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PREDICTIVE VARIABLES AND CAREER PATHS FOR SELECTION TO LIEUTENANT COLONEL COMMAND WITHIN THE MARINE CORPS

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THESIS

PREDICTIVE VARIABLES AND CAREER PATHS FOR SELECTION TO LIEUTENANT COLONEL COMMAND WITHIN THE MARINE CORPS

by

Brian M. Anderson

September 2022

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In this thesis, I study the predictive variables and career paths associated with selection to lieutenant colonel command within the Marine Corps. Previous research analyzed the lieutenant colonel command screening board (CSB), but none have focused on an officer's career path and its effect on lieutenant colonel command selection. First, I determine the variables associated for selection to lieutenant colonel in three different populations contained within the data. I then analyze which career paths for the infantry, artillery, tank, and assault amphibious vehicle officer military occupational specialties (MOS) are predictive for selection to lieutenant colonel command. I applied logit multivariate models to CSB data from FY 2015 and FY 2017–2022 to determine these variables and career paths. My findings suggest command selection is associated with physical fitness, Fitness Report evaluations, and resident major professional military education. Regarding predictive career paths, captains who fill a b-billet associated with their primary MOS have an increased probability of selection for lieutenant colonel command. Individual b-billets positively correlated with command selection include Tactical Training Exercise Control Group as a captain, Expeditionary Warfare School instructor as a major, and a Recruiting Station Commanding Officer. Additionally, possessing the additional MOSs of Operational Planner is positively correlated with lieutenant colonel command selection.

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PREDICTIVE VARIABLES AND CAREER PATHS FOR SELECTION TO LIEUTENANT COLONEL COMMAND WITHIN THE MARINE CORPS

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LIST OF ACRONYMS AND ABBREVIATIONS

AAV	Assault Amphibious Vehicle
AGPA	Academic Grade Point Average
AILS	Advanced Intermediate Level School
AMOS	Additional Military Occupational Specialty
ANGLICO	Air Naval Gunfire Liaison Company
BSP	Blended Seminar Programs
CCC	Captains Career Courses
CCLEB	Commandant's Career Level Education Board
CFT	Combat Fitness Test
CLS	Career Level School
CMC	Commandant of the Marine Corps
CPG	Commandant's Planning Guidance
CPIB	Commandant's Professional Intermediate-Level Education Board
CSB	Command Screening Board
CSC	Command and Staff College
CSP	Command Screening Process
DEP	Distance Education Program
EWS	Expeditionary Warfare School
FITREP	Fitness Report
FY	fiscal year
HQMC	Headquarters Marine Corps
I-I	Inspector-Instructor
ILS	Intermediate Level School
MCO	Marine Corps Order
MEU	Marine Expeditionary Unit
MGPA	Military Grade Point Average
MMOA	Manpower Management Officer Assignments
MMRP	Manpower Management Records and Performance
MOS	Military Occupational Specialty
MSM	Meritorious Service Medal

NPS	Naval Postgraduate School
OMPF	Official Military Personnel File
PFT	Physical Fitness Test
PME	Professional Military Education
PMOS	Primary Military Occupational Specialty
RBR	remove by request
RO	Reviewing Officer
RS CO	Recruiting Station Commanding Officer
RS	Reporting Senior
SOI	School of Infantry
TBS	The Basic School
TFDW	Total Force Data Warehouse
TTECG	Tactical Training Exercise Control Group

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I. INTRODUCTION

> There is required for the composition of a great commander not only massive common sense and reasoning power, not only imagination, but also an element of legerdemain, an original and sinister touch, which leaves the enemy puzzled as well as beaten. It is because military leaders are credited with gifts of this order which enable them to ensure victory and save slaughter that their profession is held in such high honor.
>
> —Winston Churchill (2005, p. 293).

This study provides a quantitative analysis of the variables and career paths in selection for lieutenant colonel command billets within the Marine Corps. I use multivariate regressions logit models to determine the correlation of the variables on the outcome of selection for lieutenant colonel command. This study aims in identifying these variables for all military occupational specialties (MOS). Additionally, I analyze career paths for infantry (0302 MOS), artillery (0802 MOS), tank (1802 MOS), and amphibious assault vehicle (AAV) (1803 MOS) officers. Career paths include captain and major B-billets, resident professional military education (PME) courses, and obtaining the 0505 Additional MOS (AMOS) of Operational Planner to determine their correlation in selection for lieutenant colonel command. The identification of these variables and career paths could assist the command screening boards in their decisions by highlighting the variables historically relevant in selecting lieutenant colonel commanders. Additionally, identification of predictive B-billets could assist Marines with lieutenant colonel command aspirations, as they can actively seek out these billets to increase their probability of selection for lieutenant colonel command.

