

NAVAL POSTGRADUATE SCHOOL

Monterey, California



THESIS

THE RELATIONSHIP BETWEEN EMOTIONAL INTELLIGENCE AND LEADER PERFORMANCE

by

Michael A. Trabun

March 2002

Thesis Co-Advisors:

W. Brad Johnson
Wm R. Bowman

Approved for public release; distribution is unlimited

REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188) Washington DC 20503.				
1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE March 2002	3. REPORT TYPE AND DATES COVERED Master's Thesis	
4. TITLE AND SUBTITLE: The Relationship Between Emotional Intelligence and Leader Performance			5. FUNDING NUMBERS	
6. AUTHOR (S) Trabun, Michael A.				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval Postgraduate School Monterey, CA 93943-5000			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) N/A			10. SPONSORING / MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government.				
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release; distribution unlimited			12b. DISTRIBUTION CODE A	
13. ABSTRACT (maximum 200 words) This study reflects a comparison of the measured emotional intelligence ability to the evaluated leadership performance of 104 select male and female U.S. Naval Academy midshipmen. Binary logistical regressions were used to analyze the impact of selected explanatory variables on the probability of an individual performing effectively as a squad leader. Separate leader performance models were estimated on the members of the sample, and some significant relationships between the EIQ scores and leadership performance were found. The results of this research assessed the utility of the Mayer, Salovey, Caruso Emotional Intelligence Test, Version 2 (MSCEIT v.2) to discriminate between effective leaders as inconclusive, while some scores from the MSCEIT v.2 were found to add to the predictive validity of each of the models. Conclusions and recommendations for further research are provided. KEYWORDS: Leadership, Emotional Intelligence, Military Performance, Training, Officer Accession, Personality Type, Psychology, EI, EQ, EIQ, EQI				
14. SUBJECT TERMS Leadership, Emotional Intelligence, Military Performance, Training, Officer Accession, Personality Type, Psychology, EI, EQ, EIQ, EQI			15. NUMBER OF PAGES 133	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT UL	

THIS PAGE INTENTIONALLY LEFT BLANK

Approved for Public Release; distribution is unlimited

**THE RELATIONSHIP BETWEEN EMOTIONAL INTELLIGENCE
AND LEADER PERFORMANCE**

Michael A. Trabun
Major, United States Marine Corps
B.A., Washington State University, 1986
M.S., Capitol College, 1998

Submitted in partial fulfillment of the
requirements for the degree of

**MASTER OF SCIENCE IN
LEADERSHIP AND
HUMAN RESOURCE DEVELOPMENT**

from the

**NAVAL POSTGRADUATE SCHOOL
March 2002**

Author:

Michael A. Trabun

Approved by:

W. Brad Johnson, Thesis Co-Advisor

William R. Bowman, Thesis Co-Advisor

Douglas A. Brook, Dean
Graduate School of Business and Public Policy

THIS PAGE INTENTIONALLY LEFT BLANK

ABSTRACT

This study reflects a comparison of the measured emotional intelligence ability to the evaluated leadership performance of 104 select male and female U.S. Naval Academy midshipmen. Binary logistical regressions were used to analyze the impact of selected explanatory variables on the probability of an individual performing effectively as a squad leader. Separate leader performance models were estimated on the members of the sample, and some significant relationships between the EIQ scores and leadership performance were found. The results of this research assessed the utility of the Mayer, Salovey, Caruso Emotional Intelligence Test, Version 2 (MSCEIT v.2) to discriminate between effective leaders as inconclusive, while some scores from the MSCEIT v.2 were found to add to the predictive validity of each of the models. Conclusions and recommendations for further research are provided.

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

I.	INTRODUCTION.....	1
A.	BACKGROUND	1
B.	OBJECTIVES/PURPOSE	4
C.	RESEARCH QUESTIONS	5
D.	BENEFIT OF RESEARCH	6
E.	SCOPE, LIMITATIONS, ASSUMPTIONS.....	6
F.	ORGANIZATION OF STUDY	7
II.	LITERATURE REVIEW AND THEORETICAL FRAMEWORK	9
A.	OVERVIEW	9
B.	EMOTIONS.....	10
C.	HUMAN INTELLIGENCE	10
D.	MODELS OF EMOTIONAL INTELLIGENCE	11
E.	LEADERSHIP.....	19
F.	EI AND LEADERSHIP.....	21
G.	EI AS A PREDICTOR OF PERFORMANCE OUTCOMES	24
H.	EI AND GENDER.....	26
I.	DEVELOPING EI	30
J.	CONCLUSION	32
III.	METHODOLOGY AND DATA	35
A.	GENERAL.....	35
B.	DATA.....	37
C.	RESEARCH DESIGN	39
1.	Participants and Procedure	39
2.	EQ Model and MSCEIT v.2 Description.....	41
D.	VARIABLES	46
1.	Dependent Variable	46
2.	Explanatory Variables.....	49
E.	METHODS	57
IV.	DATA ANALYSIS	59
A.	PRELIMINARY DATA ANALYSIS	59
B.	H₁: THERE IS A RELATIONSHIP BETWEEN EI AND LEADERSHIP PERFORMANCE AT USNA AMONG MEMBERS OF THE SAMPLE.	62
1.	Model 1, Pre-USNA baseline predictors of effective Squad Leader Performance	62
2.	Model 2, Overall EI as a predictor of Squad Leader Effectiveness.....	63
3.	Model 3, Area Level EI as a predictor of Squad Leader Effectiveness.....	64

4. Model 4, Branch Level EI as a predictor of Squad Leader Effectiveness	65
5. Model 5, Task Level EI as a predictor of Squad Leader Effectiveness	66
C. H ₂ : EI AS MEASURED BY THE MSCEIT V.2 IS A MORE ACCURATE PREDICTOR OF LEADERSHIP PERFORMANCE AT USNA THAN THE MEYERS-BRIGGS TYPE INDICATOR.	67
1. Model 6, Meyers Briggs Type Indicator (MBTI) as a predictor of Squad Leader Effectiveness	67
D. SUMMARY OF DATA ANALYSIS	68
V. CONCLUSIONS AND RECOMMENDATIONS.....	69
A. CONCLUSIONS	69
B. STRENGTHS AND WEAKNESSES OF STUDY.....	71
C. RECOMMENDATIONS.....	73
D. RECOMMENDATIONS FOR FURTHER RESEARCH.....	74
APPENDIX A. DESCRIPTIVE STATISTICS	77
APPENDIX B. MEAN VALUE MARGINAL EFFECT COMPUTATIONS	79
APPENDIX C. EXCERPTS FROM MIDSHIPMAN PERFORMANCE EVALUATION SYSTEM	85
APPENDIX D. 360 DEGREE SQUAD LEADER FEEDBACK QUESTIONNAIRE FOR USNA MIDSHIPMAN, AY 2000-2001	95
APPENDIX E. MSCEIT EXAMPLE ITEMS.....	109
LIST OF REFERENCES	111
BIBLIOGRAPHY	113
INITIAL DISTRIBUTION LIST.....	115

LIST OF FIGURES

Figure 3-1. Overview of the Four-Branch Model of Emotional Intelligence	42
(Mayer & Salovey, 1997).....	42
Figure 3-2. Levels of Feedback from the MSCEIT v. 2	43
Figure 3-3. Regression Modeling Methodology.....	58
Figure C-1. Midshipmen Training Fitness Report (FITREP) p. 1	92
Figure C-2. Midshipmen Training Fitness Report (FITREP) p.2	93

THIS PAGE INTENTIONALLY LEFT BLANK

LIST OF TABLES

Table 3-1. Factors Hypothesized to Affect Leadership Ability and Performance or Emotional Intelligence.	39
Table 3-2. Reliability of the MSCEIT v. 2 and its Sub Areas and Branches (Mayer, Salovey, & Caruso, 2000, p. 78).....	45
Table 3-3. Performance Indicators modeled as dependent variable in analysis	47
Table 3-4. Leadership Indices used in the study.	48
Table 4-1. Summary Table of Logistical Regression Analysis	61
Table A-1. Descriptive Statistics for the Research Sample	77
Table B-1. Marginal Effects of Baseline Leader Performance Model	79
Table B-2. Marginal Effects of Overall EI Model.....	80
Table B-3. Marginal Effects of Area EI Model	81
Table B-4. Marginal Effects of Branch EI Model	82
Table B-5. Marginal Effects of Task Level EI Model.....	83
Table B-6. Marginal Effects of MBTI Model.....	84

THIS PAGE INTENTIONALLY LEFT BLANK

LIST OF SYMBOLS, ACRONYMS AND/OR ABBREVIATIONS

EI	Emotional Intelligence
EQ	Emotional Intelligence Quotient
EQi	Bar On Emotional Quotient Inventory
FITREP	Performance Evaluation/Fitness Report
MBTI	Meyers-Briggs Type Indicator
MIDN	Midshipman, United States Navy
MSCEIT v.2	Mayer, Salovey, Caruso Emotional Intelligence Test, Version 2
OOM	Order of Merit
USNA	United States Naval Academy
QPR	Quality Points Rating

THIS PAGE INTENTIONALLY LEFT BLANK

ACKNOWLEDGMENTS

The author would like to acknowledge the support of Lisa Ayoung and Multi Health Systems, Inc. for the use and scoring of the MSCEIT v.2 as part of this research effort, and Dr. David R. Caruso of Charles J. Wolfe Associates, and Ms. Ella Smith of the U.S. Naval Academy Institutional Research Center for their guidance, time, and assistance in conducting this research. The author would also like to thank Dr. W. Brad Johnson, Dr. Wm Reno Bowman, and my wife Lynn for their advice, counsel, patience, and assistance in completing this effort.

THIS PAGE INTENTIONALLY LEFT BLANK

I. INTRODUCTION

“Man passes through the whole gamut of emotions in war; I am content to call up a few moods, partly to find if they help to that understanding of human nature on which success in the conduct of war largely depends, and partly for the light they cast on our attitude to the enemy, to danger, and to human destruction.” (Lord Moran, 1945, p. 37)

A. BACKGROUND

In assessing the human factors at work in any leadership situation, the affect of emotions on individuals have always contributed to the possible outcomes. The positive potential inherent in this interaction of emotions, however, has not always been recognized as having a role in bringing about solutions to problems, or motivating others to perform some action or achieve a common goal or objectives. Rather, in many contexts, the prevailing philosophy has been one of mitigating or minimizing the role that emotions play in problem solving or decision making. This is evident in the context of a military culture where leaders, conditioned to make rapid decisions in an environment characterized by chaos, uncertainty, and friction have long assumed that allowing for emotion as part of a decision making process can bring about potentially negative consequences. As a result, the military leader is one who most likely has learned to subdue or separate the influence that emotions play in any situation.

Since the second world war, a body of social and clinical research has examined the emotional impact on men and women who have experienced the extreme end of the military operational context, a hostile combat environment. As a result, we now have a greater understanding of the affects that this environment has on the role of human emotions, and their short and long term effectiveness of men and women in battle. Only

recently however, have sociologists and psychologists begun to analyze the role that using emotions as part of the leadership process emotions can play in mitigating negative outcomes, or bringing about positive outcomes in any leadership situation. The bulk of this analysis can be found in the realm of study now known as Emotional Intelligence (EI).

Both the concept and the term “emotional intelligence” (EI), have found their way into the contemporary theory and lexicon of both psychology and organizational behavior. Conceivably, a leader or manager with the ability to perceive, understand, and effectively manage and use emotions could significantly impact personal and organizational effectiveness. Furthermore, the awareness and cultivation of emotional intelligence, when viewed as an investment in human capital, could alter the manner in which organizations select, train, and place members within the organization, as well as reduce costs associated with human resource development.

The fact that we spend much of our time engaged in social interactions with others, and that some people seem more successful than others in such interactions, suggests the need for a concerted effort to define and measure many of those skills and abilities that are often collectively attributed to “common sense” or “everyday experience.” While traditional concepts of general human intelligence have focused on cognitive processes measured by standard Intelligence Quotient (IQ) tests, some have argued that these traditional measures explain only 10 to 20% of a person’s intelligence (Mayer and Salovey, 1997).

From the exploration of human intelligence conducted at the turn of the 20th century, the concept of “social” or “personal” intelligence was offered by Edward L. Thorndike [the designer of the Intelligence Quotient (IQ)] as one explanation for what many today consider to be those abilities that make up the remainder of one’s intellectual competency not assessed by IQ tests. The belief that one could distinguish “emotional” from other aspects of intelligence was the genesis of efforts to define these abilities and establish their relationship to the cognitive functions and capabilities that define traditional human intelligence.

The EI construct has been widely popularized in literature as an outgrowth of management or leader effectiveness movements. In his 1995 book entitled Emotional Intelligence, Daniel Goleman placed emphasis on EI as a set of management principles and character traits to be applied by members within an organization. From a scientific standpoint however, Goleman’s construct is not easily measured. As a field of human intelligence, emotional intelligence has become the subject of increasing research.

Based on the belief that many intellectual problems contain emotional information, and that this information may be processed differently than the processing of non-emotional information, psychologists Jack Mayer and Peter Salovey developed an ability-based construct of EI that has met a scientific standard sufficient to establish EI as a distinct component of human intelligence, thereby opening the door for research.

“Emotional Intelligence involves the ability to perceive accurately, appraise, and express emotion; the ability to access and/or generate feelings when they facilitate thought; the ability to understand emotion and emotional knowledge; and the ability to

regulate emotions to promote emotional and intellectual growth." (Mayer and Salovey, 1997, p. 10) The EI model developed by Mayer and Salovey views EI as a set of cognitive abilities that exists in varying degrees in all humans, and has significant implications for management and leadership. Using this model, EI accounts for one's ability to identify feelings and express emotions, as well as to recognize emotions in others. It addresses the use of emotions to direct attention, facilitate thought, make decisions or solve problems, as well as to understand the relationship between emotions, and to manage emotions of self and others.

It is widely believed that emotionally intelligent leadership may lessen personnel turnover or attrition, and improve efficiency among members of teams or workgroups. Therefore, the objective of this thesis is to draw conclusions about the relationship of emotional intelligence to leader performance among U.S. Naval Academy (USNA) midshipmen, and offer implications for selecting, training, developing, and evaluating naval leaders.

B. OBJECTIVES/PURPOSE

Conceivably, a leader or manager with the ability to perceive, understand, manage, and use emotions to facilitate thought could reduce costs associated with acquiring, training, and retaining human resources. Furthermore, the awareness and cultivation of emotional intelligence as an investment in human capital could alter the manner in which organizations select, train, and place members within the organization.

Emotionally intelligent leadership may lessen personnel turnover or attrition, and improve efficiency among members of teams or workgroups.

The underlying mission of the U.S. Naval Academy is to prepare men and women to fight and lead in combat. This research, therefore, examines the role that emotional intelligence plays in the leadership performance of midshipmen at the U.S. Naval Academy. The goal is to draw conclusions about the relationship of emotional intelligence to leader performance among military officer candidates, and offer relevant recommendations for selecting, training, developing, and evaluating naval leaders.

C. RESEARCH QUESTIONS

The following research questions formed the basis for the research design, methodology, and data analysis selected and utilized in this study:

1. What is the relationship between EI and leader performance among midshipmen at USNA?
2. Which areas, branches, and tasks of the EI construct correlate with leader performance among members of the sample?
3. Does the relationship of EI and leader performance differ by gender within the sample?
4. Is EI a more accurate predictor of leader performance at USNA than the Meyers-Briggs Type Indicator (MBTI)?

D. BENEFIT OF RESEARCH

This research may yield insights relevant to the development and application of leadership education and training at USNA. Specifically, the findings may be relevant to midshipman performance evaluation, 360 Degree feedback, Brigade leadership billet (Striper) selection, use of an EI measure as a predictor of success at USNA, and the candidate admissions process.

E. SCOPE, LIMITATIONS, ASSUMPTIONS

The scope of this research includes the following: (1) a review of literature on emotional intelligence concepts and their potential implications for leaders, (2) a comparison of the USNA EI data with established norms, and (3) the relationship of specified leadership performance and demographic factors with emotional intelligence. The thesis concludes with recommendations for further research and implications for the accession, training, and evaluation of naval officers.

This study assumes that higher emotional intelligence leads to higher performance outcomes, and that experiences or activities designed to develop and sharpen skills will enhance an individual's level of emotional intelligence. This study is limited by the lack of an independent measure of leader performance. Indices used to quantify leadership performance among the subjects reflect some subjectivity and inconsistency inherent in the nonempirical performance evaluation systems such as the one employed for midshipman squad leaders at the United States Naval Academy.

F. ORGANIZATION OF STUDY

This study is organized into five chapters. Chapter II reviews studies that relate to this research. The author discovered a dearth of research available in the area of EI and performance outcomes. Chapter III describes the contents of the data set used in this research, details the research design, and procedures used to conduct the data analysis. A complete explanation of the research methodology used to construct the study's models is also included. Chapter IV describes the empirical results of the analysis, and Chapter V summarizes the conclusions of the study, provides research-based policy recommendations, and recommends further research based on the findings.

THIS PAGE INTENTIONALLY LEFT BLANK

II. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

“Emotional intelligence is a product of two worlds. One is the popular culture world of best-selling books, daily newspapers and magazines. The other is the world of scientific journals, book chapters, and peer review.”
(Mayer, 1999, p. 1)

A. OVERVIEW

Emotional Intelligence is an exciting topic, which at face value seems to hold a great deal of promise for the practice of leadership, and the enhancement of individual, group, and organizational effectiveness. Unfortunately, the role of emotional intelligence in individual performance outcomes is often unknown or overstated. While the most widely recognized and available literature on emotional intelligence comes from popular management books and magazines, emotional intelligence is increasingly the subject of scientific research. These results are frequently published in peer-reviewed scientific journals and books.

In the following sections, a theoretical framework of emotional intelligence and related concepts is presented. The reader is introduced to definitions of emotions and intelligence, and their relevance to the study of EI. Next, the most widely accepted models of emotional intelligence are presented, along with their inherent strengths and limitations. A brief discussion of leadership is also included, followed by a review of the relationship between EI and gender, EI as a predictor of performance outcomes, and the relationship between EI and leadership. A discussion of the Meyers-Briggs Type Indicator is presented, and the chapter concludes with a summary of contemporary thought on developing EI among individuals and within organizations.

B. EMOTIONS

Within the realm of leadership and management practices, emotions often have a negative connotation. The term “emotional intelligence” is often discounted as a soft skill that holds a tenuous correlation to predictable outcomes in the workplace. However, before we examine the theory surrounding emotional intelligence, it is important to understand the concepts that make up both emotions, and human intelligence.

