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EVOLUTION OF THE MARINE OFFICER FITNESS REPORT: A MULTIVARIATE ANALYSIS

by

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EVOLUTION OF THE MARINE OFFICER FITNESS REPORT: A MULTIVARIATE ANALYSIS

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ABSTRACT

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LIST OF ACRONYMS AND ABBREVIATIONS

1stLt	First Lieutenant
2ndLt	Second Lieutenant
AC	Active Component
Capt	Captain
CFT	Combat Fitness Test
CNA	Center for Naval Analysis
Colonel	COL
ECP	Enlisted Commissioning Programs
FITREP	Fitness Report
FRA	Fitness Report Average
FY	Fiscal Year
GCT	General Classification Test
HOR	Home of record
JAG	Judge Advocate General
LtCol	Lieutenant Colonel
Maj	Major
MARADMIN	Marine Administrative Message
MBS	Master Brief Sheet
MCC	Monitored Command Code
MCO	Marine Corps Order
MECEP	Marine Enlisted to Commissioning Education Program
MMRP-30	Manpower Management Records and Performance Branch-30
MOC	Marine Operating Concept
MOS	Military Occupational Specialty
MRO	Marine Reported On
MROW	Marine Reported On Worksheet
NBA	National Basketball Association
OCC	Officer Candidates Course

Occfield	Occupational Field
OCS	Officer Candidates School
PARS	Performance Anchored Rating Scales
PES	Performance Evaluation System
PLC	Platoon Leaders Course
PME	Professional Military Education
RO	Reviewing Officer
ROTC	Reserve Officer Training Corps
RS	Reporting Senior
RUC	Reporting Unit Code
STEM	Science, Technology, Engineering, Math
TBS	The Basic School
TFDW	Total Forces Data Warehouse
USMC	United States Marine Corps
USNA	United States Naval Academy

EXECUTIVE SUMMARY

A. PURPOSE

This study examines variation in Reporting Senior (RS) evaluation behavior from calendar years 2010 to 2017. This study uses positive economic analysis to describe what is going to identify significant correlations in the data, which an RS signals as high quality. The primary focus of this study is to assist manpower decision-makers in meeting the Commandant's intent of matching a competent and ready Marine to a billet that individual Marine is qualified to fulfill.

B. BACKGROUND

The Marine Corps' FITREP was changed in 1999 to combat inflation, ensure fairness, and to appropriately inform promotion and selection boards to select high-quality Marines for continuation of service. Numerous studies have since been conducted identifying that the current system is working, but there are systemic variations in reporting official evaluation behavior.

The Marine Operating Concept includes two critical tasks important to this thesis. The first task is for manpower managers to emphasize quality in leadership positions, while the second task relates to talent management to improve return on training and education investment. This thesis identifies aspects of high-quality from RSs evaluation behavior of top-third fitness report outcomes.

C. FINDINGS AND CONCLUSIONS

The data in this thesis come from Manpower Management Records and Performance Branch-30 and Total Force Data Warehouse providing 118,765 FITREPs to examine. My first logistics regression model shows that variation exists in RS evaluation behavior when controlling for race of the RS and the Marine Reported On (MRO). This variation continues to exist when I add other non-performance-based demographic factors such as gender, religion, marital status, and dependents. The variation in RS FITREP top-

third outcome significantly narrows when accounting for performance-based factors such as education and physical fitness test scores of the RS and the MRO.

The degree subject on record appears to have the highest odds ratio results in my model, possibly identifying that RSs place value of different types of education. Science, technology, engineering and math (STEM) degrees are valued more by RSs over non-STEM degree holder for males. More so, male degree holders that have a "no subject major indicated" on file have even higher FITREP top-third outcome odds than STEM degree MROs. Physical fitness and combat experience have significant results, but an education in STEM and other have the highest aggregate odds. Female officers with STEM degrees are less likely to receive top-third FITREP outcomes from any RS, while the other degree category offers the highest FITREP top-third outcome odds in my model. Physical fitness and combat experience appear to have less influence on FITREP top-third outcome. RSs are signaling quality in the education of the MRO.

Based on my findings, I suggest that Manpower Management create case study training and education to enhance FITREP training at basic officer courses. I also suggest that talent managers improve data collection methods for undergraduate major and grade point average to continuously identify the variance in education as a high-quality metric. Lastly, reexamine Marine Corps Order 1610.7 to enhance the rating philosophy guidance to Marine Corps RSs, as chapters 4 (p. 22) and 8 (p. 5) appear to contradict one another.

D. RECOMMENDATIONS FOR FURTHER RESEARCH

My study focuses on the variation of RS evaluation behavior while focusing on how RSs learn about the capabilities of their subordinates over time. Variation does exist in reporting behavior and the driving factors in my model are STEM and other degree holders, 1st Class PFT scores and combat experience for male officers. I recommend that future researchers conduct a Cost-to-Benefit Analysis on the effects of job matching a STEM to a non-STEM superior or subordinate combination to enhance job performance and readiness.

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I will remain ...

Semper Fidelis!

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I. INTRODUCTION

This positive economic examination of recent officer fitness reports (FITREP) assists decision-makers in meeting the Commandant's intent of matching a competent and ready Marine to a billet that individual Marine is qualified to fulfill. I examine measurable and observable characteristics of the Marine Reported On (MRO) and Reporting Senior (RS) to examine the effects, if any, of RS learning over time and if statistical discrimination is present within active component officer performance appraisals. Previous research by think tanks and Naval Postgraduate School theses have identified high quality officer promotion predictors such as: overall performance at The Basic School (TBS), a master's or doctoral degree, attributes on the fitness report highly correlated to promotion, high physical fitness scores, gender, dependents, and awards (Quester et al, (2007), Clemens et al (2011), Stolzenberg (2017) and Salas (2015)). My unorthodox method of examining what characteristics RSs value on performance appraisals indirectly include the aforementioned high-quality characteristics while holding constant certain demographic characteristics of the MRO and the RS to see if demographic characteristics have an effect on FITREP markings.

The problem that I see is that across the Marine Corps' different occupational fields (occfield), reporting officials place different values on different high-quality characteristics measured on a homogenous FITREP. For example, the combat arms occfield places more value on certain FITREP attributes that are highly correlated and statistically significant to officer promotion than the other occfields (Stolzenberg (2017)). Being female is also highly correlated to officer promotion in the aviation (pilot) community (Stolzenberg (2017)). This thesis will examine if the demographic differences and limited performance-based factors of the RS and the MRO influence performance appraisal markings identifying if any variation exists in RS learning over time.

To do this objectively, I reread "First to Fight" by Lieutenant General Victor 'Brute' Krulak before this analysis. Then I rediscovered that Brute mentions critical thinking and selfless service to God, country and Corps. The purpose of this thesis is to examine our most important human resources document for retention, selection and

promotion, the FITREP. The RS, MRO and the FITREP are the subjects of this objective and critical analysis. Though the subject of this thesis could be misinterpreted to carry a tone of remonstrance; I must assure you that is not my intent. In the spirit of Lieutenant General Victor 'Brute' Krulak, we as leaders must be self-critical and know ourselves to improve and secure our future via the trust of our Marines, the citizens of our Nation, and our Congress…

> In the most profound sense, I suppose, the future of the Corps lies within itself, because, however large or small its problems are, nobody else is going to find solutions to them. It has been that way for over 200 years and it is that way today. It is a challenge that will demand the very best of a Corps that has been sharpened on challenge for all of its colorful life. (Krulak, 1984, p. 226)

The intent of this thesis is to review scholarly work of how Marine Corps RSs observe MROs in order to develop a model based on sound economic theory coupled with previous peer reviewed econometric techniques to can examine if any variation exists in FITREP outcomes based on the demographic characteristics of the MRO and the RS. The purpose of this thesis is multi-fold. First, I add to previous Marine Corps FITREP and reporting official literature to continue the discussion on high quality indicators in an effort to improve the Marine Corps' performance evaluation system (PES). Second, I examine the growth rate of FITREP scores by the same RS to measure if any variation exists between the RS and the MRO based on demographic factors of both, which is an indication of how an RS learns about an MRO's capabilities and limitations over time. Lastly, I examine if non-performance factors such as race, gender and occfield are affecting RS evaluation behavior.

II. BACKGROUND

A. OVERVIEW

In this Chapter, I provide background information on how the United States Marine Corps (USMC) evaluates its officers. I begin with a discussion of the Marine Corps Operating Concept, followed by a description of the Marine Corps' Performance Evaluation System and FITREP. I conclude this chapter with a review of empirical studies on the FITREP and on the current demographic makeup of the Marine Corps.

B. MARINE CORPS OPERATING CONCEPT

The Marine Corps Operating Concept (MOC) broadly describes how the Marine Corps will "conduct the range of military operations in accordance with Title 10 responsibilities" (Neller, 2010, p.i). The MOC is a current and forward-looking document developed by the Commandant of the Marine Corps and his staff identifying strategic operating environments and challenges, a problem statement, and specifying critical tasks. The MOCs purpose is to provide all Marine Corps elements with unifying operating concepts to link the strategic level with the tactical level echelons to enhance its warfighting capabilities. This thesis explores two key areas in the talent management (exploit the competence of the individual Marine) critical task of the MOC by examining how a superior officer evaluates subordinate officers over time to determine the rate of RS learning that occurs and if there is an evaluation bias. Such bias would negatively impact the quality of assignments, promotions, and command selection of USMC officers, and be incongruous with the MOC.

1. Emphasizing Quality in Leadership Positions

Critical task 5.6 of the MOC mandates Marine Corps entities to "examine and refine our manpower management models and policies to more efficiently and effectively align personnel assignments with billet qualification" (Neller, 2010, p. 26). A key piece to enhancing the manpower management model is the input that identifies high-quality

officers and drives manpower decision-making: the FITREP, which is described further below.

2. Managing Talent to Improve Return on Training/Education Investment

This critical task focuses on total quality manpower management to match individual talent to career paths to enhance the Total Force (Neller, 2010, p. 26). Critical task 5.7 acknowledges the significant costs the Marine Corps invests to train and educate Marines in an effort to enhance job performance. This task challenges manpower managers to develop a better talent tracking system to enhance job performance of the individual Marine regardless of military occupational specialty (MOS). The Marine Corps uses the FITREP to measure job performance and has determined that the RS is the reporting official to measure "performance and character" (USMC, 2015, p. 2). An examination of recent officer FITREPs assists manpower managers in meeting the Commandants intent to improve talent management tracking systems to match a Marine's credentials and experience to a career path requiring those credentials and experience. My research examines how Marine Corps RSs evaluate their subordinate officers over time to provide an analysis of performance evaluation behavior of the primary performance measurement tool used to promote and assign officers (USMC, 2015, p. 2). This examination of recent officer FITREPs adds to previous literature to determine if an evaluation bias exists in the officer ranks possibly impacting the quality of officer assignments, retention, promotions, and command selection.

C. PERFORMANCE EVALUATION SYSTEM

Marine Corps Order 1610.7 governs the Marine Corps' Performance Evaluation System (PES). This order establishes rules, regulations and guidelines for reporting officials to provide an accurate recommendation to the Commandant of the Marine Corps for "promotion, career designation, retention, resident schooling, command and duty assignment" (USMC, 2015, p. 2). The purpose of the PES is two-fold: firstly, to support "centralized selection, promotion and retention of the most qualified Marines", and secondly, to aid in personnel assignment and enhance manpower management decisions

(USMC, 2015, p. 1-1). Specifically, this document provides RSs with instruction and amplifying guidance to fulfill their administrative duty to remove "personal biases" and focus on documenting "individual performance, personal qualities, character, and potential to serve at a more senior level" (USMC, 2015, p. 1-3). This thesis focuses on two major components of the PES: the FITREP and how the FITREP impacts the observed Marine's Master Brief Sheet (MBS).

1. Fitness Report

The FITREP is the performance measurement tool that promotion and selection boards use to make manpower management decisions. The FITREP is the "primary means for evaluating a Marine's performance to support the Commandant's efforts to select the best qualified personnel for promotion, command and duty assignments" (USMC, 2015, p. 2).

Chapter 2 of the PES outlines the reporting chain and responsibilities of reporting officials on the Marine being evaluated, the Marine Reported On (MRO). The FITREP has two officers that act as reporting officials: a Reviewing Officer (RO) and the Reporting Senior (RS). The RO is responsible for preserving the integrity of the report in accordance with policy and experience, accurateness of the report, and monitoring for inflated reports (USMC, 2015, p. 2-2). The RO is "senior in grade to the RS" and normally responsible for supervising the RS's professional duties (USMC, 2015, p.2-2). The RS, meanwhile, is in the best position to observe subordinate Marines to make recommendations on future assignments, retention, promotion and command selection (USMC, 2015, p. 2-1). The performance evaluation manual further imbues more responsibility on the RS to accurately "observe, evaluate, and report on the Marine's performance, professional qualities, and potential" (USMC, 2015, p. 2-2).

Given this delineation of responsibilities, it is the RS who can provide more accurate critical inputs on a FITREP for an MRO to assist in the refinement of manpower models that can enhance the effectiveness of manpower decision makers (USMC, 2015, p. 2-2). The RS is the "first commissioned or warrant officer or general service-9 (GS-9) equivalent or above in the reporting chain to the MRO" (USMC, 2015, p. 2-2). The RS is

also responsible for the immediate tasking and supervision of the MRO (USMC, 2015, p. 2-2). The RS establishes a formal billet description outlining the MROs "duties and responsibilities" in less than 30 days of the start of the reporting relationship (USMC, 2015, p. 2-2). This counseling also establishes RS expectations dependent on seniority of the MRO. The MRO is responsible for executing the billet description to the best of their ability. The RS will then evaluate and measure the performance of the MRO over the reporting period according to the responsibilities outlined in the billet description.

2. Fitness Report Instrument

The FITREP consists of multiple multi-part sections (Appendix C). The administrative information portion of the FITREP is in section A which itself has 11 sections (USMC, 2015, p. 4-17). The RS is responsible for the accuracy of this administrative information, completes an assessment of 14 attributes for officers (13 for enlisted) in sections A through J ending with a certification in section J-1, and provides comments in section I (USMC, 2015, p. 2-2).

I now describe the administrative information portion as I use this information to select my sample for analysis. The first section identifies the MRO being evaluated by name, Department of Defense Identification Number, grade, date of rank and both primary military occupational specialty (MOS) and billet MOS. The second section is what organization the MRO is attached to by monitored command code (MCC), reporting unit code (RUC) and unit description. The third section describes the reporting occasion and the period covered with starting and ending dates along with the type of report. The fourth section is the duty assignment descriptive title. The fifth section is a special case section that enables the RS to mark the report as adverse, not observed or extended. The sixth section enables the RS to mark the Marine subject for either commendatory, derogatory or disciplinary action. The seventh section enables the RS to recommend the MRO for promotion or mark not applicable. The eighth section is a special information section displaying the MRO's rifle and pistol qualifications, physical fitness test score, combat fitness test score, height and weight, body fat if applicable, reserve component affiliation during reporting period, and status. The status portion is only for gunnery sergeants to

indicate their desired career path to first sergeant or to master sergeant. The ninth section allows the MRO to input three future duty preferences. The last sections, ten and eleven, are personally identifiable information for both the RS and RO.

The next section of the FITREP is section B, billet description. The purpose of this section is to describe the MRO's "scope of duties" throughout the evaluation period forming a basis for the RS evaluation (USMC, 2015, p. 4-17). This portion makes manpower management decision makers aware of the level of responsibility of the billet in relation to the attached unit's accomplishments during the dates of the reporting period. The RS is responsible for communicating a formal billet description to the MRO outlining "duties, responsibilities, and expectations" (USMC, 2015, p. 2-2). The billet description is flexible and can change overtime as responsibilities of the MRO change.

The next section of the FITREP is section C, billet accomplishment. This section focuses on the MRO's "most significant" accomplishments during the reporting period (USMC, 2015, p. 4-19). The MRO periodically updates a Marine reported on worksheet (MROW) throughout the period of observation to ensure accurate input of individual and unit accomplishments. This portion of the FITREP is not an assessment, but an objective list of achievements in bullet format with each specific achievement preceded with a circle or dash (USMC, 2015, p. 4-19). The billet accomplishment portion is populated by the MRO and reviewed by the RS to ensure most Marines mutually understand the phrases. The RS's responsibility is to ensure the billet accomplishment is accurate.

Mission accomplishment is outlined in section D describing the performance and proficiency of the "Marine's ability and success of getting the job done during the reporting period" (USMC, 2015, p. 4-24). Performance is a measurement of the MRO's "aptitude, competence, and commitment to the unit's success above personal reward" of assigned duties and additional informal assignments (USMC, 2015, p. 4-24). Proficiency is a measurement relating to the MRO's experience, "technical knowledge and practical skill" while completing assigned tasks. Proficiency also has a leadership element where the MRO is evaluated on the ability to transfer knowledge to others. The RS will assign the MRO a marking for both performance and proficiency. For performance, the RS will evaluate the MRO on results. The RS will consider time and resource management and

accurate job completion by the MRO throughout the period of observation. For proficiency, the RS will evaluate the MRO on individual skill by observation in the execution of duties.

Individual character is outlined in section E describing the courage, effectiveness under stress and initiative of the MRO. This section evaluates the MRO on the "whole Marine" concept, a performance measure that is "of the greatest interest to the Marine Corps" (USMC, 2015, p. 4-26). The courage attribute enables the RS to evaluate the MRO's perseverance in certain environments while focusing on the "moral and physical strength to overcome danger, fear, difficulty or anxiety" (USMC, 2015, p. 4-27). The next attribute, effectiveness under stress, enables the RS to evaluate the MRO's functionality and resilience in less than desirable conditions. The initiative attribute allows the RS to gauge the MRO's willingness to "transform opportunity into action" without specific guidance or tasking (USMC, 2015, p. 4-29). The RS marks the MRO on these three attributes that are most important to the Marine Corps to evaluate individual character.

Leadership is outlined in section F describing the MRO's ability to "lead subordinates, develop subordinates, set the example, ensure the well-being of subordinates and communicate" (USMC, 2015, p. 4-29). This section allows an RS to identify "effective leaders", the "primary goal of the fitness report" (USMC, 2015, p. 4-29). The Marine Corps has also determined that leadership is a force that encourages mission accomplishment while also recognizing that there are many different types of effective leadership styles. This section also directs MROs to support "equal opportunity" with their unit members to foster teamwork while accomplishing the mission "regardless of race, religion, ethnic background or gender" (USMC, 2015, p. 4-30). The first attribute within this section is leading subordinates. This attribute enables the RS to measure the MRO's ability to lead their subordinates to maximize each member of the unit's performance. The second attribute within this section is developing subordinates. This attribute enables the RS to measure the MRO's ability to mentor and train subordinates "regardless of race, religion, ethnic background, or gender" (USMC, 2015, p. 4-31). The third attribute is setting the example, "the most visible facet of leadership" (USMC, 2015, p.4-31). This attribute allows the RS to measure the MRO's ability to act as "a role model for all others"

while evaluating individual conduct and ethics, overall fitness and professional appearance (USMC, 2015, p. 4-31). The fourth attribute within this section is ensuring the well-being of subordinates. This attribute allows the RS to measure the MRO's ability to take care of other Marines focusing on welfare and family readiness. The last attribute within the leadership section is communication skills. This section enables the RS to measure the MRO's comprehensive communication equally weighting "listening, speaking, writing, and critical reading skills" (USMC, 2015, p. 4-33). The leadership section allows the RS to identify high-quality leaders, the most important goal of the FITREP, to aid promotion and selection board decisions.

Intellect and wisdom are outlined in section G describing the MRO's "professional military education, decision making ability, and judgement" (USMC, 2015, p.4-34). This section focuses on the MRO's ability to make knowledgeable and timely decisions that positively affect the Marine Corps. The first attribute within this section is professional military education. This attribute allows the RS to evaluate the MRO's commitment to warfighting education focusing on attendance at resident and non-resident schools, completion of "professional qualification and certifications", civilian education advancement, involvement in technological advancements, "participation in military societies" and reading books on the Commandants Professional Reading Program (USMC, 2015, p. 4-34). The second attribute in this section is decision making ability. This attribute allows the RS to measure the effects of the MRO's decisions within the period of observation considering viability, time and tempo generation (USMC, 2015, p. 4-35). The last attribute within this section is judgment. This attribute allows the RS to measure the MRO's ability to make the correct decision while offering the best course of action considering second and third order effects (USMC, 2015, p. 4-37). The intellect and wisdom section enable the RS to comprehensively measure the intelligence, decision making ability, and judgment of the MRO throughout the period of observation.

The last section is section H is "fulfillment of evaluation responsibilities" (USMC, 2015, p. 4-37). This section is mostly applicable to officers fulfilling the role of a reporting official (USMC, 2015, p. 4-37). The section allows an RS to measure an officer MRO's ability to "accurately and timely" submit an uninflated FITREP. This section of the

FITREP is intended to identify the importance of an RS submitting an uninflated and administratively correct FITREP to the RO within the appropriate timeline (USMC, 2015, p. 4-38). This section enables an RS to monitor the FITREP evaluation duties of subordinate officers in an effort to maintain the integrity of the PES.

The RS completes the FITREP by providing mandatory, directed and additional comments in section I (USMC, 2015, p. 4-38). Mandatory comments describe the MRO through the lens of the "whole Marine concept" and come first in this section. Directed comments specify the section requiring the comment to highlight commendatory or derogatory actions throughout the period of observation. Additional comments come after the aforementioned comments specifying quality characteristic outside of other areas not previously addressed. An example of an additional comment is "community involvement" (USMC, 2015, p. 4-39). This section enables the RS to make comprehensive comments on the MRO's performance throughout the observation period. The intent of the comments in this section are for the RS to provide a more holistic description of the details of the MRO's "professional character" consistent with the performance anchored rating scales (PARS) markings in sections D-H (USMC, 2015, p. 4-39). The RS certifies the FITREP in section J and forwards it the RO. After the RO completes section K, the FITREP is forwarded to Headquarters Marine Corps for processing ultimately providing inputs to the Master Brief Sheet (MBS) to aid in manpower management decisions.

3. Reporting Senior's Rating Scale

The aforementioned sections describe the attributes that the RS marks to evaluate the MRO throughout the period of observation. All officers are evaluated by an RS in five attribute categories: mission accomplishment, individual character, leadership, intellect and wisdom, and fulfillment of evaluation responsibilities (USMC, 2015, p. 4-21). All enlisted are evaluated on the same attributes while excluding the fulfillment of evaluation responsibilities as enlisted are not normally reporting officials. The RS is responsible for assessing the "duties and responsibilities" of the MRO during the observation period by accurately completing five sections labeled D, E, F, G and H in the FITREP. These five sections "describe the whole Marine concept both on and off duty" and give the RS a

"broad cross section of areas to evaluate the MRO that the Marine Corps deems most important" (USMC, 2015, p. 4-20).

All of the five attribute sections of the FITREP are marked by the RS using a "performance anchored rating scales" (PARS) with the RS determining their own marking philosophy (USMC, 2015, p. 4-21). The PARS are alpha numeric and range from "A" to "H". The PARS are read from left to right on the FITREP with each section distinctly separate from another with a "description of levels of demonstrated performance related to the attribute" (USMC, 2015, p. 4-21). The descriptions separate mandatory justification sections from markings not requiring justification. The sections requiring mandatory justifications are sections "A", "F", and "G" (USMC, 2015, p. 4-21). Section "A" is reserved for adverse marking by an RS for an MRO who unsatisfactorily performs in a particular attribute area. One marking of "A" will make the entire report adverse requiring a specific comment on the nature of the adverse action (USMC, 2015, p. 4-21). Likewise, "F" or "G" markings require justification for "exceptional, sustained performance throughout the reporting period" (USMC, 2015, p. 4-21). The PES cautions an RS to use these high markings only for "extraordinary Marines" (USMC, 2015, p. 4-21). The other markings of "B", "C", "D", "E" and "H" do not require justification. The PES advises the RS to fairly evaluate each MRO on performance and character throughout the evaluation period to determine the relative value of the report.

The marking philosophy of the RS results in a relative value for each individual report that is compared to the RS's historical profile of same grade/rank MROs. A relative value is formed for each individual report from the PARS markings of "A" to "H" with corresponding numeric values: "A=1, B=2, C=3, D=4, E=5, F=6, G=7, and H=0 (not observed)" (USMC, 2015, p. 8-4). The individual report values are then calculated into a fitness report average (FRA) which is equal to the sum of the alpha numeric values and dividing that sum by the observed attributes "rounded to the nearest hundredth" (USMC, 2015, p. 8-5). The "RS average is equivalent to a relative value of 90" (USMC, 2015, p. 8-5). The comparison of the individual report to the RS's profile allows the RS to mark a MRO in three distinct categories: (1) upper third 93.37 - 100.00; (2) middle third 86.67 – 93.33; and (3) bottom third 80.00 – 86.66 (USMC, 2015, p. 8-6).

4. Master Brief Sheet

The Master Brief Sheet (MBS) provides a comprehensive summary of a Marine's personnel data as well as a "Marine's performance evaluation record" (USMC, 2015, p. 8-3). The MBS is a single source document that includes a history of all FITREPs from reporting officials organized by each separate reporting occasion for every individual Marine. The line item detail displays every applicable attribute marking for each reporting occasion. Furthermore, the MBS provides RS profile data of the relative value of the FITREP to compare the FITREP to other FITREPs over time. The Marine Corps does this by comparing "the Relative Value at the Time of Processing" of the FITREP to "the Cumulative Relative Value" of the RS profile (USMC, 2015, p. 8-5). This facilitates a comparison of overall performance from one FITREP to another FITREP utilizing the RS's profile of same rank/grade MROs determining the upper, middle or lower category of the report and an analysis of above, with or below the fitness report average of the RS (USMC, 2015, p. 8-5). Additionally, the MBS has a section for the RO similar to that of the RS outlining comparative performance markings by grade. This thesis focuses on disentangling learning and statistical discrimination by the RS,and has purposefully omitted RO roles and responsibilities. Lastly, the MBS allows promotion and selection boards to identify trends in RS markings to aid in manpower management decisions.

D. CLEMENS, MALONE, PHILLIPS, LEE, HIATT AND KIMBLE

The Director, Manpower Management tasked the Center for Naval Analysis (CNA) to conduct a comprehensive review of the Marine Corps' performance evaluation system after it had been reformed in 1999. Specifically, the Director wanted an examination of possible inflated performance markings, demographic fairness and if the system was providing the designed outcome. Clemens et al. (2011) critically analyze data of Marine officer FITREP evaluations from 1999-2011 to examine if the FITREP system was "performing well" with no aggregate-level inflated markings (Clemens et al., 2011, p. 1). In this section, I review the authors findings of the differences in the way Marine officers evaluate subordinate officers over time from the perspective of the characteristics of the

RS, and their recommendations to enhance the Marine Corps' performance evaluation system (PES).

Clemens et al. (2011) find that RSs fitness report average (FRA) increase over time when evaluating subordinate officers making a promotion or selection boards job more difficult in identifying high-quality officers (Clemens et al., 2011, p. 11). Manpower Management Support Branch provided the authors with PES data from 1999 through 2011 for MROs rank of lieutenant colonel through second lieutenant (Clemens et al., 2011, p. 11). The authors examine RS FRA to rank of the MRO and fiscal year finding variation in trends over time by rank and fiscal year (FY). Quality, by FRA, of captains, first lieutenants, and second lieutenants were all marginally higher in "FY 2011 than they were in FY 1999, but lower than they were from FY 2003 through FY 2005" (Clemens et al., 2011, p. 12). The average increase and decrease in variation over time was further analyzed by standard deviation of RS FRA to rank of the MRO and fiscal year identifying a decreasing FRA for every rank possibly making a promotion or selection boards job more difficult in selecting high-quality officer (Clemens et al, 2011, p.11). They also find that RSs in the rank of brigadier general, colonel and lieutenant colonel rate captains higher than a captain receive markings from a major (Clemens et al, 2011, p.13). This finding is attributed to quality differences of captains being assigned to work for more senior RSs as well as "less visibility" of the MRO (Clemens et al., 2011, p. 13). Overall, the authors find that higher ranking RSs give better FITREPS. The authors also state their concern for less useful FITREPs due to less variation in FRAs from RSs.