A. BACKGROUND

War by its very nature is complex, unpredictable, violent, and dynamic. The future operating environment will enhance and magnify these characteristics inherent in war and will do so at an unprecedented pace (Headquarters Marine Corps [HQMC], 2019a). Currently, the Marine Corps is in a period of transition to meet these changes. In 2019, the Commandant of the Marine Corps (CMC), General Berger, released his Commandant's

Planning Guidance (CPG) where he listed "Command and Leadership" as one of his five priorities. General Berger in his CPG states, "As Commandant, I am responsible for the selection of the best and fully qualified commanders. Those selected for command have earned our special trust and confidence and are accountable for all decisions and actions" (HQMC, 2019a). Institutionally, the Marine Corps has placed a high premium on the selecting its commanders due to high level of responsibility and the importance of selecting qualified men and women to command will become increasing important to win battles in the future operating environment.

The Marine Corps is a commander centric military institution and commanders are essential to the Marine Corps' approach to war. From its cornerstone doctrinal publication *Warfighting* to command screening boards, the Marine Corps emphasizes the unique role and responsibilities of its commanders. In MCDP 1, *Warfighting,* the concept of the commander is not a focal point, but its importance is just assumed and is an essential aspect of the Marine Corps' preparation and engagement in combat (HQMC, 2018a). Commanders exist at almost every level of organization in both operational and non-operational units from a platoon up to a Marine Expeditionary Force. Not all levels of command are equal in responsibility or importance. This is evident in processes and requirements in selection for these command billets.

My research focuses exclusively on the lieutenant colonel command billet. The lieutenant colonel command billet is especially important due to its influence, authorities, and exerted influence at the tactical and operational levels of war. Due to the importance and influence of this billet, the Marine Corps convenes an annual board to select lieutenant colonel commanders "to ensure Marines receive the best possible leadership and to provide eligible officers with a fair and equitable opportunity to command" (HQMC, 2017a). In the Marine Corps, lieutenant colonel command billets are the first board-selected commands, save majors for the Recruiting Station Commanding Officers (RS CO).

B. RESEARCH QUESTIONS

- What variables predict selection for lieutenant colonel command?

- For the 0302, 0802, 1802, and 1803 MOSs, what career paths predict selection for lieutenant colonel command?

C. SCOPE AND LIMITATIONS

My focus for this thesis is to analyze and determine the predictive variables for selection for lieutenant colonel command as well as the career paths that are predictive for the outcome of selection for lieutenant colonel command. For combat arms MOS career paths, I focus on the effect of obtaining the secondary MOS of Operational Planner, the attendance of resident PME schools, and captain and major B-billets to determine their relationship in selection for lieutenant colonel command. This study includes data from Total Force Data Warehouse (TFDW), Manpower Management Officer Assignments-3 (MMOA-3), Manpower Management Records and Performance-30 (MMRP-30), and The Basic School (TBS). The data comprises the results of the lieutenant colonel Command Screening Boards (CSB) from Fiscal Year (FY) 2015 and FY 2017–2022.

My analysis identifies demographics, performance metrics, and career information that predict selection for lieutenant colonel command. My study is quantitative in nature focusing solely on the results of previous CSBs and does not evaluate either the CSB process or the quality of commanders selected by the CSB. Although the Command Screening Process (CSP) applies to both lieutenant colonels and colonels, I solely focus on selection to lieutenant colonel commands.

D. THESIS ORGANIZATION

This thesis has six chapters. Chapter II is the background and provides the necessary information regarding CSB and the CSP as well as explanation of career paths and B-billets. Chapter III is the literature review and provides the historical research related to this topic. Chapter IV describes the data and methodology. Chapter V reports my analysis and the findings of the regression analysis. Chapter VI is the conclusion and recommendations for future study.

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II. BACKGROUND

A. LIEUTENANT COLONEL COMMAND WITHIN THE MARINE CORPS

Within the Marine Corps, the lieutenant colonel command billet, save one exception, is the first command within an officer's career that is board selected and vested with Title X responsibilities.[1] Due to the task organization of the Marine Corps, most Marines reside and operate under the direct authority of a lieutenant colonel commander. Battalions are the base units for deployments and large-scale training exercises as well as the unit tracked by Head Quarters Marine Corps (HQMC) regarding readiness. For these reasons, Marines identify more with their battalion or squadron than with a higher headquarters such as a regiment, division, or aircraft group. Due to this influence, the lieutenant colonel command billet's importance cannot be understated.

1. Command Screening Program and Command Screening Board

The Marine Corps instituted the CSP in 1992 replacing a system where Commanding Generals selected commanding officers (Marr, 1997). The purpose of the CSP has a threefold purpose according to the CSP Marine Corps Order (MCO): "ensure that Marines receive the best possible leadership and to provide all eligible officers with a fair and equitable opportunity to command. In addition, the program formalizes an objective system that eliminates subjective bias from the process" (HQMC, 2017a). The Marine Corps instituted the CSP in 1992 to provide a more objective and effective means to select the most qualified Marines to fill the critical lieutenant colonel command billets

The CSB is a non-statutory board but is conducted "under the general philosophy as statutory boards" (HQMC, 2017a). Since the CSB is not guided by statute, it operates in accordance with CMC guidance and Marine Corps policies. As Tarsiuk notes, the non-statutory nature of the CSB provides an inherent flexibility as the Marine Corps can change its processes and adapt to institutional needs as it deems necessary (Tarsiuk, 2019).

