

## **ABSTRACT**

CARTER, LYCIA ANNE. Predicting Managerial Performance in Law Enforcement: The Impact of Work Setting and Rater Position. (Under the direction of Mark A. Wilson.)

The purpose of this research was twofold: to determine the predictive validity of a promotion process currently in use at a statewide law enforcement agency; and to investigate the effect that rater position and work context exhibit on the relationships between three components of job performance and overall performance ratings. Results indicate that performance ratings are the most robust predictor of supervisory performance, after accounting for the effects of time in rank and the number of times an individual participated in the promotion process before being promoted. The predictive validity of the promotion process was modest but statistically significant, accounting for approximately 21% of the variance in supervisory performance when the evaluator's position and the incumbents' work setting were included in the model. Results for the criterion side of the model indicate that task performance and citizenship performance account for the greatest amount of variance in overall supervisory performance. The effects that rater position and work context have on the relative weights of task, citizenship and counterproductive performance were inconclusive but suggest a possible interaction between rater position and work setting.

**PREDICTING MANAGERIAL PERFORMANCE IN LAW ENFORCEMENT:  
THE IMPACT OF WORK SETTING AND RATER POSITION**

by

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Dedicated to my parents  
Robert and Phyllis Carter,  
for instilling in me the value of education

## Biography

Lycia Anne Carter was born on May 25, 1962 in Brockton, Massachusetts, the hometown of Rocky Marciano. Lycia was the youngest of Robert and Phyllis Carter's seven children. She attended public schools and graduated from Brockton High School in 1980. From 1980 to 1981, Lycia attended Clark University in Worcester, Massachusetts. In 1982, she transferred to the University of Massachusetts at Amherst.

Fascinated by human behavior and individual differences, Lycia decided to major in psychology. Initially, the physiological basis for human behavior captivated her attention and she pursued the neuroscience curriculum available to psychology majors. While at UMass, she conducted research on circadian rhythms with Dr. Richard Gold, minored in Latin, and had the pleasure of reading Virgil's Aeneid as well as works by Pliny and Cicero in the original Latin.

Lycia became interested in Industrial/Organizational Psychology after experiencing first hand the impact of low job satisfaction and low morale on the psychological health of employees during a summer job. During her senior year, she took two courses in Industrial/Organizational Psychology. One year after graduating from UMass, cum laude, she began a Master of Science degree at NC State University in Raleigh, completing it in December of 1989 under the direction of Dr. J. W. Cunningham.

Lycia began her professional career in Boston, Massachusetts. In 1992, she moved to New York City and began working for ASI, a human services consulting firm, as a professional assessor. By late 1994, she had moved into Research and Development,

conducting job analyses and developing assessment centers. That same year, she was married to Matthew Goodwin and they had their first child, Noah, in 1996.

Inspired by her boss at ASI, Dr. Seymour Adler, Lycia decided to return to graduate school to pursue her doctorate. In 1997, she returned to NC State and began working on her Ph.D., initially under the direction of Dr. J. W. Cunningham and, upon his retirement, under the direction of Dr. Mark Wilson.

During her doctoral studies at NC State, Lycia continued to develop professionally by telecommuting for ASI, working as an intern at the North Carolina State Highway Patrol, and working with Dr. Mark Wilson on the State Bureau of Investigation Selection Validation Research Project. In October 2001, Lycia accepted the position of Assessment Analyst with the NC State Highway Patrol, overseeing the promotion and performance management processes for sworn members.

Since March of 2004, Lycia has been the Director of Testing and Standards at the Metropolitan Police Department in Washington, D.C. where she is in charge of all promotion and internal selection programs, as well as the performance management process, for the Department's 3800 law enforcement officers.

Intending to finish her degree in 2001, Lycia was delayed by the births of three additional children: twin boys, Seth and Jack, in December 2000; and finally a daughter, Emmeline, in August 2002. Lycia now lives in Arlington, Virginia with her husband, their four children and their dog, Bingo.

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As those of you who have completed doctorates know, it is a difficult endeavor made easier by the support and encouragement of many people. I have been fortunate to have many people in my life that have been willing to help me achieve my goal of earning a Ph.D. Mine and my husband's families have been there for us in many ways, and without them, this wouldn't have been possible. My friends have also been a source of encouragement, cheering me on to the finish line.

But, the person who deserves the most recognition for supporting me in my academic accomplishments is my husband, Matthew Goodwin. It has not been an easy road for either of us but especially for Matthew. He left his job in the diamond industry in New York City to relocate to Raleigh, North Carolina, knowing that there was no diamond industry there. He has taken the kids to visit family when I really needed to study for final exams. He has reassured me that I could, in fact, pass my prelims, and that I would, in fact, finish my dissertation; and, he has listened to, and commiserated with, my complaints.

Whenever people discovered that I was working full time, had four children and working on my dissertation, they would inevitably ask, "how do you do it?" My answer was always the same - I couldn't do it without my husband.

My children, Noah, Seth, Jack and Emmeline, have helped me to keep things in perspective and remember what is truly important in life, and Noah, especially, has been my 'Little Buddy' throughout this long process. He has attended group project meetings, and accompanied me to many places around campus and Poe Hall. He has delighted and amazed my fellow graduate students and me, by his keen wit and his "bon mots," most notably his

coining the classic phrase, “Brown Stephanie and Yellow Stephanie,” as a method of distinguishing between Stephanie Tarrant and Stephanie Sloan, respectively. He has made me happy and driven me crazy, but most of all made me really proud, especially when he announced that he wanted to be a “psylogochist” when he grows up.

Kelley Krokos has been a true friend to me during graduate school. She has been a source of companionship and understanding from the beginning. She convinced me not to bail during those first, panicky weeks in 1997 (when I couldn’t help but wonder, “What was I thinking?”), she was my study partner through all the courses we had together, including the ‘semester from hell’ and the two classes with Dr. Drewes, and she was there for me and my family in many other ways.

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## **Introduction**

Accurate prediction of job performance is of central importance to organizations, for various reasons. Not only is it important to identify those candidates that will become successful employees but determining which incumbents will make effective supervisors is also of significant consequence. Over the years, many potential predictors of job performance have been examined. Currently, the prevailing predictors are the constructs of cognitive ability (Campbell, 1990; Hunter & Hunter, 1984), experience (Borman, Hanson, Oppler, Pulakos & White, 1993), and personality (Barrick & Mount, 1991).

Predicting performance is important, but no more so than a clear understanding of what performance is. In recent years, several models demonstrating the multidimensional nature of job performance have emerged (e.g. Campbell, McHenry & Wise, 1990; Motowidlo & Van Scotter, 1994; Murphy & Shiarella, 1997; Wilson & Grant, 1997). Currently, three broad components are thought to define the performance domain: task performance, citizenship performance and counterproductive performance (Rotundo & Sackett, 2002).

Some studies investigating the domain of managerial performance have sought to further refine these performance dimensions. For example, Borman and Brush (1993) delineated task performance into two distinct categories, supervisory task performance and technical task performance, while Conway (1999) investigated two facets of citizenship performance, job dedication and interpersonal facilitation, and their relationship to the task performance of managers. Research in the area of leadership has focused more on the interpersonal behaviors of managers and how well they are able to develop and motivate their

subordinates. Although the number and level of managerial performance dimensions may vary, it is clear that most researchers support the multidimensionality of managerial performance (Fleishman, Zaccaro & Mumford, 1991).

In addition to identifying the predictors of job performance and defining the criterion itself, research has focused on combining these two streams, resulting in various integrated models (Viswesvaran & Ones, 2000). In the early stages of development, these integrated models typically showed general cognitive ability as predicting task performance (Hunter, 1986) and some facet(s) of personality, often conscientiousness, as predicting citizenship performance (Borman & Motowidlo, 1997). However, the relationships between the predictors and the criterion are most likely more complex (Viswesvaran & Ones, 2000).

A major purpose of the current research is to identify the predictive validity of a content-valid promotion process currently in use in a large state police organization in the southeast. As the development of the promotion process was influenced by research on integrated models of job performance, determining its predictive validity may not only help the organization improve its success in selecting supervisors, it may provide additional support for the three-dimensional, integrated model of job performance that influenced its development.

The second goal of this study is to investigate the impact that work context and rater position have on the relationship between the predictors and the criterion in the integrated model of managerial performance. The results of some research suggest that predictors of supervisory performance may vary depending on work setting and occupation. This study seeks to examine the effects of work context for supervisors in the same occupation. The

sample of supervisors in this study are in a single occupation, namely law enforcement, and are within a single organization, whose primary focus is to ensure safe, efficient transportation on the highways and roadways of the state. However, the fact that this is a statewide organization means that supervisors conduct their work in multiple settings. They may be assigned to work in areas that vary in terms of population density (i.e. rural vs. urban locations), traffic pattern (i.e. interstate vs. non-interstate roadways), and traffic density (vehicle miles traveled). The variety of work settings may present supervisors with challenges that are unique to the specific context in which the work is conducted. In fact, many Leadership models take into consideration the impact of work setting by including which leadership styles would be most effective in which settings (e.g. Antonakis, Avolio & Sivasubramaniam, 2003; Fiedler, 1971; Osborn, Hunt & Jauch, 2002). If the context in which the work takes place influences the effectiveness of a particular leadership style, then it is also possible that context would impact the effectiveness of selection components. Finally, the performance of the line supervisors included in this study will be evaluated by two commissioned officers, working in the same location but with different responsibilities. Given that these two high level supervisors are responsible for different functions in the district (operational vs. administrative functions) then they may not only have different perspectives of how well the supervisor is performing his/her job, they perceive certain aspects of performance as more important than others and thus weight those dimensions more highly. Such differences in values and perceptions may also impact the relationship between the predictors and the criterion in the job performance model.

In order to achieve the purposes of this study, predictors and definitions of managerial performance are discussed, followed by a brief discussion of integrated models of job performance. Next, the relative impact of the components of job performance on overall performance appraisal ratings will be addressed, and finally, the impact of work context on these overall ratings will be examined.

### *Predicting Managerial Performance*

A review article by Korman (1970) indicates that in the middle part of the 20<sup>th</sup> century, researchers were already examining the merits of using measures of cognitive ability, personality, and interests, as well as biodata, peer ratings, and supervisor ratings to predict managerial performance. More recently, Borman and Brush (1993) found relationships between cognitive ability and experience, and supervisor proficiency and knowledge. The results of this study indicate that individuals who demonstrate ability are given the opportunity to gain supervisory experience, and that supervisory experience has a greater impact on supervisor proficiency than cognitive ability. Cognitive ability, however, had a greater impact on supervisor knowledge. Studies exploring the relationship between personality characteristics and managerial performance have produced mixed results (e.g. Craik et al., 2002; Robertson, Baron, Gibbons, MacIver & Nyfield, 2000; and Yoon, 1998). There is some research that suggests that the predictive validity of certain personality characteristics is moderated by the type of work performed or the functional area in which the manager works. For example, Scratchley & Hakstian (2001) found that openness, in combination with divergent thinking, is predictive of managerial creativity. In addition, Heckman (1999) found that the relationship between managerial performance and two

personality characteristics, extraversion and conscientiousness, was moderated by the type of work performed. In that study, high performing managers in investigative fields, such as engineering or research and development, scored lower on measures of extraversion than low performing managers in these same occupations. Conversely, high performing managers working in occupations requiring social skills (e.g. personnel and sales) scored higher in extraversion than their low performing counterparts. Conscientiousness also differentially predicted the performance of managers in different fields. Managers performing well in creative fields (e.g. advertising) scored lower on conscientiousness than high performing managers in conventional fields (e.g. accounting). These results indicate that personality can be a valid predictor of managerial performance, however support for a general theory that specific personality characteristics, such as conscientiousness or extraversion, are predictive of managerial performance across all occupations is not supported.

#### *Defining Managerial Job Performance*

No less important than identifying valid predictors of performance is the identification of what is to be predicted. Obviously, organizations are interested in predicting job performance but what specifically defines job performance? Historically, measures of overall job performance, typically based on supervisory ratings, served as the criteria for validating various predictors of performance (McDaniel, Finnegan, Morgeson, Campion & Braverman, 1997). Overall performance ratings can be useful in many situations, for example administrative decisions that require comparing individuals, such as promotion and compensation. Comparing individuals across several performance dimensions can be



cumbersome and confusing. Therefore, using overall performance ratings can help to simplify these decision-making processes.

Many organizations continue to collect and utilize supervisory evaluations of overall job performance, yet over the past decade I/O research has focused on the multi-dimensional nature of the job performance construct. Models of job performance have emerged that conceptualize job performance as task performance and another kind of performance, referred to in the literature as extra-role performance (Werner, 1994), contextual performance (Borman & Motowidlo, 1997) organizational citizenship behavior (Organ & Ryan, 1995), and most recently, Citizenship Performance (Rotundo & Sackett, 2002). Task performance has also been broken down into job knowledge (declarative knowledge) and execution of the job (procedural knowledge and skill) (McCloy, Campbell & Cudeck, 1994; Wilson & Grant, 1997).

Aside from labeling differences, various definitions of citizenship have been proffered. These definitions primarily involve descriptions of behaviors that positively affect the organization but they are not necessarily included in one's job description. However, Rotundo and Sackett (2002) posit that the conceptualization of citizenship behavior as occurring outside the domain of one's job description is problematic. They make the case that whether the behavior is part of the job description or not, it is the behavior itself that should be considered when determining the appropriateness of its inclusion in the category of citizenship. Therefore, they define citizenship behavior as "behavior that contributes to the goals of the organization by contributing to its social and psychological environment" (Rotundo & Sackett, 2002, pp 68 – 69).

A third component of job performance, workplace deviance (Robinson & Bennett, 1997) has been gaining prominence in the I/O literature, especially as interest in integrity testing grows (e.g. Brown & Cothorn, 2002; Murphy 2000; Luther 2000; Ones & Viswesvaran, 2001). Workplace deviance, also labeled counterproductive performance (Rotundo & Sackett, 2002) and organizational misbehavior (Vardi & Wiener, 1996) is, in some respects, the antithesis of citizenship performance. While definitions of citizenship commonly include descriptions such as, “positively contributes to the...of the organization” counterproductive performance is seen as negatively contributing to the organization in some way.

Vardi and Weiner (1996, pp. 153) define organizational misbehavior as “any intentional action by members of organizations that defies and violates (a) shared organizational norms and expectations, and/or (b) core societal values, mores and standards of proper conduct.” Robinson and Bennett (1995) hold that behavior must meet four criteria in order to be considered workplace deviance. First, current members of the organization must exhibit the behavior, as opposed to members that left the organization or were never officially part of the organization. Second, the behavior must be intentional, rather than accidental or beyond the member’s control. Third, there must be an appropriate standard of acceptable behavior established against which the demonstrated behavior can be measured and determined to be deviant. Lastly, the behavior should be in violation of organizational norms rather than a transgression of a broader societal norm or law.