They also examine how RS ratings change over time with the amount of experience the RS has in writing FITREPs. The authors find that second lieutenants, first lieutenants, captains, and majors benefit with higher FRAs the longer the RS evaluates a certain rank (Clemens et al, 2011, p. 20). Majors and lieutenant colonels appear to hit an FRA ceiling as average FRAs are both constant after the fifth FITREP written by the RS (Clemens et al., 2011, p. 21). Lieutenant colonels FRA's are more constant than subordinate ranks averaging between 4.31 and 4.86 from 1 to 7 successively written FITREPs (Clemens et al., 2011, p. 22). The more "evaluation experience" of the RS results in higher FRAs,

although the RS seniority is more important than FITREP writing experience (Clemens et al., 2011, p. 21).

Clemens et al (2011) also find that there are systemic differences in the way Marine officers evaluate subordinate officers when considering gender, demographics, and occupational fields (occfields). Their econometric examination controls for "year, marine reported on grade, race/ethnicity, marital status, dependents, The Basic School (TBS) third, General Classification test (GCT) score, and commissioning source" (p. 39). They find, on average, that female RSs mark female MROs lower than a male RS with a female MRO. They also find that White RSs award marginally higher marks to "White and Hispanic MROs" when compared to Black and there "other" race variable MROs (Clemens et al., 2011, p. 39). Conversely, when controlling for the aforementioned control variables as well as grade and gender, a Black RS will award a Black MRO higher markings on average than a White MRO with a Black RS (Clemens et al., 2011, p. 83). The occupational results have a similar average bias evaluation outcome such that relative values are lower when the RS and MRO are in the same occfields (Clemens et al., 2011, p. 40). Infantry and logistics military occupational specialties (MOS) enjoy higher FITREP markings while aviators receive, on average, lower RS markings (Clemens et al., 2011, p. 40). The authors find that Marine officers evaluate subordinate officers differently considering gender, race, and MOS.

The authors conclude their report with "successes of the FITREP system, additional training for RSs, ROs, and boards, and issues for further monitoring and study" (p. 61). The authors find overarching successes of the FITREP system:

> … no evidence that grade inflation among officers is rampant at an aggregate level; Marine officers commissioned through enlisted to officer programs, with higher college grade point averages, or finishing in the top third of their The Basic School (TBS) class tend to receive higher marks; and subject matter experts agree that the current system usually results in promotion of the best and most qualified officers. (p. 61)

These findings indicate that promotion and selection boards are well equipped to identify high-quality Marine officers for promotion and selection. The authors also identify areas of reporting official additional training and board training. They recommend that junior

officers receive professional military education (PME) in FITREP writing, evaluation methods and promotion board operations (Clemens et al., 2011, p. 63). Lastly, the authors recommend topics for monitoring and further observation:

> FRAs are becoming somewhat less varied and potentially less informative over time; observable characteristics of officer candidates prior to commissioning explain little to none of the difference in FITREP marks between White, Black, and Hispanic officers, whereas TBS performance differs significantly by race and is a key predictor of the subsequent FITREP gap; there is evidence that White RSs tend to award slightly lower FRAs to Black MROs and vice versa- while controlling for other observable characteristics- and that male and female officers each tend to receive higher marks from RSs of the opposite gender; aviators appear to receive lower marks than other officers of the same quality; the opposite appears to be true for infantry, logistics, and military police officers; White officers appear to receive stronger recommendations for promotion than Black or Hispanic officers with the same RV; school quality appears to have a less robust effect than college GPA on performance. (pages 63-64)

This study is important to my research because if offers evidence of evaluation bias in the Marine Corps' internal labor market in the first decade of the 2000s. It further possibly identifies a self-selection problem that may be affecting Marine Corps officer assignments, promotion and command selection as like individuals (MROs) enjoy higher evaluations from like superiors (RSs).

E. QUESTER, HATTIANGADI, LEE, HIATT AND SHUFORD

The Commandant of the Marine Corps also tasked the Center for Naval Analysis (CNA) to conduct a comprehensive review of the Marine Corps' enlisted Marine and officer demographics to determine if they reflect American society (Quester et al., 2007, p. 1). The study examines accession, retention, promotion and occupational distribution trends for enlisted Marines and officers. The accession findings conclude with "Black officer accession declining since the late 1990s and Hispanic officer accession remaining constant in recent years" with both "Black and Hispanic officer representation in the Marine Corps below the U.S. population" (Quester et al., 2007, p. 31). They also find that Black and Hispanic officers have "been promoted and retained better than others" in the

Marine Corps while the component also recruits significantly less Blacks compared to other components within the DoD, see table 1 (Quester et al., 2007, p. 31).

Table 1. Accessions: Percentage Black by fiscal year. Source: Quester et al. (2007, p. 39).

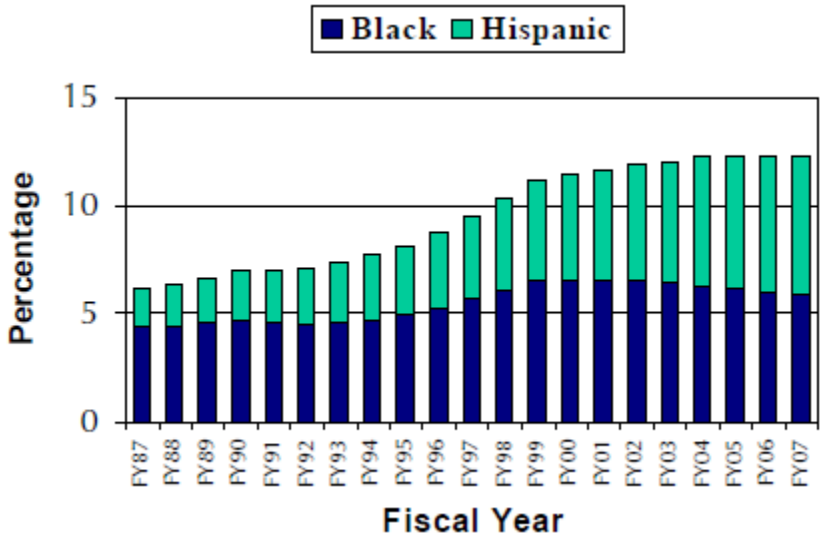
	2000	2001	2002	2003	2004	2005	2006[b]
Army	23.0%	22.4%	17.1%	15.9%	14.2%	12.0%	12.4%
Navy	20.8%	20.9%	17.8%	19.0%	19.7%	18.8%	17.2%
Marine Corps	12.8%	12.2%	10.0%	9.0%	8.3%	7.7%	7.6%
Air Force	19.3%	18.2%	15.5%	13.8%	14.6%	14.4%	14.7%
DOD total	20.0%	19.9%	15.7%	15.0%	14.5%	13.1%	12.9%

a. Data from OSD, Accession Policy. Service and DOD totals include prior service accessions, which account for less than 1/2 of 1 percent of recruits.
b. Data for 2006 are preliminary.

They conclude that the Marine Corps must continue to access and promote Black and Hispanic officers to "reflect the diversity of American society" (Quester et al., 2007, p. 31).

The authors find the representation of racial and ethnic officer distribution varies from year to year, by rank, and varies by MOS. Hispanic representation has increased steadily since fiscal year 1987 (Quester et al., 2007, p. 31). The increase in Hispanic officer representation is driven by two factors: an increase in Hispanic accession and male college attainment (Quester et al., 2007, p. 22). Throughout that same time frame, Black representation slightly increased then started decreasing in FY 2000 (see Figure 1).

Figure 1. Percentage of Marine officers who are Black or Hispanic, by fiscal year. Source: Quester et al. (2007, p. 31).



These representation trends represent an increase in Black and Hispanic officer retention.

The officer MOS distribution in this sample differs vastly by race. This study conflates restricted and unrestricted officer occupations resulting in imprecise officer occupational categories relevant to my research. My thesis only focuses on unrestricted active component officers. Thus, I will only include restricted active component officer MOS distributions outlined in the Quester report.

Black and Hispanic officers are distributed differently across Marine Corps occflds. Black officers have heavy representation in the Personnel Administration and Retention (0102) and Financial Management (3404) MOSs (Quester et al., 2007, pages 25-32). Interestingly, "Black officers are very heavily represented in some of the same occflds with very high concentrations of Black enlisted Marines" (Quester et al., 2007, p. 32). Black officers have little representation in the Legal Services (4402) occupation and have an even smaller amount of representation in the Tank (1802) and Amphibious Assault Vehicle (1803) and Pilot/ Naval Flight Officer (75XX) occupations (Quester et al., 2007, p. 32).

The distribution of Hispanic officers is also different across Marine Corps occflds. Like Black officers, Hispanic officers also have a high concentration in support occupations (Quester et al., 2007, p. 32). Hispanic officers have heavy representation in Financial Management (3404), Aircraft Maintenance (6002), and Aviation Logistics (6602) occupations (Quester et al., 2007, p. 32). Similar to Black enlisted Marines and officers, Hispanic enlisted Marines and officers are "overrepresented in many of the same occflds" albeit at a lesser degree of overrepresentation than Blacks (Quester et al., 2007, p. 32).

This study is important to my research because if offers evidence of similar races succeeding in the Marine Corps' internal labor market. It further possibly identifies a self-selection problem that may be affecting Marine Corps officer assignments, promotion and command selection as like individuals enjoy higher evaluations from like superiors possibly resulting in Black and Hispanics being "promoted and retained better than others" (Quester et al., 2007, p. 33).

F. HIGH QUALITY OFFICER

This section reviews two recent Naval Postgraduate School theses that identify high-quality officer characteristics and promotion predictors. I will first review high-quality performance factors that predict officer promotion, and then review performance indicators of Hispanic and non-Hispanic Marine officers.

Stolzenberg (2017) examines significant factors for Marine Corps officer promotion to the rank of lieutenant colonel (LtCol). The author views attaining the rank of LtCol as meeting a successful quality career milestone in an officer's career. The purpose of his thesis is to identify promotion predictors to LtCol to establish a baseline for high-quality characteristics to enhance manpower management policies and force shaping tools (Stolzenberg, 2017, p. 1).

The author finds that five different Marine Corps occfields have different high-quality characteristics for the 13 attributes of the FITREP. The aviation occfield, which is composed of aviators, is driven by technical indicators on the attribute section of the FITREP with RSs placing statistically significant values on "Mission Performance,

Mission Accomplishment, and Setting the Example" (Stolzenberg, 2017, p. 75). The combat arms occfield, which are infantry, artillery, tanks, and combat engineer MOS's, place statistically significant values on "Mission Performance, Judgment and Professional Military Education (PME)" (Stolzenberg, 2017, p. 75). The combat service support occfield place statistically significant values on "Mission Performance, Leading Subordinates, Setting the Example and Communication" (Stolzenberg, 2017, p. 75). The aviation ground occfield, which are aviation support entities not aviators, place statistically significant values on "Mission Performance, Effectiveness, Developing Subordinates, Setting the Example and PME" (Stolzenberg, 2017, p. 75). The occfields are linked by Mission Performance attributes indicating Marine officers place high value on Mission Accomplishment and Mission Performance. However, occfield RSs place value on different attributes providing an example of human capital accumulation specific to common MOSs within a particular occfield.

The FITREP, examining all officer attributes and their subjectivity, has been identified as a promotion predictor (Reynolds 2011; Hoffman 2008). Stolzenberg (2017) extends the research to couple the subjectivity of the FITREP with objective performance measures to enhance the promotion probability to LtCol. The author finds high-quality promotion probability differences in objective performance measures. Aviation Marines (pilots) value the following statistically significant findings more than other occfiels: Combat Fitness Test (CFT), combat deployments, a master's degree, being a female officer, and commissioning sources as Reserve Officer Training Corps (ROTC) and Officer Candidates School (OCS) (Stolzenberg, 2017, p. 77). Combat arms Marines view the following statistically significant findings more than other occfiels: married and other commissioning source (Stolzenberg, 2017, p. 77). Combat Service Support Marines view the following statistically significant findings more than the other occfields: Physical Fitness Test (PFT), a doctorate degree, and foreign language (Stolzenberg, 2017, p. 77). Lastly, Aviation Ground Marines view the following statistically significant findings less than other occfields: top-third TBS and middle third TBS class rankings (Stolzenberg, 2017, p. 77).

This study is valuable to my research because it identifies different high-quality promotion predictors to LtCol from the different occfields across the Marine Corps. My unorthodox view of examining demographic variables will add to the literature to determine if characteristics of the RS effect evaluation behavior.

Salas (2015) examines retention and performance factors of Hispanic and non-Hispanic Marine Corps officers to identify differences in successful careers and milestones. In this section I discuss pre and post-entry variables that effect retention and promotion for Hispanic and non-Hispanic Marine officers. The author's end-state is to enhance manpower management policies that "improve retention and promotion of Hispanic officers in the Marine Corps as intended by the 2011 Military Leadership Diversity Commission" (Salas, 2015, p. 2). The author examines data from Total Forces Data Warehouse (TFDW), Manpower Management Records and Performance Branch-30 (MMRP-30) and CNA facilitating a review of 7,880 Marine Corps officers from FY 1999-2004 (Salas, 2015, pages 40-41).

The author finds that pre-entry and post-entry variables have an effect on retention and promotion for Hispanic officers. Hispanic officers are more likely to depart from service if they have higher GCT scores or if they graduate from a highly competitive college or private college (Salas, 2015, p. 71). He attributes this departure from service to more opportunity in the civilian labor market (Salas, 2015, p. 71). Hispanic officers who commission from the "Academy, NROTC, Marine Enlisted to Commissioning Education Program (MECEP), and the Platoon Leaders Course (PLC)" are all more likely to continue to serve than those Hispanic officers who commissioned by OCS or Officer Candidates Course (Salas, 2015, p. 71).

Post-entry variables effecting retention differ by occfield with Hispanic officers in the Aviation Ground occfield having a higher propensity to continue to serve than Hispanic officers in the Combat Arms occfield (Salas, 2015, p. 71). More post-entry findings include those Hispanic officers with higher PFT scores are more likely to leave the Marine Corps, those with higher rifle qualifications are more likely to remain in service, and those with more awards are 3.89 points more likely to remain in service (Salas, 2015, p. 71). All aforementioned retention factors are statistically significant at the 99 percent level

indicating a precise level of accurateness in Salas' examination. His main retention results for Hispanics is that they are 8.7 percent more likely to continue to serve more than six years than non-Hispanics with the retention effect diminishing to 6.3 percent at ten years (p. 87).

His promotion probability predictors to O-4 (major) findings are virtually the same for Hispanic and non-Hispanic Marine officers indicating a fair and equitable promotion and evaluation system for the Marine Corps (p. 87). Promotion probability predictors that are positive and statistically significant for Hispanic officers are TBS overall grade point average, awards, and average relative value (Salas, 2015, p. 81). His findings, when controlling for ethnicity, indicate a promotion system up to the grade of O-4 is fair and equitable.

This study is important to my research because it provides statistically significant variables that are different for Hispanic officers when compared to non-Hispanic officers identifying that a RS may award different markings for a subordinate officer of a different race. This study also provides further evidence of occfields placing different values on observable and measurable characteristics.

G. SUMMARY

This chapter describes the Marine Corps' performance evaluation system and reviews empirical studies on the Marine Corps' performance evaluation system. The Marine Corps makes manpower management decisions based on a Marine's historical performance cataloged in a performance appraisal. The Marine Corps performance appraisal is the fitness report. This report has different administrative sections that identify the Marine Reported On who is the subject of the evaluation, the billet description and billet accomplishments, and the evaluated performance over the reporting period by the two reporting officials. The Marine Corps has placed an enormous amount of responsibility in the Reporting Senior who is normally the first commissioned or warrant officer or GS-9 or above in the subordinate's chain of command. The Reporting Senior is responsible for subjectively evaluating the Marine Reported On during a period of observation to rate the MRO's performance, conduct and overall contribution to the

mission and unit success. The Reporting Senior is responsible for evaluating the MRO on 14 different attributes for officers with an alpha numeric rating resulting in a relative value that is unique for each report. This relative value determines if the MRO has performed above, with or below peers and is compared to a Reporting Senior's profile that is normed to an average relative value of 90. The Master Brief Sheet comprehensively summarizes an MRO's FITREPs and is a reference document utilized by manpower managers to make decisions on retention, assignment, promotion and command selection.

This chapter also reviews an empirical study of Marine officer evaluation behaviors. Clemens et al. (2011) examined the Marine Corps' performance evaluation process over a twelve-year period from 1999-2011 and found RS evaluation differences between race, gender, and military occupational specialty. Specifically, they find that on average White and Hispanic MROs enjoy higher fitness report markings from White RSs when compared to other RS races. More so, Black MROs enjoy on average higher markings from Black RSs than a White MRO. Their last important finding is that on average female MROs receive lower fitness report markings from female RSs when compared to male MROs with a female RS. The differences in fitness report averages across race, gender and military occupational specialty is fed into the Master Brief Sheet used by manpower decision makers to select officers for retention, assignment, promotion, and command.

This chapter also reviews a CNA study on Black and Hispanic Marines accession, retention, promotion and occupational distribution trends. Quester et al. (2007) finds that both Black and Hispanics Marine officer accessions and representation are less than the overall race percentage of American society identifying the Marine Corps is falling short of the Commandants guidance of the diversity of the Marine Corps reflecting American society. Both Black and Hispanic officers are overrepresented in support occflds with the appearance that those officers self-select into occupations of similar race. Finally, Quester et al. (2007) finds that Black and Hispanic officers enjoy better promotion and retention than other officers.

Lastly, this chapter reviews two NPS theses examining the FITREP to identify high-quality characteristics effecting promotion probability to LtCol and factors that affect

Hispanic performance. The first study reveals that Marine Corps RSs in different occfields place different values on attributes within the FITREP and other objective performance measures such as gender, marital status, educational attainment, and physical fitness. The second study reveals that Hispanic and non-Hispanic officer retention differs, but promotion probability to the grade of O-4 is essentially equal indicating a fair and equitable promotion process for Marine officers.

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III. LITERATURE REVIEW

A. OVERVIEW

This research focuses on whether and how performance evaluation ratings change over time, considering like and unlike measurable characteristics of the rater and the subject. This chapter reviews related scholarly literature on evaluation bias, including in employer learning and statistical discrimination, professional sports, the retail sector, in education, and among the police occupation.

B. ATONJI AND PIERRET

Altonji and Pierret (2001), under sponsorship from the Bureau of Labor Statics, U.S. Department of Labor, explore a hypothesis of "Employer Learning with Statistical Discrimination (ELSD)" where firms observe easily observable facts among young employees to determine if those characteristics are correlated to productivity measurements over time (Altonji and Pierret, 2001, p. 314). Using the National Longitudinal Survey of Youth 1979 (NLSY79) as their dataset, they examine the effects of wage and race on easily observed variables ("education, Armed Forces Qualification Test score and race") and more difficult to observe variables ("experience and training") on 5,403 non-Hispanic males (Altonji and Pierret, 2001, p. 314). They find that an employee's wage and productivity increase over time with the "wage effect of education" diminishing over time (p. 343). They also find that race is "negatively correlated with productivity" positing that the "productivity gap reflected in wages" is driven less by race and more by additional information the firm gains on the employee over time (p. 343).

This study is important to my research of how Marine Corps reporting seniors evaluate their subordinates over time because it analyses how firms increase wage with responsibility of their employees over time given race, education, and experience variables. This study examines the difference in employer learning and statistical discrimination providing an empirical framework for my research. This study also provides examples of econometric techniques to test the value of productivity and wages and if statistical discrimination exists within a firm.

C. PRICE AND WOLFERS

Price and Wolfers (2010) establish significant own-race bias in the National Basketball Association (NBA). They find that Black officials called fouls more frequently against White players and vice versa. Which referees comprise an officiating crew for specific games tends to be randomly determined by the league. The authors then utilize this randomness in the composition of the officiating crew relative to the composition of the basketball players and team, as well as a difference-in-differences research design. Using data from 1991-2004 of the NBA regular season, the difference in difference analysis finds that "a player earns 0.18 fewer fouls per 48 minutes played" when being supervised by "three referees of the same race than when facing three opposite-race referees (Price & Wolfers, 2010, p. 1867). Players of the same race as the officials earn "up to 4 percent fewer fouls" and "score up to 2 1/2 percent more points" in a game, suggesting an own-race bias of the officials" (Price & Wolfers, 2010, p. 1859). This study finds consistent results across the sample when comparing all-White and all-Black officiating crews with players of like race and foul-calling, suggesting own-race bias (Price & Wolfers, 2010, p. 1860).

This study is important to my research of how Marine Corps reporting seniors evaluate their subordinates because it analyses how a person in a position of power observes a team of like and unlike characteristics. Although NBA referees are not actively participating in military service when officiating, their employment environment has similarities to some operating environments of Marines. Foul-calling is made in a split-second, high-pressure, public and controlled environment similar to some training and operating environments of Marines. Marine performance evaluators also observe how their subordinates operate in this high-pressure and stressful environment, making judgments on their decision-making skills, abilities and contributions to mission accomplishment.

D. GIULIANO, LEVINE AND LEONARD

Giuliano, Levine and Leonard (2009) extend the literature on own-race bias by examining the relationship between managers and their employees using data from a large retail employer in the United States from 1996 through 1998. Their research studies the

variation of employee quits, dismissals, and promotions among those who work for an own-race or different race manager. Overall, their findings are similar across the three outcomes of study, suggesting an own-race bias while elaborating on the effects of "status and identity" (p. 26). Their findings suggest that "racial biases continue to present obstacles for minorities in the workplace," with non-White employees "less likely to be dismissed and more likely to be promoted when their manager is the same race" (p. 26). The estimated quit probabilities are lowest among all employees with a White manager and highest among all employees, except Asian employees, with a Black manager. The promotion probabilities differ in that all race managers are more likely to promote a White employee than any other employee. Also, Black employees are least likely to be promoted by Hispanic and Asian managers. Black employees have the lowest promotion probability rate and the highest dismissal rate (Giuliano, Levine and Leonard, 2009, p. 33). Similarly, White employees with non-White managers have almost equal or better outcomes, offering an explanation to behavior in diverse hierarchies.

Employee and manager characteristics are an important consideration of this study due to self-selection. The summary statistics reveal the White employee's make up 64.4 percent of the employee population while White managers comprise 87 percent of all managers (Giuliano, Levine and Leonard, 2009, p. 31). Minority managers are underrepresented in this firm across all race categories. Males are also underrepresented in this firm with 70.4 percent of employees and 78.4 percent of managers being female (Giuliano, Levine and Leonard, 2009, p. 31). The authors' findings suggest the composition of the firm's employees and managers are a significant determinant of why White employees self-select into employment based on similar characteristics of the manager.

Self-selection into employment is further supported by other economic theories. The utility function of the employee could vary based on the compatibility with the manager, either positively or negatively affecting quits, dismissals and promotions. The employee may have a preference to work in groups of own-race employees and managers or vice-versa. In-group theories of taste-based models (Becker, 1972) and efficiency-based models suggest employees do self-select into employment based on the status, social

identity and race of other employees and managers (Giuliano, Levine and Leonard, 2009, p. 3).

This study has consistent findings, a large sample size of more than 100,000 employees, and is geographically diverse across 700 stores located throughout the United States. However, the regression estimates are subject to reverse causality causing the estimates to be either over or underestimated. In this study the White manager is attracting White employees while the retail firm's composition is mostly White. This reverse causality is further supported by the aforementioned economic theories of self-selection, in-group theory, and taste and efficiency-based models. Giuliano, Levine and Leonard do mention, on multiple occasion, the White estimates are subject to reverse bias.

This literature is important to my research of how Marine Corps reporting seniors evaluate their subordinates over time because it analyses how superiors and peers of like and unlike characteristics interact in a diverse labor market. The team dynamic, make-up of employees (MROs) and managers (RSs), is highlighted in this paper offering statistical evidence of quit, promotion and dismissal behavior in a firm that is mostly White similar to the Marine Corps officer composition. This study also uses economic theory of self-selection and group theory to support accession, retention and promotion behaviors.

E. DEE

Dee (2005) analyzes how student assignment to an analogous teacher impacts the teacher's subjective evaluations of the student. The author analyzes data from the National Education Longitudinal Study of 1988 to determine if outcomes vary with demographic differences of teachers and 8th grade students in three subjective evaluations: whether a student is disruptive, inattentive, or rarely completed homework. The teacher data survey also enables a regional analysis of different areas of the United States as well as a socioeconomic analysis. Dee's fixed effect logit estimates indicate "the odds of a student beings seen as disruptive by a teacher are 1.36 times as large when the teacher does not share the student's racial/ethnic designation" (p. 162). More so, students are estimated to be perceived as 19 percent more inattentive and 37 percent more disruptive with an opposite gender teacher (Dee, 2005, p. 162). Regional effects are concentrated in the

South with statistical significance at the 1 percent level for all three student teacher interactions for other race teachers. This study thus provides supporting evidence on how teachers perceive students of different race and gender and their expected performance in the classroom.

This literature is important to my research of how Marine Corps reporting seniors evaluate their subordinates over time because it analyses how people in positions of authority perceive other people of different race and gender. These perceptions are important because Marine Corps performance evaluators observe subordinates of different race and gender. Although this study analyzes teacher's perception of 8th grade students, it provides evidence of implicit biases and the different expectations teachers have of their students based on the racial and gender match between teacher and student. Marine Corps reporting seniors may have different implicit and explicit expectations of their subordinate officers based on rank, time in grade, operational experience and other tangible factors such as race, gender and physical fitness.

F. DONOHAU III AND LEVITT

Donohau III and Levitt (2001) analyze the relationship between the composition of a city's police officers and the racial makeup of arrests. The authors examine panel data from 1975 to 1993 across 122 U.S. cities with more than 100,000 residents in an attempt to measure the effect of the race of police on arrests in property, violent and drug crimes. Their results show that police officer race matters on arrests, as police officers of a given race make more arrests of the opposite race. The authors "remain uncertain" as to why more nonWhite police officers arrest Whites. They posit police arrest patterns are a social balancing of the community or to deter Whites from committing crimes (p. 391).

This literature is important to my research of how Marine Corps reporting seniors evaluate their subordinates over time because it examines the race of police officers on arrests in large metropolitan areas of the U.S. Police departments have similar hierarchical rank structures to the Marine Corps. This study offers more insight into how people in a position of authority behave in stressful and uncertain situation with a person of a different race.

G. SUMMARY

This chapter describes how employees and firms behave in different environments with subordinates of like and unlike characteristics through a review of empirical studies. This chapter also reviews how people in positions of power behave in their particular element. The economic theory of self-selection describes how subordinates sort into like groups in a labor market based on taste further attracting employees of similar characteristics.

The first section of this chapter reviews an empirical study of employer learning and statistical discrimination. Altonji and Pierret (2001) examined National Longitudinal Survey of Youth data from 1979 to study employer effects on easily observable and difficult to observe characteristics of 5,403 non-Hispanic male labor force participants. They find that an increase in wages is correlated with an increase in experience over a period of time. They also find that firms sort employees by gaining additional information about employees over time dependent on human capital accumulation and productivity.

The second chapter of this section reviews how National Basketball Association officiating crews behave in a game with same and different race players. Price and Wolfers (2010) find an own-race bias of randomly assigned officiating crews where the players of the same race of the officiating crew benefit by receiving less fouls in a game resulting in slightly higher average points scored per game. Their findings are consistent throughout the 15-year observation period.