Emotions are defined as “internal events that coordinate many psychological subsystems including physiological responses, cognitions, and conscious awareness” (Mayer, Caruso, Salovey, 1999, p.267). Recognized as one of three or four fundamental classes of mental operations—the others include motivation, cognition, and consciousness---emotions appear to have evolved so as to signal and respond to changes in relationships between the individual and the environment (including one’s imagined place within it). The term “emotional intelligence,” then, implies something having to do with the intersection of emotion and cognition (Mayer, Salovey & Caruso, 2000).

C. HUMAN INTELLIGENCE

An individual is considered “intelligent” if he or she is able to carry on abstract thinking. However, for a concept such as “emotional intelligence” to be classified as a true intelligence, it must meet three specific criteria. First, it must meet conceptual criteria that it reflects a mental performance versus a preferred manner of behaving. Second, it must meet a correlational criteria based on empirical standards and describe a

set of closely related abilities that are similar to, but distinct from, mental abilities already described by an established intelligence. Lastly, the intelligence must develop with age and experience (Mayer, Caruso, Salovey, 1999).

D. MODELS OF EMOTIONAL INTELLIGENCE

Emotional intelligence (EI) is the product of both popular culture and scientific research, and given the complex nature of human behavior, numerous models of EI have been developed in an attempt to both explain the concept and establish its reliability and validity. Models of emotional intelligence can be broadly categorized into two types: mixed models and ability models. Mixed models attempt to explain EI as personality characteristics or traits, emotional or cognitive abilities, and the results of those abilities and traits. Ability-based models attempt to explain EI as a set of emotional and cognitive abilities as part of the broader context of human behavior. In this section, the historical roots of EI research are presented, as are the three most widely known models of EI and their relative strengths and weaknesses. The section concludes with a discussion of the Mayer and Salovey ability-based model of EI, which forms the foundation for the design of this study.

By the early 1990s, there was a long tradition of research on the role of non-cognitive factors in helping people succeed in both life and in the workplace. The current work on emotional intelligence builds on this foundation. (Cherniss, 2000, p. 4)

Research from the 1990's forward established the concept of emotional intelligence as an empirical area of study (Mayer, Salovey & Caruso, 2000), however, the

exploration of emotional intelligence reaches back throughout the twentieth century to those researchers who recognized that non-cognitive aspects (such as memory and problem solving) were equally important to providing a complete explanation of human intelligence. In the 1930s, Edward Thorndike proffered his idea of “social intelligence,” which he defined as the ability to understand others and act wisely in human relations, while David Wechsler referred to “non-intellective” as well as “intellective” elements to explain personal and social factors associated with human intelligence in the 1940s. In the 1980’s, Howard Gardner discussed a concept of multiple intelligences (involving intrapersonal and interpersonal relationships) to explain the entire body of human intelligence, only a portion of which was measured by standard IQ measures (Cherniss, 2000b).

Although there are concerted efforts to refine the definition of EI, there are currently numerous definitions of this concept. Outside the realm of academia, EI is most popularly recognized as a list of personality traits or characteristics. Since the publication of the popular book *Emotional Intelligence* by Dr. Daniel Goleman in 1995, emotional intelligence has been widely popularized by numerous mass-market books, articles, and television programs. Goleman has suggested that it is “as powerful, and at times more powerful than IQ,” and it was reported in Time Magazine that it “may be the best predictor of success in life.” The term “emotional intelligence” was actually coined by psychologists Peter Salovey and Jack Mayer in 1990, however, mainstream familiarity with the EI concept is due primarily to the publication of Goleman’s books.

Goleman, a psychologist and former science writer for the New York Times, became increasingly aware of research that showed the importance of social and

emotional abilities for personal success. In his book, he reviewed the current literature and research on the subject, as well as presented additional research on emotions and the brain, as well as emotions and social behavior (Mayer, Salovey & Caruso, 2000). Goleman defined emotional intelligence as “a set of abilities that include self-control, zeal, persistence, and the ability to motivate oneself.” (Goleman, 1995, p. xii). He further categorized these abilities into five main domains, each illustrated by a number of attributes: (1) knowing one’s emotions, (2) managing emotions, (3) motivating oneself, (4) recognizing emotions in others, and (5) handling relationships (Goleman, 1995). Goleman models each of these major ability areas with a number of specific attributes that, at face value, would intuitively seem to correlate with success in life, but are nonetheless difficult to discern among individuals, and even more difficult to measure and objectively evaluate from the standpoint of conducting research.

A widely published researcher in the field of emotional intelligence, Dr. Reuven Bar-On defines emotional intelligence as “an array of noncognitive capabilities, competencies, and skills that influence one’s ability to succeed in coping with environmental demands and pressures” (Bar-On, 1997, p. 14). Bar-On reviewed the available literature to determine personality characteristics that appeared to demonstrate some relationship to success in life. The results were the development of a model to explain why some individuals succeed in life more than others, and an Emotional Quotient Inventory (EQi) designed to measure “the potential to succeed rather than success itself” (Mayer, et al., 2000, p. 402).

Bar-On’s model of emotional intelligence consists of key components of effective emotional and social functioning that lead to psychological well-being. It contains five

composite components and fifteen subscales. The five components include: (1) Intrapersonal EQ (comprising self-regard, emotional self-awareness, assertiveness, independence, and self-actualization), (2) Interpersonal EQ (comprising empathy, social responsibility, and interpersonal relationships), (3) Stress management EQ (comprising stress tolerance and impulse control), (4) Adaptability EQ (comprising reality testing, flexibility, and problem solving), and (5) General Mood EQ (comprising optimism and happiness) (Bar-On, 2000).

In the 1980's, Bar-On developed what would become one of the first valid and reliable measures of emotional intelligence to be commercially published, the Bar-On EQ Inventory. It has since yielded a cross-cultural picture of emotional intelligence within individuals of diverse age, gender, socioeconomic, and occupational groups, and varying ethnic backgrounds from over 12 countries (Bar-On, 2000). In a Master's Thesis entitled *Emotional Intelligence: A Look at its Effect on Performance at the United States Naval Academy*, S. L. Hoffman used the results of the BAR-On EQi administered to a freshmen class upon entry to USNA to examine the relationship between EI and academic performance, general military performance, conduct, gender, and attrition. Overall, Bar-On's EQi components demonstrated significant relationships to performance, conduct, attrition, and gender (Hoffman, 1999).

Bar-On's model is not without limitations. The measure evolved from a clinical versus occupational context, and little is known about its predictive validity in work situations (Cherniss, 2000). Furthermore, his work combines mental abilities with other characteristics that are considered separate from mental abilities, making it difficult to

make consistent correlations (Mayer, et al., 2000). Furthermore, measurement is accomplished via self-report, which introduces other sources of error.

The most significant criticism of both the Goleman and Bar-On models is their concept of both emotional abilities, and the products of those abilities (Caruso, Mayer, & Salovey, 2000). These “mixed models” are based upon an ability model, but add other psychological attributes or personality traits. By including personality traits or characteristics of behavior in their models, Goleman and Bar-On have confounded the researcher’s ability to explain the significance of the model or its particular sub-scales or categories. Thus, mixed models, and the claims associated with them have been difficult to measure or support from the standpoint of empirical research.

While Goleman and Bar-On are perhaps the more well known of the modern theorists, Mayer and Salovey pioneered a research program intended to develop valid measures of emotional intelligence and to explore its significance. Their hypothesis that one could distinguish “emotional” from other cognitive and non-cognitive aspects of intelligence was the genesis of efforts to define these abilities and establish their relationship to other components of human intelligence. Their academic and research efforts have established emotional intelligence as a specialty within the science of human intelligence, and their ability-based model for emotional intelligence forms the foundation for this thesis research. The Mayer and Salovey model is an ability/skill-based model that is focused on how emotions can facilitate thinking and adaptive behavior. Therefore, I will discuss this model, and its development, in more depth.

In 1993, Mayer and Salovey noted that “many intellectual problems contain emotional information that must be processed; [and that] this processing may proceed differently than the processing of non-emotional information” (p.433) Thus, Mayer and Salovey sought to explore emotional intelligence as a set of abilities that related emotion and cognitive reasoning with one another. Referring to emotional intelligence in part as an ability to recognize the meanings of emotional patterns and to reason and solve problems on the basis of them (1990; 1997), they have since defined emotional intelligence as

the ability to perceive accurately, appraise, and express emotion; the ability to access and/or generate feelings when they facilitate thought; the ability to understand emotion and emotional knowledge; and the ability to regulate emotions to promote emotional and intellectual growth. (1997, p.10)

The domain of emotional intelligence, as described by Mayer and Salovey, incorporates several discrete emotional abilities that can be divided into four classes or branches: (1) The ability to perceive and appraise emotion, (2) the ability to assimilate basic emotional experiences into mental life, (3) the ability to understand and reason about emotions, and (4), the ability to manage and regulate emotion in oneself and others (Mayer, et al., 2000).

The mental ability model of emotional intelligence makes predictions about the internal structure of the intelligence and also its implications for a person's life. The theory predicts that emotional intelligence is, in fact, an intelligence like other intelligences in that it will meet three empirical criteria. First, mental problems have right or wrong answers, as assessed by the convergence of alternative scoring methods. Second, the measured skills correlate with other measures of mental ability (because mental abilities tend to intercorrelate)...(and) third; the absolute ability level rises with age (Mayer, et al., 2000, p. 400).

As noted by Caruso et al. (2000), the ability-based model brings inherent strengths and limitations. The strengths of the ability model are its focus on how emotions can facilitate thinking and adaptive behavior. It is skill based, and as such, it “considers EI as a special class of mental attributes or cognitive capacities that are separate from traits” (Caruso, et al., 2000, p. 5). It does not discount the applicability of certain traits within the model. However, it views traits as a product of EI skills/abilities, and provides a means to understand how leaders manage emotions, and those of others to achieve results.

The model does not focus on personality traits or dispositions, per se, except as a product of having these underlying skills. Similarly, emotional intelligence conceived of as ability can be measured using objective, ability-based measures...[This] ability model has been empirically validated, and the four branches of emotional intelligence have been shown to be separable, but also related to a single construct (Caruso, et al., 2000, p. 4).

The authors likewise point out that the ability model is not without its own limitations. The ability model of EI is “not a complete theory of workplace management” and is “intended to co-exist with, supplement, and clarify existing models of leadership—not replace them” (Caruso, et al. 2000, p. 5) Their ability model of EI is

also relatively new, and lacks extensive empirical data to support its predictive validity. They note that “because of the depth of the model (and because it does not include products of emotional intelligence as part of the model) it is not likely to achieve the level of prediction that popular models of emotional intelligence boast” (Caruso, et al., 2000, p. 5).

Because of the strengths of the mixed models presented by Goleman and Bar-On, they have achieved significant popularity. They are “grand in scope and include a multitude of traits, many of which have strong face validity” (Caruso, et al., 2000, p. 5). Furthermore, they are comprised of a list of traits that intuitively “resonate with leaders and HR professionals and cover most of present day thinking on leader effectiveness” (Caruso, et al., 2000, p. 5) as well as standard competency models. Perhaps most popularly, they claim “to have tremendous predictive validity, accounting for up to 80% of the variance in life outcomes” (Caruso, et al., 2000, p. 5). Mixed models do, however, pose significant limitations for the researcher. Foremost, they are duplicitous with current research on leadership traits models of personality and offer little that is new to leadership theorists. The models themselves are “unclear in their grouping of competencies” (Caruso, et al., 2000, p. 5), and the emotional competencies include both skills *and* outcomes. Overall, it is difficult to distinguish some traits from others (i.e., influence and communications), and “some researchers believe that emotional intelligence defined as a mixed model does not exist as a construct separable from other aspects of personality” (Caruso, et al., 2000, p. 5).

E. LEADERSHIP

This study seeks to examine the relationship between emotional intelligence and leader performance. In this section leadership theory is briefly examined as part of the broader human behavioral context within which the concept of emotional intelligence is examined. Contemporary views of leadership are also summarized so that the reader may better understand how emotional intelligence can potentially explain aspects of leader behavior, or otherwise impact leader performance.

Theories surrounding the “leadership” construct are as broad and complex as those surrounding the concepts of “emotions” or “intelligence.” The “exercise of leadership is a universal and exceedingly complex social phenomenon that has long defied exact scientific definition and measurement” (Hays, S. H., and others, 1967, p. 15). Leadership, and leader performance is not easily measured, and most would argue that the practice of leadership is more art than science. However, in spite of numerous and varied definitions of the term and concept, most agree that “leadership” is the activity of influencing an individual or group to achieve some goal or objective. A review of the literature revealed three primary components to any leadership situation bound together by a concept of dynamic interaction: (1) the leader; (2) the follower(s); and (3) the context, environment, or situational aspect of their surroundings (Hersey, Blanchard, and Johnson, 1996). The capable leader is one who knows how to capitalize on the potentialities inherent in his or her own personality, his or her subordinates, and the situation.

The basic theoretical approaches to leadership have moved through three rather dominant phases: trait, attitudinal, and situational. The trait theory of leadership focuses on the leader him or herself, and has its historical roots in the “Great Man” concept, based on the theory espoused by Thomas Carlyle. All leader-oriented theories postulate that leadership is some quality or characteristic residing in the personality of the leader. The trait theory of leadership postulates that there are certain traits possessed by leaders that differentiate them from followers. The major drawback to this approach is that traits do not function in isolation. The human personality is a dynamic and unified organization of physical and mental factors that must be considered as a whole.

The trait theory should not be discarded however. Studies of traits in successful leaders demonstrate some potential links to recognizable elements of the EI construct such as the ability to perceive, understand, and manage emotions. A 1958 study of USAF OCS candidates showed that although traits were important to determining which men would emerge as leaders of a group, the nature of the group and the situation also determined which men were leaders. The most discriminating leader traits were those that involved other people, such as social maturity and extroversion. (Hays, and others., 1967)

Leadership studies initiated in 1945 by the Bureau of Business Research at Ohio State University narrowed the description of leader behavior to two dimensions: Initiating Structure and Consideration. While “Initiating structure” refers to the extent to which a leader is task-oriented and directs subordinates’ work activities toward goal achievement, “Consideration” refers to the extent to which a leader is sensitive to subordinates, respects their ideas and feelings, and establishes mutual trust” (Hersey, et

al., 1996, p. 105). The studies determined that they were separate and distinct dimensions, and that a high score on one did not necessitate a low score on the other (Hersey, et al., 1996).

F. EI AND LEADERSHIP

This section examines the relationship between the EI construct and leadership. At face value, models of emotional intelligence appear to have significant validity and applicability across the traditional functions of management and leadership. Within the naval service in particular, leadership is considered a core competency. However, applying emotional intelligence in a military context presents some significant challenges given prevailing notions that military leadership induces more task-related behavior than relationship-focused behavior. Because of the unique context of the military environment and the challenging nature of many associated tasks, there is perhaps greater applicability for EI skills in the daily functions of leaders.

In the 1940's, leadership studies at Ohio State suggested that "consideration" is an important aspect of effective leadership (Cherniss, 2000). "More specifically, this research suggested that leaders who can establish "mutual trust, respect, and a certain warmth and rapport" with members of their group will be more effective" (Cherniss, 2000, p. 3) While "consideration" would seemingly conjure up a negative connotation to some military leaders, mutual trust and respect are the foundation of military effectiveness, and are crucial to good order and discipline, as well as the ability to function cohesively in situations that harbor the potential for loss of life. "Consideration,

warmth, and rapport” is found in the military context in the form of justice, fairness, and the compassion exercised by military leaders at all levels in the process of managing the welfare of subordinates. Bachman (1988) found that the most effective leaders in the U.S. Navy were more outgoing, emotionally expressive, dramatic, sociable, and warm than less effective leaders (Cherniss, 2000).

In an unpublished masters thesis, C. L. Rice (1999) used an early ability model of emotional intelligence developed by Mayer and Salovey to evaluate the effectiveness of teams and their leaders based on a top-down assessment by department managers, as well as measured EI of both the leaders, and an average EI score for the team. This research suggested that emotional intelligence plays a role in effective team leadership and team performance, but that it does not play a role in all aspects of such performance.

Competency models of leadership, when addressing the role of emotional intelligence, must explicitly (a) analyze the nature of the leadership position; (b) state the model of emotional intelligence being employed; (c) list the specific emotional skills included in the competency model; and (d) demonstrate that the emotional skills are relevant to a critical aspect of the leadership position. (Caruso, et al., 2000, p. 9)

The ability model is not a complete theory of workplace management. It is a model of a type of intelligence and is therefore intended to co-exist and clarify existing models of leadership—not replace them. Borrowing a framework presented by Caruso, et al. (2000), we can examine the application of the ability-based model by leaders, and apply it to a military context.

In the first branch of their four-branch model, the ability to perceive emotions in others, the authors suggest that leaders need to be able to perceive emotions in

themselves and others because greater self-awareness influences managerial performance. High performing managers' self-ratings were more congruent with their subordinates' ratings than were average-performing managers (Church, 1997). For the naval leader, the ability to perceive and identify emotions is the first step in effectively managing emotions in themselves and others. This may be critical to effectively accomplishing the mission or diffusing stressful situations.

Looking at the second branch of the model, the ability to use emotions, leaders need to be able to effectively use emotions in order to understand and motivate others. Doing so allows leaders to take multiple perspectives on issues that will facilitate planning, and engage in work facilitated by certain emotions. Leaders can use emotions to generate enthusiasm for a project or task, as well as use them to direct, energize and motivate the group and themselves. Team building is critical in a military context, and the symbolic frame, which is prevalent in the history and traditions of the Naval Service, evokes emotions that often sustain the organization through trying periods. While seldom recognized, emotions play a frequent role in harnessing the energy of military organizations, motivating groups or teams to accomplish assigned tasks, supporting critical decision making, and solving problems at hand.

Understanding emotions, the third branch of the ability model, provides the leader with information on how subordinates behave, or are affected by their environment and relationships. As noted earlier, the followers and the context or situation form two-thirds of any leadership problem. Therefore, understanding emotions is a key component in the leader's ability to understand how subordinates are affected by a given situation, and provides an understanding of subordinates' points of view and motivations. Moreover,

understanding emotions and how they affect both the leader and the follower enhances leader-member exchanges, which have been demonstrated to be predictive of performance outcomes, based on a leader's ability to connect with people and get along with members of the group.

