-study variances. Subsequently, this analysis also considered residuals greater than 1.96, to ascertain the observance of outliers.

Transactional Leadership Style and Extra Effort

There were five studies (cited in Table B1) aggregated and quantitatively analyzed to determine the correlational relationship between the transactional leadership style and extra effort. The sample sizes ranged from a low of 47 to a high of 486, and the asterisk attached to the Kubala dissertation in Table B1 represents two individual samples computed instead of one overall sample. For the raw weights, the Durić (2011) study (police managers) had the largest sample size and the highest weighted score (141.06) and contributed the most information to the study, whereas the Kubala (2013) study (police chiefs) had the smallest sample size and weighted score (36.04), and contributed the least information and influence on the direction of the effect size. The correlational effect sizes for the transactional leadership style and extra effort ranged from a low 0.137 to a moderately high 0.349, and there were no residuals greater than 1.96, thus, there were no observable outliers to report.

Table B1

Studies on Transactional Leadership and Extra Effort

Citation	*N*	*ESS*	*RW*	Residual
Morreale (2002)	182	0.137	94.29	−1.09
Gozubenli (2009)	219	0.200	103.65	−0.41
Durić (2011)	486	0.349	141.06	1.74
Kubala (2013) (r)*	94	0.175	62.47	−0.53
Kubala (2013) (s)*	47	0.206	36.04	−0.19
Sarver & Miller (2014)	161	0.242	88.12	0.08

*Note. *Kubala Dissertation–two independent samples applied (r–subordinates, s–police leaders). N = sample. ESS is used for the individual study effect sizes. RW is used for raw weight.*

Transformational Leadership Style and Extra Effort

There were five studies (cited in Table B2) applied to this meta-analysis to determine the correlational relationship between the transformational leadership style and extra effort. The sample sizes ranged from a low of 47 to a high of 486, and the asterisk attached to the Kubala dissertation in Table B2 represents two individual samples computed instead of one overall sample. For the raw weights, the transformational leadership style is much more evenly distributed ranging from a low score of 6.49 to a high score of 7.50, which allows for an equal contribution of information from all of the studies. The correlational relationship between the transformational leadership style and extra effort is rated as very strong with effect sizes ranging from a low of 0.370 to a very high 0.894. In addition, there were no residuals greater than 1.96, thus, there were no observable outliers to report.

Table B2

Studies on Transformational Leadership and Extra Effort

Citation	*N*	*ESS*	*RW*	Residual
Morreale (2002)	182	0.894	7.30	1.73
Gozubenli (2009)	219	0.800	7.36	0.72
Durić (2011)	486	0.630	7.50	−0.35
Kubala (2013) (r)*	94	0.732	7.03	0.22
Kubala (2013) (s)*	47	0.471	6.49	−0.96
Sarver & Miller (2014)	161	0.370	7.27	−1.39

*Note. *Kubala Dissertation–two independent samples applied (r–subordinates, s–police leaders). N = sample. ESS is used for the individual study effect sizes. RW is used for raw weight.*

Laissez-faire Leadership Style and Extra Effort

There were five studies (cited in Table B3) applied for this meta-analysis to determine the correlational relationship between the laissez-faire leadership style and extra effort. The sample sizes ranged from a low of 47 to a high of 486, and the asterisk attached to the Kubala dissertation in Table B3 represents two individual samples computed instead of one overall sample. For the raw weights, the laissez-faire leadership style is evenly distributed ranging from a low score of 10.65 to a high score of 13.65, which allows for all of the studies equally to contribute information to the meta-analytic study. The correlational relationship between the laissez-faire leadership style and extra effort is extremely weak in policing environments with effect sizes ranging from a low of −0.636 to a high of 0.010. In addition, there were no residuals greater than 1.96, thus, there were no observable outliers to report.

Table B3

Studies on Laissez-faire Leadership and Extra Effort

Citation	*N*	*ESS*	*RW*	Residual
Morreale (2002)	182	−0.636	13.03	−1.13
Gozubenli (2009)	219	−0.610	13.19	−0.97
Durić (2011)	486	−0.230	13.65	0.95
Kubala (2013) (r)*	94	−0.580	12.17	−0.74
Kubala (2013) (s)*	47	0.010	10.65	1.68
Sarver & Miller (2014)	161	−0.370	12.90	0.31

*Note. *Kubala Dissertation–two independent samples applied (r–subordinates, s–police leaders). N = sample. ESS is used for the individual study effect sizes. RW is used for raw weight.*

Appendix C: A Data Analysis for the Study's Leadership Styles and Subordinate

Satisfaction with the Leader

This appendix consists of three tables (C1 through C3) that report the statistical

analysis for each of the leadership styles–transactional, transformational, and laissez-faire

(independent variables) and the leader outcome of subordinate satisfaction with the leader

(dependent variable). Furthermore, the data analysis consists of individual cited study

sample sizes and effect sizes. In addition, a raw weight was computed from each of the

included sample sizes, by combining the within- and between-study variances.

Subsequently, this analysis also considered residuals greater than 1.96, to ascertain the

observance of outliers.