The third chapter of this section reviews quits, dismissals, and promotions from a large retail firm in the United States. Giuliano, Levine and Leonard (2009) find that status and identify effect the three outcomes of their study. They find that quit probabilities are lowest for employees with a White manager while quit possibilities are higher for all employees, except Asians, with a Black manager. They also find that managers are more likely to promote employees of the same race further contributing to an own-race bias in the work environment. They also find that Black employees have the highest dismissal rate when compared to White, Hispanic and Asian employees. They reference self-

selection contributing to employees quit, dismissal and promotion rates within a large retail firm composed mostly of White women.

The fourth chapter of this section reviews if an eighth-grade teacher has preconceived outcomes of students of different demographics. The study uses data from the National Education Longitudinal Study of 1988 to analyze teacher perceptions and expectations of a student in three different outcomes: disruptive, inattentive, or rarely completed homework. Dee (2005) finds that the odds are higher for a student being seen as disruptive if the student and teacher share different race and ethnic backgrounds. He also finds that students appear to be more inattentive if the student is the opposite gender of the teacher. He also uses a survey to examine differences in regional effects in all three aforementioned outcomes resulting in teachers perceiving difference race students as more disruptive, inattentive and more likely to complete homework. This study supports that demographic differences between a student and a teacher effect how a teach perceives a student of difference observable characteristics.

Lastly, this chapter reviews police interactions with the public in 122 United States cities with more than 100,000 residents. Donohau III and Levitt (2001) measure the effect of the race of a police force on arrests in property, violent and drug crimes. They find that the police officers arrest more opposite race suspects. However, the authors remain uncertain as to why non-White police officers arrest more Whites.

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IV. DATA AND METHODOLOGY

A. INTRODUCTION

This research focuses on whether and how performance evaluation ratings change over time, considering like and unlike measurable characteristics of the reporting senior (RS) and the Marine reported on (MRO). This chapter describes the data and methodology used in this examination.

B. DATA AND SAMPLE SELECTION

The panel data used for this analysis come from two sources: Manpower Management Records and Performance Branch (MMRP)-30 and Total Force Data Warehouse (TFDW).

Manpower Management Records and Performance (MMRP) Branch-30 provided 135,905 FITREPs from November 2009 to September 2017. MMRP-30 created unique identifiers for both the RS and MRO to link the RS to the MRO to examine how an RS learns about the MRO over time. This link between the RS and MRO allows me to measure if variation exists in RS learning about the MRO over time in comparison to other evaluations the RS has written on like and unlike subordinate officers. MRRP-30 includes FITREP data of active duty officers at the ranks of Second Lieutenant through Lieutenant Colonel with observed FITREPs by an active duty Marine Corps RS.

Meanwhile variables indicating MRO and RS characteristics, such as race and religion, come from the TFDW data. Data from TFDW was then merged to the MMRP-30 data, resulting in 118,765 FITREPs to examine from Fiscal Years (FY) 2010 to 2017.

I next describe some characteristics of the resulting data set to put into context the criteria I used for selecting the sample for the subsequent analysis. In particular, Table 2 displays the RS grades from this data merger. This table was produced in STATA v 13.0, a general software statistical package, by tabulating the RS ranks in the data set to view the population of the first reporting official in the FITREP reporting chain. Here we discover that 42 percent of all the evaluations in the requested population are written by RS Marine

officers holding the rank of Major, while 36 percent of the sample are Lieutenant Colonel. This illustrates that as an officer gains rank and experience they are disproportionately responsible for evaluating more subordinate officers.

Table 2. RS Rank Distribution

variable	Observation	mean	sd
RS RANK 2ndLt	0	0	0
RS RANK 1stLt	263	0.22%	0.047
RS RANK Capt	15,908	13.39%	0.341
RS RANK Maj	49,866	41.99%	0.494
RS RANK LtCol	42,221	35.55%	0.479
RS RANK Col	10,507	8.85%	0.284
Total	118,765	100%	0.020

In addition, Table 3 displays the MRO grades. Here we discover that 53 percent of the MRO evaluations are of Marine officers holding the rank of Captain, and 27 percent of the sample are Major.

Table 3. MRO Rank Distribution

variable	Observation	mean	sd
MRO RANK 2ndLt	577	0.004858	0.070
MRO RANK 1stLt	15,016	0.126435	0.332
MRO RANK Capt	63,099	0.531293	0.499
MRO RANK Maj	31974	0.269221	0.443557
MRO RANK LtCol	7916	0.066653	0.249421

Table 4 displays all of the processed FITREPs in the data set by rank of the RS. The observation row reports the number of FITREPs in that FITREP_t round by the same RS evaluating the same MRO. For example, the first row in the FITREP_t column is labeled one and reports 84,444 FITREPs. This number indicates all of the RSs who have written one FITREP on a MRO in this data set. The Table clearly shows the number of FITREPs the RS writes on the same MRO decreases over time, and also indicates the aggregate frequency of MROs who work for the same RS. The sum row describes the number of successive FITREPs by the rank of the RS. This row is providing an example of the seniority of the RS who evaluates the same MRO over time. The mean row is providing percentage of the RSs by rank by dividing the observations by the sum of FITREPs. For example, in FITREP_T row one the RS who is a first lieutenant who has written at least one FITREP on a total of 217 subordinate officers comprising less than one percent of the total RS population in this data set who have written FITREPs on one MRO.

This table establishes the foundation of my analysis by identifying the appropriate sample to examine. The table identifies the RSs by rank who evaluate a subordinate officer over time. The table identifies that 84,444 RSs of all ranks evaluate an MRO once while 323 RSs of all ranks evaluate an MRO on five separate reporting occasions. RSs who are at the rank of Major evaluate the most MROs comprising of 40 percent (31,145), 43 percent (11,119), 51 percent (3,396), 60 percent (956), and 62 percent (201) of one, two, three, four, and five FITREPs evaluating the same MRO, respectively. Second lieutenants are not evaluating their peers with zero FITREPs written on active component unrestricted officers. Another discovery is that first lieutenant RSs rarely evaluate subordinate officers in comparison to higher ranking RSs in this data set. MROs who are promoted are still continuously captured in this model if the RS remains the same. We also discover that the number of FITREPs written by the same RS diminishes significantly from five to six FITREPs written by the same RS. Thus, in my analysis, it is sufficient to include FITREPs by RSs who have evaluated the same MRO five times or less only.

Next, I describe the variables I use for my analysis.

Table 4. FITREPs over Time by the Same RS

FITREP_t	stats	RS Second Lieutenant	RS First Lieutenant	RS Captain	RS Major	RS Lieutenant Colonel	RS Colonel
1	Obs	84,444	84,444	84,444	84,444	84,444	84,444
	mean	0	0.002	0.125	0.404	0.372	0.095
	sd	0	0.051	0.331	0.491	0.483	0.293
2	Obs	25,677	25,677	25,677	25,677	25,677	25,677
	mean	0	0.001	0.148	0.433	0.336	0.081
	sd	0	0.0404	0.355	0.496	0.472	0.273
3	Obs	6,663	6,663	6,663	6,663	6,663	6,663
	mean	0	0.001	0.169	0.510	0.268	0.052
	sd	0	0.024	0.375	0.500	0.443	0.222
4	Obs	1,585	1,585	1,585	1,585	1,585	1,585
	mean	0	0	0.183	0.603	0.2	0.014
	sd	0	0	0.387	0.489	0.400	0.117
5	Obs	323	323	323	323	323	323
	mean	0	0	0.2229	0.622	0.152	0.003
	sd	0	0	0.417	0.486	0.359	0.055
6	Obs	61	61	61	61	61	61
	mean	0	0	0.197	0.704	0.082	0.016
	sd	0	0	0.401	0.460	0.277	0.128
7	Obs	10	10	10	10	10	10
	mean	0	0	0.4	0.6	0	0
	sd	0	0	0.516	0.516	0	0
8	Obs	1	1	1	1	1	1
	mean	0	0	1	0	0	0
	sd	.	.	.	.	.	.
9	Obs	1	1	1	1	1	1
	mean	0	0	1	0	0	0
	sd	.	.	.	.	.	.
Total	N	118,765	118,765	118,765	118,765	118,765	118,765
	sum	0	263	15,908	49,866	42,221	10,507
	mean	0	0.002	0.134	0.420	0.356	0.088
	sd	0	0.047	0.341	0.494	0.479	0.284

1. Variables from the FITREP data by MMRP

a. Relative Value at Processing

Table 5 provides a description of the relative value at processing variables in the data set.

Table 5. Relative Value at Processing Descriptions

NAME	**VARIABLE DESCRIPTION**	**VALUE**
MRO Bottom Third	>=80 and <=86.66	1 if Yes, 0 otherwise
MRO Middle Third	>=86.67 and <=93.33	1 if Yes, 0 otherwise
MRO Upper Third	>=93.34 and <=100	1 if Yes, 0 otherwise

To create a baseline for quality, I first identified the officers in the data set who are marked by the RS with a relative value at processing in the bottom third to categorize as the MRO bottom third variable. I then identified the officers in the data set who are marked by the RS with a relative value at processing in the middle third to categorize as the MRO middle third variable. Lastly, I identified the officers in the data set who are marked by the RS with a relative value at processing in the upper third to categorize as the MRO upper third variable.

b. Duty Occasion

Table 6 provides a description of the duty occasion variables in the data set.

Table 6. Duty Occasion Variables Description

NAME	VARIABLE DESCRIPTION	VALUE
MRO Combat	C duty occasion	1 if Yes, 0 otherwise
MRO NonCombat	J or N duty occasion	1 if Yes, 0 otherwise

To create duty occasion variables, I first identified the officers with FITREP duty occasions with observed time in combat to categorize as the combat duty occasion variable. I then identified the officers with FITREP duty occasions with observed time not in combat to categorize as the non-combat duty occasion variable.

c. Body Fat

Table 7 provides a description of the body fat variable in the data set.

Table 7. Body Fat Variables Description

NAME	VARIABLE DESCRIPTION	VALUE
MRO Body Fat	>=0 and <=47	1 if Yes, 0 otherwise

To create a body fat variable, I identified the officers with a marking in the body fat column on the FITREP to categorize as the body fat variable.

2. Demographic Variables from TFDW

Total Force Data Warehouse provided demographic data of both the RS and the MRO. This robust data set includes eight variables for both the RS and the MRO: gender, marital status, primary military occupational specialty (MOS), commissioning source, civilian education, race, religion, number of dependents, civilian education degree, and

rank. Although they are not labeled as such, all of the below description and tables in this section reference variables for both the RS and the MRO.

a. Gender

Table 8 provides a description of the gender variables in the data set.

Table 8. Gender Variables Description

NAME	VARIABLE DESCRIPTION	VALUE
Male	M	1 if Yes, 0 otherwise
Female	F	1 if Yes, 0 otherwise

To create gender variables, I first identified the officers in the data set who are male to categorize as the male variable. I then identified the officers in the data set who are female to categorizes as the female variable.

b. Marital Status

Table 9 provides a description of the marital status variables in the data set.

Table 9. Marital Variable Descriptions

NAME	VARIABLE DESCRIPTION	VALUE
Married	Married	1 if Yes, 0 otherwise
Divorced	Divorced, annulled and legally separated	1 if Yes, 0 otherwise
Other Marital Status	Single or widowed	1 if Yes, 0 otherwise

To create marital status categories I first identified married officers. Subjects who are married are categorized in the married variable. I then identified the officers who are divorced, annulled and legally separated to categorize these officers in the divorced variable. Lastly, I identified the officers who are either single or widowed to categorize in the other marital status variable.

c. Primary Military Occupational Specialty

Table 10 provides a description of the primary military occupational specialty (PMOS) occupational field variables in the data set.

Table 10. PMOS Variables as Occfields

NAME	**VARIABLE DESCRIPTION**	**VALUE**
MOS_CombatArms	0301, 0302, 0370, 1801, 1802, 1803, 8041	1 if Yes, 0 otherwise
MOS_CombatSvcSuppt	0101, 0102, 0180, 0201, 0202, 0203, 0204, 0206, 0207, 0401, 0402, 0430, 0601, 0602, 0603, 0605, 1301, 1302, 3001, 3002, 4301, 4302, 8040	1 if Yes, 0 otherwise
MOS_FinMan	3401 or 3404	1 if Yes, 0 otherwise
MOS_Law	4401 or 4402	1 if Yes, 0 otherwise
MOS_AviationGND	6001, 6002, 6601, 6602, 7201, 7202, 7204, 7208, 7210, 7220, 7301, or 7315	1 if Yes, 0 otherwise
MRO_MOS_Aviation	>=7507 & <=7599 & 8042	1 if Yes, 0 otherwise

To create occupational field categories I first identified the PMOS of the officer to group into the respective occfield using grouping methods from Marine Corps Administrative Messages (MARADMIN), the MOS Manual and empirical research methodologies. To create military occupational fields, I first identified the MROs who are either in school for a combat arms MOS or who possess a combat arms MOS to categorize

as the MRO combat arms variable. I then identified the MROs who are either in school for a combat service support MOS or who possess a combat service support MOS to categorize as the MRO combat service support variable. I then identified the MROs who are either in school for financial management or possess the financial management MOS to categorize as the MRO financial management variable. I then identified the MROs who are either in military judge advocate general (JAG) school or possess the JAG MOS to categorize as the MRO law variable. I then identified the MROs who possess the acquisition management MOS to categorize as the MRO acquisition variable. I then identified the MROs who are either in school for a ground aviation MOS or possess a ground aviation MOS to categorize the MRO aviation ground variable. The aviation ground variable feeds into the 8040 logistics Colonel MOS. It is important to note that the O-6/Colonels in the aviation ground category were placed into the combat service support RS variable not the aviation ground variable. Lastly, I identified the MROs who are either in school for aviation as a pilot or possess a pilot MOS to categorize as the aviation variable.

d. Commissioning Source

Table 11 provides a description of the race variables in the data set.

Table 11. Commissioning Source variables

NAME	**VARIABLE DESCRIPTION**	**VALUE**
Commsource INTERSERVETRANS	Interservice transfer	1 if Yes, 0 otherwise
Commsource OCS	Officer Candidates School	1 if Yes, 0 otherwise
Commsource OTHERECPs	Other Enlisted Commissioning Programs	1 if Yes, 0 otherwise
Commsource PLC	Platoon Leaders Class	1 if Yes, 0 otherwise
Commsource_ROTC	Reserve Officer Training Corps	1 if Yes, 0 otherwise
Commsource SERVICEACADEMIES	Service academy	1 if Yes, 0 otherwise
Commsource OTHER	Missing commissioning source or other	1 if Yes, 0 otherwise

To create commissioning source variables, I first identified the officers who commissioned by interservice transfer to categorize as the interservice transfer commissioning source variable. I then identified the officers who commissioned by Officer Candidates School (OCS) to categorize as the OCS commissioning source variable; this variable is synonymous with OCC. I then identified the officers who commissioned by an enlisted to officer commissioning program to categorize as the other enlisted to officer program variable. I then identified the officers who commissioned by Platoon Leader's course (PLC) to categorize as the PLC variable. I then identified the officers who commissioned by Reserve Officer Training Corps (ROTC) to categorize as the ROTC variable. I then identified the officers who commissioned by graduating from a service academy to categorize as the service academy variable. Lastly, I identified the uncategorized commissioning sources for officers in the data set or officers with missing commissioning source information to categorize as the other variable.

e. Civilian Education

Table 12 provides a description of the highest civilian level of education attained in the data set.

Table 12. Civilian Education Descriptions

NAME	**VARIABLE DESCRIPTION**	**VALUE**
Bachelors	Bachelor's degree	1 if Yes, 0 otherwise
Master's Degree	Master's degree, post degree or 1st professional degree	1 if Yes, 0 otherwise
Doctorate	Doctoral degree	1 if Yes, 0 otherwise
Other	Adult diploma, associate's degree, high school diploma, less high school, or 1 semester college	1 if Yes, 0 otherwise

To create education categories, I first identified the officers only possessing a bachelor's degree to categorize as the bachelor's education variable. I then identified the officers possessing a Master's degree, post degree or first professional degree to create the master's degree education variable. I then identified the officers possessing a doctoral degree to create the doctorate education variable. Lastly, I identified the officers possessing an adult diploma, high school diploma, lees high school or 1 semester college to categorize as the other education variable.

f. Race

Table 13 provides a description of the race variables in the data set.

Table 13. Race Variable Descriptions

NAME	VARIABLE DESCRIPTION	VALUE
Hispanic	Cuban, Latin American, Mexican, Puerto Rican, Other Hispanic	1 if Yes, 0 otherwise
White	White	1 if Yes, 0 otherwise
Asian	Japanese, Filipino, Other Asian, Other Pacific Islander, Polynesian, Guamanian, and Micronesian	1 if Yes, 0 otherwise
Black	Black or African American	1 if Yes, 0 otherwise
Other Race	Declined to Respond, Native American Indian or Alaska Native, European/Anglo, US Canadian, or Indian	1 if Yes, 0 otherwise
Non White	Hispanic, Asian, Black or Other	1 if Yes, 0 otherwise

To create race categories I first identified Hispanics using responses to race and ethnicity. Subjects who identify their race as American Indian or Alaska Native, Asian, Black or African American, declined to respond, or White, but identify their ethnicity as

Cuban, Latin American, Mexican, Puerto Rican or Other Hispanic are categorized as Hispanic. I then identified the White category as those subjects who racially identify as White with an ethnicity that is non-Hispanic. Thirdly, I identified Asians using responses to subjects who identify their race as Asian, American Indian or Alaska Native, and declined to respond, but identify their ethnicity as Japanese, Filipino, Other Asian, Other Pacific Islander, Polynesian, Guamanian, and Micronesian. I then identified subjects who identify racially as Black or African American and identify their ethnicity as African or declined to respond for input to the Black race code. I then identified the outstanding population that declined to respond to race and ethnicity, as well as those who identify racially as Native American Indian or Alaska Native with an ethnicity of European or Anglo, U.S. Canadian, or Indian. Lastly, I created a non-White variable by identifying those who identify as Hispanic, Asian, Black or Other.

g. Religion

Table 14 provides a description of the religion variables in the data set.

Table 14. Religion Variable Descriptions

NAME	VARIABLE DESCRIPTION	VALUE
Christian	Christian religion	1 if Yes, 0 otherwise
Catholic	Anglican Catholic Church, Catholic Churches, Eastern Orthodox Churches, and Roman Catholic Church	1 if Yes, 0 otherwise
Non-Christian	Baha'I faith, Buddhism, Hindu, Jewish, Jewish-Conservative, Jewish-Orthodox, Jewish-Reform, and Muslim	1 if Yes, 0 otherwise
Other_religious_beliefs	Unitarian universalist association, WICCA, WICCA (Witchcraft), or other religions	1 if Yes, 0 otherwise
No_religious_preference	No preference recorded, no religious preference, unknown, or missing	1 if Yes, 0 otherwise

To create religion categories I first identified the officers who have a religious preference of Christian to categorize as the Christian variable. The list of Christian religious preferences is extensive. I used http://www.pewforum.org/religious-landscape-study/ for guidance to assist me in creating the Christian variable. I then identified the officers who have a religious preference of Catholic to categorize as the Catholic variable. I then identified the officers who have a religious preference as not Christian to categorize as the Non-Christian variable. I then identified the officers who have other religious preferences or beliefs to categorize as the other religious beliefs variable. Lastly, I

identified the officers who do not have a religious preference to categorize as the no religious preference variable.

h. Number of Dependents

Table 15 provides a description of the number of dependents in the data set.

Table 15. Number of Dependent Descriptions

NAME	**VARIABLE DESCRIPTION**	**VALUE**
Dependents Zero	Zero dependents or blank data	1 if Yes, 0 otherwise
Dependents One	One dependent	1 if Yes, 0 otherwise
Dependents Two	Two dependents	1 if Yes, 0 otherwise
Dependents Three	Three dependents	1 if Yes, 0 otherwise
Dependents Four	Four dependents	1 if Yes, 0 otherwise
Dependents Five or More	>= Five dependents	1 if Yes, 0 otherwise

To create number of dependent categories, I first identified the officers that have zero dependents or no record of dependents to categorize these officers as having zero dependents. I then identified the officers that have only one dependent to categorize these officers as the dependents one variable. I then identified the officers that have two dependents to categorize these officers as the dependents two variable. I then identified the officers in the data set that have three dependents to categorize as the dependents three variable. I then identified the officers that have four dependents to categorize as the dependents four variable. Lastly, I identified the officers that have five or more dependents to categorize as the dependents five or more variable.

i. Science, Technology, Engineering and Math Major

Table 16 provides a description of the college major the officer attained.

Table 16. STEM Variables Descriptions

NAME	VARIABLE DESCRIPTION	VALUE
STEM	Science, technology, engineering, or math	1 if Yes, 0 otherwise
Non-STEM	Other than science, technology, engineering or math	1 if Yes, 0 otherwise
STEMOther	"" or "No Major Subject Indicated"	1 if Yes, 0 otherwise
MissingEdcuationSTEM	Other than STEM, Non-STEM, or STEMOther	1 if Yes, 0 otherwise

To create STEM categories I first identified the officers who possess a STEM degree to categorize as the STEM variable. I then identified the officers who possess a non-STEM degree to categorize as the non-STEM variable. The business rule for coding dichotomous variables in this category is if Science, Technology, Engineering and Math (STEM) appears in the degree title, then it qualifies as a STEM major after thorough review of the degree title. I also reviewed the United States Naval Academy's (USNA) STEM website at: https://www.usna.edu/Academics/Majors-and-Courses/index.php for more guidance to categorize STEM and Non-STEM degree holders. For example, a political science major has science in the title of the degree and is categorized as Non-STEM as the USNA's website categorizes it as Non-STEM. I then identified the officers who do not have a subject title on record or have "No Major Subject Indicated" to categorize as STEMOther. I then identified the officers who have missing degree subject by identifying those who have positive data on all of the previously created education variables in this paragraph. This method creates the MissingEdcuationSTEM, which produces 110 variables that will not be used in my analysis.

j. Present Rank

Table 17 provides a description of the present grade of the officer.

Table 17. Present Rank Variables

NAME	VARIABLE DESCRIPTION	VALUE
2ndLt	Second Lieutenant, O1, or O1E	1 if Yes, 0 otherwise
1stLt	First lieutnenant, O2, or O2E	1 if Yes, 0 otherwise
Capt	Captian, O3, or O3E	1 if Yes, 0 otherwise
Maj	Major or O4	1 if Yes, 0 otherwise
LtCol	Lietenant Colonel or O5	1 if Yes, 0 otherwise
Col	Colonel or O6	1 if Yes, 0 otherwise
BGen	Brigidier General or O7	1 if Yes, 0 otherwise

To create present rank variable, I first identified the officers that are second lieutenants to categorize as the second lieutenant variable. I then identified the officers that are first lieutenants to categorize as the first lieutenant variable. I then identified the officers that are captains to categorize as the captain variable. I then identified the officers that are majors to categorize as the major variable. I then identified the officers that are lieutenant colonels to categorize as the lieutenant colonel variable. I then identified the officers that are colonels to categorize as the colonel variable. Lastly, I identified the officers that are brigadier generals to categorize as the brigadier general variable.

The MRO distribution for this table includes a different set of present grade variables. The MRO distribution is second lieutenant through lieutenant colonel.

C. EMPIRICAL METHODS

This research uses multivariate regression techniques to examine the panel data to see if and how a FITREP varies over time considering like and unlike characteristics of the RS and MRO. In this section, I will review the econometric techniques used to conduct this analysis followed by summary statistic tables.

1. Logistics Regression

To estimate the effects of various RS and MRO characteristics on the likelihood an MRO is rated as a high-quality Marine, I first estimate a series of logistic regressions. A logistics regression or logit model estimates the effects of regressors on a binary dependent variable using a Logistic cumulative distribution function (CDF) (Wooldridge, 2013, p.526). Logit regressions are appropriate in this case because the dependent variables, whether the MRO is ranked in the Top/Middle/Bottom Thirds on their FITREPs, is a binary outcome.

The econometric specification I estimate is:

$$P(\mathrm{Y}=1)=\frac{\exp(z)}{[1+\exp(z)]}$$

where, for example, Y=1 if an MRO is ranked in the Top Third and 0 otherwise. In addition,

$$z=\beta_o+\beta_1 di+\beta_2 dj+\beta_3 di*dj+\beta_4 t+\beta_5 t*di*dj$$

In the above specification, i indexes MRO; j equals RS; and t equals time (continuous FITREPs by the same RS). Also, d are dummy or indicator variables of the MRO i and the RS j. For instance, in my analysis where I focus on the race of MRO and RS and d indicates Black, di=1 if MRO i is Black and 0 otherwise, dj=1 if RS is Black and 0 otherwise.

For the sake of exposition, I do not include all the regressors in the above equation. However, the specification I estimate includes various race, gender and religion dichotomous variables to disentangle RS learning over time and if statistical discrimination exists in Marine Corps officer evaluations. This specification will estimate the change in

FITREPs over time with $\beta_4 t + \beta_5 t * di * dj$ while controlling for race, gender and religion of the RS and MRO.

This examination uses several different logit regressions to estimate the effects of gender, marital status, primary military occupational specialty (MOS), commissioning source, civilian education, race, religion, number of dependents, civilian education degree, and rank. This unorthodox approach in examining FITREPs is attempting to determine the amount of learning that occurs between the RS and MRO over time. This specification indirectly captures the high-quality officer promotion predictors identified by Stolzenberg (2017) and Salas (2015) to examine if demographic measurable and observable characteristics have an effect on FITREP outcomes.

Goodness of fit is also a contentious topic of logit regressions. Logistics regression use a "pseudo R-squared" goodness of fit measure to estimate the true effects of the model (Wooldridge, 2013, p.531). However, "goodness-of-fit is usually less important than trying to obtain convincing estimates of the ceteris paribus effects of the explanatory variables" (Wooldridge, 2013, p.531). The goodness-of-fit is less of a concern due to my research questions. The statistical significance of the results of all the models is important as well as the economic significance in covariates that are marginally statistically significant.

This specification is also over or under estimating the effects of self-selection stemming from the characteristics of the RS. Self-selection is an economic theory where people choose or self-select to areas that will increase overall utility over areas that provide less utility (Education and Self-Selection). Naturally people will self-select to a job they prefer or a hobby they enjoy more so than unenjoyable jobs or hobbies. Higher education is a prime example of this theory where people attain more education if that particular education is more natural to the person receiving the education all the while increasing the monetary opportunities of future employment that requires higher education. I mention these examples to highlight pieces of my literature review that identify self-selection from the employer to employee's perspective and why it is important to consider the effects of self-selection when thinking about how a RS learns about an MRO over time.

This specification is also over or under estimating the effects of the demographic variables due to omitted variables bias of high-quality performance indicators of Marine officers. Introducing these omitted variables would undoubtedly have a positive or negative effect on the demographic variables outcome. The omitted variables are being accounted for in the error term (ε_{ijt}) of the specification.

2. Summary Statistics

The descriptive statistics in this section highlight the means and standard deviations of the variables used in this examination. The purpose of providing these summaries is to give a reference point for future research or for comparative study. The following tables may indicate the Marine Corps could enhance its assignment process by matching the capabilities and limitations of Marine officers in a complimentary form.

a. Dependent Variable Summary Statistics

This section will provide a summary of all the dependent variable descriptive statistics. The MRO dependent variables are: gender, marital status, primary military occupational specialty (MOS), commissioning source, civilian education, race, religion, number of dependents, civilian education degree, and rank.

Table 18 provides an illustration of the MROs in the data set by gender. This table illustrates the gender of the MROs observed by the RSs. Here we discover that 93 percent of the MRO sample are male.