In addition to defining the components of job performance that apply across all occupations and levels of employees, streams of research in both psychology and

management have attempted to identify managerial performance dimensions (e.g. Borman & Brush, 1993; Craik et al., 2002; Shipper and Davy, 2002). Using a combination of judgmental sorting and factor analysis, Borman and Brush (1993) derived an 18-factor structure of managerial performance. Their results support a two-dimensional model of the manager job performance criterion including task performance and citizenship performance. They further delineated task performance into two types, technical task performance and supervisory task performance.

Seeking to refine the model of overall job performance even further, Conway investigated the number of factors that comprise both task performance and citizenship performance for managers. He used structural equation modeling to determine the fit of a four-factor model of managerial job performance, two factors that comprise the citizenship construct (job dedication and interpersonal facilitation) and two that comprise the task performance construct (technical/administrative performance and leadership). Van Scotter and Motowidlo (1996) also found that the interpersonal facilitation component of citizenship performance could be distinguished from task performance.

Yet, Conway found that the job dedication component of citizenship performance accounted for unique variance in ratings of overall task performance for managers, a finding not supported by the Van Scotter and Motowidlo study. However, separating task performance into two categories, leadership and technical/administrative, and including both facets in the structural model reduced the unique contribution of job dedication. Conway suggests that “leading by example” may be part of job dedication in that a dedicated manager would be a role model for subordinates. This same behavior may also be a source of high

ratings in the leadership dimension, and when leadership is included in the model the results are less clear. Interestingly, Conway found that the distinctions made between citizenship and task performance vary by rating source. An analysis of peer ratings demonstrated that, when task performance was broken into leadership and technical performance, peers distinguished between both the interpersonal facilitation and job dedication aspects of citizenship performance. However, supervisor and self-ratings showed less of a distinction between citizenship performance and task performance in the four-factor model. Neither study included counterproductive performance as a distinct component in a model of managerial job performance.

Research in the area of Leadership has focused less on defining the domain of managerial job performance and more on the manager's interpersonal behaviors and how well he/she is able to inspire and develop subordinates. In the Transformational Leadership model (Bass 1985; 1997), leadership is defined in terms of the following five dimensions: (1) Idealized Influence (attributed) is commonly known as 'charisma' and can be described as the perception of the leader's personal characteristics, such as confidence, ethics, power, etc. by his/her followers; (2) Idealized Influence (behavior) is another aspect of charisma but the focus is behavioral rather than personal; (3) Inspirational Motivation is, as the label indicates, concerned with how the leader inspires, or energizes his/her followers by persuading them that their goals are attainable; (4) Intellectual stimulation refers to actions that the leader takes that encourage followers to develop creative solutions to problems; and (5) Individualized Consideration encompasses the mentoring aspect of leadership, focusing on

behaviors such as providing advice and assisting followers with personal development (Antonakis et al., 2003).

*Relative weight of components to overall job performance*

Research has shown that managers do take both task performance and citizenship performance into consideration when evaluating overall performance and that these components generally have unequal influence on ratings of overall performance. For example, Van Scotter, Motowidlo & Cross (2000) found that supervisors weighted citizenship performance and task performance differently depending on the purpose of the ratings. Citizenship performance was weighted more heavily when determining the distribution of informal rewards whereas task performance was more influential in determining formal rewards. Similarly, Kiker & Motowidlo (1999) found that citizenship performance was valued more highly for high performers than for low performers. These results suggest that supervisors do differentially weight the components of task and citizenship performance and that the purpose for evaluating overall performance as well as the performance level of the individual being evaluated influences the relative weights assigned.

Along with task and citizenship performance, Rotundo and Sackett (2002) included counterproductive performance in their study and the results both support and expand the findings of other researchers in this area. Using a policy-capturing approach, Rotundo et al. found that, in general, supervisors tend to weight task and counterproductive performance more heavily than citizenship performance in determining ratings of overall job performance. In this study, managers from five different occupations (accountant, administrative assistant,

retail cashier, machine operator, and nurse) provided ratings on the three performance components and on overall performance based on information contained in a hypothetical performance profile. Results showed that raters tended to use all three components of performance when assigning overall performance ratings, however they varied in the relative weight assigned to each component. On average, managers in the fields of accounting and machine operator assigned the greatest weight to task performance, administrative assistant and nurse managers equally weighted task and counterproductive performance, and managers of retail cashiers weighted counterproductive performance most heavily, although citizenship was not an insignificant contributor. Moreover, the three components of performance evaluated in this study accounted for nearly two-thirds of the variance in overall performance.

### *Work Context*

The fact that managers in different occupations weight task, citizenship and counterproductive components differently when assigning overall performance ratings begs the question, “Does context matter?” The results of several studies cited in this article suggest that context does indeed matter and reasonably so. For example, it seems logical that the managers of retail cashiers in the Rotundo and Sackett study would weight counterproductive performance most heavily due to the impact of employee theft in the retail sector. One source reports that in 2001, nearly 4% of retail employees were apprehended for theft and that dishonest employees stole eight times the amount of shoplifters, with the dollar figures totaling approximately \$900 per dishonest employee vs. \$114 dollars per individual shoplifter (Jack L. Hayes International, Inc. 2002). It is also reasonable that nurse managers

would be equally concerned with task performance and counterproductive performance since non-performance of one's job, either due to malicious intent or lack of skill, could have a huge impact on individual and organizational outcomes (e.g. patient deaths, lawsuits against the health care provider etc.).

On the other side of the equation, research supports the idea that the type of work being done is important when trying to predict performance. Recall that Heckman (1999) found the type of work performed by managers moderated the relationship between personality characteristics and job performance. However, there has been little, if any, research conducted that investigates the impact that different work settings within a single occupation have on the relationship between predictors and the job performance criterion. Neither has research on managerial positions included counterproductive performance as a third component of the job performance criterion. Therefore, this study investigates the relative weights that supervisors assign to task performance, citizenship performance, and counterproductive performance when assigning overall ratings of managerial job performance, as well as the moderating effect of work context on the weighting of the components.

#### *Integrating predictors and criterion*

Identifying valid predictors of job performance and enhancing understanding of the job performance criterion are important advancements in selection research yet they are only two parts of the equation. Melding these advancements into an integrated model that specifies the relationship between the predictors and the criterion is vital to ensuring the usefulness of the information.

Research that focuses on how best to predict job performance, given its multidimensional nature, has resulted in several models. An oft-studied theory is that personality is a better predictor of citizenship performance while cognitive ability exhibits a stronger relationship with task performance. Supporting this theory, McCloy, Campbell & Cudeck (1994) demonstrated that cognitive ability is a sound predictor of declarative knowledge, while personality is linked to the motivation to perform. Several other studies support this theory (Hattrup, O'Connell & Wingate, 1998; Motowidlo & Van Scotter, 1994; Van Scotter & Motowidlo, 1996; Wilson & Grant, 1997). However, the relationships between predictors and criterion are not that clear cut. Yes, personality characteristics such as conscientiousness show relationships with citizenship performance but relationships between personality and task performance have also been established (Barrick & Mount, 1991; Hurtz & Donovan, 2000).

As previously discussed, counterproductive performance is being included as a third dimension of job performance. As such, researchers have been exploring the relationships between the established performance predictors of cognitive ability and personality characteristics, and integrity, a predictor of counterproductive performance. Duehr, Sackett and Ones (2003) report that previous studies conducted by one or more of the authors showed no relationship between cognitive ability and integrity at the construct level. However, cognitive ability did show moderate positive (.25 - .37) and negative (-.22 and -.33) correlations with six of 23 integrity dimensions identified through a judgmental sort. Interestingly, the four dimensions with which cognitive ability correlated positively were related to personality characteristics (Extroversion/ Introversion, Locus of Control, Social



Desirability and Orderliness) while the two negative correlations were related to integrity-based dimensions (honesty). Related research by Greenberg (2002) indicated that both individual and situational determinants impact the likelihood that employees will engage in one type of counterproductive performance, theft.

### *Summary and Research Questions*

A review of the research has shown that current models of job performance, for both non-supervisory and supervisory personnel, are multidimensional, and that a combination of personality factors, cognitive ability and experience are the best predictors of job performance, while the job performance criterion appears to be comprised of task, citizenship and counterproductive performance. The literature also indicates that the relationships between personality and job performance, and the relative weights that supervisors assign to the dimensions of job performance may be influenced by occupation or work setting. However, the research neither addresses the impact that work setting or rater position has on an integrated model of job performance, nor does it address whether adding these variables to an integrated model of job performance would account for significantly more variance. The research described in this study attempts to provide more information on integrated models of job performance and the variables that may influence them.

The model that influenced the development of the promotion process at the state police organization in this study was a multidimensional model that included cognitive ability, experience and, indirectly, personality. In addition, the overlap between the components of the process and the conduct of the job supports the content-validity of the promotion process. Although a concurrent validity study could have been conducted before

implementing the promotion process, for obvious reasons a true predictive validity study was not a viable method for establishing validity. As of 2003, however, the process had been in place for six years and many supervisors were promoted through the process. Therefore, data was available for the conduct of a predictive validity study. In addition to merely conducting a predictive validity study of the promotion process, the current research was designed to address some of the gaps in the supervisory job performance literature.

Five research questions were addressed in this study. The purpose of the first three was to establish the predictive validity of the promotion process. Questions four and five addressed whether work context and rating source differentially affect the relative importance of task, citizenship, and counterproductive performance when evaluating the overall job performance of line supervisors. Also of interest was determining whether the introduction of these variables into an integrated model of job performance would result in greater variance being accounted for in the criterion. The first question addressed in this study was how well the components of the promotion process, taken as a whole, predict the overall performance of supervisors. Next, whether the components of the promotion process differentially predict task performance, citizenship performance and counterproductive performance, as rated by supervisors, was investigated. Third, was the question of whether the components of the promotion process differentially predict dimensional performance appraisal ratings assigned to line supervisors in the organization's performance evaluation process. Fourth, what impact do work context and rater position have on the relative importance of task, citizenship and counterproductive performance to overall job performance. That is, do supervisors weight the three components of job performance

differently depending on the setting in which the work takes place or the position that they hold. Finally, does a model of supervisory performance that includes work context and rater position account for significantly more variation in job performance than a model without these variables.

### **Method**

It is important to understand the promotion process in the state police organization that was studied. Table 1 contains each of the components of the promotion process, its assigned weight, and the maximum number of points that can be achieved on each component. The components of the promotion process are discussed below, followed by a discussion of the sample. The model that was tested in this study is presented in Figure 1. This model is based on the three-factor model identified by Wilson and Grant (1997). Table 2 lists the constructs identified in the model along with the components of the promotion process that served as the predictors and criterion manifest variables. These constructs and components were matched judgmentally as initially, the data was not available for any other method. However, after all of the data from the promotion process was collated, a factor analysis of the promotion scores for the supervisors in this study was conducted. The results provide strong support for the initial conceptualization of the model. The resulting factor structure is presented in Appendix A.

#### *The Promotion Process*

The promotion process that was the subject of investigation in this study is a content-valid process based in large part on the job analysis results of Troopers, Line Sergeants, First Sergeants, and Lieutenants at the organization. Promotion from Master Trooper to Supervisor

involves the completion of seven mandatory components, while members vying for promotion from one supervisor rank to the next complete six mandatory components. Both groups are afforded the opportunity to participate in an optional, physical fitness component that allows them to earn additional points. The components are a combination of hurdles and compensatory measures. All members must meet certain eligibility requirements to participate in the process. Troopers must have obtained the rank of Master Trooper, a rank that takes six years to achieve, and Supervisors must have two years in-rank. In addition, members must not be under disciplinary action. A discussion of each of the components of the process follows.

#### *The Policy and Law Exam*

The first two components in the process are intended to measure Declarative Knowledge. All participants must pass a rank-specific, multiple-choice examination that tests their knowledge of the organization's policies and relevant general statutes. The 100-item test has two parts, a closed-book section and an open-book section, with the majority of the questions contained in the closed-book section. Participants must answer 70% of the questions correctly in order to remain in the process.

The actual items in the Policy and Law test have varied somewhat over the years, with a major shift occurring in 2000 from fact-based items to application-oriented items. The internal consistency reliability of the tests, as measured by KR20, range from .65 to .78 with a mean of .72 for the Officer rank, and .57 to .79 with a mean of .68 for the Sergeant rank.<sup>1</sup> These reliabilities are somewhat lower than is recommended for practical purposes

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<sup>1</sup> Individual response data is not available for the tests administered in 1998 or in 2001. Average reliability was computed based on five test administrations: 1997, 1999, 2000, 2002 and 2003.

(Nunnally, 1978), although four are approaching the recommended alpha-level of .80 and more than half meet the criteria of .70 for use in research.

Low reliability coefficients suggest two possibilities: they may indicate that the test is an unreliable measure of job knowledge, or they may suggest that the test is multidimensional. Unfortunately, due to the low number of both items and participants common to multiple administrations, the tests were unable to be factor analyzed to determine dimensionality.

Data was available, however, to calculate one-year, test-retest reliability coefficients (for parallel forms of the test) for three test administrations at the Officer rank, and for two at the Sergeant rank although the sample sizes were very small, ranging from four to nine. The Pearson correlation coefficients, presented in Table 3, were .20, .74 and .40 respectively for Officers and .79 and .31 for Supervisors. The low correlation of .20, between the years 1999 – 2000, may be attributable to the shift in the types of test items. The high correlations of .74 and .79, for Officers and Supervisors respectively, are likely representative of a true test-retest correlation for this sample since the tests administered during these two years were identical and were not parallel forms. Given the small sample sizes, significance in the correlations is difficult to reach. However, correlations of .74 and .79 are quite respectable and suggest that the low reliability coefficients may, in fact, be due to multi-dimensionality.

#### *The Pre-Supervisor Video Course Exam*

This step in the process, also designed to measure Declarative Knowledge, applies only to Trooper participants. The focus in this component is Declarative Knowledge as it relates to supervision and management rather than on the technical aspects of the job.

Troopers must pass a 50-item pre-supervisor test based on a 40-hour video course covering introductory management topics such as performance appraisal, situational leadership, conflict resolution, and communication. As with the Policy and Law test, Troopers must answer 70% of the questions correctly in order to continue in the process.

The internal consistency reliabilities of the Pre-supervisor Video Course range from .67 to .78, with an average of .76 across six test administrations. Data are not available for the pre-supervisor test administered in 2001 however, this test was identical to the test administered in 2000 therefore the reliability should be comparable.