[1] The Recruiting Station commanding officer billet is board selected and is reserved for the rank of major and, if selected, would occur earlier in an officer's career than lieutenant colonel command.

2. Conduct of the CSB

Members of the CSB are comprised of General Officers and colonels who have had successful command tours with a variety of Primary MOSs (PMOS) and racial and gender diversity to ensure the board is representative of the total force (HQMC, 2017a). The CSB averages 19 board members with 2 General Officers and 17 colonels (Tarsiuk, 2019). The board screens eligible lieutenant colonel and lieutenant colonels (select) to choose the "fully qualified and best qualified to meet the needs of the Marine Corps among those officers whose names were furnished to the board" (HQMC, 2017a). The slating window starts on 1 June and concludes on 31 May of the following year (HQMC, 2017a). The lieutenant colonel CSB selects the number of primaries equivalent to the number of available commands. The board also selects alternates as a contingency if a primary declines command or is unable to assume command. Tarsiuk provides a detailed explanation of the lieutenant colonel CSB actions including board setup, voting processes, and board member actions (Tarsiuk, 2019).

3. Lieutenant Colonel Commands

There are two types of lieutenant colonel commands in the Marine Corps. The first type is known as a "strung" command. These commands are not MOS specific and the board "may string commands to certain MOSs or MOS groupings with lower than average opportunities to command" (HQMC, 2017a). Strung commands provide the board an opportunity to ensure non-PMOS commands have a mixture of MOSs. Of note, the "board has the discretion to deviate from any stringing plan to ensure a fully competitive and qualified officer is slated to a specific command" (HQMC, 2017a). An example of a lieutenant colonel strung command is Recruit Training Battalion at the Marine Corps Recruit Depots. The second type of lieutenant colonel command are the PMOS commands. For PMOS commands, the board will select "officers who currently hold the PMOS required by the command" (HQMC, 2017a). An example of a PMOS command would be an infantry battalion command.

4. Eligibility and Recent Statistics of the Lieutenant Colonel CSB

All lieutenant colonels and lieutenant colonel (selects) are eligible for screening except lieutenant colonels in the above zone for promotion, officers enrolled in an Advanced Intermediate Level School (AILS) program, officers in their first year of an Operational Planner utilization tour, and officers on their first year of a joint tour (MMOA, 2020). Eligible officers have the option of submitting a Remove by Request (RBR) which removes their names for consideration "without prejudice and will be eligible to compete for command in subsequent years" (HQMC, 2017a). Officers submit an RBR for various reasons, but some of the justifications include family considerations, planning to retire, not desiring command, or waiting for other command opportunities (MMOA, 2020). Figure 1 notes the lieutenant colonel CSB data from FY 2017-FY 2022. On average over the five-year period, 902 officers were eligible for screening with a 149 or 17% of officers slated for lieutenant colonel command, while 307 or 34% of officers opted for RBR.

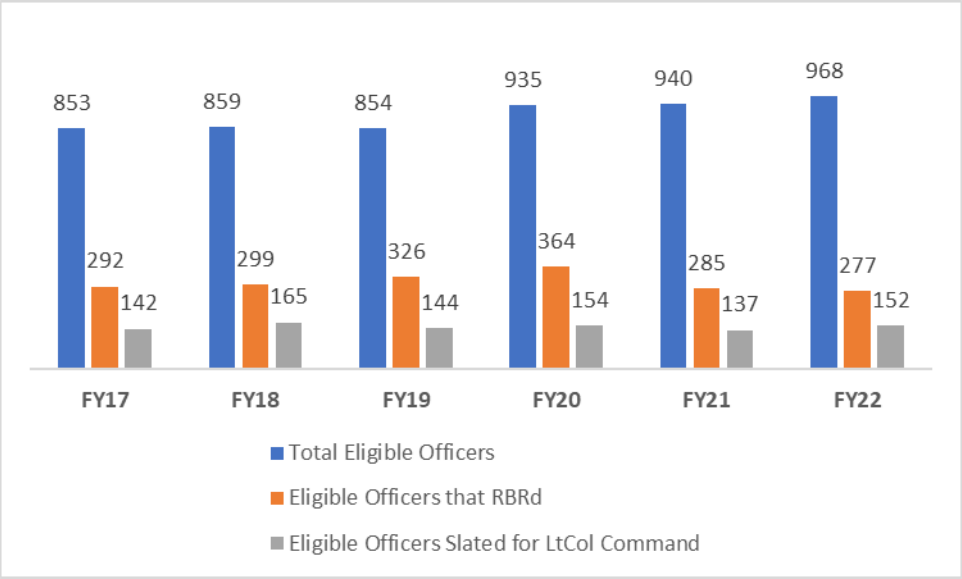

Figure 1. Eligible Officers for Lieutenant Colonel Command FY 2017–22. Adapted from Manpower & Reserve Affairs (n.d.).