Table 18. MRO by Gender

Variable	Obs	Mean	Std. Dev.
Clean Sample			
MRO Male	109,928	0.926	0.262
MRO Female	8,837	0.074	0.262

Table 19 provides an illustration of the MROs in the data set by marital status. This table illustrates the marital status of the MROs observed by the RSs. Here we discover that 73 percent of the MRO sample are married.

Table 19. MRO by Marital Status

Variable	Obs	Mean	Std. Dev.
Clean Sample			
MRO Married	86,508	0.728	0.445
MRO Divorced	5,021	0.042	0.201
MRO Marital Status Other	27,241	0.229	0.420

Table 20 provides an illustration of the MROs in the data set by primary military occupational specialty. This table illustrates the PMOS of the MROs observed by the RSs. Here we discover that 39 percent of the sample MROs are in the combat service support, 25 percent in aviation, and 24 percent are in the combat arms occfields.

Table 20. MRO by PMOS

Variable	Obs	Mean	Std. Dev.
Clean Sample			
MRO MOS Combat Arms	28,220	0.238	0.426
MRO MOS Combat Service Support	46,023	0.387	0.487
MRO MOS Financial Managment	1,739	0.015	0.120
MRO MOS Law	3,336	0.028	0.165
MRO MOS Aviation Ground	9,811	0.082	0.275
MRO MOS Aviation	29,360	0.247	0.431

Table 21 provides an illustration of the MROs in the data set by highest level of civilian education attained. This table illustrates the level of civilian education attained and recorded in TFDW. Here we discover that 15 percent of the MRO sample have attained a master's degree.

Table 21. MRO by Civilian Education Attained

Variable	Obs	Mean	Std. Dev.
MRO Education Bachelors	90,597	0.763	0.425
MRO Education Masters	17,554	0.148	0.355
MRO Education Doctorial	1,588	0.013	0.115
MRO Education Other	9,031	0.076	0.265

Table 22 provides an illustration of the MROs in the data set by commissioning source. This table illustrates the commissioning source of the MROs observed by the RSs. Here we discover that 31 percent of the MROs commissioning source was by way of the Platoon Leaders Course.

Table 22. MRO Commissioning Source

Variable	Obs	Mean	Std. Dev.
Clean Sample			
MRO Commissioning Source Interservice Transfer	363	0.003	0.055
MRO Commissioning Source Officer Candidates School	28,948	0.244	0.429
MRO Commissioning Source Other Enlisted Commissioning Programs	16,063	0.135	0.342
MRO Commissioning Source Platoon Leaders Course	36,525	0.308	0.461
MRO Commissioning Source Reserve Officer Training Corps	17,092	0.144	0.351
MRO Commissioning Source Service Academy	17,836	0.150	0.357
MRO Commissioning Source Other	1,943	0.016	0.127

Table 23 provides an illustration of the MROs in the data set by race. This table illustrates the racial composition of the MROs observed by the RSs. Here we discover that 79 percent of the MRO sample is White.

Table 23. MRO by Race

Variable	Obs	Mean	Std. Dev.
MRO White	94,292	0.794	0.405
MRO Black	5,223	0.044	0.205
MRO Hispanic	9,367	0.079	0.270
MRO Asian	4,712	0.040	0.195
MRO Other race	5,176	0.044	0.204

Table 24 provides an illustration of the MROs in the data set by religious preference. This table illustrates the religious preference of the MROs observed by the RSs. Here we discover that 51 percent of the MROs in the sample identify their religious preference as Christian.

Table 24. MRO by Religious Preference

Variable	Obs	Mean	Std. Dev.
MRO Christian	60,715	0.511	0.50
MRO Catholic	34,840	0.293	0.455
MRO Non-Christian	1,618	0.014	0.116
MRO Other Religious Preferences	3,391	0.029	0.167
MRO No religious preferences	18,198	0.153	0.360

Table 25 provides an illustration of MROs in the data set by the number of dependents of the MRO. This table illustrates the number of dependents of the MROs observed by the RSs. Here we discover that 30 percent of the MROs in the sample do not have a dependent while 21 percent have one dependent. This distinction is important to note to consider the time allocation effects on work behavior of being single and having one dependent.

Table 25. MRO by Number of Dependents

Variable	Obs	Mean	Std. Dev.
MRO Dependents Zero	35,546	0.299	0.458
MRO Dependents One	24,753	0.208	0.406
MRO Dependents Two	17,416	0.147	0.354
MRO Dependents Three	23,608	0.199	0.399
MRO Dependents Four	12,364	0.104	0.305
MRO Dependents Five or More	5,083	0.043	0.202

Table 26 provides an illustration of the MROs in the data set by civilian education degree in STEM or Non-STEM. This table illustrates the type of degree attained by the MROs being observed by the RSs. Here we discover that 51 percent of the MROs in the sample have attained a non-STEM degree.

Table 26. MRO by STEM or Non-STEM Degree

Variable	Obs	Mean	Std. Dev.
MRO Education Non-STEM	60,003	0.505	0.50
MRO Education STEM	25,403	0.213	0.410
MRO Education Other	34,344	0.2891639	0.453

D. SUMMARY

This chapter describes the Marine Corps entities who provided the data for this thesis, the modeling techniques I will use to examine the data, and the summary statistics of the MRO variables.

MMRP-30 and TFDW provided the data sample for this thesis. MMRP-30 provided panel data for me to examine including 118,765 FITREPs from 2010-2017. From this data, I created three variables: MRO third placement (top, middle, or bottom), combat or non-combat FITREP, and a body fit variable. The variables created from the MMRP-30 data will allow me to examine if a Marine officer is a high-quality Marine and if the demographic characteristics of the RS and MRO effect the likelihood of the outcome. TFDW provided demographic data for both the RS and the MRO. From this rich data set, I created eight variables for both the RS and the MRO: gender, marital status, primary military occupational specialty (MOS), commissioning source, civilian education, race, religion, number of dependents, civilian education degree, and rank. Both data sets were given to me with unique RS and MRO identifiers allowing me to link them together to examine if differences in RS learning about the MRO occur over time.

The modeling techniques I use for this analysis are logit regressions in many different models. The specification I use for this examination was developed using previous research discoveries and sound econometric techniques. The binary outcome variable will allow me to examine if differences in RS learning vary over time considering the demographic differences of both the RS and MRO. The over or under estimates of this model stem from self-selection of the RS and MRO, and omitted variables bias in the form of omitted high-quality performance indicators identified by previous research.

The summary statistics of the data sample provide easily identifiable information to readers of this thesis. The summary statistics provide that the majority of this data set is an MRO unrestricted officer who is male, married, in the combat service support occfield, has attained a bachelor's degree, commissioned through the Platoon Leaders Course, religious preference is Christian, has zero dependents, holds a non-STEM major, and present rank is captain.

V. FINDINGS AND RESULTS

A. INTRODUCTION

This research uses multivariate regression techniques to examine if and how a FITREP varies over time considering like and unlike characteristics of the RS and MRO. This thesis also examines if the differences between the RS and MRO are affecting FITREP top third outcomes. In this section, I review the difference in RS learning of the MRO that occurs over time by race of the RS and MRO. I also review the findings of my analysis by discussing the RS reporting behavior differences in FITREP top third outcome by observable and measurable characteristics of both the RS and MRO. Lastly, I review how the first FITREP impacts follow-on FITREPs from the same RS of the MRO indicating that first impression effects are important for officer in the top third.

B. RS LEARNING EVOLUTION OVER TIME

The panel data set for this examination includes 118,765 Marine Corps officer FITREPs with MRO ranks of second lieutenant to lieutenant colonel from 2011 to 2017. The data set includes 71.1 percent of officers who only receive one FITREP from an RS before their reporting relationship terminates. As discussed in the previous chapter, I select the sample to include the FITREPs written by the same RS on the same MRO up to the first five FITREPs. This provides a sufficient sample to examine RS learning about the MRO over time while minimizing statistical noise.

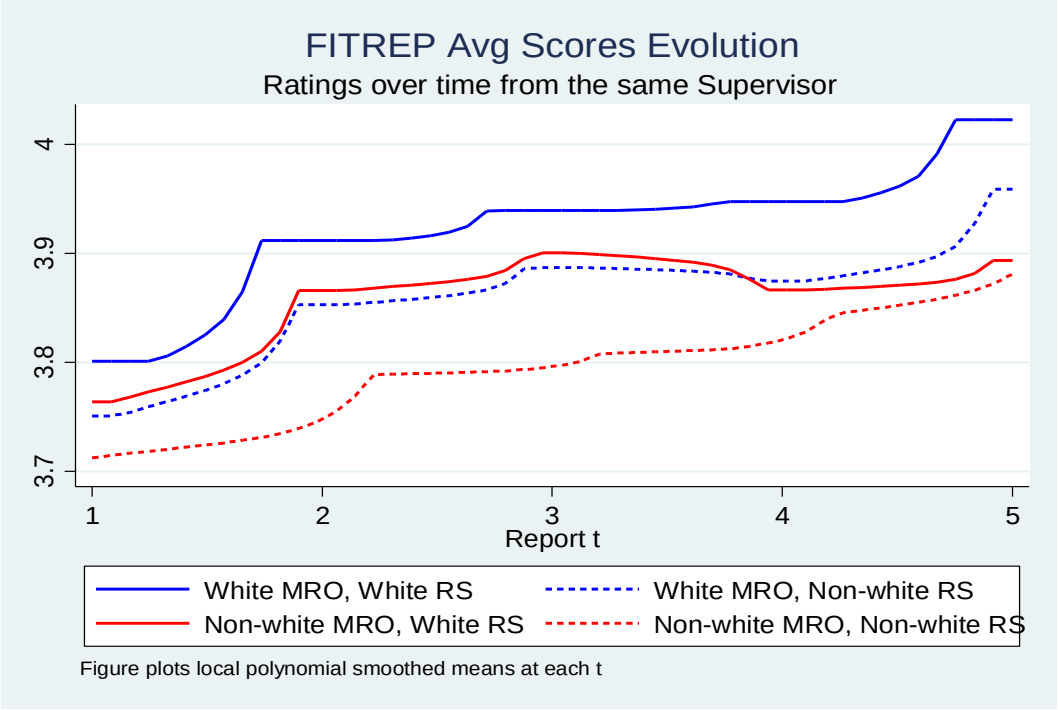
RS learning occurs on numerous levels as the MRO and RS interact over time. The FITREP growth rate measures the amount of learning that occurs over time as the RS is learning about the MROs capabilities and limitations or productivity. There is no full-proof way to identify whether it is the RS learning, the MRO improving productivity or a personal relationship developing over time. However, I can offer an argument suggesting that learning does occur over time. Reporting Seniors evaluate on productivity and they evaluate on noise. RS must minimize the noise to honestly evaluate a subordinate's productivity. As time passes, the RS learns more about the productivity of the MRO. This theory is corroborated by Altonji and Pierret (2001) research on learning where they find

that an employee's wage and productivity increase over time as more information is gained by the firm about the employee.

The first finding in my analysis is the systematic variation in FITREP average scores across the MRO's race. As Figure 2 illustrates, white MROs appear to receive a race benefit from White RSs as they receive higher initial FITREP average scores and end with higher FITREPs average scores. The White on White benefit phenomenon illustrates that RS learning occurs most within a relationship of the same race. Non-White RSs and MROs behave differently than other same race groups. Non-White RSs appear to evaluate non-White MROs more critically as they receive lower initial FITREP average scores and end with the overall lowest FITREP average score. RS learning from non-White RSs with non-White MROs appears to occur at a slower rate. This finding suggests the RSs and MROs who are Hispanic, Black and Asian learn less about one another over time than a White evaluation combination.

Figure 2 also shows different combinations of White and non-White RSs and MROs suggests learning does occur over time, but at different rates across race pairs. A White RS with a non-White MRO appears to have the slowest learning growth rate over time. The growth in FITREP average scores further suggests that the RS learns the most from the first to the second FITREP about his/her MRO's productivity. As the reporting relationship continues, the White RS appears to not favor the learning that occurs at the fourth FITREP as the FITREP average score decreases. This decrease is the largest decrease in the graph suggesting that the White RS is less enthusiastic with the MROs performance at the fourth and fifth FITREP. The RS learning that occurs with a non-White RS with a White MRO follows a similar trend as the White RS with a non-White MRO. However, the non-White RS learning occurs at a more rapid rate from the fourth to the fifth FITREP indicating more learning is occurring over time.

Figure 2. FITREP AVG Scores over Time Controlling for Race



RS learning over time varies when controlling for rank and race of the MRO and race of the RS. Second Lieutenant MROs of all races appear to receive similar first FITREPs from RSs of all races. The growth rate from the first to second FITREP also appears similar, but White MROs with a White RS receive marginally higher second FITREP average scores. White MROs with non-White RSs and the same non-White combination appear to receive lower second FITREP average scores indicating less learning is occurring in these groups from the first to second FITREP. The data sample size for Second Lieutenant MROs does not support an accurate examination of these MROs beyond two consecutive FITREPs. The number of Second Lieutenant MROs with the same RS with one, two, three, and four FITREPs are: 495, 74, 7, and 1, respectively.

First Lieutenant MROs of all races with RSs of all races appear to all receive similar FITREP average scores on the first FITREP. The learning occurs at relatively the same rate until the third FITREP. At this point in time, White MROs with a White RS appear to learn more about one another receiving consecutively higher FITREP averages until the

fifth FITREP. Non-White MROs receive higher third FITREP average scores from White RSs indicating the most RS learning is occurring at this point of time for this group when compared to other combination of Second Lieutenants. The number of observations for non-White RSs with both White and non-White MROs reaches the level of a White RS/MRO pair, but is dropped from the graph indicating non-White RSs observe Second Lieutenants less often over a period of time than White RSs. The fourth FITREP average score from the same RS on the same MRO decreases for both combinations of White RS/MRO and White RS to non-White MRO. The non-White MROs with White RSs decreases at a more rapid rate than the White RS/MRO pair suggesting RS learning is occurring at different rates. The number of First Lieutenant MROs with the same RS with one, two, three, four and five FITREPs are: 9,257, 3,928, 1337, 398 and 84, respectively.

Captain MROs of all races with RSs of all races appear to all receive similar FITREP average scores on the first FITREP. Variation in RS learning appears to occur at the second consecutive FITREP with White MROs with a non-White RS receiving the highest FITREP average scores. Non-White MROs with non-White RSs receive the lowest FITREP average scores on the second FITREP indicating that the RS learning occurring about the MRO is unfavorable. Variation continues while examining the third FITREP average scores. White MROs with non-White RS receive the highest FITREP average scores on the third FITREP suggesting favorable RS learning is occurring at this point in time. Non-White RSs with non-White MROs receive the lowest third FITREP average scores in comparison to other RS to MRO combinations. White and non-White MROs with White RSs receive relatively equal third FITREP average scores while remaining in between the high and low RS to MRO combinations. The gap between White and non-White MROs appears to widen in the fourth FITREP average scores. Non-White MROs with a White RS and non-White MROs with non-White RSs decrease falling below White MROs FITREP averages. White MROs with White RSs remains relatively flat, but higher than any non-White MRO combination. The variation continues in the fifth consecutive FITREP for Captains. Non-White MROs with non-White RSs spike to the highest level for Captains with five FITREPs from the same RS. White MROs with White and non-White RSs grow marginally higher and appear to end together with the White RS and MRO

combination slightly higher. Non-White Captain MROs with White RSs appear to decrease in FITREP average scores ending lowest in comparison to any other Captain MRO to RS combination. The number of Captain MROs with the same RS with one, two, three, four and five FITREPs are: 9,176, 2,929, 844, 207 and 36, respectively.

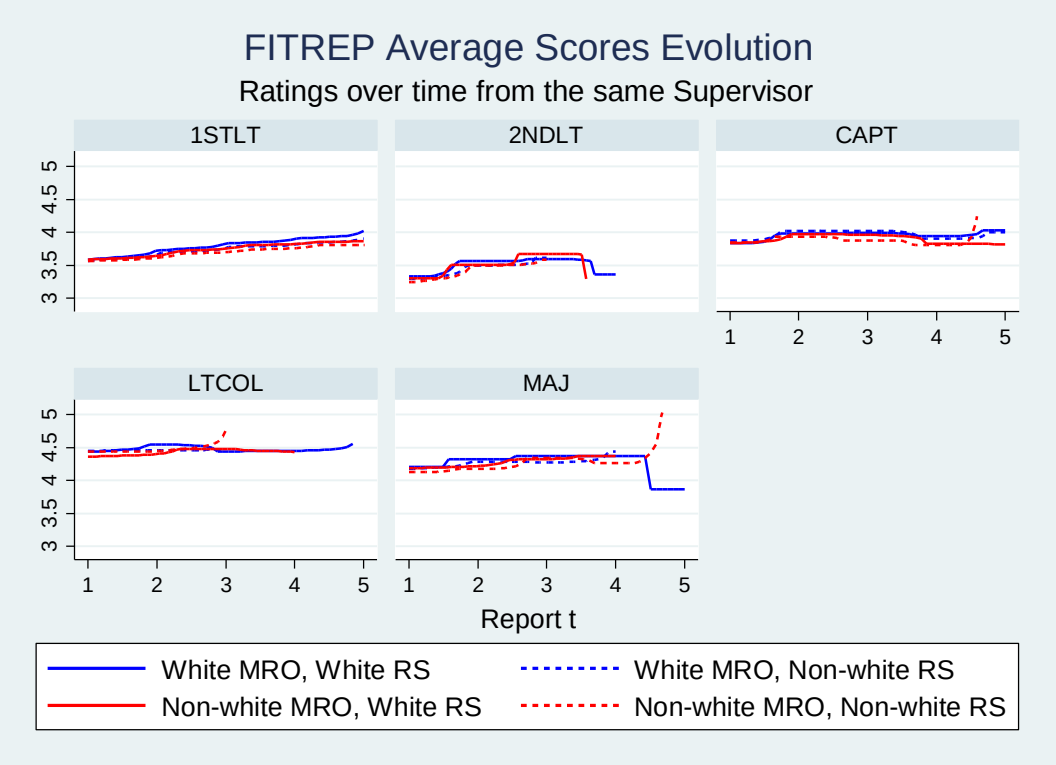
Major MROs of all races with RSs of all races appear to all receive similar FITREP average scores on the first FITREP. Non-White MRO Majors with non-White RSs appear to have the lowest first FITREP average score in comparison to all other MRO to RS combinations, while the other combinations appear relatively equal. The second consecutive FITERP increases for White MROs with White and non-White RSs, while non-White MROs with White and non-White RSs increases marginally. The third FITREP illustrate White MROs with non-White RS trending down below all other combinations. White MROs with White RSs are marginally higher than any other combination in the third consecutive FITREP. White MROs with White RSs trend steadily in line with the previous outcome for the fourth consecutive FITREP, but above non-White MROs with a White RS. The number of non-White Major MROs with a fourth consecutive FITREP from the same RS diminishes to 17 observations. The fifth consecutive FITREP for Major MROs is insignificant as the White MROs in the sample are seven with one non-White MRO. The number of Major MROs with the same RS with one, two, three, four and five FITREPs are: 24,691, 6,146, 1,009, 120 and 8 respectively.

Lieutenant Colonel MROs of all White and non-White races with RSs of White and non-White races appear to all receive similar FITREP average scores on the first FITREP. The sample size provides an analysis of the first through third consecutive FITREPs for this rank. Non-White and White MROs with the same race RSs have similar first FITREP average scores. Non-White MROs with White RSs are lower than any other MRO to RS combination for the first FITREP. The second consecutive FITREP shows that White MROs with White RSs trend upward surpassing all other MRO to RS combinations. Non-White MROs with non-White RSs appear to flatline showing only a marginal increase from the previous FITREP average score. The third consecutive FITREP for all but one MRO to RS combinations narrow in a tight range showing no significant increase or decrease from the second FITREP with the exception of the 37 non-White MROs with a non-White

RS increasing to the highest FITREP average score. The number of Lieutenant Colonel MROs with the same RS with one, two, three, four and five FITREPs are: 6,042, 1,593, 258, 21 and 1 respectively.

This analysis finds that RS learning occurs over time at mostly an increasing manner. There appears to be systemic differences in ratings such that same trait RS rate same trait MRO higher on average. Figure 3 displays trait favorability when controlling for non-based performance factors such as race and rank.

Figure 3. FITREP Average Scores over Time by Rank

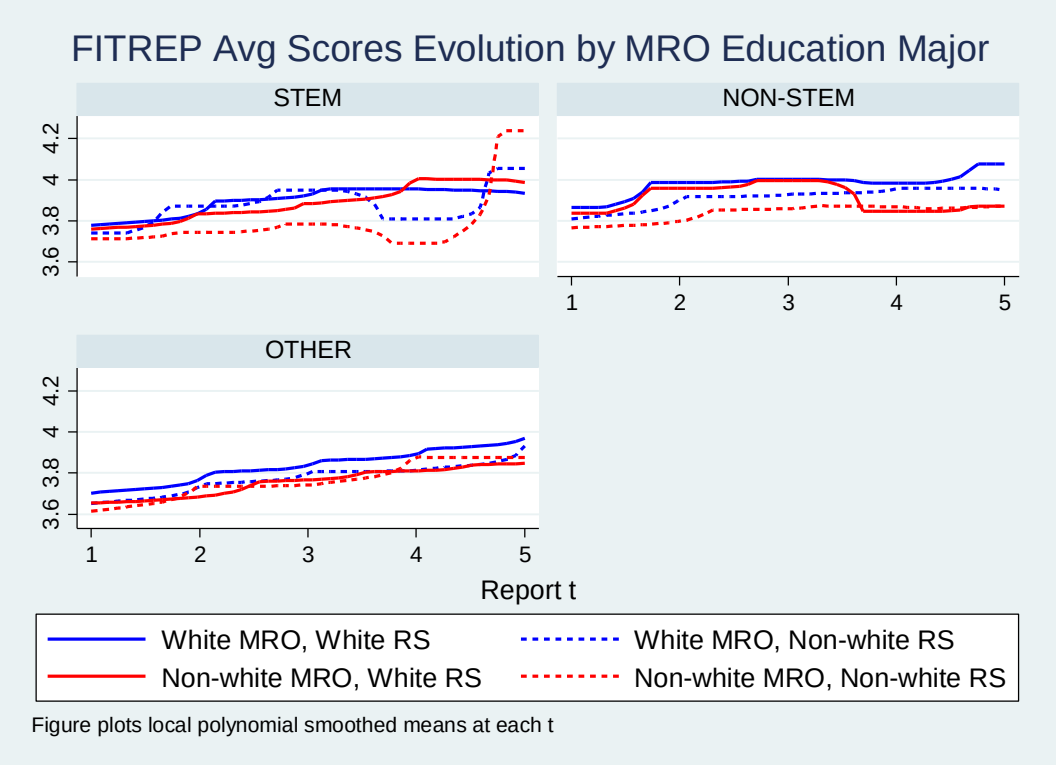


RS learning over time varies when controlling for race and subject degree of the MRO and race of the RS. While FITREP ratings do vary systemically by the likeness and differences of RS to MRO, these differences narrow substantially once performance-based factor such as education are accounted for. This analysis appears to suggest a RS will learn more or less about an MRO dependent on the STEM, non-STEM or other subject of

education on record indicating performance-based factors influence RS behavior more than non-performance-based factors such as race.

The most RS learning occurs from MROs who possess STEM degrees (21.4 percent of sample size). The RSs learning varies dependent on MRO to RS race combination with all race MROs with a STEM degree receiving more benefit than non-STEM or other degree subjects on record. This indicates that RSs learn more about the capabilities and limitations of MROs holding a STEM degree more than non-STEM and STEMOther (MROs with missing subject degree on record). Figure 4 displays the FITREP average score by race and education in three separate categories: STEM, Non-STEM and Other.

Figure 4. FITREP Average Score by Race and Education



C. RS REPORTING BEHAVIOR DIFFERS BY CHARACTERISTICS

The findings in this section discuss the evaluation differences of RSs and MROs of similar and dissimilar characteristics. The control group in this analysis is the RSs who do not have a race on record categorized as the RS other race variable. I first discuss the logistics regression results of MROs who are ranked in the top third by the races of the RSs. Second, I discuss the regression results of MROs who are ranked in the top third while holding the race and gender of the MROs constant. Third, I discuss the regression results of MROs who are ranked in the top third by race, gender, and occfields, to examine if variation exists in RS FITREP outcome by race of the RS in different competitive categories within the Marine Corps to examine is variation exists in occfield. Finally, I examine commissioning source of the MRO and RS to determine if commissioning source has an effect on top third FITREP outcome in addition to race. I continue to add to similar and dissimilar characters of both the RS and MRO in progressive regression models to determine if these specific characteristics affect top third MRO outcomes.

In this data set, Marine Corps RSs evaluate MROs differently by the measurable and observable characteristics of both the RS and the MRO. A non-White MRO is 1.2 times more likely to be marked in the top third by a White RS than a non-identifiable race RS. A White MRO is 1.16 times more likely to be marked in the top third by a White RS than a non-identifiable race RS. These significant findings provide evidence that racial differences marginally affect the likelihood of a RS marking an MRO in the top third. A Black Marine MRO is 1.1 times more likely to be marked in the top third by a White RS than a non-identifiable race RS. A Hispanic MRO is 1.21 time more likely to be marked in the top third by a White RS a than non-identifiable race RS. An Asian Marine MRO is 1.29 times more likely to be marked in the top third by a White RS than a non-identifiable race RS. However, the Black, Hispanic and Asian findings are statistically insignificant, but economically significant when considering the racial effects of a White RS on all racial variables.

Black RSs behave differently than White RSs, appearing to favor non-White and Hispanic MROs more than White MROs. A Hispanic MRO is 1.41 times more likely to be marked in the top third by a Black RS than a non-identifiable race RS. A non-White

MRO is 1.23 times more likely to be marked in the top third by a Black RS than a non-identifiable race RS. A White MRO is 1.11 times more likely to be marked in the top third by a Black RS than a non-identifiable race RS. Although statistically insignificant, a Black MRO has a less than 1 percent likelihood of being marked in the top third by a Black RS. Blacks appear to more critical of each other in marking an MRO in the top third when compared to all MRO races. These significant findings highlight the differences in Black RS evaluation behavior such that Black RSs are more likely to rank all race MROs, but Black and Asian in the top third.

Hispanic RSs behave differently in marking an MRO in the top third. A non-White MRO is 1.22 times more likely to be marked in the top third by a Hispanic RS than a non-identifiable race RS. A White MRO is 1.1 times more likely to be marked in the top third by a Hispanic RS than a non-identifiable race RS. These significant findings identify the differences in FITREP evaluation behavior of Hispanic RSs compared to a non-Hispanic RS.

Lastly, evaluation differences still persist in the way Asian RSs mark a Marine in the top third. The odds that an Asian RS ranks a White MRO in the top third compared to a non-White MRO is 1.24 to 1. This is the only significant finding when controlling for race for an Asian RS. However, the odds that an Asian RS ranks a Black MRO in the top third compared to a non-Black MRO is 0.97 to 1. This economically significant finding provides marginal evidence that an Asian RS is more likely to mark White, non-White, and Hispanic MROs higher than a Black-MRO.

The significant findings in this model indicate that variation does exist in evaluation behavior of the RS while controlling for the race of the MRO. A White MRO receives a higher likelihood of being evaluated in the top third from RSs who are Asian and Black than a RS who is White or Hispanic. Another key finding in this logit model is that a RS of any race is more likely to mark a White MRO in the top third over other MRO races. White MROs have significant findings from all RS races in this model unlike that of any other MRO race. A non-White MRO receives a higher likelihood of being evaluated in the top third from RSs who are Black and Hispanic than a RS who is White. A Hispanic MRO receives the highest significant likelihood in this model of being evaluated in the top third

by a RS who is Black. When controlling for race, MROs who are White, non-White and Hispanic receive a race benefit from similar and dissimilar race RSs indicating that variation does exists in RS evaluation behavior.