Finally, managing emotions allows leaders to handle stress of situations, solve problems and make appropriate decisions--all highly recognizable components of the military operating context. Furthermore, the ability to regulate one's own and the emotions of others allows leaders to create an environment that enhances individual and group relationships.

G. EI AS A PREDICTOR OF PERFORMANCE OUTCOMES

This section deals with the role of emotional intelligence as a predictor of success in the work environment. Preparing midshipmen to be Navy or Marine Corps officers constitutes a significant investment in human capital, and a highly selective admissions process scrutinizes the performance and aptitudes of every candidate in an effort to identify those most suited for, and most likely to succeed in, a career in the naval service. Once admitted to USNA, peers, senior midshipmen, and officers evaluate performance semi-annually through structured performance evaluations and the assignment of military performance grades for a given semester.

Feist and Barron (1996) referred to the results of a study of 80 Ph.D.'s in science who underwent a battery of personality tests, IQ tests, and interviews in the 1950s when they were graduate students. Forty years later, they were tracked down and experts in their own fields made estimates of their professional success based on resumes and

evaluations. It turned out that social and emotional abilities were four times more important than IQ in determining professional success and prestige (Cherniss, 2000).

“What matters in terms of how you do compared to your peers has less to do with IQ differences, and more to do with social and emotional factors...it is more important to be able to persist in the face of difficulty and to get along well with colleagues and subordinates than it is to have an extra 10 or 15 points of IQ.” (Cherniss, 2000, p. 5)

“Intelligence, conceptualized as abstract thinking, has often been demonstrated to predict one or another type of success, particularly academic success. Although it is a potent predictor, it is far from a perfect one, leaving the vast amount of variance unexplained” (Mayer, et al., 2000, p. 399).

Little is known about what EI reliably predicts. Psychologists recognize that general intelligence predicts some aspects of success, such as academic achievement and occupational status, yet general intelligence is often said to account for between 10% and 20% of such success, leaving about 80% to 90% to be explained by other factors (Mayer and Salovey, 1997).

The unexplained 80% of success appears to be in large part the consequence of complex, possibly chaotic interactions among hundreds of variables playing out over time...For example, a person's career success is a product of not only personality components themselves, but also economic forces, political forces, and scientific advancements...For these reasons, a new variable's value for predicting success is more realistically compared with how much variance new variables typically explain rather than how much unexplained variance is yet to be explained. The best new variables typically increase predictions, for instance, of job performance by between 1 and 4%. That 1 to 4% can mean great savings when scientific methods of selection are employed for thousands of people, but it is far different than what was claimed for emotional intelligence. (Mayer, et al., 2000, p. 412)

Both Goleman (1998) and Mayer, et al. (2000) have argued that emotional intelligence by itself is “probably not a strong predictor of job performance. Rather, it provides the bedrock for competencies that are” (Cherniss, 2000, p.7) required for performance in many contexts. In the military culture, leadership is one of the foremost competencies that determine the abilities of an officer, and leadership skills, knowledge, abilities, and experiences predict job performance and career success.

“While extravagant claims as to the power of emotional intelligence to predict success appear to contradict existing research, a mental ability measure of emotional intelligence may be the optimal tool for identifying people who truly understand emotions...Ability-based emotional intelligence measures can distinguish between people who truly understand their emotions from those who get lost in them. Optimally this could be used to identify those who may be mismatched with a given career or position within the organization” (Mayer, Salovey & Caruso, 2000, p. 413).

More specific to this research, it could assist in the identification of candidates for admission, and serve as a basis for the continued training, development, and evaluation of naval leaders.

H. EI AND GENDER

Only within the last twenty-five years have women been admitted to and integrated within the Brigade of Midshipmen at USNA. While women hold positions of leadership throughout the brigade, and the relaxation of combat exclusion policies have opened up more career opportunities for women in the naval service, there continue to be

significant cultural barriers for women that do not exist for men. This section deals with the relationship between EI and gender, and its implications for leadership.

In the realm of emotional intelligence, women performed about 0.5 standard deviations higher than men using previously developed tests of emotional intelligence (Mayer, Caruso, Salovey, 1999).

One possible explanation for this is that women must read emotions more carefully because they possess less power in society than do men. [However], research shows that it is women in more powerful positions who have exhibited greater emotional accuracy... [Alternative explanations of this finding include the idea that] women may be socialized to pay more attention to emotions, and further, that they may be better biologically prepared to perform such tasks. Research does not address the relative contributions of these factors. (Mayer, Caruso, Salovey, 1999, p. 293)

There are significant gendering processes at work in our culture. “When children are born they enter into a gender-tracking system that creates different social realities for the sexes. Parents, teachers, and peers believe that the sexes differ—and explicitly or subtly reward, punish, and ignore behaviors in accordance with prevailing stereotypes. Different physical environments are constructed for the sexes, environments that provide different opportunities for learning physical and cognitive skills” (Russo, 1985, p. 150).

There is a prevailing belief embedded within our society that women are more emotional than men. According to commonly held beliefs, women are more emotionally responsive, experiencing and expressing most emotions more intensely than do men; men, if they are emotional at all, are believed to experience and express more anger. In contrast to these widely held beliefs, the empirical status of sex differences in emotions remains unknown. (Barrett et al., 2000, p. 1027)

Keeping one's emotions hidden is one of the strongest demands of the male sex-role in American society. Research has documented that both mothers and fathers encourage their sons to hide their emotions at an early age. In his examination of the dimensions of the male sex role in America, Robert Brannon highlighted nationwide surveys conducted in the 1970s, where "self-control" was cited as one of the qualities most admired in a man by 47% of all men, and 37% of all women (Brannon, 1985). Almost half of all males surveyed listed "keeps his feelings under control" as one of the most important qualities in a man.

It's not that men can never show any emotions. Men can openly display anger, contempt, impatience, hostility or cynicism without being stigmatized. It is only emotions suggesting vulnerability, like fear, sadness, and depression; and extremely positive feelings such as tenderness and trust which are felt to be unmasculine. (Brannon, 1985, p. 308)

Women and men appear to perform about the same on most intelligence-related mental tests. There are, however, some regular differences in the profiles of the two groups. Women are better at reading comprehension, perceptual speed, associative memory, and composition. Men are somewhat better in mathematics, social studies, and in scientific knowledge.

The fact that women are slightly superior to men in perceiving emotion has been known for some time. In a descriptive study, Barrett, Lane, Sechrest, and Schwartz (2000) examined sex differences in the complexity and differentiation of people's representations of emotional experience. "Women consistently displayed more complexity and differentiation in their articulations of emotional experiences than did

men, even when the effect of verbal intelligence was controlled” (Barrett et al., 2000, p. 1027). These results may reflect a sex difference in knowledge of emotions, in ability to access knowledge of emotion, in motivation to use knowledge of emotion, or all three (Barrett et al., 2000). Citing the research on gender differences in self-estimated IQ, Petrides and Furnham (2000) researched gender differences in measured and self-estimated trait emotional intelligence. Gender differences in measured trait EI showed a significant gender difference for mean scores on the “social skills” factor, while there were no other significant differences on any of the other factors nor on total trait measured EI. When total self-estimated EI was regressed onto the four measured trait EI factor scores and gender, males’ self-estimates of EI were significantly higher than females’. The authors noted:

An important question remains as to why we should be interested in gender differences in EI...? Inaccurate self-evaluations may have damaging behavioral consequences because perceptions of competence are intimately tied to aspirations, preferences for challenging tasks, curiosity, intrinsic motivation, persistence and task performance...Low expectations may lead to poor performance, thus providing self-fulfilling strategies of a self-perpetuating behavioral pattern. (Petrides & Frunaham, 2000, pp. 460-1)

The role of EI as it relates to leader performance among female members of the sample is of particular interest in light of ongoing barriers to women in the armed forces, and the masculinization process that some contend is a part of entry level indoctrination and training in the armed forces.

I. DEVELOPING EI

As noted earlier, one of the criteria for establishing a true human intelligence is that the intelligence must develop with age and experience (Mayer, Caruso, & Salovey, 2000). One component of the mission of the United States Naval Academy is to “develop midshipmen mentally to produce graduates who have the potential to assume the highest responsibilities of command” (USNA, 1999, p. 20). If the abilities associated with EI indeed form part of the foundation upon which leadership competency is established, then the development of those abilities is of interest in the development of capable leaders. In this section the development of emotional intelligence, and its implications for the training and education of leaders and managers is reviewed.

Studies suggest that about two-thirds of the competencies linked to superior performance are emotional or social qualities such as self-confidence, flexibility, persistence, empathy, and the ability to get along with others. Goleman, in his book *Working with Emotional Intelligence* (1998) asserts that in leadership positions, almost 90 percent of the competencies necessary for success are social and emotional in nature. Early studies by Taylor (1911), Mayo (1933), and Lewin (1947) showed “the social and emotional needs of workers were as important for work motivation as monetary incentives or threats. More specifically, they suggested that when managers pay more attention to employees and show more concern for well-being, both satisfaction and performance increase” (Cherniss, 2000b, p. 435).

“A growing body of research on emotional learning and behavior suggests that it is possible to help people of any age become more emotionally intelligent at work.

However, many programs designed to do so fail to recognize the difference between two types of learning[:] Cognitive and emotional” (Cherniss, 1998, p. 4). Social and emotional learning is different from cognitive and technical learning, and it requires a different approach to training and development. Emotional capacities differ from cognitive abilities because they are controlled by different areas of the brain. Therefore, emotional competence requires emotional learning as well as cognitive learning. Cognitive learning involves fitting new data and insights into existing frameworks of association and understanding, extending and enriching corresponding neural circuitry. Emotional learning includes these functions and the engagement of neural circuitry where social and emotional habit is stored. Motivational factors also make social and emotional learning more complex than purely cognitive learning. The prospect of needing to develop greater emotional competence among members of the organization, particularly its leaders is much more likely to generate resistance to change (Cherniss, 1998).

The use of competency-based selection procedures for selecting high-performing employees has become a standard practice for many organizations, and a close inspection of the competency models that are used indicates that most of the competencies relate to emotional intelligence (Goleman, 1998). However, “workplace interventions to improve emotional intelligence are necessary because many adults now enter the work place without the necessary competencies” (Cherniss, 2000b, p. 434).

Though there have been no longitudinal studies to measure the effectiveness of concerted efforts to develop EI among members of a work force, as suggested by Cherniss (2000b), “there is a long history of efforts to improve social and emotional competencies in the workplace, and there have been effective models to practitioners” (p.

449). The process of developing EI takes time, effort, motivation, support, and the process requires repeated practice over a long period of time. If an organization is to place an emphasis on EI as part of the leadership development process, it must provide a climate and organizational culture that supports social and emotional learning.

J. CONCLUSION

The EI model developed by Mayer and Salovey views EI as a set of cognitive abilities that exists in varying degrees in all humans, and has significant implications for managers and leaders. The strengths of the ability model are its focus on how emotions can facilitate thinking and adaptive behavior. It is skill based, considers EI as a special class of mental attributes or cognitive capacities, and is conducive to measurement and analysis. Furthermore, this model views personality or leadership traits as a product of EI skills/abilities, and provides a means to understand how leaders manage emotions, and those of others, to achieve results.

Emotional Intelligence at the individual and group or organizational levels converges in the exercise of leadership. The emotional intelligence of a group's leader will have a powerful impact on the group's climate and effectiveness. Of course, groups also have a powerful impact on their leaders, but the emotionally intelligent leader is aware of those influences, recognizes when they become pernicious, and has the capability to manage them in a way that minimizes harm. Emotionally intelligent leaders understand group, intergroup, and organizational dynamics, particularly as they affect emotional functioning, and they are skillful in working with those dynamics for the benefit of individuals and their organizations. (Cherniss, 2000b, p. 450)

Therefore, the objective of this thesis was to draw conclusions about the relationship of emotional intelligence to leader performance among U.S. Naval Academy (USNA) midshipmen, and to offer implications for selecting, training, developing, and evaluating naval leaders. A thorough discussion of the findings of this research, and recommendations for further research are presented in Chapters IV and V.

THIS PAGE INTENTIONALLY LEFT BLANK

III. METHODOLOGY AND DATA

“Emotional Intelligence involves the ability to perceive accurately, appraise, and express emotion; the ability to access and/or generate feelings when they facilitate thought; the ability to understand emotion and emotional knowledge; and the ability to regulate emotions to promote emotional and intellectual growth.” (Mayer and Salovey, 1997, p. 10)

A. GENERAL

This chapter provides an explanation of the regression analyses undertaken to determine the relationship between emotional intelligence and leader performance among midshipman squad leaders at the United States Naval Academy. First, the data set used to construct the regression models is reviewed. Next, specific variables included in the analysis are defined. Finally, the methodology used to examine the relationship between emotional intelligence and leader performance is described. These relationships were modeled using binary logistic regression of different model specifications.

The overall performance of Midshipmen at USNA is holistically represented by an individual’s standing among his or her classmates. Class standings are characterized by the Order of Merit (OOM), which, among other factors such as individual aptitude, motivation and potential, plays a significant role in an individual’s assignment to a specific service or warfare specialty in the operating forces of the Navy or Marine Corps.

The Order of Merit for a class is computed by weighting individual performance in the areas of academic and professional courses, physical education and athletic performance, as well as military performance and conduct. In general, performance in academic and professional courses of instruction accounts for 64.5%, Physical Education

6.6%, Athletic Performance 3.4%, Military Performance 17.7%, and Conduct 7.8% of the OOM.

In the admissions process, the current method of evaluating an applicant's potential to succeed at USNA-- and ultimately as a leader in the Naval service--tries to predict how he or she will perform in the context of academia, physical fitness, and military performance. Based upon experience and achievements during high school, preparatory school, or other college level and perhaps prior military experiences, various factors are identified as part of the candidate admissions process to calculate a single potential index of potential known as the "candidate multiple."

There are many predictors used in the admissions model as valid indicators of academic and physical education outcomes at USNA such as High School class ranking, SAT Verbal and Math scores, and participation in athletic or non-athletic activities. Little, however, is known regarding valid predictors of military leadership potential. While non-athletic extra-curricular activities are part of the "candidate multiple," these factors are at best weakly correlated with the actual performance of midshipmen as leaders, and in most cases not related at all, (or at times even inversely related,) to what one would expect.

A goal of this thesis research is to explore a more useful measure of military leadership potential at USNA and to identify individual factors that are correlated with the leadership performance of midshipmen. These factors include experiences or activities during high school or pre-USNA years that are hypothesized to contribute to leader ability as well as psychological variables derived from standardized tests

administered to midshipman after admission. One unique measurement, never analyzed for midshipmen to date is the level of emotional intelligence as measured by a standardized EI instrument.

The research methodology used in this thesis follows two stages: First is the derivation of consistent measures of military leadership performance and potential for 1/c Midshipmen. Second, is the identification of causal factors related to the leader performance and potential of 1/c Midshipmen.

B. DATA

The data file used for this analysis was compiled from data obtained through multiple sources. Emotional intelligence quotient (EIQ) data was collected as part of this study with the assistance of Multi Health Systems, Inc. Data relevant to the performance of midshipmen both prior to and during their tenure at USNA was provided by the Institutional Research Center of the United States Naval Academy.

The merged data set covers the general military and academic performance of the members of the sample. 360 midshipmen from the USNA class of 2001 were assigned duties as a Squad Leader during the fall semester of the 2000-2001 academic year and comprise the population studied in this research. Some members of the Squad Leader population at USNA did not consent to participation. The information obtained from 360-degree feedback, Meyers-Briggs Type Indicator, as well as specified pre-USNA performance and experience scores or variables (obtained during the USNA admissions process) are also included for members of the Squad Leader population. Emotional

intelligence scores, as well as specific indicators of leadership performance, based on formal performance evaluations, were unavailable for 40 members of the group, and those cases were excluded from the data analysis, yielding a final sample size of 104 members (28.88%) of the population.

The factors used to describe or predict leader performance in this study were classified into two major categories. The first category included variables that reflect measured abilities, performance, or experiences prior to appointment and induction as a midshipman at USNA, as well as baseline demographic factors. The researcher hypothesized that these variables contributed to development of either an individual's emotional intelligence, or their leadership ability. The second category includes variables indicative of psychological abilities defined as emotional intelligence, or personality type classification using the Myers-Briggs Type Indicator. The two categories and the variables included in each are displayed in Table 3-1.

The variables shown in Table 3-1 were selected by the researcher based on a hypothesis that these factors could conceivably contribute to leadership ability or leader performance, and either afforded opportunity to demonstrate ability in the realm of emotional intelligence, or enhance the development of such capabilities. Thus, the variables used in this research are assumed to either be reflective of leader performance as a Squad Leader, or reflect skills and experience that affect either leadership ability, or the leader's emotional intelligence. As emotional intelligence has been demonstrated in previous research to develop with age and differ across gender, both age and gender were included in the analyses.

Pre-USNA Leadership Factors	PSYCHOLOGICAL FACTORS
▪ Respondent Age ▪ SAT-Math High Score ▪ SAT-Verbal High Score ▪ Gender Classification ▪ Experience as H.S. Class Officer ▪ Experience as H.S. Club Leader ▪ Experience as H.S. Music Leader ▪ Experience as H.S. Team Capt/Co-Capt ▪ Experience as Boys/Girls State Delegate ▪ Experience as Camp Counselor ▪ Experience as Scout Leader ▪ Experience as JROTC Member ▪ Experience as Prior Military Service ▪ Preparatory School Graduate ▪ Minority Status	EI as measured by MSCEIT v.2 ▪ Overall EI ▪ Area EI: Emotional Experiencing ▪ Area EI: Emotional Reasoning ▪ Branch EI: Perceiving Emotions ▪ Branch EI: Using Emotions ▪ Branch EI: Understanding Emotions ▪ Branch EI: Managing Emotions ▪ Task EI: Perceiving; Faces ▪ Task EI: Perceiving; Pictures ▪ Task EI: Using; Sensations ▪ Task EI: Using; Facilitation ▪ Task EI: Understanding; Blends ▪ Task EI: Understanding; Changes ▪ Task EI: Managing; Emotion Mgt ▪ Task EI: Managing; Social Mgt Meyers Briggs Type Indicator ▪ Preference for Extroversion ▪ Preference for Sensing perception ▪ Preference for Thinking Judgment ▪ Preference for Judging attitude

Table 3-1. Factors Hypothesized to Affect Leadership Ability and Performance or Emotional Intelligence.