B. MARINE OFFICER CAREER PROGRESSION

Career progression refers to a Marine officer's ascension through the ranks with associated billets and PME. Following their commission, Marine officers attend TBS, a six-month course designed to instruct newly commissioned officers on basic infantry tactics and officership. TBS's mission according to its website:

> Train and educate newly commissioned or appointed officers in the high standards of professional knowledge, esprit-de-corps, and leadership to prepare them for duty as company grade officers in the operating forces, with particular emphasis on the duties, responsibilities, and warfighting skills required of a rifle platoon commander. (Training Command, n.d.)

At TBS, officers are evaluated in three categories: leadership, academic, and military skills. Upon completion of TBS, officers attend further training at their PMOS school which varies in duration depending on their MOS school then to their units for their operational tours. Figure 2 provides an example of a ground officer career progression.

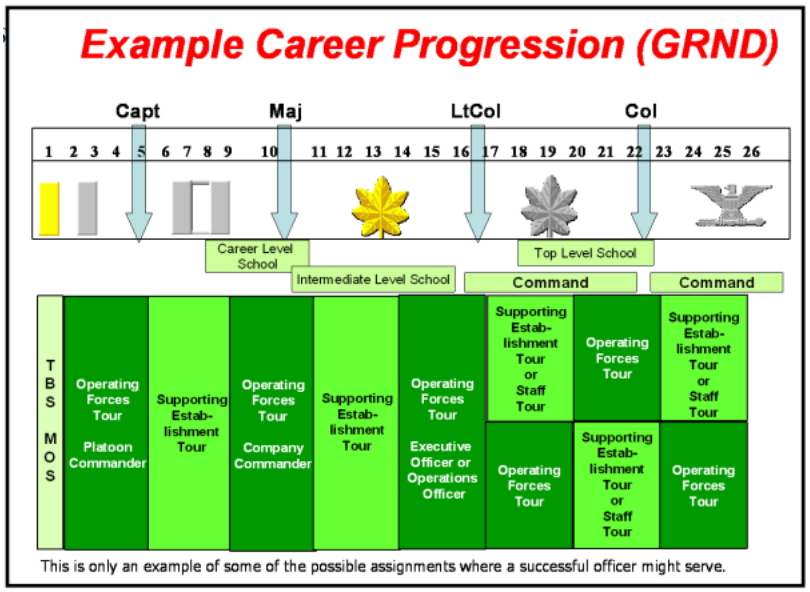

Figure 2. Ground Officer Career Progression Example. Source: 9th Marine Corps District (2008).

Not all career progressions are the same and can differ from officer to officer with notable variation between ground, law, and aviation MOSs. Generally, billets rotate

between operating force tours and supporting establishment tours. In the operating force tours, billet variety is limited and are within an officer's PMOS. Some of these billets are known as "key billets in grade." Though not all operating force tour billets are considered key billets, the goal for an officer is to serve in a key billet during his operational tour respective to his grade and PMOS. Figure 2 provides examples of key billets in grade (dark green) such as platoon commander, company commander, and executive officer or operations officer.

With each ascension in rank following first lieutenant, as TBS counts as PME for second and first lieutenants, an officer is expected to complete PME commensurate with his/her rank. Completion of PME is "indicative of an officer's desire to seek professional growth and may make the officer more competitive for promotion" (HQMC, 2008). The completion of PME signals to the promotion boards that an officer desires to continue to serve and seeks promotion.

1. B-billets

B-billet refers to billets outside of the Marine officer's PMOS or billets outside of a Marine officer's PMOS unit. There are many B-billets in the Marine Corps and are generally categorized into recruiting, training, or staff (Stolzenberg, 2017). Some B-billets are MOS specific such as instructor assignment at an MOS specific school, while other B-billets are open to all unrestricted officers. Figure 2 provides an example of a possible career progression where a Marine, ground officer departs the operating forces for billets within the supporting establishment. These supporting establishment tours are examples of an occasion of a Marine officer filling a B-billet. However, B-billets do not solely exist within the supporting establishment, but also exist in operational units. Air Naval Gunfire Liaison Company (ANGLICO) is an example of a unit where Marine officers fill operational B-billets. Additionally, the term "B-billets" is a misnomer as it does not necessarily refer to a billet, but rather a unit. For example, TBS is a well-known B-billet for captain and majors. TBS, however, is not a billet, but rather a unit tasked with training and educating newly commissioned officers. When an officer is assigned to TBS, he can fill multiple billets during the tour including warfighting instructor, staff platoon

commander, executive officer, or staff officer. When a Marine officer states that TBS was his B-billet, it is understood that the officer filled multiple billets during his supporting establishment tour at TBS.