Table 27. Probability of an MRO Being Rated in the Top Third and RS Race: Logit Regressions by MRO Race

	(1)	(2)	(3)	(4)	(5)
	White MRO	Non-White MRO	Black MRO	Hispanic MRO	Asian MRO
RS White	**1.160*** **	**1.202** **	1.109	1.213	1.292
	(0.0497)	(0.104)	(0.217)	(0.166)	(0.232)
RS Black	**1.119** **	**1.233** **	1.002	**1.417** **	1.141
	(0.0596)	(0.125)	(0.222)	(0.230)	(0.255)
RS Hispanic	**1.096***	**1.215** **	1.093	1.180	1.309
	(0.0548)	(0.119)	(0.241)	(0.184)	(0.277)
RS Asian	**1.235*** **	1.091	0.973	1.042	1.119
	(0.0687)	(0.122)	(0.260)	(0.184)	(0.266)
Constant	0.528***	0.434***	0.413***	0.474***	0.395***
	(0.0223)	(0.0369)	(0.0796)	(0.0639)	(0.0695)
Observations	94,287	24,478	5,223	9,367	4,712
Note: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1					

RS evaluation differences still exist when controlling for both race and gender. A non-White and male MRO is 1.19 times more likely to be marked in the top third by a White RS than a non-identifiable race RS. A White and male MRO is 1.16 times more likely to be marked in the top third by a White RS than a non-identifiable race RS. These significant findings are similar to the results in Table 27 however, the likelihood marginally decreases for non-Whites from 1.20 times more likely to 1.19 times more likely when controlling for gender. The intuition here is that adding gender has little effect in top third outcome when compared to only RS race.

Black RS's top third evaluation behavior is different from that of a White RS. A Hispanic and male MRO is 1.48 times more likely to receive a top third marking by a Black RS than a non-identifiable race RS. A White and male MRO is 1.11 times more likely to be marked in the top third by a Black RS than a non-identifiable race RS. These significant

results suggest that male Hispanics are more likely to receive top third FITREP outcomes by a Black RS, which increases from the first model in table 27. A White MRO has relatively no average increase in benefit from a Black RS.

Hispanic RSs behave differently in marking an MRO in the top third when controlling for race and gender. A non-White and male MRO is 1.23 times more likely to be marked in the top third by a Hispanic RS than a non-identifiable race RS. A White and male MRO is 1.1 times more likely to be marked in the top third by a Hispanic RS than a non-identifiable race RS. These significant results are similar to the model in table 27 identifying Hispanic RSs ability to fairly mark MROs of different race and gender.

Lastly, evaluation differences are still present in Asian RSs top third markings of a MRO. The odds that an Asian RS ranks a White and male MRO in the top third compared to a non-White and female MRO is 1.25 to 1. Unlike the first model in table 27, all of the RS Asian coefficients are positive indicating a more likelihood of an outcome in the top third for non-White, Black, and Hispanic male MROs.

Male MROs have different top third outcomes with male only RSs. All of the results are significant for White and non-White MROs. The most significant results from this interaction are the odds that a Hispanic male RS ranks White, non-White, and Asian male MROs in the top third are 0.192 to 1, 0.313 to 1, and 1.428 to 1 than a non-identifiable race RS, respectively. These results indicate that Hispanic RSs are more likely to rank an Asian male MRO in the top third than a non-identifiable race RS. The odds that White male RS ranks an Asian male MRO in the top third are 1.421 to 1 than a non-identifiable race RS. These significant findings indicate that race and gender may be influencing FITREP top third outcomes.

Female MROs have different top third outcomes than their male counterparts. The results are insignificant for RSs of any race when controlling for White and non-White race and female gender of the MROs indicating RSs evaluate top third FITREP outcomes on other, possibly performance, variables not in this model. I use a female and RS race interaction to examine variation in top third FITREP outcomes on female MROs of White and non-White races. Overall, female RSs evaluate female MROs more critically than

males evaluating males. The odds that a White RS ranks a White and female MRO in the top third are 0.841 to 1 while the odds that the same RS ranks a non-White female MRO are 0.592 to 1. The odds that both a Hispanic and Asian female RS ranks a White female MRO in the top third are 0.516 to 1 and 0.136 to 1, respectively. These significant findings indicate that White female MROs who work for a female RS are less likely to receive a FITREP top third outcome than White male MROs.

The variation in these results stimulate thought about how female RSs evaluate female MROs in middle third and bottom third FITREP outcomes. I examine these results in Appendix B to provide a more comprehensive examination of female to female evaluation behavior. The only significant odds in the middle and bottom third models are the odds that a White Female RS ranks a White female MRO in the middle third are 0.730 to 1 when compared a female MRO receiving an evaluation from a White male RS. These odds are significantly more likely to result in a middle third FITREP outcome than the top third FITREP outcomes with a female RS evaluating a female MRO. Although statistically insignificant, the majority of the middle and bottom third FITREP outcome odds ratios are closer to or above one indicating the likelihood of a female receiving a FITREP outcome of middle or bottom third as much more likely than a top third outcome when controlling for race and gender.

A key finding in this logit model is that a RS of any race is more likely to mark a White male MRO in the top third over other MRO races. This finding is similar to the first model in table 27 indicating that White and male MROs receive an additional FITREP benefit from any RS, but at a smaller rate than non-White Male MROs. Table 28 displays to regression results for MRO top third and race and gender match.

Table 28. MRO Top Third and Race and Gender Match: Logit Regressions

	(1)	(2)	(3)	(4)	(5)
	White Male MRO	Non-White Male MRO	Black Male MRO	Hispanic Male MRO	Asian Male MRO
RS White	**1.162*** **	**1.186***	1.152	1.222	1.262
	(0.0517)	(0.107)	(0.237)	(0.180)	(0.235)
RS Black	**1.106***	1.179	1.012	**1.447****	1.083
	(0.0615)	(0.127)	(0.236)	(0.253)	(0.255)
RS Hispanic	**1.104***	**1.231****	1.185	1.191	1.257
	(0.0574)	(0.127)	(0.276)	(0.199)	(0.279)
RS Asian	**1.247*** **	1.111	1.045	1.112	0.965
	(0.0720)	(0.132)	(0.292)	(0.210)	(0.246)
Constant	0.527***	0.438***	0.395***	0.470***	0.400***
	(0.0231)	(0.0391)	(0.0801)	(0.0681)	(0.0730)
Observations	87,990	21,938	4,708	8,376	4,259
se in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

	(1)	(2)	(3)	(4)	(5)
	White Male MRO	non-White Male MRO	Black Male MRO	Hispanic Male MRO	Asian Male MRO
VARIABLES	MRO Top Third	MRO Top Third	MRO Top Third	MRO Top Third	MRO Top Third
MRO Top Third					
RS White Male	**0.243*** **	**0.257*** **	**0.217***	**0.229****	**1.421****
	(0.0305)	(0.0588)	(0.124)	(0.0957)	(0.180)
RS Black Male	**0.205*** **	**0.256*** **	0.0732	0.393***	1.256
	(0.0459)	(0.0843)	(0.169)	(0.137)	(0.248)
RS Hispanic Male	**0.192*** **	**0.313*** **	**0.282***	0.201	**1.428***
	(0.0410)	(0.0777)	(0.166)	(0.125)	(0.252)
RS Asian Male	**0.315*** **	**0.175***	0.120	0.142	1.021
	(0.0483)	(0.0974)	(0.227)	(0.154)	(0.224)
Constant	-0.723***	-0.900***	-0.994***	-0.774***	0.362***
	(0.0295)	(0.0565)	(0.119)	(0.0922)	(0.0438)
Observations	87,990	21,938	4,708	8,376	4,259
se in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

	(1)	(2)
	White Female MRO	non-White Female MRO
VARIABLES	MRO Top Third	MRO Top Third
MRO Top Third		
RS White	1.13	1.358
	(0.178)	(0.384)
RS Black	1.26	1.674
	(0.237)	(0.530)
RS Hispanic	1.01	1.13
	(0.183)	(0.352)
RS Asian	1.08	0.974
	(0.225)	(0.343)
Constant	0.533***	0.4***
	(0.083)	(0.112)
Observations	6,297	2,540
se in parentheses		
*** p<0.01, ** p<0.05, * p<0.1		

	(1)	(2)
	White Female MRO	non-White Female MRO
VARIABLES	MRO Top Third	MRO Top Third
MRO Top Third		
RS White Female	**0.841***	**0.592****
	(0.0847)	(0.107)
RS Black Female	1.032	1.486
	(0.382)	(0.671)
RS Hispanic Female	**0.516****	0.681
	(0.140)	(0.268)
RS Asian Female	**0.136***	0.908
	(0.142)	(1.113)
Constant	0.612***	0.551***
	(0.0167)	(0.0239)
Observations	6,297	2,540

se in parentheses			[redacted]
*** p<0.01, ** p<0.05, * p<0.1			

RS evaluation behavior differences still exist when controlling for race and religion of the RS and MRO for FITREP outcomes in the top third. These results are different from the other regression results as the statistical power of observation diminishes when controlling for race (Black, Hispanic, and Asian), and their respective religions other than the Christian and Catholic religions. This model provides an analysis of only Christian and Catholic religions. I will use two race variables, White and non-White, to examine if there is variation in top third outcomes when controlling for religion and race. The display of the regression results table will offer a comparative analysis of how White and non-White RSs who are Christian and Catholic evaluate MROs of similar and dissimilar race and religion.

RSs who are Christian are more likely to rank MROs who are not Christian in the top third. RSs who are White provide a marginal benefit to non-Whites when compared to Whites, while RSs who are Asian provide a slightly higher benefit to White when compared to non-Whites. The odds that a White Christian RS will rank a White non-Christian MRO in the top third are 1.05 to 1 (p-value 0.012). The odds that a Christian and White RS will rank a non-White and non-Christian MRO in the top third are 1.064 to 1(p-value of 0.012). However, the odds that a Christian and Asian RS will rank a non-Christian and White MRO in the top third are 1.263 to 1 (p-value of 0.005). Non-Christian and non-White MROs receive similar odds from a Christina and Asian RS of 1.23 to 1 (p-value of 0.046). These significant findings reveal that White and Asian RSs who are Christian are more likely to mark a non-Christian and different race MRO in the top third while holding all else constant.

RSs who are Catholic are more likely to rank MROs who are both Catholic and not Catholic and of opposite race in the top third. The odds that a White and Catholic RS will rank a non-White and Catholic MRO in the top third are 1.104 to 1 (p-value of 0.058). These results reveal that race is not influencing FITREP evaluation behavior while the Catholic religion may be possibly benefitting an MRO. The odds that an Asian and

Catholic RS will rank a White and Catholic MRO in the top third are 1.19 to 1 (p-value of 0.085); while the odds that the same RS will rank a non-White and non- Catholic MRO in the top third are 1.207 to 1 (p-value of 0.039). This finding provides statistically significant results that MROs who do not share the same Catholic religion and are non-White receive a higher benefit than Whites if the RS is Asian. Table 29 displays the MRO top third, and race and religion match of the RS and MRO.

Table 29. MRO Top Third, and Race and Religion Match: Logit Regressions

	(1)	(2)	(2)	(4)
	White MRO Religion Christian	White MRO Religion not Christian	non-White MRO Religion Christian	non-White MRO Religion not Christian
VARIABLE				
MRO Top Third				
RS White Religion Christian	1.032	**1.050****	0.974	**1.064****
	(0.0198)	(0.0202)	(0.0410)	(0.0262)
RS Black Religion Christian	1.078	0.996	1.039	1.040
	(0.0561)	(0.0524)	(0.103)	(0.0664)
RS Hispanic Religion Christian	0.958	0.907	0.995	1.067
	(0.0642)	(0.0616)	(0.140)	(0.0869)
RS Asian Religion Christian	1.065	**1.263*****	0.999	**1.227****
	(0.0882)	(0.105)	(0.172)	(0.126)
Constant	0.601***	0.575***	0.525***	0.521***
	(0.00787)	(0.00756)	(0.0149)	(0.00878)
Observations	49,734	49,935	10,980	31,314
	(5)	(6)	(7)	(8)
	White MRO Religion Catholic	White MRO Religion not Catholic	non-White MRO Religion Catholic	non-White MRO Religion not Catholic
RS White Religion Catholic	1.044	1.021	**1.104***	1.005
	(0.0290)	(0.0174)	(0.0574)	(0.0258)
RS Black Religion Catholic	0.960	1.054	1.014	1.027
	(0.0691)	(0.0450)	(0.117)	(0.0618)
RS Hispanic Religion Catholic	0.920	1.032	0.966	0.948
	(0.0606)	(0.0411)	(0.109)	(0.0540)

RS Asian Religion Catholic	**1.190***	1.072	0.821	**1.207****
	(0.120)	(0.0694)	(0.158)	(0.110)
Constant	0.634***	0.578***	0.548***	0.525***
	(0.0102)	(0.00568)	(0.0164)	(0.00762)
Observations	26,729	72,940	8,108	34,186

RS evaluation differences still exist when controlling for both race, female gender, marital status and the number of dependents of the MRO. White female MROs receive a negative benefit when working for a female RS of any race compared to a non-identifiable race RS. Although these results are more positive than the previous results, females continue to evaluate other females more harshly than males working for females.

Female marital status also has a less likelihood FITREP outcome for the top third for female MROs working for a female RS. The odds that a Hispanic female RS will rank a White married female MRO in the top third are 0.463 to 1 when compared to a White male working for a Hispanic female RS. Although statistically insignificant, Black RSs appear to favor married White MROs as they are more likely to rank a married White female MRO in the top third; this is the only positive correlation in the White married female results. Non-White females who are married do not receive any significant results. I also pooled White and non-White females in a female marriage variable to examine if variation exists in female FITREP outcomes in the top third receiving no significant findings. The MRO females who are not married receive less likely FITREP top third outcomes when working for a female RS. The White females who are not married did not reveal significant results, but all of the coefficients are more positive, still less likely (less than 1), providing economic significance that any race RS prefers to evaluate a MRO who is not married. The odds that a White female RS will rank a non-White and not married female in the top third are 0.380 to 1 when compared to non-White males working for White female RSs. The pooled female and not married MRO results in the odds that a White female RS will rank a not married female MRO in the top third are 0.671 to 1. The significant results indicate that female RSs prefer to have not married female MROs work for them as the top third FITREP outcome is more significant.

The regression results for how female RSs evaluate female MROs in different occfields are not comprehensive as the sample only allows for an examination of the combat service support occfield. The combat arms occfield only has 10 MROs while the combat service support occfield has 6,035 MROs to examine. The aviation and aviation ground occfields do not have the statistical power to provide a conclusive examination and are not shown in the regression results table. The odds that a White female RS will rank a White female MRO in the combat service support occfield in the top third are 0.822 to 1 when compared to a White male MRO. The odds that a Hispanic female RS will rank a White female MRO in the combat service support occfield in the top third are 0.413 to 1 when compared to a White male MRO in the same occfield. These results indicate that White female MROs working for a White RS receive a 50 percent race and gender benefit when comparing the FITREP outcomes of a White female MRO working for a Hispanic female RS. It is worth noting that the benefit for a White female MRO is still around 18 percent less likely to be ranked in the top third. Non-White females in this occfield around 43 percent less likely to be ranked in the top third by a White female RS while holding all else constant. The pooled results provide significant findings that White, Hispanic, and Asian female RSs evaluate female MROs in the combat service support occfield differently indicating that female MROs are less likely to receive a top third FITREP outcome. The odds that a White female RS will rank a female MRO in the combat service support occfield are 0.756 to 1; odds that a Hispanic female RS are 0.507 to 1; and the odds that an Asian female RS are 0.13 to 1. These significant findings indicate that female MROs who work for a female RS in the combat service support occfield are less likely to receive top third FTREP outcomes relative to their male counterparts.

The last significant findings in this section reveal that having one or more than one dependent is more beneficial to FITREP top third outcome. I believe these findings indicate how MROs behave in and outside of the workplace dealing with time management, professionalism, efficiency, and behavioral traits the RS deems appropriate. The odds that a White female RS will rank a White female with zero dependents in the top third are 0.605 to 1 when compared to White males without dependents, and the odds that a Hispanic female RS are 0.360 to 1. These findings indicate that a White female MRO

without dependents working for a female RS will be approximately 150 percent and 220 percent less likely to receive a top third FITREP outcome while holding all else constant. The odds that a White female RS will rank a female in the combat service support occfield in the top third are 0.656 to 1 when compared to a male in the same occfield with a female RS. The odds that a White female RS will rank a female in the combat service support occfield 0.434 to 1 when compared to a male in the same occfield with a female RS. The more senior ranking MROs are more likely to have dependents in this data set indicating Marine Corps philosophies and responsibilities have been inculcated in behavior, and that behavior at work could influence utility outside of work.

Table 30. MRO Top Third and Race, Female Gender, Marital Status, and Dependents: Logit Regressions

VARIABLES	(1)	(2)	(3)
MRO Top Third	White married Female MRO	non-White married Female MRO	Married Female MRO
RS White Female	0.884	0.740	0.847
	(0.124)	(0.180)	(0.103)
RS Black Female	1.616	2.20	1.814
	(0.788)	(1.200)	(0.657)
RS Hispanic Female	**0.463****	1.375	0.606
	(0.169)	(0.837)	(0.186)
RS Asian Female		1.65	0.249
		(2.336)	(0.269)
Constant	0.696***	0.606***	0.669***
	(0.0260)	(0.0365)	(0.0213)
Observations	3,242	1,285	4,532

	(6)	(7)	(8)	(9)	(10)
VARIABLES	White not married Female MRO	non-White not married Female MRO	Not married Female MRO	White Female MRO in Combat Serv Suppt	non-White Female MRO in Combat Serv Suppt
MRO Top Third					
RS White Female	0.781	**0.380*****	**0.671****	**0.822***	**0.575*****
	(0.125)	(0.128)	(0.0960)	(0.0966)	(0.119)
RS Black Female	0.428	0.633	0.480	0.813	1.426
	(0.335)	(0.733)	(0.310)	(0.454)	(0.645)

RS Hispanic Female	0.734	0.407	0.603	**0.413*** **	0.747
	(0.307)	(0.261)	(0.210)	(0.131)	(0.300)
RS Asian Female	0.321		0.274		1.742
	(0.347)		(0.293)		(2.466)
Constant	0.519***	0.526***	0.521***	0.684***	0.574***
	(0.0232)	(0.0375)	(0.0197)	(0.0229)	(0.0287)
Observations	2,474	960	3,435	4,114	1,910
	(11)	(12)	(13)	(14)	(15)
VARIABLES	Female MRO in Combat Serv Suppt	White Female MRO with Dependents	non-White Female MRO with Zero Dependents	Female MRO with Dependents	Female MRO without Dependents
MRO Top Third					
RS White Female	**0.756****	**0.605*****	**0.487*****	**0.656****	**0.838***
	(0.0768)	(0.110)	(0.117)	(0.100)	(0.0896)
RS Black Female	1.082	2.677	0.963	2.602	0.764
	(0.378)	(1.900)	(0.592)	(1.325)	(0.289)
RS Hispanic Female	**0.507****	**0.360****	0.688	**0.434***	0.652
	(0.125)	(0.154)	(0.360)	(0.150)	(0.191)
RS Asian Female	**0.129***		0.963		0.408
	(0.134)		(1.180)		(0.319)
Constant	0.647***	0.747***	0.519***	0.705***	
	(0.0180)	(0.035)	(0.028)	(0.0280)	
Observations	6,035	2,010	1661	2,889	

RS evaluation differences still exist when controlling for race and occupational field of the MRO. Most of the significant results in this model reveal that occfield similarities have a higher FITREP top third outcome than the aforementioned models controlling for race and gender of the MRO. The combat service support occfield composing of mostly manpower, intelligence, logistics, ground supply, and public affairs officer's is the largest group in my sample size. Although the results in this model are all statistically insignificant, the economic significance of these results reveal that race of the RS and MRO is not affecting top third outcomes in FITREPs. The statistically insignificant results suggest marginally that a White MRO receives similar evaluations to other races when the RS is White, Black, Hispanic or Asian. These statistically insignificant results reveal different races do not receive any additional benefit from a RS that shares the same

race. The odds that a White RS ranks a White MRO in the top third are 1.08 to 1. The odds that a Black RS ranks a White MRO in the top third are 1.11 to 1. The odds that a Hispanic RS ranks a White MRO in the top third are 0.971 to 1. The odds that an Asian RS ranks a White MRO in the top third are 1.09 to 1. These results suggest that race is not significantly affecting performance evaluations in the combat service support occfield.

The combat arms occfield logistics regression's results reveal RS evaluation differences exist when controlling for race and occfield. White MROs receive a statistically significant race benefit on FITREP outcomes in the top third from RSs of any race, while other race MROs do not receive a race benefit. The odds that a White RS when compared to a non-identifiable race RS ranks a White MRO in the top third are 1.36 to 1 (p-value of 0.00). The odds that a Black RS when compared to a non-identifiable race RS ranks a White MRO in the top third are 1.24 to 1 (p-value of 0.056). The odds that a Hispanic RS when compared to a non-identifiable race RS ranks a White MRO in the top third are 1.23 to 1 (p-value of 0.043). The odds that an Asian RS when compared to a non-identifiable race RS ranks a White MRO in the top third are 1.39 to 1 (p-value of 0.005). MROs of on non-White, Black, Hispanic, and Asian races appear to not receive a significant race benefit on FITREPs from a RS of similar or dissimilar races.

The aviation occfield logistics regression's results reveal RS evaluation differences exist when controlling for race and occfield. White MROs receive a statistically significant benefit on FITREP outcomes in the top third from only Asian RSs. The odds that an Asian RS when compared to a non-identifiable race RS ranks a White MRO in the top third are 1.46 to 1 (p-value of 0.002). Although statistically insignificant, the odds that a White RS ranks a White MRO in the top third are 1.15 to 1 (p-value 0.103), and the odds that a Hispanic RS ranks a White MRO in the top third are 1.17 to 1 (p-value of 0.129). These results provide economic indicators that Marine aviators are marginally impartial on FITREP outcomes in the top third when controlling for race and occfield as the covariates and p-values are similar.

The aviation ground occfield logistics regression's results reveal RS evaluation differences exist when controlling for race and occfield. Unlike the aforementioned results where MROs who are White receive a race benefit from similar and dissimilar race RSs,

the aviation ground community appears to place positive and negative values on the diversity of their respective workforce. The odds that a Hispanic RS when compared to a non-identifiable race RS ranks a non-White MRO in the top third are 1.614 to 1 (p-value 0.093). The odds that an Asian RS when compared to a non-identifiable race RS ranks a Black MRO in the third are 0.167 to 1 meaning that a Black subordinate who has an Asian superior is 83 percent less likely to receive a top third evaluation (p-value 0.065). The odds that a Hispanic RS when compared to a non-identifiable race RS ranks an Asian MRO in the top third are 3.267 to 1 (p-value of 0.026). The aviation ground occfield is the only competitive category in this data set where non-Whites, Blacks, and Asian MROs receive different FITREP outcomes from different race RSs indicating that race influences FITREP behaviors of the RSs.

Table 31. Top Third and Race by Occupational Field: Logit Regressions

	(1)	(2)	(3)	(4)	(5)
VARIABLES	White MRO in Combat Service Support	non-White MRO in Combat Service Support	Black MRO in Combat Service Support	Hispanic MRO in Combat Service Support	Asian MRO in Combat Service Support
MRO Top Third					
RS White	1.086	1.115	1.042	1.056	1.170
	(0.0738)	(0.136)	(0.271)	(0.207)	(0.287)
RS Black	1.105	1.113	0.962	1.137	1.089
	(0.0890)	(0.155)	(0.277)	(0.256)	(0.319)
RS Hispanic	0.971	1.133	1.014	1.004	1.307
	(0.0767)	(0.158)	(0.302)	(0.222)	(0.383)
RS Asian	1.094	0.953	0.986	0.826	0.736
	(0.0940)	(0.151)	(0.353)	(0.208)	(0.248)
Constant	0.583***	0.479***	0.440***	0.560***	0.446***
	(0.0389)	(0.0577)	(0.113)	(0.108)	(0.107)
Observations	34,208	11,813	2,867	4,486	2,340
	(6)	(7)	(8)	(9)	(10)
VARIABLES	White MRO in Combat Arms	non-White in Combat Arms	Black MRO in Combat Arms	Hispanic MRO in Combat Arms	Asian MRO in Combat Arms
MRO Top Third					
RS White	**1.362*** **	1.191	1.062	1.451	1.399
	(0.120)	(0.235)	(0.477)	(0.454)	(0.644)

RS Black	**1.236***	1.181	0.903	1.571	0.941
	(0.137)	(0.284)	(0.487)	(0.600)	(0.600)
RS Hispanic	**1.227****	0.941	0.889	1.145	0.432
	(0.124)	(0.209)	(0.440)	(0.401)	(0.265)
RS Asian	**1.386*****	1.185	1.125	1.072	1.571
	(0.161)	(0.317)	(0.693)	(0.456)	(0.941)
Constant	0.537***	0.519***	0.571	0.429***	0.437*
	(0.0467)	(0.101)	(0.253)	(0.132)	(0.198)
Observations	23,413	4,806	936	1,967	758
	(11)	(12)	(13)	(14)	(15)
VARIABLES	White MRO in Aviation Pilot	Non-White in Aviation Pilot	Black in Aviation Pilot	Hispanic in Aviation Pilot	Asian MRO in Aviation Pilot
MRO Top Third					
RS White	1.154	1.265	0.779	1.341	1.675
	(0.102)	(0.293)	(0.463)	(0.500)	(1.083)
RS Black	1.066	1.651	0.458	2.200	2.407
	(0.140)	(0.543)	(0.441)	(1.201)	(2.045)
RS Hispanic	1.173	1.481	0.884	1.430	1.765
	(0.124)	(0.401)	(0.617)	(0.637)	(1.295)
RS Asian	**1.46*****	1.110	1.375	1.461	2.167
	(0.178)	(0.361)	(1.436)	(0.749)	(1.826)
Constant	0.441***	0.309***	0.364*	0.357***	0.231**
	(0.0383)	(0.0706)	(0.212)	(0.132)	(0.148)
Observations	25,418	3,940	516	1,426	718
	(16)	(17)	(18)	(19)	(20)
	White MRO in Aviation GND	Non-White MRO in Aviation GND	Black MRO in Aviation GND	Hispanic MRO in Aviation GND	Asian MRO in Aviation GND
VARIABLES					
MRO Top Third					
RS White	1.272	1.307	0.769	1.471	1.855
	(0.206)	(0.331)	(0.488)	(0.592)	(0.879)
RS Black	0.966	1.187	0.565	1.886	1.250
	(0.184)	(0.365)	(0.409)	(0.889)	(0.871)
RS Hispanic	1.322	**1.614***	0.955	1.579	**3.267***
	(0.244)	(0.460)	(0.660)	(0.723)	(1.739)
RS Asian	0.942	0.950	**0.167***	1.257	1.114
	(0.197)	(0.302)	(0.162)	(0.617)	(0.707)
Constant	0.452***	0.426***	0.571	0.409**	0.286**
	(0.0722)	(0.106)	(0.358)	(0.162)	(0.132)
Observations	7,234	2,577	614	1,021	566

RS evaluation behavior differences still exist when controlling for race and occupational field of the RS with an MRO of both the same race and occfield. The results of this model differ from the results in table 31 providing an example of how similar characteristics between the RS and MRO are affecting FITREP outcomes in the top third. Overall, the statistically significant results indicate that combat service support RSs are more critical of combat service support MROs who share similar and dissimilar races with White MROs receiving more of a negative benefit than any other races. The odds that a White RS in the combat service support occfield will rank a White MRO in the combat service support occfield in the top third are 0.939 to 1 (p-value 0.009). The odds that a Hispanic RS in the combat service support occfield will rank a White MRO in the same occfield in the top third are 0.887 to 1 (p-value 0.021). The differences in how White and Hispanic RSs in the same occfield indicate that White MROs receive a higher race benefit when the RS is White. The odds that an Asian RS in the combat service support occfield will rank a non-White MRO in the same occfield in the top third are 0.776 to 1 (p-value 0.044). The odds that an Asian RS in the combat service support occfield will rank a Hispanic MRO in the same occfield in the top third are 0.654 to 1 (p-value 0.042). Although insignificant, White and Black RSs are more likely to rank Hispanic MROs in the top third. The odds that an Asian RS in the combat service support occfield will rank an Asian in the same occfield in the top third are 0.566 to 1 (p-value 0.041).