C. RESEARCH DESIGN

1. Participants and Procedure

Focusing on leader performance as the dependent variable in this research, 360 members of the USNA Class of 2001 were identified as potential members of the sample based on their performance as midshipman squad leaders for the fall semester of the 2000/2001 academic year. The squad is the basic unit of the Brigade of Midshipmen and consists of ten to twelve midshipmen. The Squad Leader is responsible for duties

assigned to the squad; the health and welfare, as well as the overall performance and conduct of his or her subordinates; and ensuring the orders and directives of the organizational hierarchy are complied with. Of all the positions of leadership within the Brigade of Midshipmen, the Squad Leader has the greatest degree of day-to-day interaction with the members of the Brigade. To be effective, he or she must take a thorough personal interest in each member of the Squad, know their problems, be solicitous of their welfare, and extract from them a strict and efficient performance of duty. Squad leaders form the front-line of leadership within the Brigade of Midshipmen and as such influence the behavior of their subordinates by directly communicating information, conducting daily inspections and training of personnel, as well as periodic one-on-one counseling with individual members of their respective squad.

The performance of each squad leader is evaluated from the top-down through a semi-annual performance evaluation completed by their respective Midshipman Company Commander, as well as from the bottom-up through 360-degree feedback submitted by the subordinate members of their respective squads. Minimum inclusion criteria for this study required that the 360-degree feedback evaluation of a particular squad leader was completed by eight or more of the twelve subordinate members of his or her the squad. This criterion resulted in 212 (58.88% of the population) squad leaders eligible to participate in the study. An overview of the Midshipman performance evaluation system used by USNA during the 2000-2001 academic year can be found in Appendix C, and the 360 degree feedback questionnaire for midshipman squad leaders for the 2000-2001 academic year can be found in Appendix D.

Each of the 212 eligible midshipmen was solicited via an email message (describing the purpose of the study and the potential costs and benefits to participation) to contribute to the research. This email directed them to a site on the Internet where they could review a more in-depth description of the research, a testing schedule, and indicate their consent or refusal to participate through an automated response form with connectivity to a database management system. Of the 212 midshipmen solicited, 144 (40.00% of the population) midshipmen consented to and completed the measure of emotional intelligence.

Prior to administering the measure, each respondent was briefed as to the purpose of the research, how the data collected was to be used, and the potential benefits of feedback for their performance as a leader. Testing sessions were conducted in a computer laboratory environment where participants were provided a unique/confidential identifier and secure access to the instrument using individual workstations connected to the World Wide Web.

2. EQ Model and MSCEIT v.2 Description

a. Basic Construct. The emotional intelligence of each member of the sample was measured using the Mayer, Salovey, & Caruso Emotional Intelligence Test, Version 2 (MSCEIT v.2) (Mayer, Salovey, & Caruso, 2000). The MSCEIT v.2 is a performance scale that measures how well people perform tasks and solve emotional problems. The MSCEIT v.2 consists of 8 sections and 141 individual items. It typically requires 25 to 35 minutes to complete. Sample question from the MSCEIT are contained in Appendix E, and provided with the consent of Dr.

David Caruso. An overview of the Four-Branch Model of Emotional Intelligence is depicted at Figure 3-1 and is derived from the MSCEIT v.2 Technical Manual (Mayer, Salovey, & Caruso, 2000).

Emotional Intelligence (Adapted from Mayer & Salovey, 1997)	<i>Branch Name</i>	<i>Brief Description of Skills Involved</i>
	Perceiving Emotion (Branch 1)	The ability to perceive emotions in oneself and others, as well as in objects, art, stories, music, and other stimuli.
	Facilitating Thought (Branch 2)	The ability to generate, use, and feel emotion as necessary to communicate feelings, or employ them in other cognitive processes.
	Understanding Emotion (Branch 3)	The ability to understand emotional information, how emotions combine and progress through relationship transitions, and to appreciate such emotional meanings.
	Managing Emotion (Branch 4)	The ability to be open to feelings, to modulate them in oneself and others so as to promote personal understanding and growth.

Figure 3-1. Overview of the Four-Branch Model of Emotional Intelligence (Mayer & Salovey, 1997)

b. Scoring. The central feedback from the MSCEIT involves one overall emotional IQ (EIQ) score, two area EIQ scores, four branch EIQ Scores, and eight task level scores. The MSCEIT v.2 scores are reported as normed standard scores with a Mean score of 100, and a Standard Deviation of 15. In general, scores above 115 indicate enhanced emotional intelligence, scores

between 85 and 115 indicate moderate/average emotional intelligence, and scores below 85 indicate that emotional intelligence needs development. (Mayer, Salovey, & Caruso, 2000) Multi Health Systems, Inc provided complimentary administration and scoring of the MSCEIT v.2. Levels of Feedback from the MSCEIT v. 2 are depicted in Figure 3-2 and the following subparagraphs, and are derived from the MSCEIT v.2 Technical Manual (Mayer, Salovey, & Caruso, 2000).

Overall Scale	Two Areas of the MSCEIT	Four Branches of the MSCEIT	Task Level
Emotional Intelligence (EIQ)	Experiencing Emotional Intelligence (EEIQ)	Perceiving Emotion (PEIQ)	Section A (Faces)
			Section E (Pictures)
		Facilitating Thought (FEIQ)	Section B (Facilitation)
			Section F (Synesthesia)
	Strategic Emotional Intelligence (SEIQ)	Understanding Emotion (UEIQ)	Section C (Changes)
			Section G (Blends)
		Managing Emotion (MEIQ)	Section D (Emotion Management)
			Section H (Emotional Relationships)

Figure 3-2. Levels of Feedback from the MSCEIT v. 2

c. Reliability. Coefficient alphas for reliability of the MSCEIT v.2 are depicted in Table 3-2. and are derived from the MSCEIT v.2 Technical Manual (Mayer, Salovey, & Caruso, 2000).

d. Validity. “The predictive validity of the MSCEIT v.2 has not been assessed. However, the MSCEIT v.2 has demonstrated strong validity in other areas. The measure has strong face validity as the tasks and behaviors assessed are readily identifiable by test takers as measures of emotional intelligence. The MSCEIT v.2 also enjoys strong content validity based on the theory of emotional intelligence developed by the authors (Mayer & Salovey, 1997), and concurrent validity—in that the MSCEIT v.2 is strongly correlated with other measures of emotional intelligence and empathy” (Mayer, Salovey, & Caruso, 2000, p. 79-80).

Scale Group	Scale	Coefficient Alpha Reliability	N
Scores Recommended for Interpretation			
Overall	Overall EIQ	.90	945
Area Scores	A. Experiencing	.89	1181
	B. Reasoning	.84	1275
Branch Scores	1. Perception	.87	1211
	2. Facilitation	.76	1500
	3. Understanding	.73	1561
	4. Management	.82	1334
Scores Available for Further Consideration			
Branch 1: Perceiving Emotions	A. Faces	.82	1392
	E. Pictures	.85	1297
Branch 2: Facilitating Thought	B. Synesthesia	.62	1545
	F. Facilitation	.67	1670
Branch 3: Understanding Emotions	C. Changes	.65	1662
	G. Blends	.52	1673
Branch 4: Managing Emotions	D. Emotion Man.	.78	1426
	H. Social Man.	.64	1463

Table 3-2. Reliability of the MSCEIT v. 2 and its Sub Areas and Branches (Mayer, Salovey, & Caruso, 2000, p. 78)

D. VARIABLES

In order to more effectively explain the variables used in this research, an overview of the dependent and explanatory variables, the reasons for their inclusion and their hypothesized effects are provided in this section. Table A-1 located at Appendix A provides an overview of the variables used in this analysis and their expected relationship to leader performance among midshipman squad leaders at USNA.

1. Dependent Variable

The dependent variables used in this study were indicators of leader performance. “Leadership” is a difficult skill or ability to measure or quantify. In assessing leader performance of midshipmen at USNA, both the Fitness Report (FITREP) and the 360-degree feedback program for squad leaders are intended to be used to generate an overall picture of leader effectiveness for both the institution and the individual being evaluated. While the results of the 360-degree feedback are solely intended for use by the individual being evaluated, the FITREP also reflects an overall military performance grade for each midshipman for the semester, and is retained as part of a midshipman’s overall record of performance. For the purposes of this research, specified values from the midshipman performance evaluation (FITREP) and the 360-degree feedback questionnaire were used. Table 3-3 outlines those specific performance indicators from the midshipman training fitness report and the 360-degree feedback program hypothesized by the researcher to be demonstrative of emotional intelligence on the part of the leader and modeled as the dependent variable in the analysis.

FITREP Performance Indicator	Squad Leader 360 Degree Feedback
Supervising/Developing Subordinates	"Provides constructive feedback on performance and behavior."
Decision making	"Communicates well-defined goals."
Leadership Development	"Builds and sustains team atmosphere, motivating subordinates."
Comparative Standing with Peers in Unit Fall '00 Semester	"Demonstrates initiative and responds in a timely manner to subordinate's concerns."
Military Performance Grade Assigned for Fall '00 Semester	"Does not rely too heavily on positional authority to motivate subordinates." "Does not default to coercive means to motivate or correct."

Table 3-3. Performance Indicators modeled as dependent variable in analysis

For both the FITREP and the 360-degree evaluation, a summary variable was created based on the individual items used as leadership indices from each. One summary leadership index was derived by summing the mean scores from likert scales of nine select questions of the Squad Leader 360-degree feedback evaluation. The other summary leadership index was derived by summing the mean scores from likert scales of four select blocks of the semi-annual midshipman training performance evaluation (FITREP). Table 3-4 lists and defines the various Leadership Indexes used in this study.

Leadership Index Variable	Variable Description
LEADFIT5	Summary Index of Leader Performance based on selected FITREP performance indicators.
LEADR360	Summary Index of Leader Performance based on selected 360 feedback Performance Indicators.
GOODLDR	Dichotomous Index of those Squad Leaders represented in the top three quartiles for both LEADFIT5 and LEADR360

Table 3-4. Leadership Indices used in the study.

a. Leadership Summary Index (FITREP). The continuous variable (LEADFIT5) is a summary index of leader performance derived by summing the mean scores from likert scales of five select performance characteristics of the midshipman semi-annual performance evaluation (FITREP) postulated by the researcher to require demonstrated abilities of EI based on the Mayer, Salovey, Caruso model.

b. Leadership Summary Index (360 Feedback). The continuous variable (LEADR360) is a summary index of leader performance derived by summing the mean scores from likert scales of selected questions from the Squad Leader 360-degree feedback questionnaire postulated by the researcher to require demonstrated abilities of EI based on the Mayer, Salovey, Caruso model.

c. Overall Leadership Index. The dichotomous variable (GOODLDR) was created to identify those members of the sample who scored in the top 3 quartiles of all three selected performance characteristics of the midshipman semi-annual performance evaluation (FITREP), the comparative ranking amongst their peers in the Company, the

military performance grade assigned for the semester, and the selected questions from the Squad Leader 360-degree feedback questionnaire. Among members of the sample, 60% were ranked as leaders in the top three quartiles.

2. Explanatory Variables

a. Gender Classification. The dichotomous variable (FEMALE) classifies members of the sample as either “female” or “not female.” Research in the field of emotional intelligence has shown that females score higher than males on the MSCEIT v.2. Fifteen percent of the sample is classified as FEMALE.

b. Age of Respondent. The continuous variable (AGE) indicates the age of the respondent as of 15 January 2001. Research in the field of emotional intelligence has shown that EI increases with age and experience. The mean value of the AGE variable is 21.8 with a standard deviation of .98.

c. High Math SAT Score. The continuous variable (SATM-HI) represents the high math score scored by the respondent on the SAT. The mean value of the SATM_HI variable is 660.82 with a standard deviation of 60.06.

d. High Verbal SAT Score. The continuous variable (SATV-HI) represents the high verbal score scored by the respondent on the SAT. The mean value of the SATV_HI variable is 633.22 with a standard deviation of 62.29.

e. High School Class Officer. The dichotomous variable (HSCLSOFF) indicates whether the participant had leadership experience as a class officer during High School. Within the sample, 11% served as High School Class Officers.

f. High School Club Leader. The dichotomous variable (HSCLUB) indicates whether the participant indicated experience as the leader of a club during High School. Within the sample, 38% were High School Club Leaders.

g. High School Music Leader. The dichotomous variable (MUSIC) indicates whether the participant indicated experience as the leader of a band or musical group during High School. Within the sample, 13.5% were High School Music Leaders.

h. High School Team Captain/Co-Captain. The dichotomous variable (HSTMCAPT) indicates whether the participant indicated experience as an athletic team captain or co-captain during High School. Within the sample, 53% were High School team Captains or Co-Captains.

i. Boys/Girls State Delegate. The dichotomous variable (STATE) indicates whether the participant indicated selection as a delegate to Boys or Girls State during High School. Within the sample, 21% of the sample were Boys or Girls State representatives or delegates.

j. Camp Counselor. This dichotomous variable (CAMPCSL) indicates whether the participant indicated leadership experience as a camp counselor during High School. Within the sample, 21% had experience as Camp Counselors.

k. Scout Leader. This dichotomous variable (BSALDR) indicates whether the participant indicated leadership experience as a member of a scouting program during High School. Within the sample, 16% had experience as boy or Girl Scout leaders.

l. Junior ROTC Member. The dichotomous variable (ROTC) indicates whether the participant indicated experience as a member of the Junior Reserve Officers Training Corps (JROTC) during High School. Within the sample, 13% had experience as members of JROTC.

m. Prior Military Experience. This dichotomous variable (PRI_MIL) indicates whether the participant had prior military experience as either an active or reserve member of the armed forces before admission to USNA. Within the sample, 13% had prior military experience before admission to USNA.

n. Preparatory School Graduate. This dichotomous variable (FEEDER) indicates whether the participant experienced preparatory schooling after High School and before admission to USNA. Within the sample, 20% were graduates of some form of preparatory educational program prior to admission to USNA.

o. Minority Status. The dichotomous variable (MINORITY) indicates whether the participant is the member of a minority group, either African, Hispanic, Asian, or other. Within the sample, 29% were classified as a member of a minority group.

p. Overall Emotional Intelligence Score. The continuous variable (MSCEITOX) provides an overall index of the test-taker's emotional intelligence. As with any global score, the MSCEIT Total score is a handy summary of overall performance, and serves as a starting point when analyzing the respondent's level of emotional intelligence. The mean value of the MSCEITOX variable in the current sample was 99.6 with a standard deviation of 11.8.

q. Emotional Experiencing EI Score. The continuous variable (AREA_EEX) provides an index of person's ability to perceive, respond, and manipulate emotional information. This scale indexes how accurately a person can "read" and express emotion, and how well a person can compare that emotional stimulation to other sorts of sensory experiences (e.g., colors or sounds). The mean value of the AREA_EEX variable in this sample was 94.2 with a standard deviation of 14.0.

r. Emotional Reasoning EI Score (Area_REX). The continuous variable (AREA_REX) provides an index of a person's ability to understand and manage emotions. This scale indexes how accurately a person understands what emotions signify (e.g., that sadness typically signals a loss) and how emotions in him/herself and others

can be managed. The mean value of the AREA_REX variable in this sample was 106.2 with a standard deviation of 8.9.

s. Branch EI Score: Perceiving Emotions. The continuous variable (BR_1X) indicates the ability to recognize one's own feelings and the feelings of others. Emotional perception involves paying attention to, and accurately decoding emotional signals in facial expressions and tones of voice. The mean value of the BR_1X variable in this sample was 95.9 with a standard deviation of 13.6.

t. Branch EI Score: Using Emotions. The continuous variable (BR_2X) indicates the ability to take feelings into account to more accurately reason about situations and to decide how to act. This ability helps a person creatively solve problems. The mean value of the BR_2X variable in this sample was 94.8 with a standard deviation of 14.2.

u. Branch EI Score: Understanding Emotions. The continuous variable (BR_3X) indicates knowledge of how emotions combine and change over time and its importance in interacting with other people and in enhancing self-understanding. The mean value of the BR_3X variable in this sample was 108.7 with a standard deviation of 9.25.

v. Branch EI Score: Managing Emotions. The continuous variable (BR_4X) indicates the ability to work with feelings in a judicious way, rather than acting on them without thinking. This ability to successfully manage emotions often entails the

awareness, acceptance, and use of emotions in problem solving. The mean value of the BR_4X variable in this sample was 102.3 with a standard deviation of 10.75.

w. Task EI Score: Faces Task. The continuous variable (A_TOTX) measures the ability to identify how a person feels based upon their facial expression. The mean value of the A_TOTX variable in this sample was 95.9 with a standard deviation of 14.8.

x. Task EI Score: Pictures Task. The continuous variable (E_TOTX) measures the determination of the emotions that are being expressed in the surrounding environment. The mean value of the E_TOTX variable in this sample was 96.6 with a standard deviation of 15.0.

y. Task EI Score: Sensations Task. The continuous variable (F_TOTX) measures the respondent's ability to generate a certain mood in order to then reason with that mood. The mean value of the F_TOTX variable in this sample was 108.5 with a standard deviation of 9.5.

z. Task EI Score: Facilitation Task. The continuous variable (B_TOTX) measures the knowledge of how moods interact and support thinking and reasoning. The mean value of the B_TOTX variable in this sample was 102.7 with a standard deviation of 10.2.

aa. Task EI Score: Blends Task. The continuous variable (G_TOTX) measures the ability to connect situations with certain emotions (e.g., knowing that a situation involving a loss might make someone feel sad). The mean value of the G_TOTX variable in this sample was 97.3 with a standard deviation of 13.8.

bb. Task EI Score: Changes Task. The continuous variable (C_TOTX) measures the understanding emotional "chains," or how emotions transition from one to another (e.g., how frustration can change into anger). The mean value of the C_TOTX variable in this sample was 94.5 with a standard deviation of 12.1.

cc. Task EI Score: Emotion Management Task. The continuous variable (D_TOTX) measures the ability of the respondent to gauge the effectiveness of alternative actions in achieving a certain result in situations where a person had to regulate their own emotions. The mean value of the D_TOTX variable in this sample was 106.8 with a standard deviation of 10.9.

dd. Task EI Score: Social Management Task. The continuous variable (H_TOTX) measures the ability of the respondent to evaluate how effective different actions would be in achieving an outcome involving other people. The mean value of the H_TOTX variable in this sample was 101.6 with a standard deviation of 11.5.

ee. MB_IND1E. This dichotomous variable represents an individual preference for extroversion as measured by the Meyers Briggs Type Indicator. Extroverts are

oriented primarily toward the outer world and focus their perception and judgment on people and objects. In this sample, 53% were classified as preferring extroversion.

ff. MB_IND1S. This dichotomous variable represents an individual preference for perception through sensing as measured by the Meyers Briggs Type Indicator. Individuals classified with an “S” rely primarily upon the process of sensing, which reports observable facts or happenings through one or more of the five senses. In this sample, 67% were classified as preferring sensing.

gg. MB_IND1T. This dichotomous variable represents the respondent’s preference for thinking as measured by the Meyers Briggs Type Indicator. Individuals classified with a “T” demonstrate a primary reliance on thinking to make decisions on the basis of logical consequences. In this sample, 83% were classified as preferring Thinking.

hh. MB_IND1J. This dichotomous variable represents an individual preference for judging as measured by the Meyers Briggs Type Indicator. A person who prefers judgment uses thinking or feeling processes to deal with the outer world. In this sample, 66% were classified as preferring judgment when dealing with the outside world.