Test-retest correlations with one-year intervals are very strong for the Pre-supervisor test. Three of the four correlation coefficients are nearing 1.0. The correlation between the first time the test was administered in 1997 to the second time in 1998 is rather low ( $r = .57$ ), which may be the result of a lack of adequate preparation on the part of the test takers in 1997 as they may have not known what to expect. In 1998, at the second administration of the test, the test takers would have been more familiar with the requirements and prepared more fully. Therefore, the low correlation between the 1997 scores and the 1998 scores could reflect a difference in study time. As shown in Table 4, the majority of the reliabilities are approaching the recommended level of .80. That, combined with the extremely high test-retest correlations, suggests that this test is uni-dimensional.

#### *The Certification Boards*

The third component in the process, the Certification Boards, is comprised of assessment center exercises. There are two exercises for participants of the Trooper rank and three for participants at the Line Sergeant rank and above. All participants complete a rank-

specific, written exercise developed by subject matter experts with assistance from the organization's Industrial Psychologist. In addition, participants are required to perform a role-play exercise that involves counseling a subordinate. Participants at supervisor ranks, e.g. line sergeant or above, must also complete a timed in-basket exercise, a type of exercise commonly used in managerial assessment centers.

### *Performance Appraisal*

A performance appraisal score is derived based on the individual's performance in multiple, job-related performance dimensions. For supervisors, the performance appraisal score is an average derived from the ratings assigned to 11 performance areas. Since the job analysis indicated that these 11 performance areas are common to the job of Line Sergeant, First Sergeant and Lieutenant, they are used to determine the performance appraisal score for participants in these three ranks. For Trooper participants, the performance appraisal score is the average of ratings assigned to five performance areas identified through job analysis as common to Trooper and Supervisor positions.

### *Education and Experience*

Two of the four remaining components involve assigning points based on the individual's tenure with the organization (experience points) and for completed post-baccalaureate courses (education points). Members receive one-half of a point for each undergraduate, semester-hour credit, up to a maximum of 60 points. In addition, members receive five points for earning a four-year degree. Members completing a four-year degree receive one point for each graduate, semester-hour credit, up to a maximum of 30 points. Again, members earn an additional five points for earning a graduate degree. The number of

education points that a member has earned is then assigned a weight of one-half when calculating the Total Promotion Score, resulting in a maximum education score of 50 points.

To calculate experience points, members are awarded four points for each full year of service with the organization calculated to June 30 of the year in which the promotion process is completed. Partial years of service are calculated to the nearest full month and pro-rated points are assigned. A maximum of 100 experience points can be awarded. These points are then assigned a weight of one-half when calculating the Total Promotion Score for a maximum of 50 points.

#### *Physical Fitness Assessment*

Participants may, but are not required to, complete the Cooper Physical Fitness assessment and earn an additional 10-points for scoring at or above the 60<sup>th</sup> percentile for age and gender. The physical fitness assessment has three segments, including a one-mile run. Participants must complete all three segments within the parameters determined for the 60<sup>th</sup> percentile for their age and gender in order to earn the 10 additional points. Participation in the Physical Fitness assessment is completely voluntary.

#### *Interview Boards*

The Interview Boards are the final component of the process and are conducted jointly by the Commander of the agency and the Secretary of the department governing the organization. The questions are written by the Industrial Psychologist in conjunction with members of management. The questions generally relate to broader organizational issues, such as methods that can be utilized to help the organization achieve its goals; and management issues, such as the steps that an individual would take to ensure the



development of his/her subordinates. Eligibility for the Interview Boards is determined by the subtotal of the candidate's score up to this point. Candidates that are within 150-points of the top scoring member of the same rank are eligible for an interview. To ensure that a sufficient number of candidates are interviewed the minimum number of interviews conducted, by rank, are as follows: 70 Troopers, 50 Line Sergeants, and 20 First Sergeants. Any candidate that falls outside of this range is no longer eligible to continue in the promotion process.

#### *Calculating the Promotion Score*

The total unweighted score for each component, with the exception of the physical fitness assessment, is 100. Each of the components is weighted and the maximum number of points that any participant may receive is 1210, including the ten additional points for the physical fitness assessment. Table 1 shows the weights assigned to each component as well as the maximum number of points that may be assigned to each component in the promotion process. Table 5 details the calculation of the Total Promotion Score for a Trooper with 10 years' experience and a four-year degree who scored higher than the 60<sup>th</sup> percentile in the physical fitness assessment.

#### *Sample*

The job performance data needed for this study was obtained by asking lieutenants to complete a Performance Rating Form for each first and second level line supervisor under their command. The items contained in the rating form were designed to measure the three broad categories of job performance; namely task, citizenship and counterproductive performance, as well as the performance dimensions identified through a previous job

analysis. A detailed description of the development of the rating form will be provided in a later section.

Two sets of raters, both in distinct supervisory roles, provided ratings of task performance, citizenship performance, counterproductive performance and overall job performance for first and second line supervisors promoted through the promotion process described. The inclusion of rating source as a moderator in the three-component definition of overall job performance may help to expand our understanding of the complex nature of managerial job performance and the effect of rating source on the model.

A total of 16 lieutenants, two from each of eight troops, served as the evaluating supervisors. These lieutenants provided performance ratings of the line sergeants and first sergeants stationed in their Troop. There are currently 116 line sergeants and 51 first sergeants assigned across the eight troops. In order to maximize the sample size, two first sergeants that were promoted to lieutenant staff positions approximately eight months prior to the data collection were retained and evaluated on their position as first sergeants. Given that they were promoted into staff positions, would not be providing ratings on any of the supervisors in this study, and the period from promotion to data collection was relatively short, they were retained and evaluated on their performance as first sergeants. The final sample size is 169, and is comprised of 29 African Americans, 1 American Indian, and 139 Whites. Three of the 169 supervisors in the sample are female.

In an attempt to minimize rating inflation, the lieutenants were instructed that the performance ratings collected in this study would be confidential and for research purposes only. The intention here was to increase the accuracy and variability of the performance

ratings, which serve as the criterion measure in this study. The scores attained by the 152 supervisors on the components of the promotion process serve as the predictors.

As stated in the research questions, one goal of this study was to determine differences in the rating strategies of two groups of supervisors in the same organization. In this organization, troop lieutenants either perform administrative duties or operations duties. By having both lieutenants rate every line sergeant and first sergeant in his respective troop, we hoped to identify differences in the assignment of the relative weights.

### *Work Setting*

The state police organization in this study requires field personnel of equal rank to perform similar tasks. However, work settings vary widely and may impact the types of tasks performed. Members may be assigned to a district designated as 'rural' or 'urban' depending on the population density of the county in which the district is located. Districts also vary by traffic patterns and traffic density. Traffic pattern is a dichotomous variable and is operationalized as whether the District in question has an Interstate Highway that passes through it. Traffic Density is measured by the number of vehicle miles traveled (VMT) daily on different types of roads (e.g. interstate, public access routes, connectors etc.) by motorists in that District.

Although all officers of the same rank are required to perform the same tasks, the types of tasks performed more frequently and the situations that an officer is likely to come into contact with varies by population density, traffic pattern and traffic density. For example, an officer working on a section of Interstate 95 is much more likely to come into contact with out-of-state travelers and a different set of circumstances than an officer

patrolling a rural part of a county that does not contain an Interstate. Given that variation in the work setting likely influences the tasks performed most frequently, it is possible that the relative weight managers assign to citizenship, task and counterproductive performance when determining overall performance level may also vary. If this is the case, then work-setting variables may, in turn, moderate the relationship between the predictors and the criterion.

### *The Rating Form*

The rating form used to gather performance ratings was developed from three sources. First, the task list resulting from a thorough job analysis conducted in 1997 of the positions of trooper, line sergeant, first sergeant and lieutenant was reviewed. Detailed information about the job analysis and resulting task list as well as the performance measurement system can be found in Wilson, Grant, Freund and Levine (1995) and Grant and Wilson (1996) respectively. Two I/O Psychology graduate students familiar with the line sergeant and first sergeant jobs sorted the tasks from the task list into two categories: task and citizenship performance. The task-related statements were then separated into two subcategories, task-technical and task-supervision, in order to determine which tasks are specific to the technical core of the job and which are more general, supervisory duties. Initial agreement between the two graduate students ranged from a low of 41.7% in the area of Selection and Training to a high of 100% in the areas of Citizenship, Knowledge and Application of Policy and Procedures, and Forms and Reports. Overall, agreement across the 11 performance dimensions was 78.9%.

A review of the categorization of the task list revealed a heavy orientation toward the technical and administrative responsibilities of line supervisors in the organization. Of the

194 tasks for which there was agreement in the initial sort, 143 were considered task-technical by the sorters. Thus, the task list developed in the job analysis certainly provided a sufficient number of technical tasks. However, there were no task statements that could be considered counterproductive, only 16 tasks were coded as citizenship by both analysts, and many of the statements considered supervision did not necessarily overlap with the definitions of leadership found in the literature.

To expand and augment the task list several sources were used. Interviews were conducted with four lieutenants in order to determine what types of behaviors would be considered counterproductive performance in this agency. Next, performance records for line sergeants and first sergeants were reviewed to identify counterproductive behaviors in which members had engaged. The research literature available on counterproductive behavior was also reviewed as were the counterproductive behaviors identified by the California Commission on POST, Patrol Officer Psychological Screening Dimensions. Using all of the information gathered, a list of 65 behavioral statements was developed that could be considered counterproductive performance.

In order to expand the leadership behaviors in the task list, materials provided by the Director of the Administrative Officers Management Program (AOMP) at NC State, research literature on leadership, and the tasks considered supervisory from the manager task list were reviewed. The resulting list consisted of 49 leadership behaviors. Lastly, the list of 16 citizenship task statements was expanded to 34 using information gathered from the research literature along with the results of a recent job analysis of a highly similar position within the organization.

Two objectives, often competing, must be realized in order to develop an effective performance rating form. The desire for the form to be comprehensive must be balanced against issues of rater fatigue. Designing a form that asks supervisors to rate each task performed by a job incumbent is sure to be long and cumbersome, thereby compromising the reliability and accuracy of the ratings. The optimum rating form, therefore, should balance the need to collect enough data to obtain a clear picture of job performance with minimizing rater fatigue.

To create an instrument that was psychometrically sound, five items for each of the 13 performance areas was desired, bringing the total number of items to 66, including a rating of overall performance. As many of the respondents in this study were rating between twenty and thirty supervisors, minimizing rater fatigue was paramount. Therefore, the total number of items was reduced to 48: approximately three items for each of ten performance areas identified in the job analysis, five items for the three broad components of job performance, and an overall job performance rating. Two additional items were included in order to evaluate the consistency of the ratings and to detract attention from the fact that only counterproductive performance items were negatively worded.

Nearly 300 unique behavioral statements had been compiled from all of the sources described above. In order to determine which statements to retain, the following steps were taken. First, task statements lacking agreement between the two job analysts were eliminated. Next, behavioral statements that appeared too similar or that overlapped with statements in other categories were removed or collapsed. The remaining 123 statements were presented to a panel of nine Subject Matter Experts (SMEs).

Two Lieutenants, three First Sergeants and three Line Sergeants were chosen to participate in the SME panel based on geographic location, ethnic background, gender, experience in a field position, and job performance. Each of the members selected had experience as field supervisors, two of the members were black and one was female. The remaining six members were white males.

The rating form and instructions were emailed to the nine SMEs along with contact information for the researcher. Participants were presented with a table containing the list of 123 statements and two blank columns. They were asked to indicate in column one the frequency and/or importance of each statement using the following scale: 5 = performed daily; 4 = performed weekly; 3 = performed less frequently than weekly but is extremely important; 2 = performed less frequently than weekly and is somewhat important; and 1 = performed less frequently than weekly and is not important.

The panel members were then asked to review the statements that they had been rated a '3' or higher in column one and to indicate if the behavior was something that most supervisors do, the best supervisors do, or the worst supervisors do, by putting an M, B, or W, respectively, in column two. Lastly, the SMEs were asked to review the statements that they had rated as B or W to determine if the most important or frequently performed tasks were included, and if the statements covered all of the possible categories of performance (i.e. citizenship, counterproductive performance, leadership and the remaining 10 performance areas used in the performance management process). Additional space was provided if the panel members felt that additional tasks were needed in order to address the performance areas adequately.

Five of the nine SME members, two black males, one female, and two white males, completed the rating form and returned it to the researcher. Of the 123 items rated by the SMEs, 116 (94.3%) averaged a rating of '3' or higher, indicating that the majority of the items captured behaviors that line supervisors perform frequently or are very important to the job. The SMEs were unanimous in their categorization of 43 of the 123 (35%) of the behaviors on the list. In total, just over half (50.5%) of the statements were categorized as "B" behaviors (the best supervisors demonstrate these), 27.6% were categorized as "W" behaviors (the worst supervisors demonstrate these) and 19.5% were categorized as "M" behaviors, indicating that most line supervisors exhibit these behaviors. Three behavioral statements were dropped as only four of the five SMEs provided categorical ratings and the categories assigned were evenly split. Two additional items were added by one SME and were retained in the final rating form. A complete summary of the subject matter expert ratings is presented in Appendix B.

The criterion established for retaining behavioral statements was an average rating of '3' or greater, and majority agreement on the categorization of the item. In order to ensure that behaviors exhibited by supervisors at all performance levels could be evaluated with this form, a mix of B, W, and M behaviors meeting the established criteria were retained.

Initially, the same 7-point rating scale used in the organization's performance appraisal process was to be used on the rating form. However, the counterproductive performance items lent themselves to a frequency scale rather than an evaluative scale since they are qualitative in nature (i.e. they are undesirable behaviors). Rather than switching scales partway through the rating form, it was decided to phrase all of the items as positive or



negative statements and use a frequency scale throughout. Thus, respondents ultimately assigned ratings indicating how often a member demonstrates a particular behavior, either positively or negatively phrased, rather than selecting ratings that indicate how well a respondent performs a task that is neutrally worded.

The final step in developing the performance evaluation rating form involved categorizing each of the behavioral statements into one of the 11 performance dimensions from the original job analysis and the two additional dimensions of counterproductive performance and leadership. The only performance dimension not represented by behavioral statements was Forms and Reports. Three behavioral statements were added that better depicted performance in this area as the initial job analysis simply listed forms that are typically completed in the execution of one's duties. The final rating form is attached as Appendix C.