RS evaluation behavior differences still exist when controlling for race and occupational field of the RS with an MRO of both the same race and occfield in the combat arms occfield. Unlike combat service support where all odds indicate a less favorable outcome, the combat arms occfield appears to favor White MROs with odds that are more likely in the top third from RSs who are White and Asian. The odds that a White RS will rank a White MRO in the top third where both subjects are White and in the combat arms occfield are 1.173 to 1 (p-value 0.00). The odds that an Asian RS will rank a White MRO in the top third where both subjects are White and in the combat arms occfield are 1.23 to 1 (p-value 0.021). The results in this regression indicate that no other race of the RS or the MRO receive a FITREP benefit.

RS evaluation behavior differences persist in the aviation community. The significant results of this model indicate White and Hispanic MRO pilots receive a race benefit increasing the likelihood of being ranked in the top third from RSs who are Asian and White, respectfully. The odds that an Asian RS ranks a White MRO in the top third where both subjects are aviators are 1.277 to 1 (p-value of 0.011). The odds that a White RS will rank a Hispanic MRO in the top third where both subjects are aviators are 1.376 to 1 (p-value of 0.8). These two outcomes indicate that race differences positively affect top third outcomes. Negative top third outcome differences exist between both White and Black MROs and RSs. The odds that a Black RS will rank a White MRO in the top third where both subjects are aviators are 0.76 to 1 (p-value of 0.026). The odds that a White RS will rank a Black MRO in the top third where both subjects are aviators are 0.454 to 1 (p-value of 0.002). These finding indicate that RSs who are Asian possibly prefer to work with White subordinates while a Black RS is more critical of White subordinates and vice versa.

RS evaluation behavior differences persist in the aviation ground community. The significant results of this model indicate that non-White, Hispanic and Asian MRO receives a race benefit from RSs who are White and Hispanic increasing the likelihood of being ranked in the top third. The odds that a White RS will rank a non-White MRO in the top third where both subjects are aviation ground MOSs are 1.263 to 1 (p-value of 0.008). The odds that a Hispanic RS will rank a non-White MRO in the top third where both subject are aviation ground are 1.96 to 1 (p-value of 0.00). The odds that a White RS will rank a Hispanic MRO in the top third where both subjects are aviation ground are 1.417 to 1 (p-value of 0.012). The odds that a Hispanic RS will rank a Hispanic MRO in the top third where both subjects are aviation ground are 2.05 to 1 (p-value of 0.017). These findings indicate that Hispanic MROs receive a higher race benefit from a Hispanic RS than a White RS indicating race is affecting top third outcomes. The odds that a Hispanic RS will rank an Asian MRO in the top third where both subjects are aviation ground are 2.712 to 1 (p-value of 0.004). Hispanic RSs in the aviation ground community appear to be more generous in top third outcomes to non-White, Hispanic and Asian MROs than other races in this competitive category indicating race is possibly influencing FITREP outcomes. On

the other hand, White MROs appear to be less likely to be ranked in the top third by RSs who are Black and Asian. The odds that a Black RS will rank a White MRO in the top third where both subjects are aviation ground are 0.716 to 1 (p-value of 0.009). The odds that an Asian RS will rank a White MRO in the top third where both subjects are aviation ground are 0.658 to 1 (p-value of 0.018).

Table 32. MRO Top Third, and Race and Occupational Field Match: Logit Regressions

	(1)	(2)	(2)	(4)	(5)
	White MRO in Combat Service Support	Non-White MRO in Combat Service Support	Black MRO in Combat Service Support	Hispanic MRO in Combat Service Support	Asian MRO in Combat Service Support
VARIABLE					
MRO Top Third					
RS White CombatServSuppt	**0.939*** **	0.972	1.068	1.014	0.921
	(0.0226)	(0.0409)	(0.0936)	(0.0685)	(0.0876)
RS Black CombatServSuppt	0.942	0.978	0.921	1.071	1.066
	(0.0521)	(0.0850)	(0.148)	(0.154)	(0.212)
RS Hispanic CombatServSuppt	**0.887** **	0.892	0.758	0.884	1.036
	(0.0461)	(0.0791)	(0.152)	(0.121)	(0.211)
RS Asian CombatServSuppt	0.946	**0.776** **	1.015	**0.654** **	**0.566** **
	(0.0605)	(0.0976)	(0.282)	(0.136)	(0.158)
Constant	0.655***	0.545***	0.448***	0.590***	0.539***
	(0.0120)	(0.0174)	(0.0292)	(0.0304)	(0.0389)
Observations	34,208	11,813	2,867	4,486	2,340
	(6)	(7)	(8)	(9)	(10)
	White MRO in MRO MOS Combat Arms	Non-White MRO in MRO MOS Combat Arms	Black MRO in MRO MOS Combat Arms	Hispanic MRO in MRO MOS Combat Arms	Asian MRO in MRO MOS Combat Arms
RS White Combat Arms	**1.173*** **	1.030	1.045	0.911	1.407
	(0.0463)	(0.0866)	(0.198)	(0.115)	(0.300)
RS Black Comat Arms	1.078	1.305	1.356	1.306	1.132

	(0.0926)	(0.231)	(0.551)	(0.362)	(0.658)
RS Hispanic Combat Arms	1.076	0.930	1.029	0.782	0.566
	(0.0713)	(0.128)	(0.298)	(0.166)	(0.263)
RS Asian Combat Arms	**1.230****	1.108	1.228	0.721	1.811
	(0.110)	(0.238)	(0.573)	(0.233)	(0.928)
Constant	0.630***	0.587***	0.564***	0.653***	0.442***
	(0.0229)	(0.0449)	(0.0969)	(0.0742)	(0.0861)
Observations	23,413	4,806	936	1,967	758
	(11)	(12)	(13)	(14)	(15)
	White MRO in MOS Aviation Pilot	Non-White MRO in MOS Aviation Pilot	Black MRO in MOS Aviation Pilot	Hispanic in MRO MOS Aviation Pilot	Asian MRO in MOS Aviation Pilot
RS White Aviation Pilot	0.964	0.880	**0.454*****	**1.376***	0.897
	(0.0362)	(0.0893)	(0.114)	(0.250)	(0.216)
RS Black Aviation Pilot	**0.755****	0.988	0.215	1.830	1.042
	(0.0952)	(0.287)	(0.232)	(0.891)	(0.668)
RS Hispanic Aviation Pilot	0.986	0.994	0.739	1.205	0.879
	(0.0727)	(0.184)	(0.345)	(0.398)	(0.395)
RS Asian Aviation Pilot	**1.277****	0.707	0.970	1.372	0.879
	(0.123)	(0.188)	(0.865)	(0.558)	(0.626)
Constant	0.524***	0.437***	0.516***	0.364***	0.426***
	(0.0180)	(0.0406)	(0.111)	(0.0621)	(0.0946)
Observations	25,418	3,940	516	1,426	718
	(16)	(17)	(18)	(19)	(20)
	White MRO in MRO MOS Aviation GND	Non-White MRO in MRO MOS Aviation GND	Black MRO in MRO MOS Aviation GND	Hispanic MRO in MRO MOS Aviation GND	Asian MRO in MRO MOS Aviation GND
RS White Aviation GND	0.979	**1.263*****	1.138	**1.417****	1.278
	(0.0511)	(0.112)	(0.215)	(0.197)	(0.244)
RS Black Aviation GND	**0.716*****	1.152	1.422	1.336	1.110
	(0.0912)	(0.286)	(0.817)	(0.463)	(0.697)
RS Hispanic Aviation GND	1.017	**1.960*****	1.741	**2.048****	**2.712****
	(0.120)	(0.340)	(0.596)	(0.615)	(0.943)
RS Asian Aviation GND	**0.658****	0.677	0.320	1.195	0.261
	(0.117)	(0.172)	(0.244)	(0.419)	(0.199)

Constant	0.578***	0.478***	0.391***	0.488***	0.451***
	(0.0222)	(0.0310)	(0.0532)	(0.0493)	(0.0635)
Observations	7,234	2,577	614	1,021	566

RS evaluation behavior differences still exist when controlling for race and commissioning sources of the RS with an MRO of both the same race and commissioning source. RSs and MROs who receive a commission from either PLC or OTHER indicate no differences in evaluation behavior for top third outcomes. The results of this model provide more examples of how similar and dissimilar characteristics of the RS and MRO are possibly affecting FITREP outcomes in the top third. Overall, the statistically significant results indicate that Hispanic MROs are more likely to receive a top third FITREP when they share the same commissioning source as the RS, while White MROs receive the same benefit, although a smaller benefit than Hispanics, when they share the same race and commissioning source as the RS.

The positive results of this model indicating a more likelihood of an RS ranking the MRO in the top third are displayed in commissioning sources from ROTC, OTHERECP, and OCS. The odds that a Black RS will rank a Hispanic MRO when they both receive a commission from an ROTC commissioning source are 4.086 to 1 (p-value of 0.094). The odds that a White RS will rank a White MRO when they both are prior-enlisted and receive a commission from an OTHERECP (aggregate of all enlisted-to-officer commissioning programs) are 1.162 to 1 (p-value of 0.014). The odds that an Asian RS will rank a Black MRO in the top third when they both receive a commission through OCS are 2.993 to 1 (p-value of 0.063). This is the only finding for Black MROs in my analysis indicating that a OCS commissioning source is positively correlated to FITREP top third outcome for Black MROs while holding all else constant.

The less likely results are more prevalent in this model indicating that race and commissioning source of the RS and MRO are influencing FITREP outcomes in the top third for different race RSs and MROs. While Blacks sharing the same commissioning source of OTHERECP appear to be more critical evaluators as they are less likely to rank an MRO who share the same race and commissioning source characteristics in the top third.

The odds that a Hispanic RS will rank a White MRO in the top third when they both commissioned through a service academy are 0.657 to 1 (p-value of 0.019). The odds that an Asian RS will rank a non-White MRO in the top third when they both receive a commission from a service academy are 0.368 to 1 (p-value of 0.067). These are the only significant results for all races of both the RS and MRO whose commissioning source is a service academy. The odds that Black RSs will rank a White MRO in the top third when they both receive a commission through OCS 0.77 to 1 (p-value of 0.062); non-White MRO odds are 0.618 to 1 (p-value of 0.045); and Asian MRO odds are 0.095 to 1 (p-value of 0.022). Black RSs that receive a commission through OCS appear to be more critical evaluators of top third MROs with significant results for White, non-White, and Asian MROs. Black RSs and Black MROs who commission through OCS reveal statistically insignificant results with odds in the top third of 0.51 to 1 (p-value of 0.147). The only ROTC result in this model reveals the odds that a Black RS will rank a White MRO in the top third are 0.722 to 1 when they both receive a commission through ROTC (p-value of 0.042). The odds that Black RSs will rank a White MRO in the top third when they both receive a commission through OTHERECPs are 0.722 to 1 (p-value of 0.040), and Black MRO odds are 0.266 to 1 (p-value of 0.014). The odds that a Hispanic RS will rank a Hispanic MRO in the top third when they both receive a commission through OTHERECPs are 0.617 to 1 (p-value of 0.073).

Table 33. Top Third, Race and Commissioning Sources Match: Logit Regressions

	(1)	(2)	(2)	(4)	(5)
	White MRO Comm Source Service Academy	Non-White MRO Comm Source Service Academy	Black MRO Comm Source Service Academy	Hispanic MRO Comm Source Service Academy	Asian MRO Comm Source Service Academy
RS White Comm Source Service Academy	0.950	1.040	1.134	1.009	0.936
	(0.0504)	(0.106)	(0.264)	(0.164)	(0.253)
RS Black Comm Source Service Academy	0.902	0.828		1.792	
	(0.234)	(0.572)		(1.794)	

RS Hispanic Comm Source Service Academy	**0.657****	0.828	1.046	1.152	0.232
	(0.118)	(0.235)	(0.744)	(0.496)	(0.245)
RS Asian Comm Source Service Academy	0.775	**0.368***	2.092	0.256	
	(0.0605)	(0.0976)	(0.282)	(0.136)	(0.158)
Constant	0.665***	0.518***	0.478***	0.558***	0.480***
	(0.0127)	(0.0175)	(0.0375)	(0.0312)	(0.0410)
Observations	13,381	4,453	846	1,614	707
	(6)	(7)	(8)	(9)	(10
	White MRO Comm Source OCS	non-White MRO Comm Source OCS	Black MRO Comm Source OCS	Hispanic MRO Comm Source OCS	Asian MRO Comm Source OCS
RS White Comm Source OCS	0.996	0.978	0.845	0.941	1.094
	(0.0334)	(0.0699)	(0.134)	(0.116)	(0.160)
RS Black Comm Source OCS	**0.770***	**0.618****	0.513	1.185	**0.0954****
	(0.108)	(0.148)	(0.236)	(0.529)	(0.0979)
RS Hispanic Comm Source OCS	0.914	1.230	1.390	1.642	0.825
	(0.0968)	(0.230)	(0.504)	(0.512)	(0.375)
RS Asian Comm Source OCS	1.090	0.958	**2.993***	0.907	0.616
	(0.152)	(0.268)	(1.764)	(0.414)	(0.355)
Constant	0.598***	0.483***	0.468***	0.482***	0.499***
	(0.00934)	(0.0157)	(0.0317)	(0.0255)	(0.0355)
Observations	23,216	5,731	1,317	2,089	1,224
	(11)	(12)	(13)	(14)	(15)
	White MRO Comm Source ROTC	non-White MRO Comm Source ROTC	Black MRO Comm Source ROTC	Hispanic MRO Comm Source ROTC	Asian MRO Comm Source ROTC
RS White Comm Source ROTC	1.022	1.220	1.323	0.965	1.300
	(0.0510)	(0.152)	(0.383)	(0.218)	(0.315)
RS Black Comm Source ROTC	1.225	1.740	1.890	**4.086***	
	(0.268)	(0.804)	(1.740)	(3.435)	
RS Hispanic Comm Source ROTC	**0.602****	0.967		0.613	1.930
	(0.139)	(0.532)		(0.418)	(2.735)
RS Asian Comm Source ROTC	0.870	1.160			0.772

	(0.231)	(0.849)			(0.650)
Constant	0.617***	0.517***	0.353***	0.612***	0.518***
	(0.0113)	(0.0245)	(0.0417)	(0.0503)	(0.0468)
Observations	14,742	2,349	443	742	636
	(16)	(17)	(18)	(19)	(20)
	White MRO Comm Source OTHERECPs	non-White MRO Comm Source OTHERECPs	Black MRO Comm Source OTHERECPs	Hispanic MRO Comm Source OTHERECPs	Asian MRO Comm Source OTHERECPs
RS White Comm Source OTHERCPS	**1.162****	1.146	1.259	1.151	1.443
	(0.0712)	(0.0987)	(0.211)	(0.145)	(0.340)
RS Black Comm Source OTHERCPS	**0.722****	0.729	**0.266****	1.157	1.387
	(0.114)	(0.164)	(0.143)	(0.390)	(0.783)
RS Hispanic Comm Source OTHERCPS	0.844	0.742	1.138	**0.617***	1.079
	(0.136)	(0.157)	(0.441)	(0.166)	(0.990)
RS Asian Comm Source OTHERCPS	0.912	1.172	0.465	1.149	0.405
	(0.117)	(0.172)	(0.244)	(0.419)	(0.199)
Constant	0.806***	0.664***	0.537***	0.774***	0.618***
	(0.0165)	(0.0215)	(0.0334)	(0.0369)	(0.0597)
Observations	11,229	4,834	1,373	2,197	563

The logistics regression results in Appendix A reveal that differences still exist in RS reporting behavior when controlling for the race of the RS and the race (White and non-White), type of degree, occfield, and combat experience of the MRO. These significant findings reveal the RSs evaluate differently on race, type of degree, and occfield. The key finding in this model is that the type of degree, a proxy for MRO competency or ability, appears to mostly have a positive effect on FITREP top third outcome. This finding increases in power and marginally in significant when controlling for combat experience. This finding suggests RSs place a higher value on performance-based factors such as educational attainment rather than demographic factors. The aggregate model reveals that non-White males with STEM degrees are more likely to receive FITREP top third outcomes from RSs of any race than White males with STEM degrees. This aggregate

finding indicates Marine Corps RSs are evaluating their subordinates on critical thinking and problem-solving skills attained in their undergraduate education in the form of a STEM degree. The aggregate model for female MROs reveal that non-White females with non-STEM degrees are more likely to receive a FITREP top third outcome from White and Black RSs than White females with non-STEM degrees. Non-White female MROs with STEMOther degree (missing degree subject in record) are more likely to receive a FITREP top third outcome from White and Black RSs than White female MROs with STEMOther degrees.

The combat service support occfield model reveals that degree type mostly benefits MROs likelihood of receiving a FITREP top third outcome. White male MROs with a STEM degree in this occfield are more likely to receive FITREP top third outcomes from White, Black and Asian RSs than non-White STEM degree MROs. Non-White female MROs with a non-STEM degree in the combat service support occfield are significantly more likely to receive a FITREP top third outcome than White female MROs with non-STEM degrees. Non-White male and female MROs with STEMOther degrees are significantly more likely to be ranked in the top third than MROs with STEM and non-STEM degrees. These findings appear to contradict one another indicating that educational attainment does impact FITREP top third outcome as RSs evaluate MROs in the top third differently.

The aviation occfield model reveals that RSs value MROs with STEM degrees over MROs with non-STEM or STEMOther degrees, but the results are different for male and female. White female MROs with a STEM degree are less likely to receive a FTIREP top third outcome from a White male RS than male MROs with a STEM degree. Conversely, a White male with a STEM degree is more likely to receive a FITREP top third outcome if the RS is White, Black or Asian than a female MRO with a STEM degree. The non-White MROs with a STEM degree receive a significantly higher benefit of receiving a FITREP top third outcome from a White RS indicating that education as a proxy for ability is more of a performance indicator than race.

The aviation ground occfield model reveals that RSs are more likely to rank a MRO in the top third if they possess a STEM degree. A White male with a STEM degree is more

likely to receive a top third FITREP outcome from a White, Hispanic and Asian RS than a non-White male with a STEM degree. However, non-White male MROs with a STEM degree enjoy significantly higher top third FITREP outcomes from an RS who is Hispanic than Whites with a STEM degree. Non-White male STEMOther degree MROs enjoy much higher FITREP top third outcomes from a White and Hispanic RS than White male MROs with STEMOther degrees. These STEM results indicate that RSs in the aviation ground occfield are signaling the educational qualities of STEM degree MROs increases the likelihood of MROs receiving a FITREP top third outcome. Education as a proxy for ability is a stronger coefficient than race.

The combat arms occfield model reveals that RSs place value on both STEM and non-STEM degrees with non-STEM having the highest coefficient indicating RSs may prefer the qualities of a non-STEM degree. It is important to note that this occfield includes an analysis of only males. White male STEM degree MROs are more likely to receive a FITREP top third outcome if the RS is White, Hispanic and Asian than MROs who are non-White male and possess a STEM degree. The odds that a non-White male MRO will receive a FITREP top third outcome with a White RS are 1.8 to 1 when compared to White MROs. This is the highest coefficient in the White and Non-White non-STEM category indicating that the educational qualities attained in a non-STEM degree are influencing FITREP top third outcomes. The results of the non-White male MROs with a STEM degree are all statistically insignificant. However, these results reveal economic significance as the coefficients are all less than one while the White male MROs with a STEM degree are all greater than one and mostly statically significant. The non-White results for all other STEM variables are positive indicating that race in not influencing FITREP top third results while non-STEM degrees may be more of an influence than STEM degrees.

Variation is still present when controlling for race, gender, and physical fitness test scores of the MRO. All of the coefficients are positive when controlling for MRO White, non-White and a physical fitness test score in the first-class range suggesting that RSs place value on physically fit Marines. The odds that a Black male RS will rank a non-White female with a first-class PFT score in the top third are 1.992 to 1. This significant and

economic finding is higher than insignificant White females with a first class PFT score findings as well as significant White and non-White males with first class PFT scores. The odds that a Black male RS will rank a Hispanic male with a firsts-class PFT score in the top third are 1.452 to 1. These significant findings suggest that performance-based factors influence FITREP top third outcomes.

Performance-based factors appear to positively influence FITREP top third outcomes while controlling for the race, gender and PFT score of the RS and MRO. These outcomes suggest that RSs do value similar performance-based factors in their MROs. The odds that a White RS with a first-class PFT score in the top third when the MRO is a White female, White male, non-White female, and non-White male with all possessing a first-class PFT are 1.201 to 1, 1.267 to 1, 1.587 to 1, and 1.328 to 1, respectively. Another key finding in this model is that a White male RS is more likely to evaluate a non-White female in the top third than any other race or gender combination. This evaluation behavior is similar for a Black male RS with a first-class PFT with odds for a non-White female with a first-class PFT of 1.771 to 1. The performance-based factors in my model appear to influence FITREP top third outcomes more than demographic factors.

Performance-based factors continue to appear to positively influence FITREP top third outcomes while controlling for the race, gender, PFT score, and type of degree on record of the MRO. The results in this model continue to increase past one suggesting that RSs value physical fitness and education. The odds that a White male MRO with a first-class PFT and a STEM degree will receive a FITREP top third outcome when the RS is a White Male, Black male, non-White Male, and Hispanic male with all possessing a first-class PFT are 1.321 to 1, 1.527to 1, 1.398 to 1, and 1.422 to 1, respectively. Non-White male MRO with the same characteristics receive higher significant odds from White, Black an Hispanic MROs. White female MROs with a first-class PFT and a non-STEM degree receive higher significant odds for FITREP top third outcomes from White, Black, and Hispanic male RSs than male MROs with similar characteristics. This systemic variation continues to positively influence the likelihood of a top third outcome for a MRO with a first-class PFT score and a STEM, non-STEM, and STEMOther (no degree subject file on record). The strongest significant findings for the MROs observed are: non-White Male

with a STEM degree, White female with a non-STEM degree, and non-White female with STEMOther degree over any other comparison. This finding suggests performance-based factors are positively influencing FITREP outcomes in the top third.

Lastly, I add a control for combat experience to the previous model to further examine variation in RS FITREP behavior. The significance of the aggregate results in this model diminishes. The odds that White and Hispanic males with a first-class PFT will rank a White male MRO with a first-class PFT, a STEM degree, and combat experience are 1.487 to 1 and 1.605 to 1, respectively. These significant findings suggest that both RSs are more likely to evaluate an MRO in the top third when controlling for combat experience. The odds that a White male RS with a first-class PFT will rank a non-White female with a first-class PFT, a non-STEM degree and combat experience are 1.313 to 1. These significant findings continue to suggest that RSs place more value on competency variables such as education, physical fitness and combat experience than demographic variables.

D. FIRST IMPRESSIONS PERSIST

First impressions appear to influence RS evaluation behavior for MROs who receive three consecutive FITREPs from the same RS. I discover that RSs are selective in bottom, middle and upper third FITREP outcomes. The RS appears to show tremendous growth of the MROs receiving a bottom third FITREP outcome on the first FITREP as the majority leave this category for higher relative value FITREPs to middle or upper third outcomes. The RS middle third relative outcome is more stable than the bottom while the upper third outcome is reserved for only a few in the first FITREP and grow in relative value over time with the majority ending in FITREP in the upper third.

RSs appear to evaluate MROs mostly in the bottom third when they appear to know they will have another opportunity to write a FITREP on the same MRO. A RS will evaluate the first FITREP of a MRO with a 61.13 percent chance of receiving a bottom third outcome. A MRO receiving this outcome on their first FITREP has a 37 percent chance of moving to a the middle or upper third with the second FITREP, and an 18 percent of receiving a higher FITREP outcome in the final FITREP.

RSs initially evaluate about one quarter of all MROs in the middle third when they know they will appear to have another opportunity to write a FITREP on the same MRO. A MRO receiving this outcome on their first FITREP has a 49 percent chance of remaining in the middle third on their second FITREP with a much higher probability of receiving an upper third FITREP on the third FITREP. This finding reveals that RS middle third evaluation behavior varies with 24.45 percent of the MROs receiving a first middle third FITREP and 24.98 percent of the MROs receiving a third and final middle third FITREP.

RSs appear to reserve MRO upper third FITREP ranking to only a few initially. The likelihood of being ranked in the upper third of a RSs relative value profile on the first FITREP is 14.41 percent. This percentage is relatively stable when moving from the first FITREP to the second FITREP with only 18 percent of the MROs receiving a second FITREP in the upper third. Only about 4 percent of the MROs who receive an upper third relative value score with a second FITREP. However, about 82 percent of the sample receive an upper third FITREP on the third consecutive FITREP. This number is telling as it reveals the selectivity of RSs upper third FITREP outcome on the first FITREP is highly competitive; first impressions do matter.

Figure 5. Relative Value over Time

	Relative Value at Processing			
	1	2	3	Total
Bottom Third	1,595	2,131	885	4,611
	34.59%	46.22%	19.19%	100%
	61.13%	23.90%	6.29%	18.01%
Middle Third	638	5,156	3,518	9,312
	6.85%	55.37%	37.78%	100%
	24.45%	57.82%	24.98%	36.36%
Upper Third	376	1,631	9,678	11,685
	3.22%	13.96%	82.82%	100%
	14.41%	18.29%	68.73%	45.63%
Total	2,609	8,918	14,081	25,608
	10.19	34.83	54.99	100
	100	100	100	100

E. MCO 1610.17

The last finding of this thesis is a possible discrepancy in Marine Corps Order 1610.7, PES Manual (dated 13 Feb 2015). I discover this qualitative finding while conducting my literature review of the PES Manual for this thesis. The PES Manual instructs RSs on how to develop a marking philosophy and marking procedures. Conversely, the PES Manual also instructs RSs to mark MROs holistically, but mark an MRO to the RS relative value profile. This finding reveals a contradiction in PES Manual guidance and instruction. I will first discuss the marking philosophy and procedures in the PES Manual chapter four. I will then discuss the intent of the RS profile in PES Manual chapter eight. I will conclude this section with how this guidance could be appear to contradict a RS marking philosophy.

Chapter four of the PES Manual guides Marine Corps reporting officials in FITREP preparation. Part of this preparation is administrative not effecting the MRO. The other part of this chapter provides RS guidance marking philosophy and marking procedures. The PES Manual states in Chapter four that RSs "must":

> Determine the position on the scale that best reflects the performance or behavior of the MRO during the evaluation period. Grades are earned by the MRO's displayed efforts and apparent results; they are not given to attain a perceived fitness report average or relative value. (4-22)

This guidance advises RSs to award grades to performance during the observation period while not marking a FITREP to a particular relative value or fitness report average.

Chapter eight of the PES Manual outlines Headquarters Marine Corps FITREP functions. This chapter further discusses the RS profile and the relative value. The PES Manual states in Chapter eight the "Intent of the RS Profile" section that:

> After the report is complete, the RS should calculate the report average and compare that to his or her RS profile. The RS should make minor adjustments to the attribute markings, as necessary, to ensure the report meets the intent of this Order as outlined in Chapter 1 (8-5).