E. METHODS

The purpose of this research was to empirically determine if emotional intelligence is significantly related to leader performance among midshipman squad leaders at the United States Naval Academy. This section of the chapter describes the specifications of the statistical models used in the study. The relationship between leader performance and emotional intelligence was modeled using binary logistical regression analyses. The five specifications of the model developed to analyze the two basic hypotheses are detailed in Figure 3-3.

To examine the hypothetical relationship between emotional intelligence and leadership performance, Pre-USNA experiences, basic demographic factors, as well as the resultant overall EIQ score, two area scores, four branch scores, and eight task scores of the MSCEIT v.2 were analyzed against the overall index of leader performance at USNA.

To examine the relative suitability of the MSCEIT v.2 vis a vis the Meyers-Briggs Type Indicator as a predictor of leadership performance among squad leaders at USNA, the MBTI of the respondents were analyzed against the overall index of leader performance to determine the significance of the coefficients, and compare the goodness of fit of the alternative models.

A discriminant functional analysis was performed to assess the MSCEIT v.2's utility in discriminating more or less effective leaders, the results of which are presented and discussed in the proceeding chapters of this study.

H₁: There is a relationship between EI and leadership performance at USNA among members of the sample.

$$\text{GOODLDR} = \alpha_0 + \beta_1 \cdot \text{MSCEITOX}_i + \varepsilon_i$$

$$\text{GOODLDR} = \alpha_0 + \beta_1 \cdot \text{Area_EEX}_i + \beta_2 \cdot \text{Area_REX}_i + \varepsilon_i$$

$$\text{GOODLDR} = \alpha_0 + \sum_{j=1}^4 \beta_j \cdot \text{Branch}_{j,i} + \varepsilon_i$$

$$\text{GOODLDR} = \alpha_0 + \sum_{j=1}^8 \beta_j \cdot \text{Tasks}_{j,i} + \varepsilon_i$$

H₂: EI as measured by the MSCEIT v.2 is a more accurate predictor of squad leader performance at USNA than the Meyers Briggs Type Indicator among members of the sample.

$$\text{GOODLDR} = \alpha_0 + \beta_1 \cdot \text{MB1}_i + \beta_2 \cdot \text{MB2}_i + \beta_3 \cdot \text{MB3}_i + \beta_4 \cdot \text{MB4}_i + \varepsilon_i$$

Figure 3-3. Regression Modeling Methodology

IV. DATA ANALYSIS

This chapter uses binary logistic regression to analyze the impact of selected explanatory variables on the probability of an individual performing effectively as a squad leader within the brigade of midshipmen. Effective leader performance is predicted using variables reflecting leadership experiences prior to admission to USNA, the results of the Mayer Salovey Caruso Emotional Intelligence Test, Version 2 (MSCEIT v.2), and the Meyers Briggs Type Indicator (MBTI). Separate leader performance models are estimated on the members of the sample.

Table 4-1 displays the logit estimates for the variables analyzed in each model. The chapter then discusses the significant findings. Marginal effects for each of the models are contained in separate tables located at Appendix B. The marginal effects are provided because the binary logit coefficients do not indicate the impact of a small change in each independent variable on the dichotomous dependent variable. The marginal effects are computed so that the reader can see the effect of a change in the independent variable on the probability of the outcome (Effective Squad Leader Performance).

A. PRELIMINARY DATA ANALYSIS

A preliminary analysis of variables showed that the sample used in this study was representative of the population of Squad Leaders at USNA. Table A-1 in Appendix A shows a comparison of means of the dependent and explanatory variables used in this analysis, and their expected correlation to leader performance among squad leaders. For

the dependent variable, 23% of the population was characterized as a good leader, while 60% of the population met the criteria for inclusion in that group. This wide disparity is mostly due to the fact that leader performance data was not available for all members of the population. Focusing on the explanatory variables, among the majority of the pre-USNA leadership factors the mean values for the sample were either identical to those of the population or within one to three percentage points. The most notable exception were members of the sample classified as minorities, who made up 29 % of the sample vice 24% of the population. The expected correlation to leader performance for nearly all these factors was hypothesized to be positive, with the exception of being female, which (due to some gender stereotypes which may persist within the Brigade of Midshipmen) is expected to be negative, and High Math SAT Score and classification as a minority, which have an unknown expected correlation. Analyzing the level of emotional intelligence of the sample as measured by the MSCEIT v.2, all members of the sample were well within one standard deviation (15 pts) of the norm (mean value of 100).

Table 4-1 summarizes the results from the binary logistical regressions used in this analysis. A detailed analysis of each of the models and their results are contained in the following sub-paragraphs.

	Mean	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Pre-USNA Leadership Factors							
Respondent Age	21.8	-.016694	-.026474	-0.02085	-0.0575	-0.06388	-0.00159
SAT-Math High Score	660.82	.000491	.000494	0.000497	0.000444	0.001591	0.001139
SAT-Verbal High Score	633.22	-.000982	-.000989	-0.00099	-0.00178	-0.00295*	-0.00114
Female	.15	-.365062*	-.458223*	-0.47643**	-0.48594**	-0.48287**	-0.41257*
H.S. Class Officer	.11	.125697	.151421	0.171555	0.163163	0.139588	0.001367
H.S. Club Leader	.38	-.128152	-.156122	-0.17379	-0.12787	-0.04501	-0.06903
H.S. Music Leader	.13	.123733	.143009	0.166341	0.165827	0.069794	0.131904
H.S. Team Capt/Co -Capt	.53	-.016203	-.015092	-0.01738	-0.07326	-0.0341	-0.0246
Boys/Girls State Delegate	.21	.154421	.191256	0.223444	0.240194	0.293725	0.166076
Camp Counselor	.21	-.123733	-.132617	-0.13183	-0.10922	-0.19165	-0.13395
Scout Leader	.16	.323817	.338224	0.354282*	0.414235*	0.403758*	0.225763
JROTC Member	.13	-.616947**	-.616819**	-0.65444**	-0.64422**	-0.74864**	-0.60803**
Prior Military Service	.12	-.090344	-.052948	-0.05412	-0.0515	-0.04547	-0.10616
Prep School Grad	.20	-.010802	.015092	0.024827	0.087908	0.138678	0.011391
Minority Status	.29	-.172342	-.246183*	-0.22419	-0.28104*	-0.28077	-0.13965
EI as measured by MSCEITv.2							
Overall EI	99.59		3.27E-13*				
Area EI Emotional Experiencing	106.2			0.001241			
Area EI Emotional Reasoning	94.2			0.013407			
Branch EI Perceiving Emotions	95.9				-0.00688		
Branch EI Using Emotions	94.8				0.011988*		
Branch EI Understanding Emotions	108.7				0.017981*		
Branch EI Managing Emotions	102.2				0.00222		
Task EI Perceiving; Faces	95.9					-0.00091	
Task EI Perceiving; Pictures	96.6					0.001364	
Task EI Using; Sensations	108.5					0.012958	
Task EI Using; Facilitation	102.7					0.012049	
Task EI Understanding; Blends	97.3					-0.01	
Task EI Understanding; Changes	94.5					0.01455*	
Task EI Managing; Emotion Mgt	106.8					0.008184	
Task EI Managing; Social Mgt	101.5					0.008412	
Meyers Briggs Type Indicator							
Preference for Extroversion	.53						0.188857
Preference for Sensing perception	.67						0.109123
Preference for Thinking Judgment	.83						-0.15491
Preference for Judging attitude	.66						0.115729
Summary Statistics		Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
-2 Log Likelihood		113.543	110.639	109.525	102.863	97.785	107.874
Model Chi-square		25.942	28.846	29.961	36.623	41.700	31.611
Model Significance		.039	.025	.027	.009	.010	.035
Predicted .00 Percentage Correct		65.9	65.9	70.7	78.0	78.0	68.3
Predicted 1.00 Percentage Correct		74.6	69.8	69.8	74.6	74.6	71.4
Overall Percentage Correct		71.2	68.3	70.2	76.0	76.0	70.2

* = .05 Significance Level ** = .01 Significance Level

Table 4-1. Summary Table of Logistical Regression Analysis

B. H₁: THERE IS A RELATIONSHIP BETWEEN EI AND LEADERSHIP PERFORMANCE AT USNA AMONG MEMBERS OF THE SAMPLE.

1. Model 1, Pre-USNA baseline predictors of effective Squad Leader Performance

Table 4-1, (Model 1), depicts the results from estimating the impact that leadership experiences and general demographic factors (age, gender, race, SAT Scores) have on midshipman performance as a Squad Leader. Contrary to expectation, only two of the fifteen variables associated with experiences prior to admission to USNA were significantly correlated with leader performance (at the .05 significance level or higher) in terms of predicting the probability of squad leader effectiveness. Contrary to expectation, nine of the thirteen variables in the model expected to have a positive correlation with effective performance as a squad leader were negatively correlated in the model. Being female was expected to have a negative correlation due to the gender stereotypes that may prevail, and the corresponding effects they may have on the objective assessments of performance among the female members of the Brigade. Based on the marginal effects of this variable, being female decreased probability of being assessed as an effective squad leader by approximately .37. Having prior experience as a member of a High School junior ROTC program was expected to have a positive correlation to the probability of performing effectively as a squad leader due to acculturation to the military environment, familiarity with assumptions, behaviors and norms associated with the military, and perhaps experience in leading people. However, the marginal effects of this variable demonstrate that JROTC experience decreased

probability of being assessed as an effective squad leader by approximately .62. In assessing goodness of fit, this model correctly predicts 65.9% of all members of the sample predicted to be ineffective leaders, and 74.6% of all members of the sample predicted to be effective leaders for an overall percentage correct of 71.2%. The -2 Log Likelihood of the model is 113.5. Finally, 29.9% of the variation in the outcome is explained by this model.

2. Model 2, Overall EI as a predictor of Squad Leader Effectiveness

In this model, the Overall Emotional Intelligence Quotient derived from completion of the MSCEIT v.2 is added to the baseline model to assess the impact of an overall index of emotional intelligence on the probability of predicting Squad Leader performance. Adding this index to the model resulted in four of the sixteen variables being significantly correlated (at the .05 significance level or greater) with predicting the probability of being effective as a squad leader. As expected, Overall EI is positively and significantly correlated with the probability of being assessed as performing effectively, but increases this probability by only .01. When adding overall EI to the model, being classified a minority also becomes significant and negatively correlated. The marginal effects of this variable demonstrate that being classified a minority decreases the probability of being assessed as performing effectively as a squad leader by 25%. Compared to the baseline model, this variation correctly predicts 65.9% of all members of the sample predicted to be ineffective leaders, and 69.8% of all members of the sample predicted to be effective leaders for an overall percentage correct of 68.3%. The -2 Log

Likelihood of this model is slightly improved at 110.5, while 32.8% of the variation in the outcome is explained by this model. Therefore, we find that overall emotional intelligence may offer some increase in the explanatory power of the Squad Leader performance model.

3. Model 3, Area Level EI as a predictor of Squad Leader Effectiveness

In this model, the two area level scores for emotional intelligence are added as explanatory variables. Area level scores for emotional intelligence provide a more discreet layer of assessing the respondent's ability in two broad areas: to perceive emotional information and to relate it to other sensations such as colors and taste, and to use it to facilitate thoughts or decisions, and to understand emotional information and use it strategically for planning and self-management. Adding these two individual variables to the baseline model resulted in three of the seventeen variables being significantly correlated (at the .05 significance level or greater) with predicting the probability of being effective as a squad leader. In this model specification, both area level EI scores were insignificant, but again, being female and having JROTC experience were negatively correlated at the .01 level of significance. However, having leadership experience as a boy or girl scout was positively and significantly correlated at the .05 level, and the marginal effects of this variable increase the probability of being assessed as an effective leader by 35%. This variation correctly predicts 70.7% of all members of the sample predicted to be ineffective leaders, and 69.8% of all members of the sample predicted to be effective leaders for an overall percentage correct of 70.2%. The -2 Log Likelihood

of this model is slightly improved at 109.5, while 33.9% of the variation in the outcome is explained by this model. In this model, we find that area level emotional intelligence does not appear to offer some increase in the explanatory power of the Squad Leader performance model.

4. Model 4, Branch Level EI as a predictor of Squad Leader Effectiveness

In this model, the four branch level scores for emotional intelligence are added as explanatory variables. Branch level scores for emotional intelligence provide a more discreet layer of assessing the respondent's ability in four areas: (a) a perceiving emotions score which indicates the degree to which a respondent can identify emotions in self and others, (b) a facilitating thinking score which indicates the degree to which a person can use emotions to improve thinking, (c) an understanding emotions score which indicates how well a person understands the complexity of emotional meanings, development, and situations; and (d) an emotional management score indicating how well a respondent is able to manage emotions in his or her own life or the life of another (i.e., subordinate). Adding these four variables to the baseline model resulted in six of the nineteen variables being significantly correlated (at the .05 significance level or greater) with predicting the probability of being effective as a squad leader. In this model specification, both the "using emotions" and "understanding emotions" branches were positively and significantly correlated with squad leader effectiveness, however, the marginal effects of these variables increase the probability of being assessed as an effective squad leader by only .01 and .02 respectively. Being female, a minority, and

having JROTC experience were again significantly and negatively correlated, and having leadership experience as a Boy Scout or Girl Scout was positively and significantly correlated with squad leader effectiveness. Compared to the baseline model, this variation correctly predicts 78.0% of all members of the sample predicted to be ineffective leaders, and 74.6% of all members of the sample predicted to be effective leaders for an overall percentage correct of 76.0%. The -2 Log Likelihood of this model is again slightly improved at 102.9, while 40% of the variation in the outcome is explained by this model. Again, we find that Branch Level emotional intelligence may offer some increase in the explanatory power of the Squad Leader performance model.

5. Model 5, Task Level EI as a predictor of Squad Leader Effectiveness

In this model, the eight Task level scores for emotional intelligence are added as explanatory variables. These scores correspond to the eight tasks evaluated by the different sections of the MSCEIT v.2 and were added to the model in an attempt to discover significant correlations in the model with greater marginal effects. Adding these eight variables to the baseline model resulted in five of the twenty-two variables being significantly correlated (at the .05 significance level or greater) with predicting the probability of being assessed as an effective squad leader. In this model specification, tasks associated with understanding emotions were again significantly correlated. Once again however, the marginal effects of these variables increase or decrease the probability of being assessed as an effective squad leader by only .01. Compared to the baseline model, this variation correctly predicts 78.0% of all members of the sample predicted to

be ineffective leaders, and 74.6% of all members of the sample predicted to be effective leaders for an overall percentage correct of 76.0%. The -2 Log Likelihood of this model is improved in this model at 97.8, and 45% of the variation in the outcome is explained by this model. Again, we find that Task Level emotional intelligence may offer some increase in the explanatory power of the Squad Leader performance model.

C. H₂: EI AS MEASURED BY THE MSCEIT V.2 IS A MORE ACCURATE PREDICTOR OF LEADERSHIP PERFORMANCE AT USNA THAN THE MEYERS-BRIGGS TYPE INDICATOR.

1. Model 6, Meyers Briggs Type Indicator (MBTI) as a predictor of Squad Leader Effectiveness

In this model, individual preferences for elements (Extroversion, Sensing, Thinking, Judging) of the Meyers Briggs Type Indicator (MBTI) were added as explanatory variables to the baseline model to compare the predictive power of the MBTI versus the EI quotient as measured by the MSCEIT v.2. Using this model, only two of the nineteen explanatory variables were significantly correlated with squad leader performance at the .05 level or greater, and none of the MBTI preferences were significantly correlated with squad leader performance. The -2 Log Likelihood of this model is 107.9, and 35.5% of the variation in the outcome is explained by this model. Contrary to models which factored emotional intelligence into the probability of being evaluated as an effective squad leader, this variation correctly predicted only 68.3% of all members of the sample predicted to be ineffective leaders (vs. 78% for models 4 and 5), and 71.4% of all members of the sample predicted to be effective leaders for an overall percentage correct of 70.2%. From this, we conclude that MBTI may be less

effective than the MSCEIT v.2 in it's utility to predict effective squad leader performance.

D. SUMMARY OF DATA ANALYSIS

Contrary to expectation, none of the variables contained in the baseline model of this research were strongly and positively correlated with the probability of being evaluated as an effective Squad Leader within the Brigade of Midshipmen. The predominantly negative correlation of many of the explanatory variables in the models with the evaluated leadership effectiveness of squad leaders was an unanticipated finding that is difficult for the researcher to explain. In particular, being female was found to be significant and negatively correlated with squad leader effectiveness in every model, and being of a minority classification was found to be significant and negatively correlated with squad leader effectiveness in three of the six models. However, when the baseline explanatory variables were modeled using overall emotional intelligence (as measured by the MSCEIT v.2) as the dependent variable, being female and classified as a minority were the only two variables that were positively and significantly correlated with overall EI (at .01 and .05 respectively). The addition of estimates of emotional intelligence abilities as measured by the MSCEIT v.2 significantly correlated with the predicted outcome in some regression models, and produced consistent improvement in the overall goodness of fit of the models themselves.

V. CONCLUSIONS AND RECOMMENDATIONS

“It is well that those who command men in war should have known such moods, ... if they recognize them for what they are, that they may the better detect them in others. The imaginative man in war pays a price which is not exacted from his more stolid brother, but his men are the more ready to follow his example when they devine that he has read their secret thoughts.” (Lord Moran, 1945, p. 47)

This study sought to examine the role emotional intelligence plays in the leadership performance of midshipmen at the U.S. Naval Academy, and focused on those factors that predict the probability of being assessed as an effective leader within the Brigade of Midshipmen. The ultimate goal of this study was to provide policy makers with conclusions about the potential relationship of emotional intelligence to leader performance among military officer candidates, and offer relevant recommendations for selecting, training, developing, and evaluating naval leaders. An explanation of the variables that significantly relate to leader performance is provided below. Strengths and weaknesses of the study are examined, and the author discusses implications for USNA, and further research in the relationship between emotional intelligence and leader performance outcomes.