### *Procedure*

The Lieutenants serving as evaluators in this study were notified prior to receipt of the rating form as to the nature of the study and what they would be asked to do. Subsequently, each Lieutenant was mailed a package containing a list of the members under their command to be evaluated, along with sufficient Rating Forms, an Informed Consent Form and instructions. The Lieutenants were also provided with several ways of contacting the researcher to ask questions. Lieutenants were asked to provide the name, rank and registry number of the person being rated as well as their own name and registry number. The registry number serves as a unique identifier in the organization and in the present study.

Participants were provided with a stamped, self-addressed envelope, addressed to the researcher's home address to alleviate any concerns about the confidentiality of the information, and to facilitate the return of the rating forms. Participants were allowed two weeks to complete the forms and return them to the researcher. All forms were completed and returned on time, that is, the return rate in this study for the performance rating forms was 100%.

### **Analyses and Results**

The analyses conducted are presented in two groups. The first group focuses on the predictive validity aspect of the study and addresses research questions one, two and three. The second group focuses on the policy-capturing aspect of the study, assessing the impact that rater position and work context have on the weights assigned to task, citizenship and counterproductive performance, and the amount of variance the model accounts for with these additional variables. These analyses address research questions four and five. Unfortunately, the sample size was not large enough to utilize structural equation modeling. Therefore, multiple-regression was the primary analysis used in this study. Where appropriate, relative weight analysis (Johnson 2000) was used to provide additional information regarding the relative weights assigned to specific variables in relation to the score or evaluation of a broader variable. The analyses conducted and their results are explained in detail in this section.

For all of the regression analyses conducted in this study, time in rank and the cumulative number of times participating in the promotion process until promoted was held constant. Members of a supervisory rank are eligible to participate in the promotion process

after having 2-years of time-in-rank as of 1 July of the promotion cycle year. Some members reach a certain rank and choose to remain there while others enter the process as soon as they meet the eligibility criteria. In addition, members are promoted in groups, typically twice annually. Therefore, the amount of experience participants in this sample have in their current rank ranges greatly, from six months to 61 months, measured from the date of promotion to December 31, 2003.

The number of times a member participates in the promotion process prior to being promoted also varies. Some members participate multiple times before they pass the hurdles, or are ranked high enough on the Published List to be promoted, whereas others are promoted after participating only once. The number of times participating in the promotion process prior to being promoted for the members in this sample ranges from one time ( $n = 57$ ) to six times ( $n = 2$ ). The majority of the members in the sample participated two ( $n = 43$ ) or three ( $n = 33$ ) times before being promoted. It is possible that there would be differences in ability and subsequent performance such that members that have to participate more times before being promoted perform at a lower level than members who are promoted after participating only once or twice in the promotion process. Therefore, the cumulative number of times that a member participated in the process prior to being promoted will be accounted for.

Not only are there are two hurdles in the promotion process, the Policy and Law test and the Pre-supervisor Video Course test, members in this sample would have been promoted after participating in different years of the promotion process. Initially, it was planned to correct for restriction of range for the two test scores, particularly for the Pre-supervisor test

with its somewhat low pass rate of about 65%. However, after collating the promotion data and recognizing that the means and standard deviations of the components varied between years, it was decided to use standardized scores in order to equalize the sample and account for these differences. The exception lies with the physical fitness component, as this is a binary variable in that a member earns 10 points for participating and achieving the 60<sup>th</sup> percentile for his/her age and gender. Members that do not participate or that do not achieve the 60<sup>th</sup> percentile are given zero points.

#### *Predictive Validity of the Promotion Process*

This section addresses research questions one through three, which are related to determining the predictive validity of the promotion process currently in use at the organization. In order to address the first research question, how well the components of the promotion process predict supervisory performance, the overall performance ratings assigned by the Lieutenants in the study, and reverse scored, were regressed on the entire set of promotion process components, represented by the Total Promotion Score. In addition, time in rank, as measured in months to December 31, 2003, and the cumulative number of times a member participated in the promotion process prior to being promoted to his/her current rank were accounted for in this model.

Since performance ratings were collected from both Administrative and Operations Lieutenants, the Overall Performance ratings from both raters were averaged in order to create a composite Overall Performance rating. Therefore, three sets of regression analyses were conducted with each of the Overall Performance Ratings serving as the criterion: one from the Administrative Lieutenant, one from the Operations Lieutenant, and the composite

score. The results indicate that the components of the promotion process account for a significant amount of variance in performance as measured by the Overall Ratings assigned by the Administrative Lieutenants (Adjusted  $R^2 = .111$ ,  $p < .001$ ) and as measured by the Composite Overall Ratings (Adjusted  $R^2 = .070$ ,  $p = .004$ ). However, the relationship with the ratings assigned by the Operations Lieutenants was not significant (Adjusted  $R^2 = .006$ ,  $p = .278$ ). The results of these analyses are presented in Table 6.

In order to determine whether a lack of variability on the part of the Operations Lieutenant ratings accounted for the difference in the significance of the models the standard deviations of the ratings of both groups were examined. Strong similarities in the standard deviations between groups were observed, and a t-test indicated that the average variability between groups was not statistically significant ( $p = .48$ ). This finding suggests that the difference in the significance of the results may be attributable to rater position.

The goal of the second research question was to identify how well the data supports the integrated model of supervisory job performance proposed. Initially, three separate multiple regression analyses were to be conducted with the individual components of the promotion process serving as the predictors and ratings of task performance, citizenship performance, and counterproductive performance, derived from the individual item ratings gathered from the lieutenants, serving as the criterion. However, the results of research question one indicated that only the relationship between the total promotion score and the administrative lieutenant performance ratings was significant, with no obvious explanation other than rater position. Therefore, the task, citizenship, and counterproductive performance ratings were derived from the administrative lieutenant ratings for this set of analyses only.

The average score for both the citizenship and counterproductive performance dimensions were derived by taking the average of the ratings of the items written to measure these dimensions. The task performance score was derived by first computing the average score for each of the 10 performance areas identified in the original task analysis plus the leadership performance area. The average dimensional ratings for these 11 performance areas were then averaged to derive the Task performance score. The items on the rating form are categorized into the appropriate performance dimension and shown in Appendix D.

The regression analyses were conducted using the scores from the promotion process components common to both the Line Sergeant and First Sergeant ranks as the predictors. The criterion variables were the task, citizenship and counterproductive performance scores. The models utilizing the task and citizenship performance scores were significant (Task: Adj.  $R^2 = .085$ ,  $p = .02$ ; Citizenship: Adj.  $R^2 = .085$ ,  $p = .018$ ). However, the model in which the counterproductive score was the criterion variable was not significant at the  $p < .05$  level (Adj.  $R^2 = .046$ ,  $p = .097$ ). Table 7 shows the results for these analyses.

The third research question to be addressed in this set of analyses is whether the components of the promotion process differentially predict the dimensional performance appraisal ratings assigned by the actual evaluating supervisors in the organization. To determine this, 11 separate regression analyses were conducted. In all cases, the components of the promotion process served as the predictors and the dimensional performance ratings assigned by supervisors in the 2003 – 2004 performance appraisal cycle for each of the 11 performance areas included in the manager performance appraisal served as the criterion.

A primary concern with the conduct of so many regression analyses containing the same predictors is the increased risk of a Type 1 error (i.e. rejecting the Null Hypothesis although it is true). An alpha level of .05 indicates that approximately one out of twenty times statistical results lead to rejecting the Null hypothesis when in fact it is true. Given that, then performing 11 regressions with the same predictors may significantly increase the probability of concluding, erroneously, a significant relationship between a predictor and the criterion when the significance is actually due to chance. One approach to reducing this possibility is to apply a Bonferroni correction, a procedure in which the alpha level is adjusted downward. How much, of course, depends on the number of variables in the regression. Although the risk of a Type 1 error would be reduced with the Bonferroni correction, the drawback is that the risk of a Type 2 error is increased (i.e. accepting the Null Hypothesis when in fact it is false).

Another approach that can be used when a large data set is available is to split the sample in two, using one half to perform the initial regression analysis and the other to confirm the previous findings. Unfortunately, the projected sample size of 200 subjects was not available to us due to incumbents having been promoted prior to the implementation of the promotion process or having retired prior to the data collection process. Therefore, the Bonferroni correction was applied to the regression analysis described in this section.

As shown in Table 8, each of the uncorrected regression models was highly significant with F-values ranging from 3.485 (df = 10, 128) in which Critical Incident Management ratings were the criterion, to 5.467 (df = 10, 128) in which the Personnel Action ratings were the criterion. On the predictor side, after accounting for time in rank and the

cumulative number of times a member participated in the promotion process, the Certification Board Situational Exercise accounted for a significant amount of variance in the Supervision and Evaluation and Special Duties performance ratings. Education accounted for a significant amount of variance in Community Relations performance ratings; and the Interview Board accounted for a significant amount of variance in Personnel Actions and Supervision and Evaluation. The Performance Appraisal Score demonstrated a significant inverse relationship with Citizenship performance ratings, as did the Physical Fitness component with Personnel Actions ratings. The cumulative number of times that a member participated in the promotion process was significantly related to only one performance dimension, special duties, and that relationship was negative.

According to the procedures for a Bonferroni correction, one must consider the average correlation between the predictors as well as the number of criterion variables in order to determine how much the alpha level must be adjusted. In this case, there are 11 variables comprising the criterion and the average correlation between the promotion process components common to both the line sergeant and first sergeants was .042. This required lowering the alpha level from .05 to .005. Hence, in order for a variable to be considered significant in any of the models described above, the t-value must be at least 2.6125 (one-sided). Of the promotion process components, two relationships met this criteria: the Situational Exercise predicted performance appraisal ratings for the dimension Supervision and Evaluation ( $t = 2.815$ ); and the Interview Board ( $t = 3.290$ ) significantly predicted actual performance appraisal ratings for the performance area labeled "Personnel Actions".



In addition, the variable “Time in Rank” accounted for a significant amount of variance in each of the regression models, with t-values ranging from 3.559 in the ‘Citizenship’ model to 6.304 in the ‘Personnel Actions’ model. These results indicate that, not surprisingly, supervisors with more time in rank receive higher performance evaluation ratings and may perform more effectively in the job. The cumulative number of times participating in the promotion process was not significant in any of the corrected models and, as stated, was significant in only the uncorrected model in which Special Duties ratings served as the criterion. Therefore, the number of times an individual participates in the promotion process prior to being promoted does not appear to be significantly related to the individual’s performance in the new rank. The results of these analyses are presented in Table 8.

#### *Policy-capturing and Relative Weight Analysis*

As previously stated, the second set of analyses focused on the policy-capturing aspect of the proposed study. In order to answer the fourth research question, whether the relative weights assigned to task, citizenship and counterproductive performance vary by rater position or work context, a rating policy was derived for each of the participants in the study using multiple regression. The individual rating strategies were then grouped by rater position and the work setting variables. Initially, three work setting variables were to be used in this study: traffic pattern, traffic density and population. However, the correlation between traffic density and population was extremely high ( $r = .996$ ), indicating that including both of these variables would be redundant. Therefore, the traffic density variable was eliminated, reducing the number of work setting variables to two, population and traffic pattern.

Overall performance ratings collected from the raters in the study served as the criterion in these analyses while the task, citizenship and counterproductive performance ratings derived from the individual item ratings served as the predictors. Summary statistics are provided for the group of raters as a whole and then separately by rater position and work context. This provides information as to whether, on average, the weights assigned to task, citizenship, and counterproductive performance vary by rater position and work context when evaluating overall job performance.

The results of these analyses indicate that, on average, the rating strategies between the Administrative Lieutenants and the Operations Lieutenants are similar but not identical. Task performance was weighted most heavily by both groups, although assigned relatively greater weight by the Administrative Lieutenants. For the Operations Lieutenants, citizenship performance weighed more heavily in their rating policies than it did for Administrative Lieutenants although neither group weighted citizenship performance as heavily as task performance, nor did they assign much relative weight to counterproductive performance when determining overall performance ratings. The summary statistics for these analyses are shown in Table 9.

In the proposal stages of this research, it was planned to group the raters in the sample by three categories of population density: rural, suburban, and urban. Information from the 2000 North Carolina Census was obtained in order to classify the duty stations to which the supervisors in the study were assigned into one of these three population categories. After reviewing the categorizations however, it was determined that so few districts could be classified as urban that it was not possible to make meaningful comparisons of rating

strategies. Therefore, the districts were separated into two categories, micropolitan areas (micro) and metropolitan areas (metro). The labels for the population density categories reflect the terminology of Core Based Statistical Areas (CBSA) as established by the U.S. Office of Management and Budget in 1993. Micro areas are those that would formerly be considered rural and, in this analysis, the metro areas include those that would have been labeled either suburban or urban.

When work setting is examined in terms of population density, task performance is again weighted most heavily for both micropolitan and metropolitan areas, with citizenship receiving about half as much weight. Counterproductive performance was weighted more heavily, and the sign is negative, in the micropolitan areas, although it received little consideration in metropolitan areas. These results are presented in Table 10.

Typically, policy-capturing studies use performance profiles of hypothetical employees that have been developed specifically for the research being conducted. In true policy-capturing studies, the performance dimension scores are designed to be uncorrelated. In the policy-capturing analysis conducted in this study, actual performance ratings collected on real, not hypothetical employees, were used. As a result, the performance dimensions are highly correlated ranging from .455 to .796 (absolute values). Johnson (2000) suggests that using the relative weight analysis described in his article does not require that the performance dimensions be uncorrelated. Therefore, additional policy-capturing analyses were conducted using the relative weight analysis.

These relative weight analyses were conducted in a 2x2 design such that relative weights were calculated for each group of lieutenants by each of the work setting variables.

The results, presented in Table 11, are contradictory to those obtained by averaging rating policies across raters. The results of the relative weight analysis indicate that rating policies differ by rater position depending on whether or not there is an interstate present. In fact, the distribution of the relative weights for Administrative Lieutenants evaluating members that work in districts without an interstate is nearly identical to that of the Operations Lieutenants evaluating members that work in districts with an interstate. The same is true for Administrative Lieutenants evaluating members that work in districts with an interstate - the distribution of weights is nearly identical to that of the Operations Lieutenants evaluating members in districts where there is no interstate present.

However, when rating strategies are examined in terms of the work setting variable, population density, we find that the distribution of relative weights between these two groups of raters are similar with one exception. Administrative Lieutenants assign greater weight to citizenship performance and much less weight to counterproductive performance when evaluating members in metropolitan areas than do Operations Lieutenants. The distribution of the sample working in these different settings is presented in Appendix E. Members are fairly equally distributed between the two population density conditions, with 48% of the sample assigned to a district in a micropolitan area and 52% of the sample assigned to a district in a metropolitan area. With regard to the distribution of members across the traffic pattern conditions, 41% work in districts in which there is no interstate present, while 59% work in districts in which there is an interstate present.