Transactional Leadership and Subordinate Satisfaction with the Leader

There were five studies (cited in Table C1) aggregated and quantitatively

analyzed to determine the correlational relationship between the transactional leadership

style and subordinate satisfaction with the leader. The sample sizes ranged from a low of

47 to a high of 486, and the asterisk attached to the Kubala dissertation in Table C1

represents two individual samples computed instead of one overall sample. For the raw

weights, the Durić (2011) study consisting of police managers had the largest sample size

and the highest weighted score (156.58) and contributed the most information to the

study, whereas the Kubala (2013) study, based solely on police chiefs, had the smallest

sample size and weighted score (36.98), and contributed the least information and

influence on the direction of the effect size. The correlational effect sizes for the

transactional leadership style and subordinate satisfaction with the leader ranged from a

low 0.049 to a moderate 0.257, and there were no residuals greater than 1.96, thus, there

were no observable outliers to report.

Table C1

Studies on Transactional Leadership and Subordinate Satisfaction with the leader

Citation	*N*	*ESS*	*RW*	Residual
Singer & Singer (1990)	60	0.061	45.75	−0.62
Morreale (2002)	182	0.049	100.96	−1.11
Gozubenli (2009)	140	0.159	111.78	0.15
Durić (2011)	486	0.257	156.58	1.72
Kubala (2013) (r)*	94	0.080	65.34	−0.59
Kubala (2013) (s)*	47	0.147	36.98	−0.17

*Note. *Kubala Dissertation–two independent samples applied (r–subordinates, s–police leaders). N = sample. ESS is used for the individual study effect sizes. RW is used for raw weight.*

Transformational Leadership and Subordinate Satisfaction with the Leader

There were nine studies (cited in Table C2) applied to this meta-analysis to

determine the correlational relationship between the transformational leadership style and

subordinate satisfaction with the leader. The sample sizes ranged from a low of 47 to a

high of 486, and the asterisk attached to the Kubala dissertation in Table C2 represents

two individual samples computed instead of one overall sample. For the raw weights, the

transformational leadership style is much more evenly distributed, ranging from a low

score of 7.71 to a high score of 9.17, which allows for an equal contribution of

information from all the studies. The correlational relationship between the

transformational leadership style and subordinate satisfaction with the leader is rated as

very strong with effect sizes ranging from a low of 0.315 to a very high 0.860. In addition, there were no residuals greater than 1.96, thus, there were no observable outliers to report.

Table C2

Studies on Transformational Leadership and Subordinate Satisfaction with the Leader

Citation	*N*	*ESS*	*RW*	Residual
Singer & Singer (1990)	60	0.540	8.03	–0.33
Morreale (2002)	179	0.860	8.87	1.81
Alarcon (2005)	373	0.577	9.11	–0.19
Gozubenli (2009)	219	0.800	8.96	1.21
Ozbaran (2010)	196	0.413	8.91	–0.87
Durić (2011)	486	0.413	9.17	–0.89
Kubala (2013) (r)*	94	0.790	8.47	1.09
Kubala (2013) (s)*	47	0.374	7.71	–0.94
Sarver & Miller (2014)	161	0.315	8.82	–1.22
Swid (2014)	124	0.670	8.67	0.29

*Note. *Kubala Dissertation–two independent samples applied (r–subordinates, s–police leaders). N = sample. ESS is used for the individual study effect sizes. RW is used for raw weight.*

Laissez-faire Leadership and Subordinate Satisfaction with the Leader

There were eight studies (cited in Table C3) applied for this meta-analysis to determine the correlational relationship between the laissez-faire leadership style and subordinate satisfaction with the leader. The sample sizes ranged from a low of 47 to a high of 486, and the asterisk attached to the Kubala dissertation in Table C3 represents

two individual samples computed instead of one overall sample. For the raw weights, the

laissez-faire leadership style is evenly distributed, ranging from a low score of 7.95 to a

high score of 9.51, which allows for all of the studies equally to contribute information to

the meta-analytic study. The correlational relationship between the laissez-faire

leadership style and the subordinate satisfaction with the leader is extremely weak in

policing environments with effect sizes ranging from a low of −0.700 to a high of −0.091.

In addition, there were no residuals greater than 1.96, thus, there were no observable

outliers to report.

Table C3

Studies on Laissez-faire Leadership and Subordinate Satisfaction with the Leader

Citation	*N*	*ESS*	*RW*	Residual
Morreale (2002)	182	−0.693	9.20	−1.36
Alarcon (2005)	373	−0.207	9.45	0.72
Gozubenli (2009)	219	−0.700	9.28	−1.41
Ozbaran (2010)	196	−0.361	9.23	0.17
Durić (2011)	486	−0.091	9.51	1.11
Kubala (2013) (r)*	94	−0.680	8.76	−.125
Kubala (2013) (s)*	47	−0.160	7.95	0.80
Sarver & Miller (2014)	161	−0.315	9.14	0.34
Swid (2014)	124	−0.150	8.98	0.89

*Note. *Kubala Dissertation–two independent samples applied (r–subordinates, s–police leaders). N = sample. ESS is used for the individual study effect sizes. RW is used for raw weight.*