A. CONCLUSIONS

The results of this study do not show a conclusive link between emotional intelligence and effective leader performance among Squad Leaders at USNA. However, there is sufficient reason to believe that the abilities outlined in the emotional intelligence construct that formed the basis of this research is a fundamental competency on which

effective leadership can be implemented and achieved. While none of the variables contained in the baseline model of this research were strongly positively correlated with the probability of being evaluated as an effective Squad Leader within the Brigade of Midshipmen, the addition of estimates of emotional intelligence abilities as measured by the MSCEIT v.2 significantly correlated with the predicted outcome in some regression models, and produced consistent improvement in the overall goodness of fit of the models themselves. An unanticipated finding was the negative correlation with the evaluated leadership effectiveness of squad leaders of many of the explanatory variables included in the model. This must be at least partially attributed to the limitations of variables that make-up the models, and not exclusively to the emotional intelligence or the demonstrated leadership ability of the sample. As noted in the previous chapter, being female was found to be significant and negatively correlated with squad leader effectiveness in every model, and being of a minority classification was found to be significant and negatively correlated with squad leader effectiveness in three of the six models. However, when the baseline explanatory variables were modeled using overall emotional intelligence (as measured by the MSCEIT v.2) as the dependent variable, being female and classified as a minority were the only two variables that were positively and significantly correlated with overall EI (at .01 and .05 respectively). The finding is not germane to this research. However, it does suggest that perhaps women and minorities may face different challenges in the military environment which cultivates a higher level of EI, and may merit further exploration. Of particular concern to the results of this research is the possibility that leader effectiveness ratings at USNA are based on subjective and spurious criteria.

The Meyers-Briggs Type Indicator is a personality assessment tool that holds a great deal of interest for members of the staff at USNA. Administered to every incoming Plebe, the MBTI has demonstrated little utility beyond increasing the self-awareness of individual midshipmen. Research conducted at USNA has shown certain personality types or traits to be more prevalent among the population of midshipmen, but little in the way of conclusive research has been conducted to estimate the predictive utility of the MBTI. The ability to predict likelihood of success for midshipman at USNA is of interest to the board of admissions. In this study, the MBTI preferences did not demonstrate significant correlations to the probability of midshipmen to be evaluated as an effective leader. While this model is no more overwhelmingly conclusive than those containing various measures of emotional intelligence, the predictive capability of the model containing variables for MBTI, as well as the overall goodness of fit for the model was poorer relative to the others.

B. STRENGTHS AND WEAKNESSES OF STUDY

The inherent strength of this study is its focus on a sample of midshipman squad leaders that is strongly representative of the population as a whole at the United States Naval Academy. However, there are significant weaknesses that contribute to the overall inconclusiveness of the results. First, the sample size of 104 is a relatively small number for research purposes, and inherently confounds the results of the regressions. Second, for most members of the sample, the Squad Leader experience was the first opportunity to exercise leadership skills relative to a moderate number of subordinates within the

construct of a formal military organization. Therefore, the relative inexperience as leaders for members of the sample may also contribute to confounding the results.

A significant weakness in the current methodology is the substantial subjectivity inherent in the method of evaluating squad leader performance, the grade inflation that may prevail on the FITREPs, the quality of 360-degree feedback, and the assignment of military performance grades among the thirty companies within the Brigade of Midshipmen.

Midshipmen receive little training in either the importance of performance evaluation, or proper methodologies for measuring leader performance. For many, the FITREP becomes another administrative burden to be completed in a hurried fashion. Similarly, FITREPs and 360 degree feedback evaluations are often inflated or overstated. While the quality of the members of the sample is admittedly high, one would expect that given their inexperience as leaders, the distribution of performance grades, or the assignment of marks on a FITREP or 360 degree feedback would more closely approximate a normal distribution. In fact, this distribution is heavily skewed to the high end of the scale, calling into question the objectivity of the assessments, and the validity of including USNA leader evaluations for research purposes.

Lastly, a weakness of the study may be the respondent's attitude toward completing a measure of emotional intelligence, or otherwise participating in a study that has little intrinsic or extrinsic reward. Midshipmen at USNA are inundated with requirements to complete surveys, participate in various measures, or otherwise commit their most valuable and scarcest resource (time) to completing requirements that are of

little personal interest to them. Thus, a culture of ambivalence toward such efforts has permeated the Brigade. While members of the sample were solicited as volunteers, no compensation for their time or effort was offered other than feedback as to their individual levels of emotional intelligence. Many of these volunteers demonstrated apathy during the administration of the measure, and many of the results of the MSCEIT v.2 results were invalidated due to failure to complete the measure, or an otherwise failure to follow prescribed procedures. Therefore, the researcher has reason to question how many of the respondents gave the measure a valid level of effort.

C. RECOMMENDATIONS

It is recommended that USNA give further consideration to the role that emotional intelligence plays in leadership, and that its predictive value in assessing, developing, and evaluating naval leaders be further explored.

Discussions of an emotional intelligence construct are currently part of the USNA leadership curriculum. These discussions introduce the student to a concept of EI as it may be important to a leader in dealing with superiors, peers, or subordinates, but is based almost exclusively on the trait-based models portrayed in popular literature. It is recommended that the curriculum be developed to include a discussion of emotional intelligence as both a trait and ability-based construct, and that students be presented with information and exercises that may allow them to develop and exercise these abilities.

Leadership ability is difficult to objectively measure and quantify. However, the current system for Midshipmen Performance Evaluation and Reporting is not consistent among the thirty companies of the Brigade, and does not result in a detailed and accurate picture of an individual's performance. It will be difficult to accurately assess and research leader effectiveness at USNA until a more objective system is implemented that generates a more normal performance distribution. A concerted effort to train and hold midshipman accountable for the timely and accurate submission of FITNESS reports should also be instituted, and the manner in which an individual midshipman approaches his or her performance evaluation responsibilities should also be part of their own performance evaluation.

D. RECOMMENDATIONS FOR FURTHER RESEARCH

It is recommended that additional research examine the role that emotional intelligence plays in the leadership performance of midshipmen at the U.S. Naval Academy. Because EI is a skill hypothesized to improve with age and experience, a longitudinal study would be helpful in assessing changes in EI of an individual between induction and graduation. Such a study could yield insights into the experiences that help an individual develop emotional intelligence skills or abilities that make them more effective as a leader, and would provide a comprehensive opportunity to explore the hypothesized relationship assessed in this study. Such a study could yield greater insights relevant to the development and application of leadership education and training at USNA, midshipman performance evaluation, 360 Degree feedback, Brigade leadership

billet (Striper) selection processes, use of an EI measure as a predictor of success at USNA, and the candidate admissions process.

Use of alternative measures of EI could also be explored. As noted previously Hoffman (1999) used the Bar-On EQi to assess the relationship between EI and performance among midshipmen at USNA. Another measure recently developed or in development through the Institute for Personality and Ability Testing (IPAT) may merit further research.

Further research could also be conducted in the development and assessment of objective measures of leadership related to performance of naval officers, and include abilities outlined in the emotional intelligence construct. Performance measurement, evaluation or assessment is a critical component to most processes associated with the career length training, education, and development of the human component of the naval services, and as such, should not accommodate a system that is not optimized for the needs of the naval service.

It seems intuitively obvious that emotionally intelligent leadership will only improve the effectiveness of any organization through the impacts it may conceivably have toward improving efficiency among members of teams or workgroups, and increasing the readiness of the naval services. Though not a panacea, the further exploration and development of the EI construct holds promise for making sure Marines and sailors are subject to the most enlightened, competent, and capable leadership for the challenges that confront the naval services in the 21st century.

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX A. DESCRIPTIVE STATISTICS

	Population Mean (N=360)	Sample Mean (N=104)	Expected Correlation
DEPENDENT VARIABLE:			
Good Leader	.23	.60	N/A
EXPLANATORY VARIABLES:			
Pre-USNA Leadership Factors			
Respondent Age	21.7	21.8	+
SAT-Math High Score	662	661	Unknown
SAT-Verbal High Score	633	633	+
Female	.15	.15	-
H.S. Class Officer	.14	.11	+
H.S. Club Leader	.35	.38	+
H.S. Music Leader	.12	.13	+
H.S. Team Capt/Co -Capt	.58	.53	+
Boys/Girls State Delegate	.20	.21	+
Camp Counselor	.23	.21	+
Scout Leader	.15	.16	+
JROTC Member	.12	.13	+
Prior Military Service	.09	.12	+
Prep School Grad	.19	.20	+
Minority Status	.24	.29	Unknown
EI as measured by MSCEITv.2			
Overall EI	100	100	+
Area EI Emotional Experiencing	100	106	+
Area EI Emotional Reasoning	100	94	+
Branch EI Perceiving Emotions	100	96	+
Branch EI Using Emotions	100	95	+
Branch EI Understanding Emotions	100	109	+
Branch EI Managing Emotions	100	102	+
Task EI Perceiving; Faces	100	96	+
Task EI Perceiving; Pictures	100	97	+
Task EI Using; Sensations	100	109	+
Task EI Using; Facilitation	100	103	+
Task EI Understanding; Blends	100	97	+
Task EI Understanding; Changes	100	95	+
Task EI Managing; Emotion Mgt	100	107	+
Task EI Managing; Social Mgt	100	102	+
Meyers Briggs Type Indicator			
Preference for Extroversion	.56	.53	+
Preference for Sensing perception	.61	.67	-
Preference for Thinking Judgment	.80	.83	+
Preference for Judging attitude	.69	.66	-

Table A-1. Descriptive Statistics for the Research Sample

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX B. MEAN VALUE MARGINAL EFFECT COMPUTATIONS

AVERAGE IMPACT:		MARGINAL EFFECTS AT MEAN VALUES:		
VARIABLE	XBAR	LOGIT	X*LOGIT	MARGINAL LOGIT*P(1-P)
Pre-USNA Leadership Experiences				
Constant	1	3.642	3.642	
Respondent Age	21.82	-0.068	-1.48376	-0.01669417
SAT-Math High Score	660.82	0.002	1.32164	0.000491
SAT-Verbal High Score	633.22	-0.004	-2.53288	-0.00098201
Female	0.15	-1.487	-0.22305	-0.36506214
H.S. Class Officer	0.11	0.512	0.05632	0.12569725
H.S. Club Leader	0.38	-0.522	-0.19836	-0.12815228
H.S. Music Leader	0.1346	0.504	0.0678384	0.12373323
H.S. Team Capt/Co-Capt	0.53	-0.066	-0.03498	-0.01620316
Boys/Girls State Delegate	0.21	0.629	0.13209	0.15442104
Camp Counselor	0.21	-0.504	-0.10584	-0.12373323
Scout Leader	0.16	1.319	0.21104	0.32381773
JROTC Member	0.13	-2.513	-0.32669	-0.61694765
Prior Military Service	0.12	-0.368	-0.04416	-0.0903449
Prep School Grad	0.2	-0.044	-0.0088	-0.01080211
Minority Status	0.2885	-0.702	-0.202527	-0.17234272
				 Z=S(X*LOGIT) 0.2698814
				 P=1/(1+e ^{-Z}) 0.56706379

Table B-1. Marginal Effects of Baseline Leader Performance Model

AVERAGE IMPACT:

VARIABLE

MARGINAL EFFECTS AT MEAN VALUES:

XBAR

LOGIT

X*LOGIT

MARGINAL

LOGIT*P(1-P)

Pre-USNA Leadership Experiences

Constant	1	0.826	0.826	
Respondent Age	21.82	-0.107	-2.33474	-0.026474
SAT-Math High Score	660.82	0.002	1.32164	0.0004948
SAT-Verbal High Score	633.22	-0.004	-2.53288	-0.00099
Female	0.15	-1.852	-0.2778	-0.458223
H.S. Class Officer	0.11	0.612	0.06732	0.1514215
H.S. Club Leader	0.38	-0.631	-0.23978	-0.156123
H.S. Music Leader	0.1346	0.578	0.077799	0.1430092
H.S. Team Capt/Co-Capt	0.53	-0.061	-0.03233	-0.015093
Boys/Girls State Delegate	0.21	0.773	0.16233	0.1912563
Camp Counselor	0.21	-0.536	-0.11256	-0.132618
Scout Leader	0.16	1.367	0.21872	0.3382242
JROTC Member	0.13	-2.493	-0.32409	-0.61682
Prior Military Service	0.12	-0.214	-0.02568	-0.052948
Prep School Grad	0.2	0.061	0.0122	0.0150927
Minority Status	0.2885	-0.995	-0.28706	-0.246184

EI as measured by MSCEIT v.2

Overall EI	99.588	0.037	3.684756	0.0091546
------------	--------	-------	----------	------------------

 $Z = S(X * \text{LOGIT})$

0.2038473

 $P = 1 / (1 + e^{-Z})$ **0.5507861**

Table B-2. Marginal Effects of Overall EI Model

AVERAGE IMPACT:		MARGINAL EFFECTS AT MEAN VALUES:		
VARIABLE	XBAR	LOGIT	X*LOGIT	MARGINAL LOGIT*P(1-P)
Pre-USNA Leadership Experiences				
Constant	1	-2.267	-2.267	
Respondent Age	21.82	-0.084	-1.83288	-0.020855
SAT-Math High Score	660.82	0.002	1.32164	0.0004965
SAT-Verbal High Score	633.22	-0.004	-2.53288	-0.000993
Female	0.15	-1.919	-0.28785	-0.476431
H.S. Class Officer	0.11	0.691	0.07601	0.171555
H.S. Club Leader	0.38	-0.7	-0.266	-0.173789
H.S. Music Leader	0.1346	0.67	0.090182	0.1663414
H.S. Team Capt/Co-Capt	0.53	-0.07	-0.0371	-0.017379
Boys/Girls State Delegate	0.21	0.9	0.189	0.2234436
Camp Counselor	0.21	-0.531	-0.11151	-0.131832
Scout Leader	0.16	1.427	0.22832	0.3542823
JROTC Member	0.13	-2.636	-0.34268	-0.654442
Prior Military Service	0.12	-0.218	-0.02616	-0.054123
Prep School Grad	0.2	0.1	0.02	0.0248271
Minority Status	0.2885	-0.903	-0.26052	-0.224188
EI as measured by MSCEIT v.2				
Area EI Emotional Experiencing	94.205	0.005	0.471025	0.0012414
Area EI Emotional Reasoning	106.206	0.054	5.735124	0.0134066
				Z=S(X*LOGIT)
				0.1667255
				P=1/(1+e^{-Z})
				0.5415851

Table B-3. Marginal Effects of Area EI Model

AVERAGE IMPACT:		MARGINAL EFFECTS AT MEAN VALUES:		
VARIABLE	XBAR	LOGIT	X*LOGIT	MARGINAL LOGIT*P(1-P)
Pre-USNA Leadership Experiences				
Constant	1	0.974	0.974	
Respondent Age	21.82	-0.259	-5.65138	-0.057496
SAT-Math High Score	660.82	0.002	1.32164	0.000444
SAT-Verbal High Score	633.22	-0.008	-5.06576	-0.001776
Female	0.15	-2.189	-0.32835	-0.485938
H.S. Class Officer	0.11	0.735	0.08085	0.1631632
H.S. Club Leader	0.38	-0.576	-0.21888	-0.127867
H.S. Music Leader	0.1346	0.747	0.100546	0.1658271
H.S. Team Capt/Co-Capt	0.53	-0.33	-0.1749	-0.073257
Boys/Girls State Delegate	0.21	1.082	0.22722	0.240194
Camp Counselor	0.21	-0.492	-0.10332	-0.109219
Scout Leader	0.16	1.866	0.29856	0.4142347
JROTC Member	0.13	-2.902	-0.37726	-0.644217
Prior Military Service	0.12	-0.232	-0.02784	-0.051502
Prep School Grad	0.2	0.396	0.0792	0.0879083
Minority Status	0.2885	-1.266	-0.36524	-0.28104
EI as measured by MSCEIT v.2				
Branch EI Perceiving Emotions	95.923	-0.031	-2.97361	-0.006882
Branch EI Using Emotions	94.769	0.054	5.117526	0.0119875
Branch EI Understanding Emotions	108.719	0.081	8.806239	0.0179813
Branch EI Managing Emotions	102.297	-0.01	-1.02297	-0.00222
				Z=S(X*LOGIT)
				0.6962672
				P=1/(1+e^{-Z})
				0.6673596

Table B-4. Marginal Effects of Branch EI Model

AVERAGE IMPACT:		MARGINAL EFFECTS AT MEAN VALUES:		
VARIABLE	XBAR	LOGIT	X*LOGIT	MARGINAL LOGIT*P(1-P)
Pre-USNA Leadership Experiences				
Constant	1	-2.645	-2.645	
Respondent Age	21.82	-0.281	-6.13142	-0.063883
SAT-Math High Score	660.82	0.007	4.62574	0.0015914
SAT-Verbal High Score	633.22	-0.013	-8.23186	-0.002955
Female	0.15	-2.124	-0.3186	-0.482873
H.S. Class Officer	0.11	0.614	0.06754	0.1395877
H.S. Club Leader	0.38	-0.198	-0.07524	-0.045014
H.S. Music Leader	0.1346	0.307	0.041322	0.0697938
H.S. Team Capt/Co-Capt	0.53	-0.15	-0.0795	-0.034101
Boys/Girls State Delegate	0.21	1.292	0.27132	0.2937252
Camp Counselor	0.21	-0.843	-0.17703	-0.191649
Scout Leader	0.16	1.776	0.28416	0.4037585
JROTC Member	0.13	-3.293	-0.42809	-0.748635
Prior Military Service	0.12	-0.2	-0.024	-0.045468
Prep School Grad	0.2	0.61	0.122	0.1386783
Minority Status	0.2885	-1.235	-0.3563	-0.280767
EI as measured by MSCEIT v.2				
Task EI Perceiving; Faces	95.917	-0.004	-0.38367	-0.000909
Task EI Perceiving; Pictures	96.602	0.006	0.579612	0.001364
Task EI Using; Sensations	108.473	0.057	6.182961	0.0129585
Task EI Using; Facilitation	102.706	0.053	5.443418	0.0120491
Task EI Understanding; Blends	97.29	-0.044	-4.28076	-0.010003
Task EI Understanding; Changes	94.494	0.064	6.047616	0.0145499
Task EI Managing; Emotion Mgt	106.819	0.036	3.845484	0.0081843
Task EI Managing; Social Mgt	101.577	-0.037	-3.75835	-0.008412
				Z=S(X*LOGIT)
				0.6213587
				P=1/(1+e^{-Z})
				0.6505275

Table B-5. Marginal Effects of Task Level EI Model

AVERAGE IMPACT:		MARGINAL EFFECTS AT MEAN VALUES:		
VARIABLE	XBAR	LOGIT	X*LOGIT	MARGINAL LOGIT*(1-P)
Pre-USNA Leadership Experiences				
Constant	1	0.845	0.845	
Respondent Age	21.82	-0.007	-0.15274	-0.001595
SAT-Math High Score	660.82	0.005	3.3041	0.0011391
SAT-Verbal High Score	633.22	-0.005	-3.1661	-0.001139
Female	0.15	-1.811	-0.27165	-0.41257
H.S. Class Officer	0.11	0.006	0.00066	0.0013669
H.S. Club Leader	0.38	-0.303	-0.11514	-0.069027
H.S. Music Leader	0.1346	0.579	0.077933	0.131904
H.S. Team Capt/Co-Capt	0.53	-0.108	-0.05724	-0.024604
Boys/Girls State Delegate	0.21	0.729	0.15309	0.166076
Camp Counselor	0.21	-0.588	-0.12348	-0.133954
Scout Leader	0.16	0.991	0.15856	0.2257632
JROTC Member	0.13	-2.669	-0.34697	-0.608034
Prior Military Service	0.12	-0.466	-0.05592	-0.106161
Prep School Grad	0.2	0.05	0.01	0.0113907
Minority Status	0.2885	-0.613	-0.17685	-0.13965
MBTI				
Preference for Extroversion	0.53	0.829	0.43937	0.1888574
Preference for Sensing perception	0.67	0.479	0.32093	0.1091227
Preference for Thinking Judgment	0.83	-0.68	-0.5644	-0.154913
Preference for Judging attitude	0.66	0.508	0.33528	0.1157293
				Z=S(X*LOGIT)
				0.6144329
				P=1/(1+e^{-Z})
				0.6489513

Table B-6. Marginal Effects of MBTI Model

APPENDIX C. EXCERPTS FROM MIDSHIPMAN PERFORMANCE EVALUATION SYSTEM

Requirement for Fitness and Evaluation Reports of USNA Midshipmen.