Additional regression analyses were conducted to examine the impact that rater position and work context may have on the amount of variance in job performance accounted

for by the proposed model. The model described previously, in which overall job performance ratings were regressed onto task, citizenship and counterproductive performance ratings, served as the initial model (Model 1). Next, a revised model was run that included rater position (Model 2). Model 3 included the traffic pattern variable and in Model 4, the final model, the population density variable was included. In Models 2 through 4, the rater position and context variables were added last to determine if they account for additional variance.

In order to conduct the analyses that included rater position as a variable, either the Administrative Lieutenant ratings or Operations Lieutenant ratings had to be used, but not both and not a derived composite. Therefore, for this analysis, the sample was split in half, randomly, using the function available in SPSS 12.0 (2003). The Administrative Lieutenants' ratings were used for one-half of the sample, while the Operations Lieutenants' ratings were used for the other half. The order was determined in advance of executing the split sample command.

As shown in Table 12, the initial model accounted for 34.4% of the variance in the criterion. Task and citizenship ratings were significantly related to the overall rating, yet the counterproductive performance ratings were not. Including the rater position variable in Model 2 neither increased the amount of variance accounted for, nor was the relationship between rater position and overall performance rating significant ( $p = .357$ ). The work context variable, traffic pattern, added to Model 3, increased the Adjusted  $R^2$  from .344 in the initial model to .370. In addition, the traffic pattern variable was significantly related to the overall performance rating ( $t = 2.557$ ,  $p = .012$ ). However, in the fourth and final model,

inclusion of the second work context variable, population density, failed to increase the amount of variance accounted for in the criterion. Population density was not significantly related to overall performance ( $p = .631$ ).

One question that remains to be answered is whether work context or rater position improves the predictive validity model or changes the relationship between the components of the promotion process and the criterion, overall job performance. Using ANOVA, the initial predictive validity model used to answer research question 2 was revised to include rater position, traffic pattern and population density. In order to include rater position, the split sample was used with the accompanying overall performance rating. Since the overall performance rating used in this model differs from that used previously, the initial model was re-run. The results are more favorable, accounting for 18% of the variance in supervisory performance ( $\text{Adj. } R^2 = .181$ ), 7% more than the prior model. The performance appraisal score remained the most significant predictor of supervisory performance after promotion ( $t = 3.477$ ,  $p = .001$ ) while Education demonstrated a significant, inverse relationship ( $t = -2.491$ ,  $p = .014$ ). A revised model that included only the two significant predictors, performance appraisal score and education, along with the time in rank, cumulative times participating, rater position and work setting variables accounted for, approximately, an additional three-percent of variance ( $\text{Adj. } R^2 = .209$ ). No significant interaction was found between rater position and either of the work context variables, although the interaction between population density and rater position was approaching significance ( $p = .108$ ). Given that this variable was input last in the model and still attained a p-value approaching significance suggests that there are interaction effects. Administrative Lieutenants rate the

overall performance of members working in micropolitan areas higher than those in metropolitan areas. Conversely, Operations Lieutenants assign higher overall performance ratings to those in metropolitan areas. These results are presented in Table 13.

In the proposal stages of this research, Hierarchical Linear Modeling (HLM) was proposed as an analytical method as HLM can provide a more powerful test to determine whether rater characteristics are predictive of their rating policies than multiple regression. Although Rotundo and Sackett (2002) found that certain demographic variables were related to raters' policies using HLM, it was decided to forego this analysis. In the Rotundo et al. study, demographic variables that were not used in other analyses in the study were used in the HLM procedures. Therefore, by using HLM they were able to gather additional information as to which variables might impact a supervisor's rating strategy. In this study however, the variables that would have been used in the HLM procedure, namely the rater position and work context variables, have already been examined using multiple regression and relative weight analysis. Therefore, it was decided to forego the HLM analysis since no new variables were to be explored.

### **Discussion**

As described previously, this study had two goals: to provide an organization with information regarding the predictive validity of its promotion process; and to contribute to the research on integrated job performance models. These goals are not mutually exclusive however, and where possible links between these two endeavors have been made. To increase the readability of the document, the discussion of the results will follow the same order as the presentation of the research questions and analyses, such that the results

pertaining to the predictive validity study will be discussed first, followed by the results pertaining to models of job performance.

#### *Predictive Validity of the Promotion Process*

The promotion process in use at this state police organization may account for nearly 21% of the variability in supervisor performance ratings, when time rank and the number of times participating in the promotion process are included in the model. This is not a particularly noteworthy result, although it is statistically significant and does support the validity of the promotion process. It should be noted, however, that the results were obtained without correcting for unreliability in the predictors or the criterion, and with no corrections for range restriction.

Results from the predictive validity analyses suggest that experience may be the best predictor of supervisory performance. Several variables that are related to experience were determined to have the strongest relationships with supervisory performance. First, the performance appraisal score from the promotion process was the best predictor of overall performance as well as two of the three broad components of performance, task and citizenship performance, when using ratings collected for research purposes as the criterion. However, when an overall performance score derived from the most recent performance appraisal ratings served as the criterion, the relationship between the performance appraisal score was not significant in most instances. These differences may be the result of a lack of variability in the actual performance ratings, or they may be attributable to the theory that ratings collected for research purposes only tend to be more honest and less lenient than those collected for administrative purposes (Jawahar & Williams, 1997).



In addition, the cumulative number of times that a member participated in the promotion process prior to promotion was significantly related to counterproductive performance and citizenship performance, where the latter relationship was negative as would be expected. A possible explanation is that members that participate in the promotion process multiple times without qualifying for a promotion may begin to feel disgruntled and engage in counterproductive behaviors. Or, it may be that these members are already engaging in counterproductive behaviors, or at the least are failing to engage in citizenship related behaviors, thereby decreasing the likelihood of earning high enough performance appraisal ratings to qualify for a promotion. Finally, time in rank demonstrated significant relationships with task, citizenship and overall performance ratings indicating, not surprisingly, that supervisors with more experience in the current rank tend to perform better.

The organization in this study does not use overall performance ratings for promotion purposes and the promotion process was not developed to predict overall performance. Rather, the components of the promotion process are designed to differentially predict performance dimensions relevant to the supervisor job. The results indicate that the components of the promotion process predict supervisory performance fairly well. Three of the components - the Situational Exercise, the Interview Board, and Education - predicted performance in the area of Supervision and Evaluation, Special Duties, Personnel Actions and Community Relations. After the Bonferroni correction was applied, only the Situational Exercise and the Interview Board remained statistically significant. Yet, given the problems associated with using actual performance ratings as criterion ratings, the results are encouraging. Moreover, the fact that these components predicted performance in dimensions

that they were intended to predict supports both the predictive and content validity of the process.

Interestingly, Education Points demonstrated a significant relationship with the Community Relations dimension. Most likely, this relationship is the result of a common, underlying factor such as motivation. The activities associated with Community Relations involve participating in activities that are voluntary, that involve the community and that support and enhance the mission of the organization. Members that earn high ratings in the community relations dimension typically volunteer for the activities rather than being assigned them. This takes a degree of motivation because they are performed in addition to one's regular responsibilities. As for education, most of the supervisors in this sample entered the organization with little or no post-secondary education. Often, they earned their college credits by taking classes in addition to other commitments such as work and family. Therefore, a great deal of motivation is required to earn these education points.

The fact that the performance appraisal score is the strongest predictor of supervisory performance is surprising, especially given concerns with rater errors, such as leniency, that abound in law enforcement organizations. One possible explanation that would be acceptable to many is that the best predictor of future performance is past performance. The significance of the time in rank variable indicates, as suspected, that performance improves as experience increases. According to Borman et al. (1993), there may be more at work in this situation than time. Borman et al. found that individuals demonstrating ability are given more opportunities to gain supervisory experience, and that experience has a greater impact on supervisory performance than cognitive ability. It is conceivable that the supervisors in this

study receiving the highest performance appraisal ratings were high performers before being promoted and as such, they were afforded opportunities to develop the skills necessary to perform well in the next rank. That could explain why none of the components supposed to measure cognitive ability, such as the policy and law test or the written exercise of the certification boards, were significant.

One implication of the predictive ability of the performance score is that organizations that are willing to devote the time and effort to develop, administer, manage and evaluate a performance management process may be able to comfortably use performance appraisal ratings to determine administrative decisions, such as promotions. Practically speaking however, one must consider the cost for this return, which at the organization in question is significant. Newly promoted supervisors receive two full days of performance management training and current supervisors through the rank of Lieutenant receive one full day of refresher training annually. Ratings are monitored for rater error, especially leniency for those participating in the promotion process. For each of the three ranks evaluated under the performance management process, a three-member panel reviews the documentation for all ratings of '1' and '7', the highest and lowest possible ratings respectively, and makes recommendations as to the actual rating that should be assigned based on the documentation. Affected members and the supervisor that completed the performance appraisal are notified of the recommended change, and invited to submit additional information or documentation to support the rating. If no additional documentation is submitted, or the documentation is insufficient to sustain the rating, the rating

recommended by the review panel is applied. Members are then afforded an opportunity to appeal the change through the Patrol Commander.

In addition to personnel costs, there are the perception costs. An employee survey conducted in 2002 indicated that only 10% of respondents agreed with the statement, 'the promotion process is fair' while 70% either disagreed or strongly disagreed. The majority of respondents to that same survey also disagreed with the statement, 'members who perform better get promoted.' In 2000, when a sample of members was asked what they liked and disliked about the promotion process, respondents indicated overwhelmingly that the performance appraisal was given too much weight in the promotion process and that, as a result, the process was 'unfair.'

To summarize, the results of the predictive validity analyses generally support the use of the current promotion process in this organization. Overall, the total promotion score accounts for a modest, but statistically significant, amount of variance in supervisory performance; and some of the individual components are predictive of their intended performance dimensions. There are limitations with the predictive validity research. Of primary concern is the 'criterion problem.' Using performance ratings as the only criterion measure is somewhat limiting. There may be other aspects of supervisory performance that are not captured particularly well by the performance ratings. Perhaps activity data might capture other aspects of performance, establishing validity for other components of the promotion process or strengthening the overall predictive validity.

Another potential limitation is the rating form. In order to minimize rater fatigue, three to five items were used to measure performance dimensions that, in many cases, were

supported by extensive task lists. Forming dimensional ratings from a small number of items may not accurately capture the supervisors' performance across the range of tasks associated with the dimension. Moreover, given the study's small sample size only promotion process components common to both ranks could be used as predictors, rather than utilizing rank specific components (e.g. the Pre-supervisor test). If a larger sample could be obtained, the predictive validity analysis could be rank specific, which might possibly provide more detail regarding the effectiveness of the promotion process.

*Policy-capturing and Relative Weights*

In this organization, it appears that task performance ratings and citizenship performance ratings account for the majority of variance in overall performance ratings. This is in partial contrast to the results of Rotundo and Sackett, who found that task performance and counterproductive performance accounted for the majority of variance in overall performance ratings. There are several possible explanations for the difference in results. First, the present study involved a single occupation, law enforcement, whereas the Rotundo and Sackett study involved multiple occupations. Second, raters in the present study were required to evaluate actual subordinates, whereas the Rotundo and Sackett study used a traditional policy-capturing design, requiring supervisors to evaluate 'paper' employees. Rating actual employees, particularly those employed in law enforcement, may discourage supervisors from providing true ratings of counterproductive performance. Finally, counterproductive performance behaviors range in severity from mild, such as calling in sick when not or taking inexpensive office supplies, to serious, such as larceny or vandalism. In

order to encourage supervisors to provide honest ratings, the behavioral statements designed to measure counterproductive performance were representative of mild workplace deviance.

Results are inconclusive as to whether rater position and work context influence rating strategy. Initially, when rating policies were averaged by rater position, traffic pattern and population density, it appeared that there were few differences in the rating strategies of the two types of lieutenants. Task performance was always weighted most heavily regardless of rater position, the presence of an interstate, or the population density of the area. However, relative weight analysis indicated that the rating strategies employed by the two types of lieutenants were strikingly different when evaluating members assigned to districts in which no interstate is present. In fact, they were the mirror opposites of each other.

The nature of this relationship was obscured by taking an average rating policy within work setting rather than between raters and within work setting. These results would suggest that there is an interaction between rater position and traffic pattern. Furthermore, adding the traffic pattern variable to the regression model in which task, citizenship and counterproductive performance ratings were regressed onto overall job performance ratings resulted in a slight increase of the Adjusted  $R^2$ , suggesting that traffic pattern, at the least, influences rating strategy.

The relative weight analysis also suggests that population density may either influence rating strategy on its own or interact with rater position to influence rating strategy. Recall that the Administrative Lieutenants assigned far greater weight to citizenship performance in metropolitan areas than in micropolitan areas, and more than operations

lieutenants in either type of environment. However, the regression model that included population density did not account for additional variance in the criterion ratings.

The obvious limitation of this portion of the study is insufficient data to clarify the results and evaluate the interactions. Additional data should be collected and analyzed in order to determine the influence that rater position and work context have on an evaluator's rating strategy. The sample size could be expanded by collecting data from the 2004 and 2005 promotion processes. In addition, collecting data on all first sergeants regardless of whether they were promoted through the promotion process or before its implementation would also expand the sample size and may help clarify the results.

Moreover, asking the actual rating supervisors to code their position as operations or administrative lieutenant when submitting first sergeant performance appraisal ratings would allow the actual performance data to be examined for differences in rating strategy by position and by work context. This would not result in an increased sample size but it may provide useful information since the supervisor would actually be rating his direct report and presumably, would be familiar with the subordinate's performance.

#### *Integrating the Model*

The results of this study suggest that rater position and work context may influence both the predictor and criterion sides of an integrated model of job performance for supervisors in statewide law enforcement organizations, particularly if performance appraisal ratings are an integral part of administrative decisions. Policy-capturing analysis suggests that an evaluating supervisor's rating policy may be influenced by his/her position and by the setting in which the subordinate's work takes place. Experience, operationalized as time in

rank and performance appraisal ratings, appears to be the best predictor of future supervisory performance. Given that the direct supervisor often controls or greatly influences the experiences available to the individual as well as his/her performance evaluation, continuing to provide extensive managerial and leadership training through AOMP may enhance the supervisors' ability to develop his/her subordinates.