The above quote's purpose is to maintain the integrity of the PES while also improving the accuracy of how a RS evaluates "Marines of similar grades" (MCO 1610.7, 2015, p. 8-4).

This section of the PES Manual instructs Marine Corps RSs to make necessary adjustments to markings on the FITREP to what appears to me to be a report average or RS profile.

The PES Manual appears to offer contradicting guidance to RS marking philosophy and marking procedures for FITREPs. On one hand, the PES Manual encourages a RS to evaluate a MRO based on effort and results; while on the other hand, the PES Manual encourages a RS to critically analyze the FITREP average of each report to ensure the average is within a particular relative value range based on the performance of the MRO in comparison to others of similar grade. Without further FITREP training, this guidance may confuse a RS in developing their own marking philosophy in accordance with the PES Manual possibly impacting the relative profile of the RS.

F. SUMMARY

This section summarizes the findings and results of my multivariate analysis. My results reveal that there are differences in growth rates of an MROs FITREP when controlling for performance and non-performance-based factors of both the RS and MRO.

Variation in RS FITREP top third outcomes exists when controlling for non-performance-based factors such as race, gender and religion. My results also reveal that the variation in RS evaluation behavior diminishes when adding education and physical fitness test scores while simultaneously controlling for race and gender across occfields. These results corroborate past research suggesting that RSs are fairly and equitably evaluating MROs placing more value on performance-based factors than non-performance-based factors such as race, gender and religion (Clemens et al.).

My models reveal that variation does exist when controlling for non-performance-based factors. These factors include gender, marital status, occupational field (MOS) commissioning source, civilian education, race, religion, number of dependents, civilian education degree, and rank. On average, non-Whites receive more of a race benefit when controlling for race of the MRO than Whites, while non-White males also receive more benefit than White males when controlling for race and gender. Asian males receive the highest significant FITREP top third benefit in the non-White male model with FITREP odds of 1.42 to 1 from RSs who are White and Hispanic.

Female MROs continue to receive less likely odds that a female RS of any race will evaluate them with a FITREP top third outcome (Clemens et al.). When controlling for race, gender, and occfield, White females in the combat service support occfield are more likely to receive a FITREP top third outcome from a White and Hispanic RS than non-White female MROs with White and Hispanic RSs. Female MROs are also receiving significantly lower odds of receiving a top third FITREP outcome than male MROs. Female MROs with dependents have even less likelihood of receiving a top third FITREP outcome from a White female RS than female MROs without dependents. Male MROs with and without dependent odds are less likely and relatively equal from female any race RSs.

My models also reveal that variation exists when controlling for race and occfield of the RS and MRO. The odds that a Hispanic MRO who commissioned through ROTC will receive a FITERP top third outcome from a Black RS who also commissioned through ROTC are 4.086 to 1. The odds that a Black MRO who commissioned through an Officer Candidates Course with an Asian RS with the same commissioning source are 2.993 to 1. The odds that a White MRO who commissioned through an enlisted to officer commissioning program with a White RS with the same commissioning source are 1.162 to 1. All of the other significant odds in this category are negative indicating RSs and MROs who share the same race and commissioning source do not receive any additional FITREP benefit.

My models also reveal that variation exists when controlling for race and religion of the RS and MRO. Unlike other models, the White and non-White results when controlling for the Christian and Catholic religions are positive. The significant odds ratio results all range between 1.05 and 1.263 with the both the MRO being White with a religion as not Christina at the low end of the range and the high end of the range with White and Asian Christian RSs, respectively. This narrow range suggests that RSs are evaluating MROs on factors other than race and religion.

All of the non-performance-based factors lose significance when controlling for performance-based factors such as education and physical fitness score. Education appears to have the strongest effect on FITREP top third in my model. Specifically, males who

have STEM and other degrees, and females who have non-STEM and other degrees. The other degree variable I created includes MROs with “no major subject indicated” and a pair of quotation marks in the education degree field. When PFT scores are accounted for in the model the significant results are strong, but not as strong when controlling for only STEM and other degree.

VI. CONCLUSION

This positive economic analysis examines recent Marine Corps officer FITREPs to disentangle RS learning and statistical discrimination. The eight key explanatory variables I use in this analysis are: gender, race, religion, marital status, occupational field, commissioning source, STEM, non-STEM degree or Other, and number dependents. The results of this study suggest that an evaluation bias does possibly exist between the RS and the MRO while controlling for race and gender. However, that particular bias significantly diminishes when controlling for STEM, non-STEM, STEMOther, PFT scores, and combat experience. These explanatory variables are my proxies for ability in my models.

The purpose of this thesis is to examine our most important human resources document for retention, selection and promotion, the fitness report. The Marine reported on and FITREP variation from the RS is the subject of this positive economic analysis. I must again assure you that I conducted this analysis in the most objective manner possible in an effort to provide relevant high-quality indicators to Manpower Management. Variation does exist in RS learning and RS evaluation behavior. Demographic factors appear to less likely influence top third FITREP outcomes from RSs of any race or gender when controlling for performance-based factors. MROs are more likely to receive top third FITREP outcomes when controlling for my education variables indicating that performance-based factors are more likely to influence FITREP top third outcomes when compared to non-performance-based factors such as race, religion and gender. This examination corroborates past research identifying that certain occupation fields place more value on STEM and non-STEM degrees than other occupational fields. In particular, this analysis finds that the highest education variable value is the STEMOther variable. The Marine Corps enterprise knows little about the academic background of these high performing Marines. This examination also corroborates historical research findings that dependents of the MRO influence high-quality behavior in the work place as RSs are more likely to evaluate an MRO in the top third if they have one or more dependents.

My original research questions are:

1. How do FITREP evaluations vary over time from the same RS?

2. Does the evolution of FITREP evaluations by the same RS of the MRO vary by characteristics of the RS and MRO?

This examination indicates that RSs are learning at different rates dependent on the race of both the RS and the MRO while not including occupational competency control measures such as degree subject and physical fitness test scores. Adding these occupation competency controls to most of my models diminishes the statistical and economical significance of non-performance-based factors such as race, religion, and gender suggesting that Marine officer's fulfilling the role of a RS are evaluating MROs more on performance-based measures.

A. RECOMMENDATIONS

Reporting Seniors across the different combat elements are indirectly signaling to Manpower Management that they value the critical skills in the MROs' respective undergraduate degree. Education—as indicated by variation in college majors—is the strongest variable in my data set indicating the highest likelihood of a FITREP top third outcome. Manpower managers should consider the different values that RSs place on different problem-solving skills across the enterprise.

- Improve FITREP training and education by adding FITREP case study materials to improve current curriculums or adding it to the curriculums at the basic officer courses and Expeditionary Warfare School.

- Reexamine Marine Corps Order 1610.7 to enhance the rating philosophy guidance to Marine Corps RSs.

- Enhance data collection across the Marine Corps enterprise to improve research efforts. For example, I could not study the state and regional effects of FITREP top third outcome between RS and MRO due to almost 30,000 missing data entries.

B. FURTHER RESEARCH

Several prior scholarly studies and Naval Postgraduate School theses have identified high-quality predictors. They mostly involve the quality of Marine retained by the Marine Corps, promotion predictors, and RS and MRO racial and gender fixed effects. This thesis uses a recent data set of FITREPs to analyze if variation exists between the way a RS marks a MRO over time considering observable and measurable characteristics of both subjects. This examination only narrowly researches non-performance and performance-based effects of how an RS marks an MRO over time. More research to enhance the officer assignment, FITREP, and PES should include:

- Study the effects of removing the promotion and selection photograph as well as other personally identifiable information from the promotion and selection process to minimize bias.

- Research the effects of incrementally changing the FITREP to become more objective rather than its current subjective state.

- Innovate a new job performance appraisal that enhances the PES by identifying quality characteristics the Commandant deems most important to the Marine Corps.

- Conduct a Cost-to-Benefit Analysis on the effects of job matching a STEM to a non-STEM superior or subordinate combination to enhance job performance and readiness.

- Study the effects of enhancing the PES by adding Marine Corps specific narrow performance measures to the FITREP by tying, for example, physical and combat fitness scores to one or more of the 14 attributes on the FITREP to minimize promotion and self-selection risk. This recommendation will allow the Marine Corps to acknowledge what it determines as high-quality on its performance appraisal document making the FITREP more objective.

- Study the effects of optimizing STEM and non-STEM officer MOS assignment at the basic school.

APPENDIX A. LOGISTICS REGRESSION OF MRO TOP THIRD GENDER, DEGREE, DEPENDENTS, OCCFIELD, DEGREE, AND COMBAT WITH RS OF SAME RACE

	(1)	(2)	(3)	(4)	(5)
	White Female MRO with STEM Degree	non-White Female MRO with STEM Degree	White Male MRO with STEM Degree	non-White Male MRO with STEM Degree	White Female MRO with non-STEM Degree
RS White Male	1.091	1.230	**1.287*** **	**1.368***	**1.432*** **
	(0.198)	(0.394)	(0.0905)	(0.188)	(0.177)
RS Black Male	1.035	0.997	**1.515*** **	**1.521***	**1.428***
	(0.334)	(0.493)	(0.160)	(0.296)	(0.284)
RS Hispanic Male	1.232	1.072	**1.402*** **	**1.590*** *	**1.477*** *
	(0.333)	(0.502)	(0.130)	(0.278)	(0.288)
RS Asian Male	1.430	0.914	**1.427*** **	1.469	1.333
	(0.513)	(0.515)	(0.160)	(0.305)	(0.313)
Constant	0.495***	0.410***	0.453***	0.362***	0.472***
	(0.083)	(0.122)	(0.0310)	(0.0481)	(0.055)
Observations	1,321	457	18,845	4,777	2,968
	(6)	(7)	(8)	(9)	(10)
	non-White Female MRO with non-STEM Degree	White Male MRO with non-STEM Degree	non-White Male MRO with non-STEM Degree	White Female MRO with STEMOther Degree	non-White Female MRO with STEMOther Degree
RS White Male	**1.604*** *	**1.355*** **	**1.204***	1.133	**1.574***
	(0.312)	(0.0591)	(0.101)	(0.152)	(0.410)
RS Black Male	**1.781*** *	**1.175*** *	1.030	1.446	**2.200*** *
	(0.507)	(0.0752)	(0.122)	(0.334)	(0.821)
RS Hispanic Male	1.189	**1.144*** *	1.208	0.898	1.442
	(0.375)	(0.0668)	(0.136)	(0.194)	(0.499)
RS Asian Male	0.982	**1.405*** **	1.252	1.059	1.174
	(0.356)	(0.0949)	(0.181)	(0.294)	(0.545)
Constant	0.385***	0.488***	0.465***	0.513***	0.333***
	(0.0700)	(0.0206)	(0.0374)	(0.064)	(0.0821)
Observations	1,248	45,071	10,714	2,092	871
	(11)	(12)	(13)	(14)	(15)
	White Male MRO with STEMOther Degree	non-White Male MRO with STEMOther	White Female MRO with STEM Degree in Combat Svc Suppt	non-White Female MRO with STEM Degree in	White Male MRO with STEM Degree in Combat Svc Suppt

				Combat Svc Suppt	
RS White Male	**1.133****	**1.410*****	**1.576****	0.981	**1.234***
	(0.0601)	(0.147)	(0.336)	(0.339)	(0.134)
RS Black Male	**1.152***	**1.725*****	1.095	1.200	**1.614*****
	(0.0969)	(0.261)	(0.405)	(0.625)	(0.249)
RS Hispanic Male	**1.187****	**1.571*****	1.37	1.422	1.139
	(0.0865)	(0.213)	(0.45)	(0.787)	(0.176)
RS Asian Male	**1.243****	1.014	2.057	0.492	**1.427****
	(0.108)	(0.176)	(0.984)	(0.351)	(0.255)
Constant	0.504***	0.350***	0.442***	0.469**	0.524***
	(0.0257)	(0.0348)	(0.086)	(0.147)	(0.0545)
Observations	24,765	6,616	805	327	5,459
	(16)	(17)	(18)	(19)	(20)
	non-White Male MRO with STEM in Combat Svc Suppt	White Female MRO with non-STEM Degree in Combat Svc Suppt	non-White Female MRO with non-STEM Degree in Combat Svc Suppt	White Male MRO with non-STEM Degree in Combat Svc Suppt	non-White Male MRO with non-STEM in Combat Svc Suppt
RS White Male	**1.389***	**0.386****	**1.508***	**1.400*****	1.121
	(0.270)	(0.152)	(0.340)	(0.0908)	(0.122)
RS Black Male	1.375	0.327	1.863*	**1.180***	0.892
	(0.356)	(0.230)	(0.596)	(0.111)	(0.140)
RS Hispanic Male	1.410	0.359	1.138	**1.175***	1.206
	(0.367)	(0.234)	(0.414)	(0.108)	(0.192)
RS Asian Male	1.457	0.287	1.031	**1.235****	1.170
	(0.439)	(0.291)	(0.432)	(0.129)	(0.238)
Constant	0.806***	0.664***	0.537***	0.774***	0.618***
	(0.0165)	(0.0215)	(0.0334)	(0.0369)	(0.0597)
Observations	11,229	4,834	1,373	2,197	563
	(21)	(22)	(23)	(24)	(21)
	White Female MRO with STEMOther Degree in Combat Svc Suppt	non-White Female MRO with STEMOther Degree in Combat Svc Suppt	White Male MRO with STEMOther Degree in Combat Svc Suppt	non-White Male MRO with STEMOther Degree in Combat Svc Suppt	White Female MRO with STEM Degree in Aviation
RS White Male	1.230	**1.694***	1.077	**1.367****	**0.301****
	(0.199)	(0.466)	(0.0784)	(0.182)	(0.172)
RS Black Male	**1.737****	**2.090***	**1.265****	**1.591****	0.286
	(0.483)	(0.855)	(0.142)	(0.308)	(0.282)
RS Hispanic Male	0.888	1.303	1.105	**1.566****	0.343
	0.230)	(0.493)	(0.118)	(0.287)	(0.253)

RS Asian Male	1.544	0.787	1.205	0.852	0.429
	(0.483)	(0.487)	(0.146)	(0.208)	(0.335)
Constant	0.514***	0.339***	0.528***	0.356***	1.167
	(0.0724)	(0.0877)	(0.0362)	(0.0449)	(0.649)
Observations	1,522	689	9,971	3,344	342
	(26)	(27)	(28)	(29)	(30)
	non-White Female MRO with STEM Degree in Aviation	White Male MRO with STEM Degree in Aviation	non-White Male MRO i with STEM Degree in Aviation	White Female MRO with non-STEM Degree in Aviation	non-White Female MRO with non-STEM Degree in Aviation
RS White Male		**1.237***	**1.937***	1.417	0.800
		(0.154)	(0.685)	(0.7497)	(0.977)
RS Black Male		**1.476***	2.722	0.750	
		(0.339)	(1.788)	(0.924)	
RS Hispanic Male		**1.372***	2.082	2.25	
		(0.225)	(0.941)	(1.528)	
RS Asian Male		1.002	2.450	3	
		(0.212)	(1.359)	(2.449)	
Constant	0.333***	0.401***	0.204***	0.333**	0.333
	(0.136)	(0.0487)	(0.0708)	(0.172)	(0.385)
Observations	32	7,907	1,248	402	42
	(31)	(32)	(33)	(34)	(35)
	White Male MRO with non-STEM Degree in Aviation	non-White Male MRO with non-STEM in Aviation	White Female MRO with STEMOther Degree in Aviation	non-White Female MRO with STEMOther Degree in Aviation	White Male MRO with STEMOther Degree in Aviation
RS White Male	**1.203***	1.115	0.662	567,806	0.933
	(0.121)	(0.306)	(0.460)	(1.523e+09)	(0.149)
RS Black Male	0.924	1.471			1.170
	(0.154)	(0.578)			(0.383)
RS Hispanic Male	1.043	1.425	0.673	7.190e+06	1.211
	(0.137)	(0.477)	(0.551)	(1.928e+10)	(0.251)
RS Asian Male	1.704***	0.957	1.25		1.501*
	(0.263)	(0.413)	(1.505)		(0.368)
Constant	0.449***	0.380***	0.8	1.39e-07	0.492***
	(0.0441)	(0.102)	(0.537)	(0.000373)	(0.0763)
Observations	12,871	1,921	163	46	3,960
	(36)	(37)	(38)	(39)	(40)
	non-White Male MRO with STEMOther	White Female MRO with STEM Degree in Aviation GND	non-White Female MRO with STEM	White Male MRO with STEM Degree in Aviation GND	non-White Male MRO with STEM

	Degree in Aviation		Degree in Aviation GND		Degree in Aviation GND
RS White Male	0.941	0.943	0.818	**1.672****	1.650
	(0.375)	(0.611)	(1.186)	(0.426)	(0.619)
RS Black Male	1.083			1.432	2.357
	(0.845)			(0.518)	(1.295)
RS Hispanic Male	1.118	2.5	0.500	**2.016****	**3.056****
	(0.576)	(2.271)	(0.935)	(0.642)	(1.391)
RS Asian Male	0.850			**2.217****	1.320
	(0.543)			(0.895)	(0.729)
Constant	0.346***	0.5	1	0.333***	0.303***
	(0.134)	(0.306)	(1.414)	(0.0821)	(0.109)
Observations	681	124	45	1,340	579
	(41)	(42)	(43)	(44)	(45)
	White Female MRO with non-STEM Degree in Aviation GND	non-White Female MRO with non-STEM Degree in Aviation GND	White Male MRO with non-STEM Degree in Aviation GND	non-White Male MRO with non-STEM in Aviation GND	White Female MRO with STEMOther Degree in Aviation GND
RS White Male	1.481	2.169	**1.313***	1.253	1.04
	(0.555)	(1.282)	(0.185)	(0.314)	(0.425)
RS Black Male	1.909	1.023	1.027	1.290	1.833
	(1.235)	(0.880)	(0.209)	(0.483)	(1.051)
RS Hispanic Male	1.909	2.500	1.173	1.486	0.906
	(1.081)	(2.141)	(0.230)	(0.525)	(0.533)
RS Asian Male	0.424	0.625	1.181	1.520	
	(0.357)	(0.761)	(0.268)	(0.589)	
Constant	0.393***	0.267**	0.479***	0.500***	0.455**
	(0.140)	(0.150)	(0.0648)	(0.120)	(0.173)
Observations	398	181	3,377	1,049	293
	(46)	(47)	(48)	(49)	(50)
	non-White Female MRO with STEMOther Degree in Aviation GND	White Male MRO with non-STEMOther Degree in Aviation GND	non-White Male MRO with STEMOther Degree in Aviation GND	White Male MRO with STEM Degree in Combat Arms	non-White Male MRO with STEM in Combat Arms
RS White Male	1.029	**1.456****	**2.523*****	**1.627****	0.637
	(0.978)	(0.252)	(0.810)	(0.341)	(0.239)
RS Black Male	0.750	0.701	2.171	1.357	0.544
	(1.146)	(0.223)	(1.037)	(0.369)	(0.289)
RS Hispanic Male	1.500	**1.517***	**2.967*****	**1.848****	0.671
	(2.031)	(0.377)	(1.120)	(0.442)	(0.294)
RS Asian Male		0.692	1.068	**1.767****	0.490

		(0.252)	(0.532)	(0.497)	(0.265)
Constant	0.667	0.385***	0.220***	0.447***	0.875
	(0.609)	(0.0629)	(0.0675)	(0.0923)	(0.320)
Observations	71	1,771	707	3,813	818

	(51)	(52)	(53)	(54)
	White Male MRO with non-STEM Degree in Combat Arms	non-White Male MRO with non-STEM Degree in Combat Arms	White Male MRO with non-STEMOther Degree in Combat Arms	non-White Male MRO with STEMOther in Combat Arms
RS White Male	**1.396*** **	**1.888** **	**1.325** **	1.083
	(0.163)	(0.525)	(0.166)	(0.313)
RS Black Male	**1.275***	1.598	1.187	1.474
	(0.188)	(0.532)	(0.211)	(0.559)
RS Hispanic Male	1.082	1.199	**1.310***	1.092
	(0.147)	(0.381)	(0.200)	(0.366)
RS Asian Male	**1.341***	1.619	**1.380***	1.579
	(0.208)	(0.635)	(0.259)	(0.655)
Constant	0.580***	0.353***	0.485***	0.528**
	(0.0665)	(0.0968)	(0.0597)	(0.150)
Observations	11,542	2,394	8,168	1,628

Logit Model Dependent Variable Change adding Physical Fitness Test Score

	(1)	(2)	(3)	(4)	(5)
	White Female 1st Class PFT MRO	White Male 1st Class PFT MRO	non-White Female 1st Class PFT MRO	non-White male 1st Class PFT MRO	Black Female 1st Class PFT MRO
VARIABLES					
MRO Top Third					
RS White Male	1.050	**1.150*** **	1.632	1.161	0.779
	(0.172)	(0.0541)	(0.496)	(0.110)	(0.510)
RS Black Male	1.299	1.081	**1.992** **	1.132	0.717
	(0.259)	(0.0639)	(0.677)	(0.129)	(0.533)
RS Hispanic Male	0.923	1.086	1.341	1.150	0.429
	(0.176)	(0.0596)	(0.455)	(0.124)	(0.316)
RS Asian Male	1.013	**1.207*** **	1.147	1.066	0.333
	(0.221)	(0.0736)	(0.435)	(0.132)	(0.338)
Constant	0.581***	0.551***	0.349***	0.467***	0.667
	(0.0935)	(0.0255)	(0.105)	(0.0435)	(0.430)
Observations	5,418	76,884	2,226	19,353	457

	(6)	(7)	(8)	(9)	(10)
	Black Male 1st Class PFT MRO	Hispanic Female 1st Class PFT MRO	Hispanic Male 1st Class PFT MRO	Asian Female 1st Class PFT MRO	Asian Male 1st Class PFT MRO

RS White Male	1.183	1.576	1.236	1.695	1.253
	(0.260)	(0.671)	(0.190)	(1.147)	(0.244)
RS Black Male	1.045	1.645	**1.452****	1.895	0.997
	(0.262)	(0.808)	(0.269)	(1.443)	(0.248)
RS Hispanic Male	1.100	1.648	1.160	2.200	1.151
	(0.274)	(0.794)	(0.202)	(1.707)	(0.268)
RS Asian Male	1.133	0.673	1.122	3.250	0.949
	(0.340)	(0.402)	(0.221)	(2.527)	(0.249)
Constant	0.405***	0.400**	0.485***	0.333*	0.419***
	(0.0877)	(0.167)	(0.0733)	(0.222)	(0.0800)
Observations	3,926	854	7,467	407	3,831

	(11)	(12)	(13)	(14)	(15)
	White Female 2nd Class PFT MRO	White Male 2nd Class PFT MRO	non-White Female 2nd Class PFT MRO	non-White Male 2nd Class PFT MRO	White Female 3rd Class PFT MRO
RS White Male	1.296	**1.45****	2.571	1.161	3.323e+06
	(1.079)	(0.281)	(2.914)	(0.110)	(8.778e+09)
RS Black Male	0.600	1.2	1.667	1.132	
	(0.675)	(0.283)	(2.277)	(0.129)	
RS Hispanic Male	0.818	1.322	2.500	1.150	
	(0.855)	(0.298)	(4.108)	(0.124)	
RS Asian Male	1.500	**1.744****		1.066	1.396e+07
	(1.785)	(0.43)		(0.132)	(3.688e+10)
Constant	0.333	0.352***	0.200	0.467***	1.43e-07
	(0.272)	(0.067)	(0.219)	(0.0435)	(0.000379)
Observations	219	5,889	70	19,353	35

	(16)	(17)	(18)
	White Male 3rd Class PFT MRO	non-White Female 3rd Class PFT MRO	non-White Male 3rd Class PFT MRO
RS White Male	**4.386****		1.111e+06
	(3.256)		(6.685e+08)
RS Black Male	**6.679****		557,108
	(5.343)		(3.353e+08)
RS Hispanic Male	**4.552***		1.812e+06
	(3.707)		(1.091e+09)
RS Asian Male	1.435		1.035e+06
	(1.378)		(6.228e+08)
Constant	0.0909***	0.313**	2.76e-07
	(0.0671)	(0.160)	(0.000166)
Observations	999	21	245

Logit Model Independent Variable Change adds Fitness Test Score to Reporting Senior					
	(21)	(22)	(23)	(24)	(25)

	White Female 1st Class PFT MRO	White Male 1st Class PFT MRO	non-White Female 1st Class PFT MRO	non-White Male 1st Class PFT MRO	White Female 1st Class PFT MRO with STEM Degree
VARIABLES					
MRO Top Third					
RS White Male PFT1	**1.201****	**1.267*****	**1.587*****	**1.328*****	1.094
	(0.105)	(0.0409)	(0.237)	(0.0824)	(0.206)
RS Black Male PFT1	**1.496*****	**1.201*****	**1.771*****	**1.301****	1.133
	(0.220)	(0.0590)	(0.390)	(0.117)	(0.396)
RS Hispanic Male PFT1	1.140	**1.197*****	1.240	**1.341*****	1.176
	(0.156)	(0.0518)	(0.276)	(0.110)	(0.339)
RS Asian Male PFT1	1.227	**1.329*****	1.054	1.209	1.217
	(0.210)	(0.0678)	(0.290)	(0.123)	(0.463)
Constant	0.515***	0.505***	0.376***	0.414***	0.500***
	(0.0418)	(0.0157)	(0.0528)	(0.0247)	(0.0866)
Observations	5,418	76,884	2,226	19,353	1,135
	(26)	(27)	(28)	(29)	(30)
	White Male 1st Class PFT MRO with STEM Degree	non-White Female 1st Class PFT MRO with STEM Degree	non-White Male 1st Class PFT MRO with STEM Degree	White Female 1st Class PFT MRO with non-STEM Degree	White Male 1st Class PFT MRO with non-STEM Degree
RS White Male PFT1	**1.321*****	1.412	**1.397***	**1.365****	**1.344*****
	(0.0994)	(0.480)	(0.203)	(0.183)	(0.0624)
RS Black Male PFT1	**1.527*****	0.735	**1.612***	**1.568****	**1.175****
	(0.175)	(0.440)	(0.334)	(0.338)	(0.0806)
RS Hispanic Male PFT1	**1.398*****	1	**1.543***	**1.429***	**1.137****
	(0.138)	(0.490)	(0.284)	(0.301)	(0.0707)
RS Asian Male PFT1	**1.422*****	0.833	1.491	1.412	**1.337*****
	(0.170)	(0.505)	(0.327)	(0.355)	(0.0962)
Constant	0.456***	0.400***	0.369***	0.500***	0.514***
	(0.0334)	(0.126)	(0.0520)	(0.0628)	(0.0231)
Observations	16,388	403	4,154	2,480	38,595
	(31)	(32)	(33)	(34)	(35)
	non-White Female 1st Class PFT MRO with	non-White Male 1st Class PFT MRO with	White Female 1st Class PFT MRO with	White Male 1st Class PFT MRO with	non-White Female 1st Class PFT MRO with

	non-STEM Degree	non-STEM Degree	STEMOther Degree	STEMOther Degree	STEMOther Degree
RS White Male PFT1	**1.487***	**1.248***	1.081	**1.117****	**2.003****
	(0.303)	(0.110)	(0.155)	(0.0617)	(0.591)
RS Black Male PFT1	**1.693***	0.993	**1.527***	1.069	**2.716****
	(0.509)	(0.127)	(0.376)	(0.0949)	(1.091)
RS Hispanic Male PFT1	0.999	1.175	0.845	**1.165****	**2.054***
	(0.340)	(0.140)	(0.194)	(0.0882)	(0.786)
RS Asian Male PFT1	0.881	1.302	0.971	**1.233****	1.667
	(0.343)	(0.198)	(0.286)	(0.111)	(0.849)
Constant	0.440***	0.476***	0.539***	0.521***	0.267***
	(0.0834)	(0.0403)	(0.0709)	(0.0276)	(0.0750)
Observations	1,077	9,307	1,875	22,481	780
	(36)	(37)	(38)	(39)	(40)
	non-White Male 1st Class PFT MRO with STEMOther Degree	White Female 1st Class PFT MRO with STEM Degree and Combat Exp	White Male 1st Class PFT MRO with STEM Degree and Combat Exp	non-White Female 1st Class PFT MRO with STEM Degree and Combat Exp	non-White Male 1st Class PFT MRO with STEM Degree and Combat Exp
RS White Male PFT1	**1.444*****	0.521	**1.487***	1.111	1.234
	(0.159)	(0.354)	(0.330)	(1.165)	(0.622)
RS Black Male PFT1	**1.808*****	0.333	1.636		1.733
	(0.292)	(0.439)	(0.553)		(1.187)
RS Hispanic Male PFT1	**1.577****	0.333	**1.605***		1.733
	(0.224)	(0.344)	(0.438)		(1.034)
RS Asian Male PFT1	1.012		1.395		1.896
	(0.183)		(0.449)		(1.356)
Constant	0.352***	1	0.500***	1.500	0.462
	(0.0372)	(0.632)	(0.108)	(1.369)	(0.228)
Observations	6,025	95	2,171	21	493
	(41)	(42)	(43)	(44)	(45)
	White Female 1st Class PFT MRO with non-STEM Degree and Combat Exp	White Male 1st Class PFT MRO with non-STEM Degree and Combat Exp	non-White Female 1st Class PFT MRO with non-STEM Degree and Combat Exp	non-White Male 1st Class PFT MRO with non-STEM Degree and Combat Exp	White Female 1st Class PFT MRO with STEMOther Degree and Combat Exp