Article 1129, U.S. Navy Regulations, 1990, requires that records be maintained on naval personnel "which reflect their fitness for the service and performance of duties." Midshipmen fitness reports (FITREPS) are used for many professional actions during four years at USNA, including service assignment, advanced training, and selection for leadership positions. Timely, realistic, and accurate reports are essential for each of these tasks. The Military Performance System evaluates midshipmen in everything done outside of the classroom and reflects the developmental process of midshipmen becoming officers over the intensive, four-year, USNA program. It includes military training, physical training, and the inculcation of the ideals of the naval profession. The goal of the Military Performance System is to produce self-confident leaders who accept and are fully ready to perform their responsibilities both to the nation and to the men and women entrusted to them.

Instructions for preparation of the Report of Fitness of Midshipmen:

1. PERFORMANCE TRAITS (BLOCKS 19-29):

a. Each midshipman will be graded on his or her own performance as well as the performance of his or her subordinate midshipmen. This reflects the importance of leadership development at the Naval Academy. The reporting senior will assign grades for each trait in the "personal" and "subordinate" boxes. The grade for subordinate traits will be assigned based on an aggregate assessment of all midshipmen subordinate to the midshipman being graded.

b. Due regard will be given to midshipmen who have been assigned subordinates requiring extra attention. In these cases, the improvement of the subordinate will be an important factor in the grade assigned. Other considerations should include the leader's awareness of his or her subordinates' abilities and performance, and how the leader addresses and helps the subordinate improve.

c. Midshipmen in some billets, mostly in the company staff, will have no subordinate midshipmen. These midshipmen will receive "NOB" for their subordinate grades. Some other midshipmen may not have occasion to develop subordinates in one or more performance traits. For those traits, a grade of "NOB" may be assigned.

3. MARKING PERFORMANCE TRAITS. For each trait, place an "X" in only one box. The attached FITREP worksheet is provided as a guide and can be used later to assist in counseling. The 2.0 grade represents performance in accordance with USNA standards. The 4.0 grade is reserved for performance which is far above standards and is notable for

its exemplary or leadership quality. The 1.0 grade means generally poor performance which is not improving, or unsatisfactory performance in a single area. For the majority of midshipmen, most of the trait grades should be in the 2.0-3.0 range.

a. BLOCK 19: MILITARY BEARING/CONDUCT

(1) Midshipman:

- Understands and follows USNA Uniform Regulations and maintains a smart and professional appearance.
- Room is maintained in a smart, professional condition.
- Conduct sets a good example for others.
- Demonstrates self-control.
- Understands and follows the Navy's standards on alcohol use.
- Demonstrates proper behavior while on duty.
- Demonstrates proper behavior while off duty.
- Is always prompt.

(2) Subordinate:

- Promotes and achieves these same Military Bearing/Conduct standards with subordinates.

b. BLOCK 20: PLANNING/ORGANIZING/DELEGATING

(1) Midshipman:

- Develops realistic goals.
- Helps others develop realistic goals.
- Works well without supervision.
- Monitors others work without micromanaging.
- Manages time well enough to complete all his/her assignments.
- Completes assignments on time.

(2) Subordinate:

- Develops subordinates with appropriate skills to plan, organize, and execute realistic goals and milestones.

c. BLOCK 21: EQUAL OPPORTUNITY (EO)

(1) Midshipman:

- Understands and follows the Navy's EO standards.
- Educates others about the Navy's EO standards.
- Treats me in a professional manner.
- Treats others in a professional manner.

(2) Subordinate:

- Expects and achieves these same EO standards of subordinates.

d. BLOCK 22: SUPERVISING/DEVELOPING SUBORDINATES

(1) Midshipman:

- Is aware of his/her subordinates' strengths and weaknesses.
- Helps subordinates develop and realize goals.
- Motivates and challenges subordinates.
- Delegates tasks to subordinates.
- Monitors subordinates' performance without micromanaging.
- Accepts responsibility for subordinates' performance.
- Sets high standards for subordinates.

(2) Subordinate:

- Ensures subordinates have progressed significantly or have sustained superior growth such that minimal supervision of them is required.

d. BLOCK 23: MATURITY

(1) Midshipman:

- Requires no supervision during liberty, ECA's, Movement Orders, or Sports Events.

(2) Subordinate:

- Promotes and achieves these same standards in subordinates' behavior.

e. BLOCK 24: QUALIFICATIONS AND WATCHSTANDING

(1) Midshipman:

- Completes assigned qualifications promptly.
- Understands and follows watchstanding procedures.
- Demands high watchstanding standards of others.

(2) Subordinate:

- Ensures subordinates achieve full qualification in all areas in minimum time and perform all duties and watches in a superior and professional manner.

f. BLOCK 25: TEAMWORK

(1) Midshipman:

- Works well with others.
- Works well with seniors.
- Works well with subordinates.
- Promotes group ownership in team assignments or objectives.
- Helps formulate team direction.
- Helps others.

(2) Subordinate:

- Promotes and achieves superior teamwork from subordinates.

g. BLOCK 26: VERBAL AND WRITTEN COMMUNICATION

(1) Midshipman:

- Speaks in an articulate manner.
- Writes in an articulate manner.
- Composes written communications professionally.

(2) Subordinate:

- Promotes these same standards in subordinates' verbal and written communications through training and established standards.

h. BLOCK 27: DECISION MAKING

(1) Midshipman:

- Weighs all available facts before making a decision.
- Seeks advice and input from others in making his/her decisions.

(2) Subordinate:

- Trains subordinates in decision making skills.

i. BLOCK 28: PROFESSIONAL ETHICS

(1) Midshipman:

- Does what is right.
- Resists peer pressure.
- Is a positive ethical role model.

(2) Subordinate:

- Ensures subordinates maintain these same standards of professional ethics.

j. BLOCK 29: PHYSICAL DEVELOPMENT

(1) Midshipman:

- Excels during the PRT.
- Maintains his/her weight and body fat within USNA standards.
- Makes physical fitness a priority in his/her regular schedule.

(2) Subordinate:

- Promotes and achieves high standards of physical development with subordinates.

k. BLOCK 30: LEADERSHIP DEVELOPMENT

(1) Midshipman:

- Has used available feedback to improve his/her leadership performance.

(2) Subordinate:

- Has used sound leadership theory and practice to improve the leadership growth of subordinates.

4. BLOCK 31: LEADERSHIP RECOMMENDATIONS

- The reporting senior should recommend the midshipman for whatever midshipman leadership post or competitive training program he/she feels the individual is most qualified for. A maximum of two positions can be entered. Examples: BRIGADE CDR, PLATOON CDR, MINI-BUDS, etc.

5. BLOCK 32: COMMENTS ON PERFORMANCE

- Enter all specific comments on the midshipman's performance while attached to your unit. List specific accomplishments which stand out above the other midshipmen assigned. All comments must be verifiable. Any performance trait graded 1.0 or 4.0 must be specifically addressed in the comments section.

6. BLOCKS 33 & 34: PROMOTION RECOMMENDATION

- The reporting senior should place an "X" in the block on line 33 which best describes his/her opinion of the midshipman's standing in the unit compared to the midshipman's peers in the unit. The reporting senior will then place the total number of midshipmen recommended in each category in the appropriate Summary block on line 34.

7. BLOCK 35: SIGNATURE OF REPORTING SENIOR

- The reporting senior signs and dates the form in this block.

8. BLOCK 36: SIGNATURE OF COMPANY CHIEF/GUNNERY SERGEANT

- The Company Chief/Gunnery Sergeant will review the Fitness Report and provide input to the Company Officer for the assignment of the performance grade, then sign the Fitness Report in this block.

9. BLOCKS 37 & 38: SIGNATURE OF COMPANY OFFICER

- The Company Officer will sign and date the Fitness Report in block 37 and assign an overall performance grade in block 38. Areas to be factored in to the performance grade include drill/parade performance, conduct grade, room appearance, watchstanding, understanding and support of the plebe indoctrination system, sports participation, extracurricular activities participation, and personal appearance and military bearing. Company Officers will factor in summer training performance to the fall semester performance grade. Grade assignments will be as follows:

- a. Outstanding - (grade of A) assigned to those midshipmen whose performance is truly outstanding in all respects.

- b. Above Average - (grade of B) assigned to those midshipmen whose performance is above average in comparison with their peers.

- c. Average - (grade of C) assigned to those midshipmen whose military performance is average in comparison with their peers.

- d. Below Average - (grade of D) assigned to those midshipmen whose performance is below average. A grade of D automatically places the individual on probation for the following semester and results in the issuance of a probationary letter from the Battalion

Officer. If a midshipman receives a second consecutive D, an appearance before the Brigade Military Performance Board is required.

e. Failing - (grade of F) assigned only by the Academic Board to those midshipmen who have demonstrated insufficient aptitude for service. As a result, the midshipman may be recommended for separation to the Secretary of the Navy.

f. Grade Distribution - Company Officers are to utilize the distribution plan below for assignment of grades within the company. Company Officers may vary from these guidelines with the Battalion Officer's permission:

Brigade Military Performance Grade Distribution

Outstanding (A) 20-30%

Above Average (B) 25-40%

Average (C) 20-45%

Below Average (D) 03-10%

Failing (F) Assigned by Academic Board

MIDSHIPMAN TRAINING FITNESS REPORT

1. Name (Last, First, MI. Suffix):			2. Grade:		3. SSN:	
4. Alpha Code:		5. UIC:		6. Ship / Station / Academic Year Company:		
7. Occasion for Report: Periodic ☐ Special ☐				8. From: To:		
10. Type of Report: Regular ☐ Concurrent ☐				11. Physical Readiness:		
12. Reporting Senior (Last, FI, MI):		13. Grade:	14. Desig:	15. Title:	16. SSN:	
17. Command Employment and Command Achievements:						
18. Primary / Collateral / Watch Standing Duties:						
Performance Characteristics	Evaluated	NOB	1.0* Below Standards	2.0* Met Standards	3.0* Above Standards	4.0* Exceeds Standards
19. MILITARY BEARING / CONDUCT / SOBRIETY / PUNCTUALITY	Personal	☐	☐	☐	☐	☐
	Subordinate	☐	☐	☐	☐	☐
20. PLANNING / ORGANIZATION / DELEGATION	Personal	☐	☐	☐	☐	☐
	Subordinate	☐	☐	☐	☐	☐
21. EQUAL OPPORTUNITY	Personal	☐	☐	☐	☐	☐
	Subordinate	☐	☐	☐	☐	☐
22. SUPERVISING / DEVELOPING SUBORDINATES	Personal	☐	☐	☐	☐	☐
	Subordinate	☐	☐	☐	☐	☐
23. MATURITY	Personal	☐	☐	☐	☐	☐
	Subordinate	☐	☐	☐	☐	☐
24. QUALIFICATIONS AND WATCHSTANDING	Personal	☐	☐	☐	☐	☐
	Subordinate	☐	☐	☐	☐	☐
25. TEAMWORK	Personal	☐	☐	☐	☐	☐
	Subordinate	☐	☐	☐	☐	☐
26. VERBAL AND WRITTEN COMMUNICATION	Personal	☐	☐	☐	☐	☐
	Subordinate	☐	☐	☐	☐	☐

Figure C-1. Midshipmen Training Fitness Report (FITREP) p. 1

1. Name (Last, First, MI. Suffix):					2. Grade:		3. SSN:	
Performance Characteristics	Evaluated	NOB	1.0* Below Standards	2.0* Met Standards	3.0* Above Standards	4.0* Exceeds Standards		
27. DECISION MAKING	Personal	☐	☐	☐	☐	☐		
	Subordinate	☐	☐	☐	☐	☐		
28. PROFESSIONAL ETHICS	Personal	☐	☐	☐	☐	☐		
	Subordinate	☐	☐	☐	☐	☐		
29. PHYSICAL DEVELOPMENT	Personal	☐	☐	☐	☐	☐		
	Subordinate	☐	☐	☐	☐	☐		
30. LEADERSHIP DEVELOPMENT	Personal	☐	☐	☐	☐	☐		
	Subordinate	☐	☐	☐	☐	☐		
31. I recommend screening this individual for leadership positions as follows (maximum two): Recommendations may be for competitive training cruises or leadership billets such as: Brigade Commander, Regimental Commander, Platoon Commander, etc.								
32. COMMENTS ON PERFORMANCE: * All 4.0 and 1.0 marks must be specifically substantiated in comments. No numerical ranking permitted. Comments must be verifiable. Bold, underline, italic, or other highlighted type is prohibited. Font must be either 10 or 12 pitch only. Use upper and lower case.								
Promotion Recommendation	NOB	Unfit	Bottom Quartile	Third Quartile	Second Quartile	Top Quartile	35. Signature of Reporting Senior: Date:	
33. Individual								
34. Summary								
36. Signature of Senior Enlisted Advisor:				37. Signature of Company Officer:				
Date:				Date:				
38. Performance Grade		39. Signature of Individual Evaluated. "I have seen this report, have been appraised of my performance, and understand my right to make a statement: I intend to ☐ I do not intend to ☐ submit a statement. Date:						

Figure C-2. Midshipmen Training Fitness Report (FITREP) p.2

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX D. 360 DEGREE SQUAD LEADER FEEDBACK QUESTIONNAIRE FOR USNA MIDSHIPMAN, AY 2000-2001

October 2000

Squad members must complete this survey with your squad leader as the subject. Your input, along with that of your other squad members, will provide feedback to your squad leader on their leadership effectiveness. The potential benefit of this data to each squad leader rests on the integrity, truth, and accuracy of each squad member's input. As a squad member, please take this responsibility seriously. You should be as considerate and careful in providing data on your squad leader as you would want someone to be who was providing inputs on you. Your squad leader will use the resulting information as a personal means to enhance their growth as a leader.

Before you begin, take a few moments and reflect on your squad leader's effectiveness. You will be asked to evaluate your squad leader in the following areas: Individual Character, Setting the Example, Developing Subordinates, Upholding Standards and Leadership. Read the descriptors associated with each carefully. Select the one that in your opinion best fits your view of your squad leader for that particular statement. Avoid the temptation to "inflate" your responses.

ALL INPUTS ARE ANONYMOUS. Each statement requires an answer. If you skip a statement you will be asked to return to the survey and answer it. ' The Office of Institutional Research, will analyze the data in aggregate and provide your squad leader with a report summarizing the responses of all the squad members. All written comments will be provided verbatim to your squad leader.

On to the Survey

Squad Member to Squad Leader Feedback Survey (Academic Year)

Please provide the following information:

Select your platoon number.

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4

Select your squad number.

- ☐ 1
- ☐ 2
- ☐ 3

PLEASE USE THE FOLLOWING SCALE WHEN EVALUATING THE
STATEMENTS REGARDING YOUR SQUAD LEADER.

1. Not Observed
2. Shows an occasional lapse or is inconsistent in this area - behaves/performs below my level of expectations for a squad leader
3. Most of the time performs at a level expected of a squad leader in this area - normally meets my expectations with very few lapses
4. Consistently performs at a level expected of a squad leader in this area - fulfills my expectations, is doing a good job
5. Often exceeds expected performance in this area - serves as a strong role model
6. Always surpasses expected levels of performance in this area - an inspiring example/someone I truly look up to.

There are five sections comprising 25 questions. Additionally you will be asked to provide a short written input at the end of each section. YOUR INPUTS TO EACH QUESTION, INCLUDING YOUR WRITTEN COMMENTS, ARE ANONYMOUS. Your squad leader will receive a report summarizing the frequency of responses to each question. Written comments will be presented VERBATIM.

INDIVIDUAL CHARACTER - moral/inner strength to overcome fear, difficulty, peer pressure, or anxiety. The conscious, overriding ability to do the right thing.

1. Moral Courage - my squad leader makes the right choice in any given situation. placing conscience over competing interests regardless of personal consequences.

- ☐ Not observed
- ☐ Behaves/performs below my level of expectations for a squad leader
- ☐ Normally meets my expectations with very few lapses
- ☐ Fulfills my expectations, is doing a good job
- ☐ Serves as a strong role model
- ☐ An inspiring example/someone I truly look up to

2. Unselfishness - my squad leader places the organization first, and self last, adhering to the concept of "Ship, Shipmate, Self"

- ☐ Not observed
- ☐ Behaves/performs below my level of expectations for a squad leader
- ☐ Normally meets my expectations with very few lapses
- ☐ Fulfills my expectations, is doing a good job
- ☐ Serves as a strong role model
- ☐ An inspiring example/someone I truly look up to

3. Accountability - my squad leader accepts accountability for his/her actions, and also the actions of subordinates (squad members).