The influence of rater position and work environment is suggested on the criterion side of the model as well and reasonably so. Logically, one would expect that supervisors with different roles and responsibilities would differentially value various aspects of subordinate performance. Requiring administrative and operations lieutenants to complete, jointly, the performance ratings for their first sergeant subordinates may provide a fuller, and perhaps more accurate picture, of his/her job performance

A major limitation of this study is insufficient data to utilize structural modeling. The opportunity to include the rater position and work context variables in an integrated model of job performance would provide information that could result in practical accomplishments for the organization in question. In addition, it would add to the research on integrated models of job performance, which judging from the results obtained from this study are more complex than previously imagined. An additional limitation is the fact that performance ratings were used in both the predictor and criterion sides of the model, which could account for the strong, predictive relationship of the performance appraisal score from the promotion process. It may be that method variance is accounting for the strong relationship. Future research should include multiple measures of job performance and a sample size large



enough to support the use of structural equation modeling techniques in order to enhance our understanding of integrated models of supervisory job performance.

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Table 1. Components of the promotion process and their weights

Component	Trooper		Supervisor	
	weight	Total weighted points	weight	Total weighted points
Policy & Law test	1.0	100	2.0	200
Pre-supervisor test	1.0	100	--	--
Certification Boards	3.0	300	3.0	300
Interview Boards	1.0	100	1.0	100
Performance Appraisal	4.0	400	5.0	500
Education points	.5	50	.5	50
Experience points	.5	50	.5	50
Physical Fitness	1.0	10	1.0	10
Total Possible Points		1210		1210

Table 2. Integrated Model of Performance: constructs and manifest variables

<i>Construct/predictor</i>	<i>Construct/criterion</i>
<p>Cognitive Ability</p> <ul style="list-style-type: none"> <li>• Policy and Law Test</li> <li>• Pre-supervisor Test</li> <li>• Certification Boards</li> <li>• Performance Appraisal Score</li> </ul>	<p>Task Performance</p> <ul style="list-style-type: none"> <li>• Task Ratings assigned</li> </ul> <p>Citizenship Performance</p> <ul style="list-style-type: none"> <li>• Citizenship Ratings assigned</li> </ul> <p>Counterproductive Performance</p> <ul style="list-style-type: none"> <li>• Counterproductive Ratings assigned</li> </ul>
<p>Experience</p> <ul style="list-style-type: none"> <li>• Experience Points</li> <li>• Certification Boards</li> <li>• Performance Appraisal Score</li> </ul>	<p>Overall Performance</p> <ul style="list-style-type: none"> <li>• Overall Ratings assigned</li> <li>• Composite derived from actual performance appraisal ratings</li> </ul>
<p>Personality</p> <ul style="list-style-type: none"> <li>• Interview</li> <li>• Education Points</li> <li>• Physical Fitness Assessment</li> </ul>	

Table 3. Reliability coefficients for Policy and Law tests

	Trooper to Sergeant		Sergeant to First Sergeant	
	Total 100 items	Test-retest	Total 100 items	Test-retest
1997	.78 (n=198)	--	.79 (n=61)	
1998	.73 (n=56)	--	Not available	--
1999	.69 (n=54)	--	.73 (n=18)	--
2000	.65 (n=82)	.20 (n=5)	.72 (n=44)	--
2001	.78 (n=89)	.74 (n=5)	Not available	.73 (n=4)
2002	.75 (n=81)	.40 (n=9)	.58 (n=42)	.31 (n=6)
2003	.67 (n=105)	--	.57 (n=45)	--

Table 4. Reliability coefficients for Pre-supervisor Video Course test

	KR20	Test-retest
1997	.67 (n=214)	
1998	.79 (n=93)	.52 (n=17)
1999	.79 (n=90)	.97 (n=7)
2000	.76 (n=58)	.99 (n=3)
2001	Not available	Not available
2002	.76 (n=82)	.99 (n=3)
2003	.78 (n=113)	Not Available <sup>a</sup>

<sup>a</sup> Test-retest reliability could not be calculated as the Pre-supervisor course and test were completely revised for the 2003 promotion process

Table 5. Calculating the Total Promotion Score

Component	Raw Score	Trooper Weight	Total Weighted Points
Policy & Law test	80	1.0	80
Pre-supervisor test	72	2.0	144
Certification Boards	70	3.0	210
Interview Boards	84	1.0	84
Performance Appraisal	85	4.0	340
Education points	65	.5	32.5
Experience points	40	.5	20
Physical Fitness	10	1.0	10
Total Promotion Score			920.50

Table 6. Summary of Regression Analysis for Research Question 1

Predictor:	B	t	Adj R <sup>2</sup>	F	df
Criterion: Administrative Lieutenants Overall Performance Rating					
Model 2			.111	6.888***	3, 138
Time in Rank	.220	2.726			
Cumulative Times in Process	-.223	-2.801***			
Total Promotion Score	.231	2.872**			
Criterion: Operations Lieutenants Overall Performance Rating					
Model 3			.006	1.298	3, 138
Time in Rank	.095	1.110			
Cumulative Times in Process	-.048	-.574			
Total Promotion Score	.146	1.709			
Criterion: Composite Overall Performance Rating					
Model 1			.070	4.553**	3, 138
Time in Rank	.183	2.213*			
Cumulative Times in Process	-.158	-1.944*			
Total Promotion Score	.218	2.646**			

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

Table 7. Relationship between predictors and three broad components of job performance

Model	Predictors	B	t	Adj R <sup>2</sup>	F	df
Criterion: Administrative Lieutenants Task Performance Ratings						
Model 1				.085	2.232*	10, 131
	Time in Rank	.095	.965			
	Cumulative Times in Process	-.171	-1.899			
	Policy and Law Test	.080	.867			
	CBT – Situational	-.015	-.173			
	CBT - Written	-.138	-1.516			
	Performance Appraisal Score	.336	3.190***			
	Education Points	-.058	-.650			
	Experience Points	-.019	-.190			
	Interview Score	.055	.599			
	Physical Fitness Assessment	-.022	-.261			

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

Table 7 (continued)

Model	Predictors	B	t	Adj R <sup>2</sup>	F	df
Criterion: Administrative Lieutenants Citizenship Performance Ratings						
Model 2				.085	2.270**	10, 138
	Time in Rank	.039	.396			
	Cumulative Times in Process	-.228	-2.576*			
	Policy and Law Test	.083	.906			
	CBT - Written	-.035	-.394			
	CBT - Situational	-.047	-.528			
	Performance Appraisal Score	.253	2.442*			
	Education Points	-.087	-.996			
	Experience Points	-.118	-1.173			
	Physical Fitness Assessment	.067	.784			
	Interview	.072	.800			



Table 7 (continued)

Model	Predictors	B	t	Adj R <sup>2</sup>	F	df
Criterion: Administrative Lieutenants Counterproductive Performance Ratings						
Model 3				.046	1.660	10, 138
	Time in Rank	.124	1.254			
	Cumulative Times in Process	.241	2.671***			
	Policy and Law Test	-.065	-.698			
	CBT - Written	-.098	-1.091			
	CBT - Situational	.157	1.729			
	Performance Appraisal Score	-.081	-.772			
	Education Points	.043	.478			
	Experience Points	.015	.150			
	Physical Fitness Assessment	-.071	-.772			
	Interview	.030	.346			

Table 7 (continued)

Model	Predictors	B	t	Adj R <sup>2</sup>	F	df
Criterion: Operations Lieutenant Task Performance Ratings						
Model 7				-.003	.954	10, 135
	Time in Rank	-.104	-1.055			
	Cumulative Times in Process	.071	.787			
	Policy and Law Test	.004	.048			
	CBT – Situational	.010	.113			
	CBT - Written	-.142	-1.639			
	Performance Appraisal Score	-.136	-1.290			
	Education Points	.039	.434			
	Experience Points	.073	.708			
	Interview Score	-.003	-.029			
	Physical Fitness Assessment	-.099	-1.047			

Table 7 (continued)

Model	Predictors	B	t	Adj R <sup>2</sup>	F	df
Criterion: Operations Lieutenant Citizenship Performance Ratings						
Model 8				-.015	.770	10, 142
	Time in Rank	-.019	-.198			
	Cumulative Times in Process	-.008	-.093			
	Policy and Law Test	-.001	-.006			
	CBT - Situational	.071	.792			
	CBT - Written	-.078	-.909			
	Performance Appraisal Score	-.193	-1.871			
	Education Points	.002	.024			
	Experience Points	.115	1.122			
	Interview Score	-.005	-.064			
	Physical Fitness Assessment	-.098	-1.061			

Table 7 (continued)

Model	Predictors	B	t	Adj R <sup>2</sup>	F	df
Criterion: Operations Lieutenant Counterproductive Performance Ratings						
Model 9				-.040	.425	10, 141
	Time in Rank	-.111	-1.132			
	Cumulative Times in Process	.070	.786			
	Policy and Law Test	.042	.462			
	CBT - Situational	.054	.592			
	CBT - Written	-.011	-.122			
	Performance Appraisal Score	-.127	-1.208			
	Education Points	.052	.588			
	Experience Points	.082	.783			
	Interview Score	.050	.577			
	Physical Fitness Assessment	.000	-.003			

Table 8. Summary of Regression Analyses for Research Question 3

Model	Predictors	B	t	Adj R <sup>2</sup>	F	df
Criterion: Citizenship						
Model 1				.169	3.819	10, 129
	Time in Rank	.324	3.559***			
	Cumulative Times in Process	-.031	-.374			
	Policy and Law Test	.061	.712			
	CBT - Written	-.098	-1.188			
	CBT - Situational	.131	1.561			
	Performance Appraisal Score	-.210	-2.174*			
	Education Points	-.044	-.535			
	Experience Points	.025	.266			
	Physical Fitness Assessment	.060	.697			
	Interview Score	.118	1.467			

\*p &lt; .05

\*\*p &lt; .01

\*\*\*p &lt; .001

Table 8 (continued)

Model	Predictors	B	t	Adj R <sup>2</sup>	F	df
Criterion: Supervision and Evaluation						
Model 2				.222	4.969	10, 129
	Time in Rank	.479	5.433***			
	Cumulative Times in Process	-.092	-1.140			
	Policy and Law Test	-.155	-1.873			
	CBT - Written	-.018	-.227			
	CBT - Situational	.229	2.815**			
	Performance Appraisal Score	-.098	-1.05			
	Education Points	-.039	-.487			
	Experience Points	-.090	-.981			
	Physical Fitness Assessment	-.047	-.564			
	Interview Score	.156	2.010*			

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

Table 8 (continued)

Model	Predictors	B	t	Adj R <sup>2</sup>	F	df
Criterion: Administrative Activities						
Model 3				.173	3.900	10, 129
	Time in Rank	.447	4.921***			
	Cumulative Times in Process	-.116	-1.393			
	Policy and Law Test	-.078	-.912			
	CBT - Written	-.021	.255			
	CBT - Situational	.024	.286			
	Performance Appraisal Score	-.003	-.029			
	Education Points	-.096	-1.165			
	Experience Points	-.133	-1.397			
	Physical Fitness Assessment	.038	-.445			
	Interview Score	.051	.641			

Table 8 (continued)

Model	Predictors	B	t	Adj R <sup>2</sup>	F	df
Criterion: Communication						
Model 4				.159	3.620	10, 129
	Time in Rank	.448	4.896***			
	Cumulative Times in Process	-.064	-.764			
	Policy and Law Test	-.174	-2.017*			
	CBT - Written	-.033	-.397			
	CBT - Situational	.117	1.382			
	Performance Appraisal Score	-.039	-.401			
	Education Points	-.054	-.645			
	Experience Points	-.005	-.055			
	Physical Fitness Assessment	.010	.121			
	Interview Score	.144	1.782			



Table 8 (continued)

Model	Predictors	B	t	Adj R <sup>2</sup>	F	df
Criterion: Knowledge and Application of Policy						
Model 5				.216	4.793	10, 128
	Time in Rank	.500	5.634***			
	Cumulative Times in Process	-.009	-.116			
	Policy and Law Test	-.075	-.901			
	CBT - Written	-.032	-.398			
	CBT - Situational	.076	.932			
	Performance Appraisal Score	-.038	-.400			
	Education Points	-.101	-1.252			
	Experience Points	.009	.096			
	Physical Fitness Assessment	.033	.394			
	Interview Score	.101	1.289			

Table 8 (continued)

Model	Predictors	B	t	Adj R <sup>2</sup>	F	df
Criterion: Community Relations						
Model 6				.174	3.918	10, 129
	Time in Rank	.487	5.370***			
	Cumulative Times in Process	-.076	-.908			
	Policy and Law Test	-.083	-.969			
	CBT - Written	-.044	.530			
	CBT - Situational	.107	1.275			
	Performance Appraisal Score	.106	1.101			
	Education Points	.198	2.397*			
	Experience Points	-.053	-.559			
	Physical Fitness Assessment	-.069	-.800			
	Interview Score	.132	1.653			

Table 8 (continued)

Model	Predictors	B	t	Adj R <sup>2</sup>	F	df
Criterion: Forms and Reports						
Model 7				.192	4.312	10, 129
	Time in Rank	.440	4.900***			
	Cumulative Times in Process	-.082	-.993			
	Policy and Law Test	.004	.049			
	CBT - Written	-.008	-.096			
	CBT - Situational	-.040	-.480			
	Performance Appraisal Score	-.101	-1.059			
	Education Points	-.025	-.301			
	Experience Points	-.054	-.574			
	Physical Fitness Assessment	-.026	-.312			
	Interview Score	.070	.888			

Table 8 (continued)

Model	Predictors	B	t	Adj R <sup>2</sup>	F	df
Criterion: Personnel Actions						
Model 8				.245	5.467	10, 128
	Time in Rank	.548	6.304***			
	Cumulative Times in Process	-.054	-.680			
	Policy and Law Test	-.077	-.944			
	CBT - Written	-.026	-.329			
	CBT - Situational	.146	1.807			
	Performance Appraisal Score	.032	.347			
	Education Points	-.036	-.457			
	Experience Points	-.096	-1.048			
	Physical Fitness Assessment	-.182	-2.206*			
	Interview Score	.253	3.290***			

Table 8 (continued)

Model	Predictors	B	t	Adj R <sup>2</sup>	F	df
Criterion: Special Duties						
Model 9				.211	4.725	10, 128
	Time in Rank	.459	5.171***			
	Cumulative Times in Process	-.178	-2.182*			
	Policy and Law Test	-.135	-1.623			
	CBT - Written	-.021	-.259			
	CBT - Situational	.201	2.456*			
	Performance Appraisal Score	-.123	-1.308			
	Education Points	-.036	-.442			
	Experience Points	.066	.715			
	Physical Fitness Assessment	.014	.164			
	Interview Score	.138	1.772			

Table 8 (continued)