RS White Male PFT1	0.392	2.169	**1.313***	1.253	0.0390
	(0.375)	(1.282)	(0.185)	(0.314)	(0.408)
RS Black Male PFT1	0.647	1.023	1.027	1.290	0.606
	(0.647)	(0.880)	(0.209)	(0.483)	(0.573)
RS Hispanic Male PFT1	0.647	2.500	1.173	1.486	-0.0988
	(0.567)	(2.141)	(0.230)	(0.525)	(0.589)
RS Asian Male PFT1	-0.857	0.625	1.181	1.520	
	(0.843)	(0.761)	(0.268)	(0.589)	
Constant	0.353**	0.636***	0.429	0.759	0.500
	(0.168)	(0.0973)	(0.296)	(0.214)	(0.274)
Observations	190	4,933	76	1,063	156

	(46)	(47)	(48)
	White Male 1st Class PFT MRO with STEMOther Degree and Combat Exp	non-White Female 1st Class PFT MRO with STEMOther Degree and Combat Exp	non-White Male 1st Class PFT MRO with STEMOther Degree and Combat Exp
RS White Male PFT1	1.042		1.257
	(0.199)		(0.412)
RS Black Male PFT1	0.892		0.997
	(0.282)		(0.486)
RS Hispanic Male PFT1	1.063		1.295
	(0.264)		(0.595)
RS Asian Male PFT1	1.015		1.208
	(0.295)		(0.587)
Constant	0.788	0.867	0.552
	(0.146)	(0.328)	(0.172)
Observations	2,498	28	540

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APPENDIX B. LOGISTICS REGRESSION OF MRO MIDDLE AND BOTTOM THIRD ON FEMALE MRO WITH FEMALE RS

	(1)	(2)	(3)	(4)
	White Female MRO	non-White Female MRO	White Female MRO	non-White Female MRO
VARIABLES	MRO Middle Third	MRO Middle Third	MRO Bottom Third	MRO Bottom Third
MRO Middle Third				
RS White Female	**0.730*** **	0.872	1.112	0.967
	(0.0838)	(0.158)	(0.157)	(0.228)
RS Black Female	0.499	0.669	1.395	
	(0.244)	(0.375)	(0.684)	
RS Hispanic Female	0.704	1.004	0.747	1.494
	(0.200)	(0.395)	(0.298)	(0.681)
RS Asian Female	0.779		0.605	
	(0.513)		(0.630)	
Constant	0.385***	0.374***	0.138***	0.149***
	(0.0114)	(0.0175)	(0.00559)	(0.00922)
Observations	6,297	2,537	6,297	2,517
se in parentheses				
*** p<0.01, ** p<0.05, * p<0.1				

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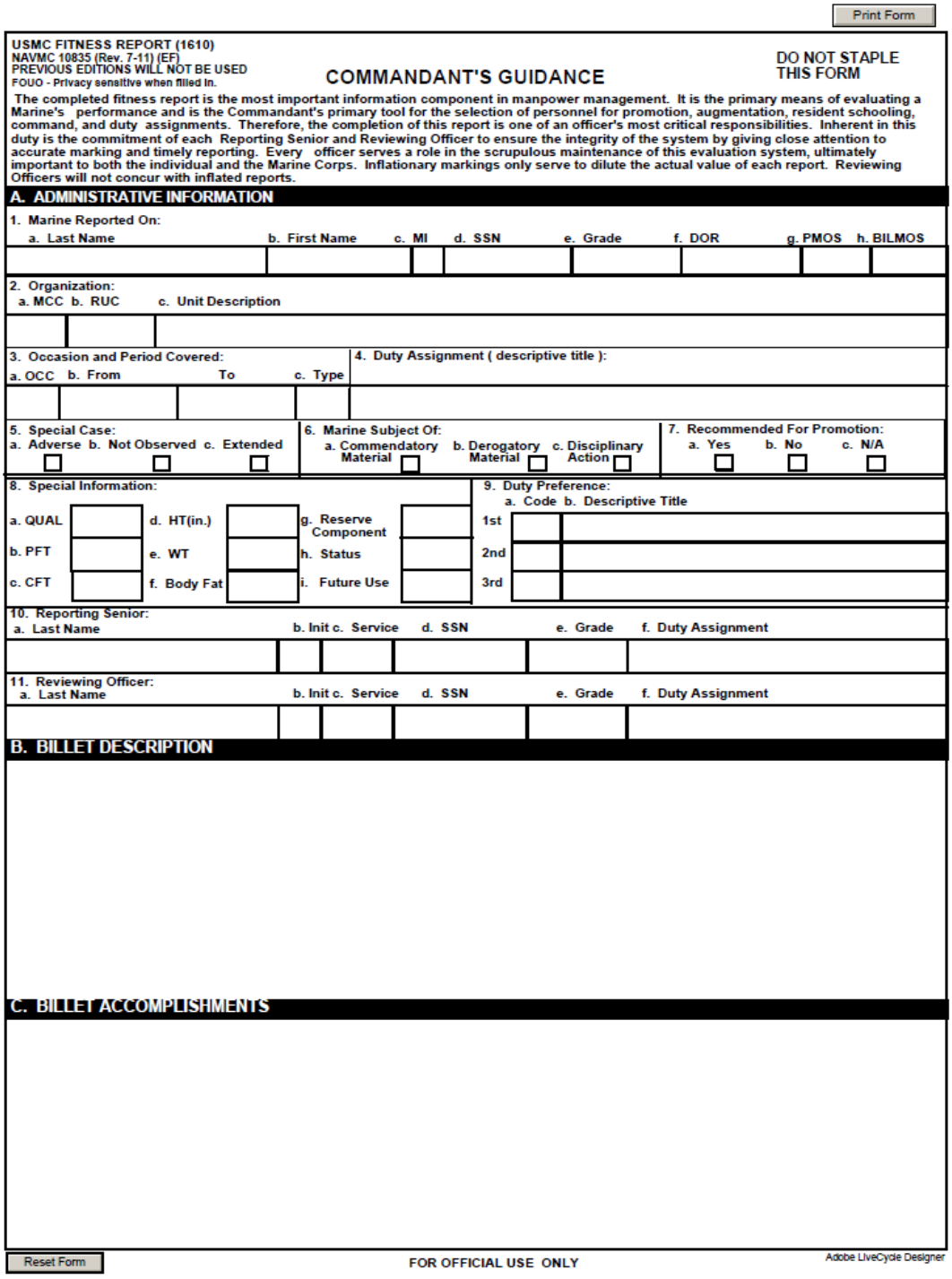
APPENDIX C. MARINE CORPS FITREP



Print Form

USMC FITNESS REPORT (1610)
NAVMC 10835 (Rev. 7-11) (EF)
PREVIOUS EDITIONS WILL NOT BE USED
FOUO - Privacy sensitive when filled in.

COMMANDANT'S GUIDANCE

DO NOT STAPLE THIS FORM

The completed fitness report is the most important information component in manpower management. It is the primary means of evaluating a Marine's performance and is the Commandant's primary tool for the selection of personnel for promotion, augmentation, resident schooling, command, and duty assignments. Therefore, the completion of this report is one of an officer's most critical responsibilities. Inherent in this duty is the commitment of each Reporting Senior and Reviewing Officer to ensure the integrity of the system by giving close attention to accurate marking and timely reporting. Every officer serves a role in the scrupulous maintenance of this evaluation system, ultimately important to both the individual and the Marine Corps. Inflationary markings only serve to dilute the actual value of each report. Reviewing Officers will not concur with inflated reports.

A. ADMINISTRATIVE INFORMATION

1. Marine Reported On:
a. Last Name | b. First Name | c. MI | d. SSN | e. Grade | f. DOR | g. PMOS | h. BILMOS

2. Organization:
a. MCC | b. RUC | c. Unit Description

3. Occasion and Period Covered:
a. OCC | b. From | To | c. Type

4. Duty Assignment (descriptive title):

5. Special Case:
a. Adverse ☐ b. Not Observed ☐ c. Extended ☐

6. Marine Subject Of:
a. Commendatory Material ☐ b. Derogatory Material ☐ c. Disciplinary Action ☐

7. Recommended For Promotion:
a. Yes ☐ b. No ☐ c. N/A ☐

8. Special Information:
a. QUAL | d. HT(in.) | g. Reserve Component
b. PFT | e. WT | h. Status
c. CFT | f. Body Fat | i. Future Use

9. Duty Preference:
a. Code | b. Descriptive Title
1st
2nd
3rd

10. Reporting Senior:
a. Last Name | b. Init | c. Service | d. SSN | e. Grade | f. Duty Assignment

11. Reviewing Officer:
a. Last Name | b. Init | c. Service | d. SSN | e. Grade | f. Duty Assignment

B. BILLET DESCRIPTION

C. BILLET ACCOMPLISHMENTS

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Adobe LiveCycle Designer

1. Marine Reported On: a. Last Name	b. First Name	c. MI	d. SSN	2. Occasion and Period Covered: a. OCC	b. From	To

D. MISSION ACCOMPLISHMENT

1. PERFORMANCE. Results achieved during the reporting period. How well those duties inherent to a Marine's billet, plus all additional duties, formally and informally assigned, were carried out. Reflects a Marine's aptitude, competence, and commitment to the unit's success above personal reward. Indicators are time and resource management, task prioritization, and tenacity to achieve positive ends consistently.

ADV				N/O
	Meets requirements of billet and additional duties. Aptitude, commitment, and competence meet expectations. Results maintain status quo.	Consistently produces quality results while measurably improving unit performance. Habitually makes effective use of time and resources; improves billet procedures and products. Positive impact extends beyond billet expectations.	Results far surpass expectations. Recognizes and exploits new resources; creates opportunities. Emulated; sought after as an expert with influence beyond unit. Impact significant; innovative approaches to problems produce significant gains in quality and efficiency.	

A	B	C	D	E	F	G	H
☐	☐	☐	☐	☐	☐	☐	☐

2. PROFICIENCY. Demonstrates technical knowledge and practical skill in the execution of the Marine's overall duties. Combines training, education and experience. Translates skills into actions which contribute to accomplishing tasks and missions. Imparts knowledge to others. Grade dependent.

ADV				N/O
	Competent. Possesses the requisite range of skills and knowledge commensurate with grade and experience. Understands and articulates basic functions related to mission accomplishment.	Demonstrates mastery of all required skills. Expertise, education and experience consistently enhance mission accomplishment. Innovative troubleshooter and problem solver. Effectively imparts skills to subordinates.	True expert in field. Knowledge and skills impact far beyond those of peers. Translates broad-based education and experience into forward thinking, innovative actions. Makes immeasurable impact on mission accomplishment. Peerless teacher, selflessly imparts expertise to subordinates, peers, and seniors.	

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JUSTIFICATION:

E. INDIVIDUAL CHARACTER

1. COURAGE. Moral or physical strength to overcome danger, fear, difficulty or anxiety. Personal acceptance of responsibility and accountability, placing conscience over competing interests regardless of consequences. Conscious, overriding decision to risk bodily harm or death to accomplish the mission or save others. The will to persevere despite uncertainty.

ADV				N/O
	Demonstrates inner strength and acceptance of responsibility commensurate with scope of duties and experience. Willing to face moral or physical challenges in pursuit of mission accomplishment.	Guided by conscience in all actions. Proven ability to overcome danger, fear, difficulty or anxiety. Exhibits bravery in the face of adversity and uncertainty. Not deterred by morally difficult situations or hazardous responsibilities.	Uncommon bravery and capacity to overcome obstacles and inspire others in the face of moral dilemma or life-threatening danger. Demonstrated under the most adverse conditions. Selfless. Always places conscience over competing interests regardless of physical or personal consequences.	

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2. EFFECTIVENESS UNDER STRESS. Thinking, functioning and leading effectively under conditions of physical and/or mental pressure. Maintaining composure appropriate for the situation, while displaying steady purpose of action, enabling one to inspire others while continuing to lead under adverse conditions. Physical and emotional strength, resilience and endurance are elements.

ADV				N/O
	Exhibits discipline and stability under pressure. Judgment and effective problem-solving skills are evident.	Consistently demonstrates maturity, mental agility and willpower during periods of adversity. Provides order to chaos through the application of intuition, problem-solving skills, and leadership. Composure reassures others.	Demonstrates seldom-matched presence of mind under the most demanding circumstances. Stabilizes any situation through the resolute and timely application of direction, focus and personal presence.	

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3. INITIATIVE. Action in the absence of specific direction. Seeing what needs to be done and acting without prompting. The instinct to begin a task and follow through energetically on one's own accord. Being creative, proactive and decisive. Transforming opportunity into action.

ADV				N/O
	Demonstrates willingness to take action in the absence of specific direction. Acts commensurate with grade, training and experience.	Self-motivated and action-oriented. Foresight and energy consistently transform opportunity into action. Develops and pursues creative, innovative solutions. Acts without prompting. Self-starter.	Highly motivated and proactive. Displays exceptional awareness of surroundings and environment. Uncanny ability to anticipate mission requirements and quickly formulate original, far-reaching solutions. Always takes decisive, effective action.	

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JUSTIFICATION:

Reset Form

1. Marine Reported On: a. Last Name	b. First Name	c. MI	d. SSN	2. Occasion and Period Covered: a. OCC	b. From	To

F. LEADERSHIP

1. LEADING SUBORDINATES. The inseparable relationship between leader and led. The application of leadership principles to provide direction and motivate subordinates. Using authority, persuasion and personality to influence subordinates to accomplish assigned tasks. Sustaining motivation and morale while maximizing subordinates' performance.

ADV					N/O
	Engaged; provides instructions and directs execution. Seeks to accomplish mission in ways that sustain motivation and morale. Actions contribute to unit effectiveness.		Achieves a highly effective balance between direction and delegation. Effectively tasks subordinates and clearly delineates standards expected. Enhances performance through constructive supervision. Fosters motivation and enhances morale. Builds and sustains teams that successfully meet mission requirements. Encourages initiative and candor among subordinates.		Promotes creativity and energy among subordinates by striking the ideal balance of direction and delegation. Achieves highest levels of performance from subordinates by encouraging individual initiative. Engenders willing subordination, loyalty, and trust that allow subordinates to overcome their perceived limitations. Personal leadership fosters highest levels of motivation and morale, ensuring mission accomplishment even in the most difficult circumstances.	

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2. DEVELOPING SUBORDINATES. Commitment to train, educate, and challenge all Marines regardless of race, religion, ethnic background, or gender. Mentorship. Cultivating professional and personal development of subordinates. Developing team players and esprit de corps. Ability to combine teaching and coaching. Creating an atmosphere tolerant of mistakes in the course of learning.

ADV					N/O
	Maintains an environment that allows personal and professional development. Ensures subordinates participate in all mandated development programs.		Develops and institutes innovative programs, to include PME, that emphasize personal and professional development of subordinates. Challenges subordinates to exceed their perceived potential thereby enhancing unit morale and effectiveness. Creates an environment where all Marines are confident to learn through trial and error. As a mentor, prepares subordinates for increased responsibilities and duties.		Widely recognized and emulated as a teacher, coach and leader. Any Marine would desire to serve with this Marine because they know they will grow personally and professionally. Subordinate and unit performance far surpassed expected results due to MRO's mentorship and team building talents. Attitude toward subordinate development is infectious, extending beyond the unit.	

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3. SETTING THE EXAMPLE. The most visible facet of leadership: how well a Marine serves as a role model for all others. Personal action demonstrates the highest standards of conduct, ethical behavior, fitness, and appearance. Bearing, demeanor, and self-discipline are elements.

ADV					N/O
	Maintains Marine Corps standards for appearance, weight, and uniform wear. Sustains required level of physical fitness. Adheres to the tenets of the Marine Corps core values.		Personal conduct on and off duty reflects highest Marine Corps standards of integrity, bearing and appearance. Character is exceptional. Actively seeks self-improvement in wide-ranging areas. Dedication to duty and professional example encourage others' self-improvement efforts.		Model Marine, frequently emulated. Exemplary conduct, behavior, and actions are tone-setting. An inspiration to subordinates, peers, and seniors. Remarkable dedication to improving self and others.	

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4. ENSURING WELL-BEING OF SUBORDINATES. Genuine interest in the well-being of Marines. Efforts enhance subordinates' ability to concentrate/focus on unit mission accomplishment. Concern for family readiness is inherent. The importance placed on welfare of subordinates is based on the belief that Marines take care of their own.

ADV					N/O
	Deals confidently with issues pertinent to subordinate welfare and recognizes suitable courses of action that support subordinates' well-being. Applies available resources, allowing subordinates to effectively concentrate on the mission.		Instills and/or reinforces a sense of responsibility among junior Marines for themselves and their subordinates. Actively fosters the development of and uses support systems for subordinates which improve their ability to contribute to unit mission accomplishment. Efforts to enhance subordinate welfare improve the unit's ability to accomplish its mission.		Noticeably enhances subordinates well-being, resulting in a measurable increase in unit effectiveness. Maximizes unit and base resources to provide subordinates with the best support available. Proactive approach serves to energize unit members to "take care of their own," thereby correcting potential problems before they can hinder subordinates' effectiveness. Widely recognized for techniques and policies that produce results and build morale. Builds strong family atmosphere. Puts motto *Mission first, Marines always* , into action.	

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5. COMMUNICATION SKILLS. The efficient transmission and receipt of thoughts and ideas that enable and enhance leadership. Equal importance given to listening, speaking, writing, and critical reading skills. Interactive, allowing one to perceive problems and situations, provide concise guidance, and express complex ideas in a form easily understood by everyone. Allows subordinates to ask questions, raise issues and concerns and venture opinions. Contributes to a leader's ability to motivate as well as counsel.

ADV					N/O
	Skilled in receiving and conveying information. Communicates effectively in performance of duties.		Clearly articulates thoughts and ideas, verbally and in writing. Communication in all forms is accurate, intelligent, concise, and timely. Communicates with clarity and verve, ensuring understanding of intent or purpose. Encourages and considers the contributions of others.		Highly developed facility in verbal communication. Adept in composing written documents of the highest quality. Combines presence and verbal skills which engender confidence and achieve understanding irrespective of the setting, situation, or size of the group addressed. Displays an intuitive sense of when and how to listen.	

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JUSTIFICATION:

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1. Marine Reported On: a. Last Name	b. First Name	c. MI	d. SSN	2. Occasion and Period Covered: a. OCC	b. From	To

G. INTELLECT AND WISDOM

1.PROFESSIONAL MILITARY EDUCATION (PME). Commitment to intellectual growth in ways beneficial to the Marine Corps. Increases the breadth and depth of warfighting and leadership aptitude. Resources include resident schools; professional qualifications and certification processes; nonresident and other extension courses; civilian educational institution coursework; a personal reading program that includes (but is not limited to) selections from the Commandant's Reading List; participation in discussion groups and military societies; and involvement in learning through new technologies.

ADV							N/O
	Maintains currency in required military skills and related developments. Has completed or is enrolled in appropriate level of PME for grade and level of experience. Recognizes and understands new and creative approaches to service issues. Remains abreast of contemporary concepts and issues.		PME outlook extends beyond MOS and required education. Develops and follows a comprehensive personal program which includes broadened professional reading and/or academic course work; advances new concepts and ideas.		Dedicated to life-long learning. As a result of active and continuous efforts, widely recognized as an intellectual leader in professionally related topics. Makes time for study and takes advantage of all resources and programs. Introduces new and creative approaches to services issues. Engages in a broad spectrum of forums and dialogues.		

A	B	C	D	E	F	G	H
☐	☐	☐	☐	☐	☐	☐	☐

2. DECISION MAKING ABILITY. Viable and timely problem solution. Contributing elements are judgment and decisiveness. Decisions reflect the balance between an optimal solution and a satisfactory, workable solution that generates tempo. Decisions are made within the context of the commander's established intent and the goal of mission accomplishment. Anticipation, mental agility, intuition, and success are inherent.

ADV							N/O
	Makes sound decisions leading to mission accomplishment. Actively collects and evaluates information and weighs alternatives to achieve timely results. Confidently approaches problems; accepts responsibility for outcomes.		Demonstrates mental agility; effectively prioritizes and solves multiple complex problems. Analytical abilities enhanced by experience, education, and intuition. Anticipates problems and implements viable, long-term solutions. Steadfast, willing to make difficult decisions.		Widely recognized and sought after to resolve the most critical, complex problems. Seldom matched analytical and intuitive abilities; accurately foresees unexpected problems and arrives at well-timed decisions despite fog and friction. Completely confident approach to all problems. Masterfully strikes a balance between the desire for perfect knowledge and greater tempo.		

A	B	C	D	E	F	G	H
☐	☐	☐	☐	☐	☐	☐	☐

3. JUDGMENT. The discretionary aspect of decision making. Draws on core values, knowledge, and personal experience to make wise choices. Comprehends the consequences of contemplated courses of action.

ADV							N/O
	Majority of judgments are measured, circumspect, relevant and correct.		Decisions are consistent and uniformly correct, tempered by consideration of their consequences. Able to identify, isolate and assess relevant factors in the decision making process. Opinions sought by others. Subordinates personal interest in favor of impartiality.		Decisions reflect exceptional insight and wisdom beyond this Marine's experience. Counsel sought by all; often an arbiter. Consistent, superior judgment inspires the confidence of seniors.		

A	B	C	D	E	F	G	H
☐	☐	☐	☐	☐	☐	☐	☐

JUSTIFICATION:

H. FULFILLMENT OF EVALUATION RESPONSIBILITIES

1. EVALUATIONS. The extent to which this officer serving as a reporting official conducted, or required others to conduct, accurate, uninflated, and timely evaluations.

ADV							N/O
	Occasionally submitted untimely or administratively incorrect evaluations. As RS, submitted one or more reports that contained inflated markings. As RO, concurred with one or more reports from subordinates that were returned by HQMC for inflated marking.		Prepared uninflated evaluations which were consistently submitted on time. Evaluations accurately described performance and character. Evaluations contained no inflated markings. No reports returned by RO or HQMC for inflated marking. No subordinates' reports returned by HQMC for inflated marking. Few, if any, reports were returned by RO or HQMC for administrative errors. Section Cs were void of superlatives. Justifications were specific, verifiable, substantive, and where possible, quantifiable and supported the markings given.		No reports submitted late. No reports returned by either RO or HQMC for administrative correction or inflated markings. No subordinates' reports returned by HQMC for administrative correction or inflated markings. Returned procedurally or administratively incorrect reports to subordinates for correction. As RO nonconcurred with all inflated reports.		

A	B	C	D	E	F	G	H
☐	☐	☐	☐	☐	☐	☐	☐

JUSTIFICATION:

Reset Form

1. Marine Reported On: a. Last Name	b. First Name	c. MI	d. SSN	2. Occasion and Period Covered: a. OCC	b. From	To

I. DIRECTED AND ADDITIONAL COMMENTS

J. CERTIFICATION

1. I CERTIFY that to the best of my knowledge and belief all entries made hereon are true and without prejudice or partiality and that I have provided a signed copy of this report to the Marine Reported on.

(Signature of Reporting Senior) (Date in YYYYMMDD format)

2. I ACKNOWLEDGE the adverse nature of this report and

☐ I have no statement to make

☐ I have attached a statement

(Signature of Marine Reported On) (Date in YYYYMMDD format)

K. REVIEWING OFFICER COMMENTS

1. OBSERVATION: ☐ Sufficient ☐ Insufficient

2. EVALUATION: ☐ Concur ☐ Do Not Concur

3. COMPARATIVE ASSESSMENT: Provide a comparative assessment of potential by placing an "X" in the appropriate box. In marking the comparison, consider all Marines of this grade whose professional abilities are known to you personally.

DESCRIPTION	COMPARATIVE ASSESSMENT
THE EMINENTLY QUALIFIED MARINE	☐
ONE OF THE FEW EXCEPTIONALLY QUALIFIED MARINES	☐
ONE OF THE MANY HIGHLY QUALIFIED PROFESSIONALS WHO FORM THE MAJORITY OF THIS GRADE	☐
A QUALIFIED MARINE	☐
UNSATISFACTORY	☐

4. REVIEWING OFFICER COMMENTS: Amplify your comparative assessment mark; evaluate potential for continued professional development to include: promotion, command, assignment, resident PME, and retention; and put Reporting Senior marks and comments in perspective.

5. I CERTIFY that to the best of my knowledge and belief all entries made hereon are true and without prejudice or partiality.

(Signature of Reviewing Officer) (Date in YYYYMMDD format)

6. I ACKNOWLEDGE the adverse nature of this report and

☐ I have no statement to make

☐ I have attached a statement

(Signature of Marine Reported On) (Date in YYYYMMDD format)

L. ADDENDUM PAGE

ADDENDUM PAGE ATTACHED: ☐ YES

Reset Form

USMC FITNESS REPORT
NAVMC 11297 (Rev. 7-11) (EF)
FOUO - Privacy sensitive when filled in.

ADDENDUM PAGE

DO NOT STAPLE THIS FORM

A. PURPOSE

1. Marine Reported On: a. Last Name	b. First Name	c. M.I	d. SSN	e. Grade	2. Occasion and Period Covered: a. OCC	b. From	To

3. Purpose:

a. Continuation of Comments Justification	Section I RO	b. Accelerated Promotion Justification	c. Adverse Report MRO Statement	3rd Officer Sighter	d. Admin Review	e. Supplemental Material	f. HQMC Use
☐	☐ ☐	☐	☐	☐	☐	☐	☐

B. TEXT

C. SUBMITTED BY

1. a. Last Name	b. First Name	c. MI	2. SSN	3. Service	4. Grade

Signature

(Date in YYYYMMDD format)

D. GENERAL/SENIOR OFFICER ADVERSE REPORT SIGHTING

1. a. Last Name	b. First Name	c. MI	2. SSN	3. Service	4. Grade

5. Title

Signature

(Date in YYYYMMDD format)

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PAGE ☐ OF ☐

Reset Form

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