There are no standard career paths, but there exists a general pattern, particularly for ground officers. B-billets vary between MOSs and rank. However, many high-density B-billets exist in the supporting establishment under HQMC under subordinate commands in training, recruiting, or educating. Others exist supporting Marine Corps reserve forces as Inspector and Instructors (I-I), while other B-billets exist in the operational forces. However, some officers do not execute a B-billet during each grade and some officers execute more than one B-billet within their grade.

2. Professional Military Education

An integral aspect of a Marine Officer's career progression is PME. The MCO on PME states, "PME is designed to equip Marines with the analytical skills necessary to exercise sound military judgment in contemporary operations. The Marine Corps PME program is a progressive learning system designed to educate Marines by-grade throughout their careers" (HQMC, 2008). Completion of officer PME is not a statutory requirement for promotion, but failure to complete PME would adversely affect the probability for promotion. There are two broad categories of PME and various options within the categories. The first category is resident PME. The second category is nonresident PME or officer Distance Education Programs (DEPs).

a. Resident PME

Captains or captain (selects) are slated for resident PME also known as Career Level School (CLS) via the Commandant's Career Level Education Board (CCLEB). The purpose of CCLEB is to "improve education utilization in the Marine Corps" (HQMC, 2021d). Majors or major (selects) are slated for resident PME or Intermediate Level School (ILS) via the Commandant's Professional Intermediate-Level Education Board (CPIB). The purpose of CPIB is the same as CCLEBs which is to "improve education utilization in the Marine Corps" (HQMC, 2021b).

(1) Resident Captain PME

There are two broad assignments for officers selected on CCLEB for CLS. The first is the Marine Corps' Expeditionary Warfare School (EWS) which is a 41-week resident school and open to all MOSs. The second assignment is the Army Captains Career Courses (CCCs). The Army CCCs are MOS specific resident schools ranging in duration. The Army CCCs include the Air Defense CCC, the Engineer CCC, the Field Artillery CCC, the Logistics CCC, the Maneuver CCC, and the Military Police CCC. Figure 3 provides the CCLEB CLS allocation for FY 2018–2022.

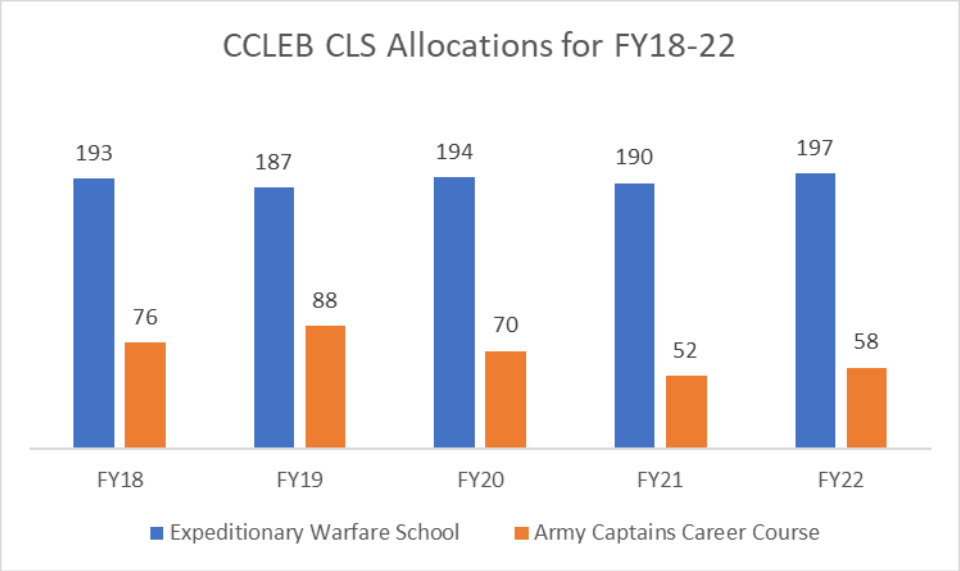

Figure 3. CCLEB Allocations for CLS FY 2018–2022.
Adapted from HQMC (2017b), (2018c), (2020a), (2020d), (2021e).

Over the five years, the CCLEB selected an average of 192 officers for EWS, 69 officers for Army CCCs and a total average of 261 officers for resident CLS.

(2) Resident Major PME

There are three broad assignments for officers selected on CPIB for ILS. The first is the Marine Corps Command and Staff College (CSC) which is a ten-month resident school and open to all MOSs. The second assignment are the Sister Service Intermediate

Level colleges which include the Naval War College, the Army Command and General Staff College and the Air War College. The third assignment are approved Foreign Intermediate Level colleges. Figure 4 provides the CPIB ILS allocation for FY 2018–2022.