Model	Predictors	B	t	Adj R <sup>2</sup>	F	df
Criterion: Critical Incident Management						
Model 10				.153	3.485	10, 128
	Time in Rank	.504	5.471***			
	Cumulative Times in Process	.020	.240			
	Policy and Law Test	-.084	-.973			
	CBT - Written	.059	.701			
	CBT - Situational	-.011	-.129			
	Performance Appraisal Score	.057	.581			
	Education Points	.088	1.049			
	Experience Points	.050	.520			
	Physical Fitness Assessment	-.098	-1.123			
	Interview Score	.031	.377			

Table 8 (continued)

Model	Predictors	B	t	Adj R <sup>2</sup>	F	df
Criterion: Selection and Training						
Model 11				.163	3.710	10, 129
	Time in Rank	.440	4.820***			
	Cumulative Times in Process	-.074	-.879			
	Policy and Law Test	.006	.064			
	CBT - Written	.052	.629			
	CBT - Situational	.004	.046			
	Performance Appraisal Score	-.111	-1.140			
	Education Points	.023	.279			
	Experience Points	.027	.285			
	Physical Fitness Assessment	-.083	-.962			
	Interview Score	.101	1.249			

Table 9. Average rating policy by rater position

Variable	Administrative Lieutenants	Operations Lieutenants
<b>Task Performance</b>		
Mean rating	4.32	4.56
SD	.44	.50
Range	3.00 – 5.32	2.74 – 5.68
% significant coefficients	50	62.5
Mean standardized beta	.656	.572
<b>Citizenship Performance</b>		
Mean rating	4.91	4.93
SD	.69	.78
Range	2.80 – 6.00	2.40 – 6.00
% significant coefficients	37.5	37.5
Mean standardized beta	.212	.349
<b>Counterproductive Performance</b>		
Mean rating	1.92	1.76
SD	.54	.56
Range	1.00 – 3.67	1.00 – 4.00
% significant coefficients	25	12.5
Mean standardized beta	-.003	.03



Table 9 (continued)

Variable	Administrative Lieutenants	Operations Lieutenants
Overall Job Performance		
Mean Rating	4.97	4.99
SD	.96	.91
Range	2.00 – 7.00	3.00 – 7.00

Table 10. Average rating policy by work setting

Variable	Traffic Pattern		Population	
	No Interstate	Interstate	Micro	Metro
<b>Task Performance</b>				
Mean rating	4.45	4.43	4.42	4.45
SD	.37	.41	.44	.36
Range	3.21 – 5.21	3.32 – 5.34	3.21 – 5.26	3.66 – 5.34
% Significant coefficients	33	33	29	67
Mean standardized beta	.89	.424	.530	.714
<b>Citizenship Performance</b>				
Mean rating	4.89	4.92	4.86	4.95
SD	.37	.62	.62	.58
Range	3.20 – 5.90	3.30 – 6.00	3.20 – 5.90	3.50 – 6.00
% Significant coefficients	0	17	0	17
Mean standardized beta	-.206	.334	.226	.387

Table 10 (continued)

Variable	Traffic Pattern		Population	
	No Interstate	Interstate	Micro	Metro
Counterproductive Performance				
Mean rating	1.83	1.85	1.91	1.79
SD	.39	.43	.45	.37
Range	1.08 – 3.17	1.00 – 3.08	1.00 – 3.17	1.08 – 3.08
% Significant coefficients	33	0	0	0
Mean standardized beta	-.379	-.016	-.17	.09
Overall Performance				
Mean rating	4.80	5.11	4.92	5.04
SD	.78	.82	.86	.77
Range	3.00 – 6.50	3.50 – 7.00	3.00 – 7.00	3.50 – 7.00

Table 11. Relative weight analysis

Variable	Administrative Lieutenants		Operations Lieutenants	
	R <sup>2</sup> = .620		R <sup>2</sup> = .528	
	Relative Weights as % of R <sup>2</sup>		Relative Weights as % of R <sup>2</sup>	
Task Performance	43.6		41.4	
Citizenship Performance	47.0		42.4	
Counterproductive Performance	9.4		16.3	
	Traffic Pattern			
	No Interstate	Interstate	No Interstate	Interstate
	R <sup>2</sup> = .754	R <sup>2</sup> = .556	R <sup>2</sup> = .576	R <sup>2</sup> = .594
Task Performance	48.5	38.6	37.5	46.1
Citizenship Performance	36.8	53.7	52.9	35.5
Counterproductive Performance	14.8	7.7	9.6	18.4
	Population Category			
	Micro	Metro	Micro	Metro
	R <sup>2</sup> = .729	R <sup>2</sup> = .500	R <sup>2</sup> = .502	R <sup>2</sup> = .557
Task Performance	44.6	32.3	45.5	38.1
Citizenship Performance	36.2	64.4	41.9	42.2
Counterproductive Performance	19.2	3.3	12.6	19.7

Table 12. Summary of Regression Analyses

Model	Predictor	B	t	Adjusted R <sup>2</sup>	F	df
Criterion: Overall Performance Rating						
Model 1: Initial Model				.344	18.980	4, 133
	Time in Rank	.147	2.098			
	Task Performance	.199	1.957			
	Citizenship Performance	.331	2.992			
	Counterproductive Performance	-.114	-1.295			
Model 2: Revised Model				.343	15.325	5, 132
	Time in Rank	.151	2.154			
	Task Performance	.239	2.153			
	Citizenship Performance	.298	2.558			
	Counterproductive Performance	-.127	-1.425			
	Rater Position	-.070	-.901			

Table 12 (continued)

Model	Predictor	B	t	Adjusted R <sup>2</sup>	F	df
Criterion: Overall Performance Rating						
Model 3: Revised Model				.370	14.396	6, 131
	Time in Rank	.135	1.963			
	Task Performance	.268	2.452			
	Citizenship Performance	.282	2.473			
	Counterproductive Performance	-.129	-1.473			
	Rater Position	-.070	-.925			
	Traffic Pattern	.175	2.557			
Model 4: Revised Model				.366	12.300	7, 130
	Time in Rank	.138	1.994			
	Task Performance	.266	2.421			
	Citizenship Performance	.283	2.474			
	Counterproductive Performance	-.133	-1.511			
	Rater Position	-.071	.938			
	Traffic Pattern	.183	2.591			
	Population Density	-.034	-.481			

Table 13. Analysis of Variance

Source	df	F	Adjusted R <sup>2</sup>
Criterion: Overall Performance Rating			
			.219
Time in Rank	1	11.583***	
Cumulative Times in Process	1	7.692**	
Performance Appraisal Score	1	20.702***	
Education	1	5.839*	
Rater Position	1	.003	
Population Density	1	.589	
Rater Position * Population Category	1	2.618†	
Error	144		

\*p < .05  
 \*\*p < .01  
 \*\*\*p < .001  
 † p = .108

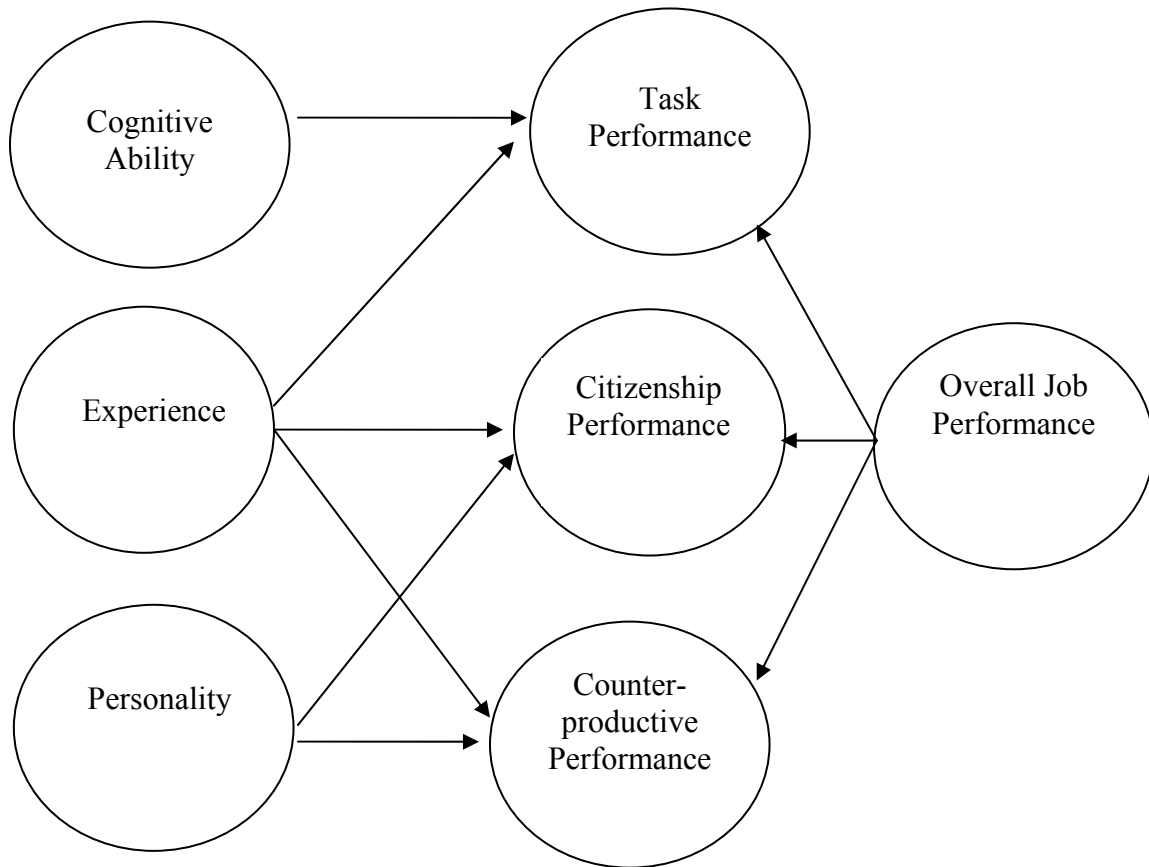


Figure 1. Three-dimensional model of job performance



## **Appendices**

Appendix A. Factor structure of promotion process components common to both ranks

Factor 1: Procedural Knowledge (Doing the Job)		22.895% variance
Performance Appraisal Score	.734	
Experience	.727	
Situational Exercise (Certification Board)	.622	
 Factor 2: Motivation		 15.895% variance
Physical Fitness Assessment	.843	
Interview Board	.533	
Education	.443	
 Factor 3: Declarative Knowledge (Knowing the Job)		 14.854% variance
Policy and Law Test	.782	
Written Exercise (Certification Board)	.563	

## Appendix B. Summary of SME Panel Results

<b>BEHAVIOR</b>	<b>MODE</b>	<b>Avg.</b>
Performs duties without constant supervision or instructions	M	5
Displays initiative in completing his/her own work	B	4.75
Demonstrates cooperation with peers	B	4.5
Applies extra effort to complete tasks that benefit the organization, whether assigned to him or someone else	B*	4.5
Makes sure the job is done correctly rather than just going thru the motions	M	4.5
Consistently displays high levels of integrity, honesty and fairness	B	4.5
Demonstrates self-confidence, self-assurance	B	4.5
Treats all members with tact and impartiality	B*	4.5
Works effectively with others to accomplish goals (teamwork)	B	4.25
Willing to work overtime when necessary	M	4.25
Honors and follows through on commitments, even when inconvenient/unpleasant	B	4.25
Encourages others verbally and in gestures in their prof. and personal endeavors	B	4.25
Empowers subordinates, receptive to ideas, involves them in making decisions	B*	4.25
Shows respect for rules & regulations, follows them even when no one is watching	B	4.25
Is mindful of the impact that his/her behavior has on other people's jobs	B	4.25
Does not allow personal differences to affect working relationships	B	4.25
Communicates with others in a tactful and respectful manner	B	4.25
Does not assist fellow supervisors	W*	4.25
Does not assist subordinates	W*	4.25
Shows favoritism to certain subordinates	W	4.25
Strives to meet deadlines and otherwise complete work in a timely manner	M	4.25
Ensures adequate Patrol coverage incl. but not limited to early/late calls	M	4.25
Drives in control	M	4.25
Maintains effective communication between own supervisor & subordinates	B	4.25
Makes sound judgments	M	4.25
Assumes authority	M	4.25
Produces consistently high quality work regardless of the circumstances	B*	4
Focuses on accomplishing the task rather than watching the clock	M	4
Works overtime when necessary to meet organizational needs	B	4
Does not abuse the rights of others	B	4
Acts without thinking	W*	4
Recognizes the contributions of his/her subordinates	B	4
Makes self available to subordinates	B	4
Enforces the rules of conduct	M	4
Confronts members who engage in unethical/illegal conduct	B	4

## Appendix B. continued

<b>BEHAVIOR</b>	<b>MODE</b>	<b>Avg.</b>
Gathers & critically evaluates important info before deciding on course of action	B	4
Makes extra effort to be on time for meetings and to complete tasks in a timely manner, even when personally inconvenient	M	3.75
Takes the initiative to keep abreast of the latest developments in the field	B	3.75
Volunteers to share knowledge, skills, abilities, or resources with others	B	3.75
Does not yield to temptations of bribes, favors, gratuities, or payoffs	B	3.75
Applies lessons learned from past mistakes/experiences to similar experiences.	M	3.75
"Reads" people and aware of the impact own words and behaviors have on others	B*	3.75
Able to persuade/mediate disputes and conflicts	M	3.75
Leaves own work for subordinates to complete	W*	3.75
Provides work, vacation and other schedules for subordinates	B	3.75
Ensures subordinates' reports are submitted accurately and on time	M	3.75
Ensures subordinates are informed of all new rules, regs, procedures, laws	M	3.75
Monitors subordinates adherence to the schedule		3.75
Encourages out-of-the box thinking	B*	3.75
Able to 'make the tough calls'	B*	3.75
Asks challenging questions	B*	3.75
Delegates appropriate tasks to subordinates	B	3.75
Monitors subordinates performance through observation, radio, & ride alongs	M	3.75
Takes action to prevent unethical/illegal conduct by others	B	3.75
Makes timely, sound decisions on the spot, if necessary, even in situations where information is incomplete and/or conflicting	M	3.75
Selects an approach that is optimal for the situation	B	3.75
Subordinates personal interests and advancement for good of work group/agency (teamwork)	B*	3.5
Persists with enthusiasm and extra effort when things become difficult	B*	3.5
Routinely demonstrates extremely high levels of conscientiousness (e.g. does not take extra breaks, spend large amounts of time at work on personal matters, etc.)	B	3.5
Acts as a "whistle-blower," reports blatant illegal/unethical acts by others in org	B	3.5
Demonstrates sensitivity toward the feelings and concerns of others	B	3.5
Able to use voice commands to control conflict, speaking calmly, clearly, authoritatively	B	3.5