- ☐ Not observed

- ☐ Behaves/performs below my level of expectations for a squad leader
- ☐ Normally meets my expectations with very few lapses
- ☐ Fulfills my expectations, is doing a good job
- ☐ Serves as a strong role model
- ☐ An inspiring example/someone I truly look up to

4. By relating to a specific event and/or in general terms, comment on the individual character of your squad leader. In your opinion is he/she the type of person who will do the right thing when tested?

SETTING THE EXAMPLE - the most visible facet of leadership. How well a squad leader serves as a role model for others.

5. My squad leader strives to achieve his/her full potential in their own academic performance.

- ☐ Not observed
- ☐ Behaves/performs below my level of expectations for a squad leader
- ☐ Normally meets my expectations with very few lapses
- ☐ Fulfills my expectations, is doing a good job
- ☐ Serves as a strong role model
- ☐ An inspiring example/someone I truly look up to

6. My squad leader demonstrates excellence in his/her professional knowledge.

- ☐ Not observed
- ☐ Behaves/performs below my level of expectations for a squad leader
- ☐ Normally meets my expectations with very few lapses
- ☐ Fulfills my expectations, is doing a good job
- ☐ Serves as a strong role model
- ☐ An inspiring example/someone I truly look up to

7. My squad leader demonstrates excellence in his/her level of physical fitness.

- ☐ Not observed
- ☐ Behaves/performs below my level of expectations for a squad leader
- ☐ Normally meets my expectations with very few lapses
- ☐ Fulfills my expectations, is doing a good job
- ☐ Serves as a strong role model
- ☐ An inspiring example/someone I truly look up to

8. My squad leader maintains his/her military standards (room/uniform/personal appearance) among the highest in the squad.

- ☐ Not observed
- ☐ Behaves/performs below my level of expectations for a squad leader
- ☐ Normally meets my expectations with very few lapses
- ☐ Fulfills my expectations, is doing a good job
- ☐ Serves as a strong role model
- ☐ An inspiring example/someone I truly look up to

9. My squad leader supports USNA and USN rules and regulations as evidenced in his/her daily actions and decisions.

- ☐ Not observed
- ☐ Behaves/performs below my level of expectations for a squad leader
- ☐ Normally meets my expectations with very few lapses
- ☐ Fulfills my expectations, is doing a good job
- ☐ Serves as a strong role model
- ☐ An inspiring example/someone I truly look up to

10. Overall, do you look up to your squad leader? What is one area that he-/she could improve regarding the example he/she sets?

DEVELOPING SUBORDINATES - The commitment to cultivating professional and personal development of subordinates. The effectiveness in creating an atmosphere of excellence, yet tolerant of mistakes in the process of learning.

11. My squad leader encourages subordinates to make the best moral choice in any given situation.

- ☐ Not observed
- ☐ Behaves/performs below my level of expectations for a squad leader
- ☐ Normally meets my expectations with very few lapses
- ☐ Fulfills my expectations, is doing a good job
- ☐ Serves as a strong role model
- ☐ An inspiring example/someone I truly look up to

12. My squad leader shows genuine interest: in his/her subordinates' academic performance.

- ☐ Not observed
- ☐ Behaves/performs below my level of expectations for a squad leader
- ☐ Normally meets my expectations with very few lapses
- ☐ Fulfills my expectations, is doing a good job
- ☐ Serves as a strong role model
- ☐ An inspiring example/someone I truly look up to

13. My squad leader emphasizes the development of professional knowledge in his/her subordinates.

- ☐ Not observed
- ☐ Behaves/performs below my level of expectations for a squad leader
- ☐ Normally meets my expectations with very few lapses
- ☐ Fulfills my expectations, is doing a good job
- ☐ Serves as a strong role model
- ☐ An inspiring example/someone I truly look up to

14. My squad leader shows genuine interest in his/her subordinates' level of physical fitness.

- ☐ Not observed
- ☐ Behaves/performs below my level of expectations for a squad leader
- ☐ Normally meets my expectations with very few lapses
- ☐ Fulfills my expectations, is doing a good job
- ☐ Serves as a strong role model

- ☐ An inspiring example/someone I truly look up to

15. My squad leader delegates authority as low as possible down the chain-of-command, allowing his/her subordinates to take on increased responsibility commensurate with their competence and experience.

- ☐ Not observed
- ☐ Behaves/performs below my level of expectations for a squad leader
- ☐ Normally meets my expectations with very few lapses
- ☐ Fulfills my expectations, is doing a good job
- ☐ Serves as a strong role model
- ☐ An inspiring example/someone I truly look up to

16. Do you feel as though your squad leader is truly concerned about your personal growth as a Midshipman and future Naval Officer?

- ☐ Not observed
- ☐ Behaves/performs below my level of expectations for a squad leader
- ☐ Normally meets my expectations with very few lapses
- ☐ Fulfills my expectations, is doing a good job
- ☐ Serves as a strong role model
- ☐ An inspiring example/someone I truly look up to

UPHOLDING STANDARDS -The consistent and fair application of measures that contribute to mission accomplishment within an atmosphere of good order and discipline.

17. My squad leader promotes basic respect and dignity for individuals regardless of race and gender.

- ☐ Not observed
- ☐ Behaves/performs below my level of expectations for a squad leader
- ☐ Normally meets my expectations with very few lapses
- ☐ Fulfills my expectations, is doing a good job
- ☐ Serves as a strong role model
- ☐ An inspiring example/someone I truly look up to

18. My squad leader requires subordinates to take personal accountability for their actions, holding his/her subordinates to high and consistent standards across all classes (1/C thru 4/C) regarding rooms, uniforms, and personal appearance.

- ☐ Not observed
- ☐ Behaves/performs below my level of expectations for a squad leader
- ☐ Normally meets my expectations with very few lapses
- ☐ Fulfills my expectations, is doing a good job
- ☐ Serves as a strong role model
- ☐ An inspiring example/someone I truly look up to

19. My squad leader provides constructive feedback to correct deficiencies, counseling his/her subordinates on personal performance and behavior.

- ☐ Not observed
- ☐ Behaves/performs below my level of expectations for a squad leader
- ☐ Normally meets my expectations with very few lapses

- ☐ Fulfills my expectations, is doing a good job
- ☐ Serves as a strong role model
- ☐ An inspiring example/someone I truly look up to

20. My squad leader enforces USNA and USN rules and regulations consistently and fairly among peers, upperclass, and underclass.

- ☐ Not observed
- ☐ Behaves/performs below my level of expectations for a squad leader
- ☐ Normally meets my expectations with very few lapses
- ☐ Fulfills my expectations, is doing a good job
- ☐ Serves as a strong role model
- ☐ An inspiring example/someone I truly look up to

21. Concerning upholding standards and overall good order and discipline, where on the scale between lenient and strict is your squad leader? What area could he/she improve upon in upholding standards to better accomplish the job or mission?

LEADERSHIP- The inseparable relationship between leader and led. The application of leadership principles to provide directions and motivate subordinates. Using authority, persuasion, and personality to influence subordinates to accomplish assigned tasks. Sustaining motivation and morale while maximizing subordinates performance.

22. My squad leader communicates well-defined, reasonable goals.

- ☐ Not observed
- ☐ Behaves/performs below my level of expectations for a squad leader

- ☐ Normally meets my expectations with very few lapses
- ☐ Fulfills my expectations, is doing a good job
- ☐ Serves as a strong role model
- ☐ An inspiring example/someone I truly look up to

23. My squad leader builds and sustains a team atmosphere, motivating his/her subordinates to achieve squad goals.

- ☐ Not observed
- ☐ Behaves/performs below my level of expectations for a squad leader
- ☐ Normally meets my expectations with very few lapses
- ☐ Fulfills my expectations, is doing a good job
- ☐ Serves as a strong role model
- ☐ An inspiring example/someone I truly look up to

24. My squad leader demonstrates initiative in responding in a timely manner to squad member's concerns (administrative actions or special requests).

- ☐ Not observed
- ☐ Behaves/performs below my level of expectations for a squad leader
- ☐ Normally meets my expectations with very few lapses
- ☐ Fulfills my expectations, is doing a good job
- ☐ Serves as a strong role model
- ☐ An inspiring example/someone I truly look up to

25. My squad leader uses the chain-of-command properly and ensures his/her subordinates use the chain-of-command properly (shows loyalty to seniors by passing along orders from above as his/her own; shows loyalty to subordinates by keeping them informed and seeking their input and feedback).

- ☐ Not observed
- ☐ Behaves/performs below my level of expectations for a squad leader
- ☐ Normally meets my expectations with very few lapses
- ☐ Fulfills my expectations, is doing a good job
- ☐ Serves as a strong role model
- ☐ An inspiring example/someone I truly look up to

26. My squad leader does not rely too heavily on positional authority (rank) to motivate his/her subordinates toward mission accomplishment.

- ☐ Not observed
- ☐ Behaves/performs below my level of expectations for a squad leader
- ☐ Normally meets my expectations with very few lapses
- ☐ Fulfills my expectations, is doing a good job
- ☐ Serves as a strong role model
- ☐ An inspiring example/someone I truly look up to

27. My squad leader avoids micro-management but provides follow-up to ensure projects are progressing.

- ☐ Not observed
- ☐ Behaves/performs below my level of expectations for a squad leader
- ☐ Normally meets my expectations with very few lapses
- ☐ Fulfills my expectations, is doing a good job

- ☐ Serves as a strong role model
- ☐ An inspiring example/someone I truly look up to

28. My squad leader does not default to coercive means ("flaming") to motivate or to correct deficiencies.

- ☐ Not observed
- ☐ Behaves/performs below my level of expectations for a squad leader
- ☐ Normally meets my expectations with very few lapses
- ☐ Fulfills my expectations, is doing a good job
- ☐ Serves as a strong role model
- ☐ An inspiring example/someone I truly look up to

29. My squad leader follows the guidelines of "praise in public, reprimand in private."

- ☐ Not observed
- ☐ Behaves/performs below my level of expectations for a squad leader
- ☐ Normally meets my expectations with very few lapses
- ☐ Fulfills my expectations, is doing a good job
- ☐ Serves as a strong role model
- ☐ An inspiring example/someone I truly look up to

30. Provide a short description of your squad leader's leadership style. Is he/she directive or does he/she use a more participatory style? Is he/she present or not so present? What is one area where he/she could be more effective as a leader?

APPENDIX E. MSCEIT EXAMPLE ITEMS

The MSCEIT has eight sub-tests and over one hundred individual items. These examples are meant to illustrate the type of items that this ability test of emotional intelligence consists of.

Branch 1 – Identifying Emotions



How much is each feeling below expressed by this face?

- | | | | | | | |
|-----------------|---|---|---|---|---|-------------------|
| 1. No Happiness | 1 | 2 | 3 | 4 | 5 | Extreme Happiness |
| 2. No Fear | 1 | 2 | 3 | 4 | 5 | Extreme Fear |

Branch 2 -- Facilitation

1. What mood(s) might be helpful to feel when meeting in-laws for the very first time?

- | | Not Useful | | | | Useful |
|-------------|------------|---|---|---|--------|
| a. Tension | 1 | 2 | 3 | 4 | 5 |
| b. Surprise | 1 | 2 | 3 | 4 | 5 |
| c. Joy | 1 | 2 | 3 | 4 | 5 |

Branch 3 –Understanding Emotions

1. Tom felt anxious, and became a bit stressed when he thought about all the work he needed to do. When his supervisor brought him an additional project, he felt _____.

- a. overwhelmed
- b. depressed
- c. ashamed
- d. self-conscious
- e. jittery

Branch 4 – Managing Emotions

1. Debbie just came back from vacation. She was feeling peaceful and content. How well would each action preserve her mood?

Action 1: She started to make a list of things at home she needed to do.

Action 2: She began thinking about where and when she should go on her next vacation.

Action 3: She decided it was best to ignore the feeling since it wouldn't last anyway.

- a. Very Ineffective
- b. Somewhat Ineffective
- c. Neutral
- d. Somewhat effective
- e. Very effective

LIST OF REFERENCES

- Bar-On R. (1997). The Emotional Quotient Inventory (EQ-I): Technical Manual. Toronto: Multi-Health Systems, Inc.
- Bar-On, R. & Parker, J.D.A. (Eds.). (2000). Handbook of Emotional Intelligence. San Francisco: Jossey-Bass.
- Barret, L. F., Lane, R.D., Sechrest, L., & Schwartz, G.E. (2000). Sex Differences in Emotional Awareness. Personality and Social Psychology Bulletin, Vol. 26, Issue 9, 1027-35.
- Brannon, R. (1985). Dimensions of the Male Sex Role in America. In A.G. Sargent (ed.) Beyond Sex Roles (2nd ed.). Stamford: West Publishing Co. pp.296-316.
- Briggs Myers, I., & McCaulley, M.H. (1985). Manual: A guide to the development and use of the Myers-Briggs Type Indicator (2nd ed.). Palo Alto: Consulting Psychologists Press, Inc.
- Caruso, D. R., Mayer, J. D., & Salovey, P. (in press). Emotional Intelligence and Emotional Leadership. In Riggio, R., Murphy, S., Pirozzolo, F.J. (Eds.), Multiple Intelligences and Leadership. Mahwah: Lawrence Earlbaum Associates.
- Cherniss, C., Goleman, D. Emmerling, R., Cowan, K., & Adler, M. (1998). Bringing Emotional Intelligence to the Workplace. (Consortium for Research on Emotional Intelligence in Organizations Technical Report). [on-line]. Available: www.eiconsortium.org.
- Cherniss, C. (2000). Emotional Intelligence: What it is and Why it Matters. [on-line]. Available: www.eiconsortium.org
- Cherniss, C. (2000b). Social and Emotional Competence in the Workplace. In Reuven Bar-On & James D.A. Parker (Eds.) Handbook of Emotional Intelligence (pp.433-458). San Francisco: Jossey-Bass.
- Goleman, D. (1995). Emotional Intelligence. New York: Bantam Books.
- Goleman, D. (1998). Working with Emotional Intelligence. New York: Bantam Books.
- Hays, S. H. & Thomas, W. N. (eds.) (1967). Taking Command. Harrisburg: Stackpole Books.
- Hersey, P., Blanchard, K.H., & Johnson, D.E. (1996). Management of Organizational Behavior: Utilizing Human Resources (7th ed). Upper Saddle River: Prentice Hall.

Hoffman, S. L. (1999). Emotional Intelligence: A Look at its effect on Performance at the United States Naval Academy. (Masters Thesis, U.S. Naval Postgraduate School, 1999). Defense Technical Information Center.

Lord Moran. (1967). The Anatomy of Courage (1st U.S. ed.). Boston:Houghton Mifflin.

Mayer, J. D. (1999). Emotional Intelligence: popular or scientific psychology? APA Monitor [On-line], 30,8. Available: <http://www.apa.org/monitor/sep99>

Mayer, J. D., & Salovey, P. (1993). The Intelligence of Emotional Intelligence. Intelligence, 17(4), 433-442.

Mayer, J. D., & Salovey, P. (1995). Emotional Intelligence and the Construction and Regulation of Feelings. Applied and Preventive Psychology, 4, 197-208.

Mayer, J. D. & Salovey, P. (1997). What is Emotional Intelligence? In P. Salovey & D. Sluyter (Eds). Emotional Development and Emotional Intelligence: Implications for Educators (pp. 3-31). New York: Basic Books.

Mayer, J. D., Caruso, D., & Salovey, P. (1999). Emotional Intelligence Meets Traditional Standards for an Intelligence. Intelligence, 27, 267-298.

Mayer, J. D., Salovey, P., & Caruso, D. R. (2000). Models of Emotional Intelligence. In R. J. Sternberg (Ed.). Handbook of Intelligence (pp. 396-420). Cambridge, UK: Cambridge University Press.

Mayer, J. D., Caruso, D., & Salovey, P. (2000). MSCEIT v.2 Technical Manual. Toronto: Multi Health Systems, Inc.

Petrides, K. V., & Furnham, A. (2000). Gender Differences in Measured and Self-estimated Trait Emotional Intelligence, Sex Roles, Vol 42, Issue 5/6, 449-461.

Russo, N. F. (1985). Sex-Role Stereotyping, Socialization, and Sexism. In A.G. Sargent (ed.) Beyond Sex Roles (2nd ed.). Stamford: West Publishing Co. pp.150-159.

U.S. Naval Academy. (1999). Reef Points (94th ed.). Annapolis: U.S. Naval Institute.

U.S. Naval Academy. (2001). Fourth Class Indoctrination System Manual (COMDTMIDNINST 1510.2B). Annapolis: USNA.

BIBLIOGRAPHY

- Bernard, H. R. (2000). Social Research Methods. London: Sage Publications.
- Bowman, W. R. (1998). SPSS Guide to Data Analysis: A Statistical Supplement with Applications. (Manuscript).
- Bowman, W. R. (1998). Dichotomous Dependent Variables and Regression Analysis using SPSS. (Manuscript).
- Mackintosh, N. J. (1998). IQ and Human Intelligence. Oxford: Oxford University Press.
- Norusis, M. J. (1999). SPSS 9.0 Guide to Data Analysis. Upper Saddle River: Prentice-Hall.
- Salovey, P., Bedell, B. T., Detweiler, J. B., & Mayer, J. D. (in press). Current Directions in Emotional Intelligence Research. In M. Lewis & J. M. Haviland-Jones (Eds), Handbook of Emotions (2nd ed.). New York: Guilford Press.

THIS PAGE INTENTIONALLY LEFT BLANK

INITIAL DISTRIBUTION LIST

1. Defense Technical Information Center
Ft. Belvoir, VA
2. Dudley Knox Library
Naval Postgraduate School
Monterey, CA
3. Nimitz Library
U. S. Naval Academy
Annapolis, MD
4. Superintendent
United States Naval Academy
Annapolis, MD
5. Office of Institutional Research
United States Naval Academy
Annapolis, MD
6. Director, Training and Education
MCCDC, Code C46
Quantico, VA
7. Director, Marine Corps Research Center
MCCDC, Code C40RC
Quantico, VA
8. Marine Corps Tactical Systems Support Activity (Attn: Operations Officer)
Camp Pendleton, CA
9. Marine Corps Representative
Naval Postgraduate School
Monterey, CA