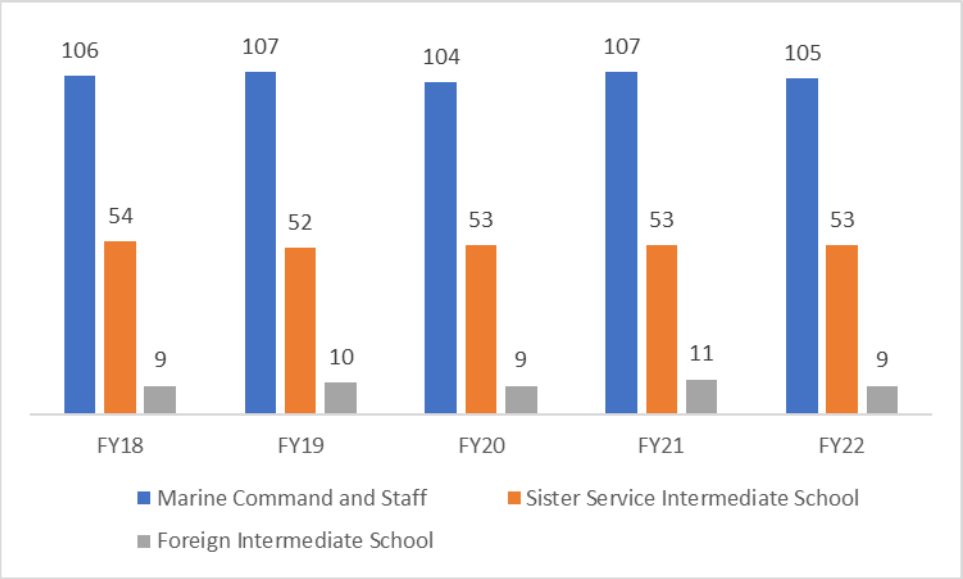

Figure 4. CPIB Allocations for ILS FY 2018–2022.
Adapted from HQMC (2017c), (2018d), (2019c), (2020c), (2021b).

Over the five years, the CPIB selected an average of 106 officers for Marine Corps CSC, 53 officers for Sister Service ILSs. 10 officers for Foreign ILSs and a total average of 168 officers for resident ILS.

b. Nonresident PME

Marine officers obtain nonresident PME through the Distance Education Programs (DEP). The College of Continuing Education designs and delivers the DEP. Most Marines complete their PME via the DEPs as there are limited resident PME availability. In 2014, the Marine Corps introduced the Blended Seminar Programs (BSPs) for EWS and the CSC. The BSPs provide students the opportunity to receive PME through a combination of in-person and online education at or near their duty station (Marine Corps University, n.d.). Officers choosing to attend the BSPs do so via application as there are established quotas on a yearly basis. According to the PME MCO, "Nonresident PME is considered equivalent

for purposes of promotion and assignment as Marine officers can complete either the resident course or the associated DEP….” (HQMC, 2008).

(1) Nonresident Captain PME

Captains have nonresident EWS, albeit in two forms, as their sole option to complete nonresident PME. The first nonresident EWS meets periodically to complete the curriculum in two academic years. The second nonresident EWS is the BSP which consists of three phases. The first and third phases are resident in nature, while the second phase is conducted online. The EWS BSP is designed to be completed in one academic year.

(2) Nonresident Major PME

Like captains, majors have one option to complete nonresident PME, nonresident CSC, but can do so in two forms. The first nonresident CSC meets periodically to complete the curriculum in two academic years. The second nonresident CSC is the BSP consisting of an initial resident period of 5 weeks, followed by a 28-week online period, then concluding with a final 6-week resident portion. The CSC is designed to be completed within one academic year.

c. Advanced intermediate level schools

AILSs are graduate-level PME for select Marines following ILS. The AILSs “produce officers qualified to fill high-impact service and joint planning billets. These programs enhance an officer’s abilities to derive critical insights from large quantities of information, make timely and effective decisions, communicate succinctly verbally, visually, and in writing; and collaborate to design cogent orders and plans” (HQMC, 2021a). The AILSs produce Marines with the secondary 0505 MOS, Operational Planner with a master’s degree in Operational Studies. There are four AILSs throughout the Department of Defense: School of Advanced Warfighting, School of Advanced Military Studies, School of Advanced Air and Space Studies, and Maritime Advanced Warfighting School. Figure 5 provides the number of Marine officers selected to AILS from FY 2018–2022.