## Appendix B. continued

<b>BEHAVIOR</b>	<b>MODE</b>	<b>Avg.</b>
Establishes & maintains effective, cooperative working relationships w/ other agencies	B	3.5
Appropriately takes control in group situations, coordinating resources, making assignments, etc.	B	3.5
Avoids asking others for assistance even when needed	W*	3.5
Blames others for own mistakes	W*	3.5
Performs job duties in a way that requires the minimum amount of effort	W	3.5
Arrives to work late	W*	3.5
Participates in unethical practices	W*	3.5
Spreads rumors or gossips about other members	W*	3.5
Uses profanity or other inappropriate language	W*	3.5
Drives recklessly and at excessive speeds	W	3.5
Succumbs to 'analysis paralysis'-unable to make decisions when options not clear	W*	3.5
Encourages subordinates to maintain physical proficiency by own example	B	3.5
Compiles evidence from complaint investigations or critical incidents	M	3.5
Develops plan of action for special assignments	M	3.5
Takes enforcement action	M	3.5
Complies with safety rules	M	3.5
Balances big picture thinking with attention to detail	B*	3.5
Keeps subordinates on track	B	3.5
Holds members accountable	B	3.5
Adapts approach to situation (e.g. forceful or enables subordinates appropriately)	B	3.5
Completes annual evaluation reports and appraisals	M	3.5
Anticipates changes in work demands and assigns/schedules personnel accordingly	B	3.5
Ahead of the pack in anticipating the future - looks over the horizon	B*	3.25
Balances personal ambitions with organizational/team goals	B*	3.25
Makes a point of getting people on board with mission and strategy	B*	3.25
Conveys an apathetic attitude by spoken word or action	W*	3.25
Breaks/bends the rules, believing that the end justifies the means	W*	3.25
Abuses privileges and benefits of the job (e.g. patrol vehicle, comp time)	W*	3.25
Is hesitant to exert influence in uncomfortable/stressful situations	W	3.25
Overbearingly takes control of situations thereby escalating tensions	W	3.25
Fails to exercise appropriate discretion in carrying out duties	W	3.25
Endangers him/herself by failing to follow safety procedures	W	3.25
Has tunnel vision, does not see the big picture when analyzing data/info	W*	3.25
Identify trends/patterns and the implications when analyzing data & info	B	3.25

## Appendix B. continued

<b>BEHAVIOR</b>	<b>MODE</b>	<b>Avg.</b>
Ensures that subordinates have necessary supplies and equipment	B	3.25
Confronts problems, even in potentially explosive situations. Doesn't back away unless tactically necessary	B	3.25
Counsels subordinates to improve their performance	B	3.25
Assesses subordinates' decisions	M	3.25
Provides feedback to subordinates on performance, decisions, actions etc.		3.25
Uses methodical, step-by-step approach to solve complex problems, as appropriate	B*	3.25
Willingly accepts & appropriately implements changes in policy, org practices, law	M	3.25
Productively uses unstructured time to identify & resolve problems or meet orgs' goals	B*	3
Takes initiative to seek & volunteer creative & innovative suggestions for improvements	B*	3
Volunteers to participate in the workings of the organization through committees, special projects, non-required but important meetings, etc.	B*	3
Does not use work time effectively, e.g. takes excessive breaks, coasts near end of shift, spends too much work time on personal matters, etc.	W*	3
Gives up or cuts corners when faced with obstacles	W*	3
Requires constant supervision and monitoring	W*	3
Sneaks out before shift is over	W*	3
Refuses to complete tasks not included specifically in his/her job description	W*	3
Verbally abuses subordinates		3
Takes effective, expedient action in crisis situations	B	3
Unhesitatingly intervenes in situations when necessary or warranted	B	3
Attends to all aspects of projects and activities to be sure they are completed	B	3
Refuses to listen to explanations from members	W	2.75
Spends too much time on unimportant/inconsequential tasks-unable to set priorities	W*	2.75
Fails to properly prepare for court appearances	W*	2.75
Loses valuable information (e.g. background investigation, complaints)	W*	2.75
Misses scheduled court appearances or other important appointments	W*	2.75
Fails to properly report damage to equipment	W	2.75
Unable/unwilling to make 'midcourse corrections' when presented w/new info	W*	2.5
Keeps subordinates informed as to what is happening in district, troop, org	B	2.5
Contacts subordinates on sick leave to check status of illness of member or family	Write in	
Attends funeral/visitation of retired/current Patrol member or their family	Write in	

\* indicates unanimous agreement

Appendix C. Rating Form

**Confidential - For Research Purposes Only**

**Evaluation Form**

Member being rated:

**Name:** \_\_\_\_\_ **Rank** \_\_\_\_\_ **Registry #** \_\_\_\_\_

Ratings completed by:

**Name:** \_\_\_\_\_ **Registry #** \_\_\_\_\_

**Check the box that best applies to your position:**

Administrative Lieutenant

Operations Lieutenant

**Rating Scale:** 1 = Very Often 2 = Often 3 = Sometimes 4 = Occasionally 5 = Rarely 6 = Never

**Part I. Circle the rating that best reflects the frequency with which this person demonstrates the level of performance described in the statement using the frequency scale shown above.**

<u>Statement</u>	<u>Rating</u>					
Provides effective work, vacation and other schedules for subordinates	1	2	3	4	5	6
Ensures adequate Patrol coverage including but not limited to early and/or late calls	1	2	3	4	5	6
Acts without thinking	1	2	3	4	5	6
Anticipates changes in work demands and assigns/schedules personnel accordingly	1	2	3	4	5	6
Takes effective, expedient action in crisis situations	1	2	3	4	5	6
Develops effective plans of action for special assignments	1	2	3	4	5	6
Can appropriately take control in group situations, coordinating resources, making assignments etc.	1	2	3	4	5	6
Applies extra effort to complete tasks that benefit the organization, whether assigned to him or someone else	1	2	3	4	5	6
Honors and follows through on commitments, even when it's inconvenient or unpleasant to do so	1	2	3	4	5	6
Produces consistently high quality work regardless of the circumstances	1	2	3	4	5	6
Displays initiative in completing his/her own work	1	2	3	4	5	6
Maintains effective communication between his/her own supervisor and his/her subordinates	1	2	3	4	5	6
Does not provides training, or provides ineffective training, to subordinates during ride-alongs or other types of observation	1	2	3	4	5	6
Keeps subordinates informed as to what is happening in the district, troop or org	1	2	3	4	5	6
Makes self available to subordinates to answer questions or discuss concerns	1	2	3	4	5	6
Fails to assist fellow supervisors	1	2	3	4	5	6
Complies with safety rules	1	2	3	4	5	6
Drives in control	1	2	3	4	5	6
Willingly accepts and appropriately implements changes in policy, organizational practices and law	1	2	3	4	5	6
Attends funeral/visitation of retired Patrol members or their family or current Patrol member's family	1	2	3	4	5	6
Takes enforcement action when appropriate	1	2	3	4	5	6
Volunteers to participate in the workings of the organization through committees, special projects, non-required but important meetings, etc.	1	2	3	4	5	6

**\*\*\*\*\*Please go on to the next page\*\*\*\*\***



**Rating Scale:** 1 = Very Often 2 = Often 3 = Sometimes 4 = Occasionally 5 = Rarely 6 = Never

<u>Statement</u>	<u>Rating</u>					
Arrives to work late	1	2	3	4	5	6
Empowers subordinates, is receptive to the ideas of subordinates, or involves them in making decisions	1	2	3	4	5	6
Treats all members with tact and impartiality	1	2	3	4	5	6
Fails to assist subordinates	1	2	3	4	5	6
Recognizes the contributions of his/her subordinates	1	2	3	4	5	6
Completes appropriate forms required by the situation (e.g. Form 19, HP 721)	1	2	3	4	5	6
Consistently completes forms with few or no errors	1	2	3	4	5	6
Leaves own work for subordinates to complete	1	2	3	4	5	6
Consistently enters information into the CAD with few or no errors	1	2	3	4	5	6
Politely answers questions from the public, even in adverse or difficult circumstances	1	2	3	4	5	6
Voluntarily participates in community related activities that support or further the mission of the Highway Patrol	1	2	3	4	5	6
Provides effective training to subordinates during ride-alongs or other types of observation	1	2	3	4	5	6
Recommends appropriate actions to resolve trainee performance problems	1	2	3	4	5	6
Conducts applicant background checks in a thorough and timely fashion	1	2	3	4	5	6
Proactively mediates disputes and conflicts	1	2	3	4	5	6
Confronts members who engage in unethical/illegal conduct	1	2	3	4	5	6
Takes appropriate and effective disciplinary action against subordinate officers who are not operating effectively	1	2	3	4	5	6
Spreads rumors or gossips about other members	1	2	3	4	5	6
Succumbs to ‘analysis paralysis’ – the inability to make decisions when options are not clear cut or obvious	1	2	3	4	5	6
Makes a point of getting people on board with the mission and strategy	1	2	3	4	5	6
Recognizes the contributions of his/her subordinates in a sincere manner, often citing specific examples of their work or accomplishments	1	2	3	4	5	6
Makes timely, sound decisions on the spot, if necessary, even in situations where information is incomplete and/or conflicting	1	2	3	4	5	6

**\*\*\*\*\*Please go on to the next page\*\*\*\*\***

**Part II. Please circle the number that best represents the member's OVERALL job performance using the expectations scale shown above:**

---

This member's OVERALL Job Performance can best be described as:

1      2      3      4      5      6      7

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## Appendix D. Performance Dimensions and Behavioral Statements

### Administrative Activities

- Item 1 – Provides effective work, vacation and other schedules for subordinates
- Item 2 – Ensures adequate Patrol coverage including, but not limited to, early and/or late calls
- Item 4 – Anticipates changes in work demands and assigns/schedules personnel accordingly

### Critical Incident Management

- Item 5 – Takes effective, expedient action in crisis situations
- Item 6 – Develops effective plans of action for special assignments
- Item 7 – Can appropriately take control of group situations; coordinating resources, making assignments etc.
- Item 45 – Plans developed for Special Assignments are incomplete or not well thought out

### Counterproductive Performance

- Item 3 – Acts without thinking
- Item 16 – Fails to assist fellow supervisors
- Item 23 – Arrives to work late
- Item 26 – Fails to assist subordinates
- Item 30 – Leaves own work for subordinates to complete
- Item 40 – Spreads rumors or gossips about other members

### Citizenship

- Item 8 – Applies extra effort to complete tasks that benefit the organization, whether assigned to him or someone else
- Item 9 – Honors and follows through on commitments, even when it's inconvenient or unpleasant to do so
- Item 10 – Produces consistently high quality work regardless of the circumstances
- Item 11 – Displays initiative in completing his/her own work
- Item 46 – Arrives to work on time

### Communication

- Item 12 – Maintains effective communication between his/her own supervisor and his/her subordinates
- Item 14 – Keeps subordinates informed as to what is happening in the district, troop or organization
- Item 15 – Makes self available to subordinates to answer questions or discuss concerns

### Selection and Training

- Item 13 (reverse scored) – Does not provide training, or provides ineffective training, to subordinates during ride-alongs or other types of observations
- Item 34 – Provides effective training to subordinates during ride-alongs or other types of observation
- Item 35 – Recommends appropriate actions to resolve trainee performance problems
- Item 36 – Conducts applicant background checks in a thorough and timely manner

### Knowledge and Application of Policies and Procedures

- Item 17 – Complies with safety rules
- Item 18 – Drives in control
- Item 19 – Willingly accepts and appropriately implements changes in policy, organizational practices and law

### Special Duties

- Item 20 – Attends funeral/visitation of retired Patrol members or their family, or current Patrol member's family
- Item 21 – Takes enforcement action when appropriate
- Item 22 – Volunteers to participate in workings of the organization through committees, special projects, non-required but important meetings etc.

### Supervision and Evaluation

- Item 24 – Empowers subordinates, is receptive to the ideas of subordinates, or involves them in making decisions
- Item 25 – Treats all members with tact and impartiality
- Item 27 – Recognizes the contributions of his/her subordinates

### Forms and Reports

- Item 28 – Completes appropriate forms required by the situation (e.g. Form 19, HP-721)
- Item 29 – Consistently completes forms with few or no errors
- Item 31 – Consistently enters information into the CAD with few or no errors

### Community Relations

- Item 32 – Politely answers questions from the public, even in adverse or difficult circumstances
- Item 33 – Voluntarily participates in community related activities that support or further the mission of the organization

### Personnel Actions

- Item 37 – Proactively mediates disputes and conflicts
- Item 38 – Confronts members who engage in unethical/illegal conduct
- Item 39 – Takes appropriate and effective disciplinary action against subordinate officers who are not operating effectively

Leadership

- Item 41 (reverse scored) – Succumbs to ‘analysis paralysis,’ the inability to make decisions when options are not clear cut or obvious
- Item 42 – Makes a point of getting people on board with the mission and the strategy
- Item 43 – Recognizes the contributions of his/her subordinates in a sincere manner, often citing specific examples of their work or accomplishments
- Item 44 – Makes timely, sound decisions, on the spot if necessary, even in situations where information is incomplete or conflicting
- Item 47 – Encourages others verbally and in gestures in their professional and personal development

Overall Performance

- Item 48 – This member’s OVERALL Job Performance can best be described as

## Appendix E: Frequency Distributions

**ENTIRE SAMPLE (n=152)**

Work Context Variable: Traffic Pattern

	Frequency	%	Valid %	Cumulative %
No Interstate	62	40.8	40.8	40.8
Interstate	90	59.2	59.2	100.0

Work Context Variable: Population Density

	Frequency	%	Valid %	Cumulative %
Micropolitan	73	48.0	48.0	48.0
Metropolitan	79	52.0	52.0	100.0

**RATER POSITION = ADMINISTRATIVE LIEUTENANT (n=69)**

Work Context Variable: Traffic Pattern

	Frequency	%	Valid %	Cumulative %
No Interstate	27	39.1	39.1	39.1
Interstate	42	60.9	60.9	100.0

Work Context Variable: Population Density

	Frequency	%	Valid %	Cumulative %
Micropolitan	32	46.4	46.4	46.4
Metropolitan	37	53.6	53.6	100.0

**RATER POSITION = OPERATIONS LIEUTENANT (n=83)**

Work Context Variable: Traffic Pattern

	Frequency	%	Valid %	Cumulative %
No Interstate	35	42.2	42.2	42.2
Interstate	48	57.8	57.8	100.0

Work Context Variable: Population Density

	Frequency	%	Valid %	Cumulative %
Micropolitan	41	49.4	49.4	49.4
Metropolitan	42	50.6	50.6	100.0