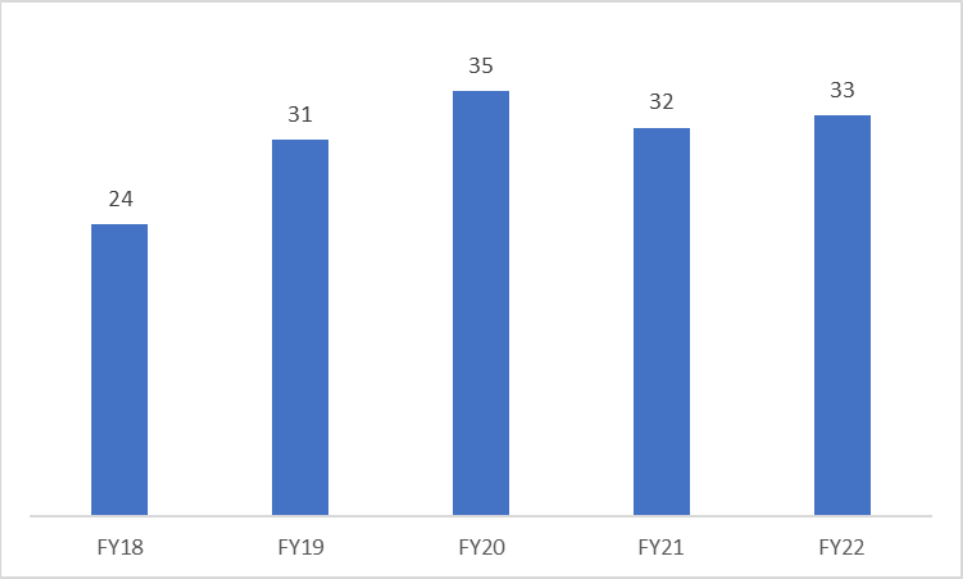

Figure 5. AILS Selections from FY 2018–FY 2022.
Adapted from HQMC (2017d), (2018e), (2019d), (2020b), (2021d).

Over the five-year period, the Marine Corps selected an average of 31 Marine officers to attend AILS to obtain the 0505 AMOS of Operational Planner. Following graduation, AILS graduates are expected to perform a utilization tour to fill the high demand Operational Planner billets. As the School of Advanced Warfighting application MARADMIN notes, "graduates have a strong record of selection for promotion and command based on their well-developed capability to reason critically, solve complex problems, and apply operational art" (HQMC, 2021a). Due to the small number of allocations for AILS school seats, Marines who possess the 0505 AMOS of Operational Planner represent a low density, highly sought-after population.

C. SUMMARY

Chapter II describes the relevant aspects of the lieutenant colonel CSB, CSP, types of lieutenant colonel command, and relevant statistics. For this study, selection as a primary for lieutenant colonel command is the dependent variable in all models. Also discussed is career progression including TBS, B-billets, CLS, ILS, and AILS. relevant statistics. This information provides the necessary background and context for the second research question regarding predictive career paths for lieutenant colonel command selection.

III. LITERATURE REVIEW

There is substantial amount of literature on factors focusing on promotion, performance, and retention of Marine officers, but limited studies directly related to lieutenant colonel command selection in the Marine Corps. Past research answered questions concerning the predictive measures for selection to the ranks of major, lieutenant colonel, and colonel as well as the effects on an officer's career when selected for various programs. This past research is relevant to my study as promotion or selection to the rank to lieutenant colonel is a prerequisite for selection for lieutenant colonel command. Additionally, I use various control variables in my models previously studied to evaluate their relationship to lieutenant colonel command selection. Lastly, I include academic research regarding identifying and promoting potential leaders in the private sector to contrast with military research.

A. PROMOTION FOCUSED RESEARCH

As previously mentioned, selection to the rank of lieutenant colonel is a prerequisite for selection to lieutenant colonel command. Tarsiuk notes, the criteria used to determine lieutenant colonel commanders of "best and fully qualified" are used on almost every promotion and education board within the Marine Corps (Tarsiuk, 2019). There are various Naval Postgraduate School (NPS) theses that studied what the Marine Corps has historically valued regarding promotion through the officer ranks.

Promotion related studies generally agree concerning the variables correlated with promotion. Regarding promotion to major Hoffman (2008) and Conlan (2021) find that physical fitness, Fitness Report (FITREP) evaluations, and personal awards are statistically significant. For promotion to lieutenant colonel Hoffman, Stolzenberg (2017), and Conlan find that physical fitness, FITREP evaluations, and combat deployments are positively correlated with selection to lieutenant colonel. While both Conlan and Stolzenberg find that graduate degrees are predictive for promotion to lieutenant colonel.

There are some divergences within the promotion related studies concerning the correlated variables, but this primarily due to the different variables included in the authors'

models. Hoffman finds resident CLS and resident ILS are positively correlated with promotion to major and lieutenant colonel respectively. Conlan finds that rifle and pistol scores, combat deployments, and adverse FITREP material are statistically significant in predicting promotion to major. Surprisingly, Conlan finds that officers that graduate in the middle third are more likely to get promoted to major than those graduating in the top third of their TBS company while Stolzenberg finds no correlative relationship with TBS performance and lieutenant colonel promotion. Unique to Conlan, he also finds demographic information such as marital status, Asian officers, and number of dependents have a positive effect on promotion to both major and lieutenant colonel.

B. PERFORMANCE FOCUSED STUDIES

Previous NPS studies focus on Marine officer performance early in their careers and its effect on performance or selection on the CCLEB. Hurndon and Wiler (2008) study the performance of officers at TBS as a predictor of performance in the operating forces as measured by an officer's Reporting Senior 's (RS) average cumulative relative evaluations on their FITREP evaluations. Their study consists of FITREP and TBS data on officers commissioned between 1998 and 2005. Due to this timeframe, the FITREP data measures at most, performance up to the rank of captain. The authors find that the three evaluative metrics at TBS of leadership, academic, and military skills are predictive of future success with leadership grades consistently having a strong correlation across all models. The authors use an officer's class ranking for the TBS leadership, academic, and military variables. Additionally, the authors find that the Platoon Leader's Course commissioning source perform the worst compared to other accession sources with prior enlisted officers performing the best. Demographic variables such as marital status, sex, and race are statistically significant with married officers and females performing better than their counterparts, while black officers perform worse than other races.

Rateike (2017) conducts quantitative analysis of officer selection on the FY 2014–2016 CCLEBs. He analyzes cross-sectional data from MMOA, TFDW, MMRP, and TBS consisting of 6,074 observations. Rateike uses a probit multivariate regression model with seven iterations with increasing control variables. Rateike finds overall TBS rank, FITREP

evaluations from both the RS and RO, combat deployments, physical fitness, being a female, and having a current photo within an officers Official Military Personnel Files positively predict selection for CCLEB.

Both studies reflect that performance at TBS is predictive of future success early in an officer's career whether measured by selection by the CCLEB or FITREP evaluations. However, Rateike does not differentiate between the evaluative metrics of TBS and relies solely on class ranking. From these studies, performance measured by either TBS as in Hurndon and Wiler's study or measured by FITREP evaluations for CCLEB selection as in Rateike's study, are strongly correlated with early career success. In my thesis I include multiple variables relevant to these studies to test their predictive value for selection to lieutenant colonel command.

C. COMMAND RELATED STUDIES

Of the relevant command related studies, Marr (1997) provides a comparative analysis of the then newly implemented CSP against previously used methods while Tarsiuk (2019) and Druffel-Rodriguez (2021) are directly related to the predictive variables associated with selection for lieutenant colonel in the Marine Corps. The last relevant command related study is Spain, Lin, and Young's (2020) analysis of West Point cadets and the predictive variables associated with successful careers of U.S. Army officers including selection for battalion command.

Marr (1997) studied the effectiveness of the CSP five years after its implementation by comparing it to the legacy program where Commanding Generals selected battalion commanders. Marr developed seven measures of effectiveness to compare the CSP against the legacy system. He performs statistical analysis on four mutually exclusive groups comparing them against each pre-CSB and post-CSB. Marr finds that the CSP is performing better than the legacy in two of the measures of effectiveness, worse in two, and the remaining three are not statistically significantly different. He concludes that the CSP is accomplishing its purpose and is a better system for selecting commanding officers. This research, though dated, provides historical context for the CSP and is the first to analyze the CSP.

Tarsiuk's (2019) study is the first to focus on the predictive variables associated the selection of lieutenant colonel command in the Marine Corps. Tarsiuk finds RS FITREP evaluations, being the rank of a major at the time of the CSB, number of deployments, physical fitness, awards, possessing an aviation PMOS and being a RS CO are positively associated for selection to lieutenant colonel command. Moreover, she finds assignment to supporting establishment units at the time of the board, non-first-class Physical Fitness Test (PFT) and Combat Fitness Test (CFT) scores, and non-white officers are negatively associated with selection to lieutenant colonel command. Her study reveals that board members generally agree on the metrics for selecting lieutenant colonel commanders but varies by command type. She also finds that board composition is consequential and may impact selection outcomes indicating bias. She recommends various changes to the CSP including that screened officers submit an application to increase the board's ability to assess qualitative attributes such as character.

Druffel-Rodrigez (2021) uses the same data as Tarsiuk's (2019) study, and his models contain most of the same independent variables with the addition of variables related to resident PME program and non-PME programs such as NPS and Air Force Institute of Technology. Druffel-Rodriguez finds that resident ILS is positively correlated with lieutenant colonel command selection. Additionally, Marine officers selected for resident PME, or no graduate program are more likely to get selected for LtCol command than those selected for non-PME graduate education. However, Marine captains selected for non-PME graduate programs are more likely to get selected for command than those selected as majors. He also finds there to be predictive value in graduate programs and performance as measured by the average RS cumulative value of the FITREPs while serving as LtCol commanders.

Spain et al. (2020) study the predictive factors of successful careers of U.S. Army officers among West Point Cadets. The authors used data from the U.S. Army's office of Economic and Manpower Analysis. The authors' study includes 5,505 observations over 13 West Point classes. "Successful" is defined as selection for early promotion to the ranks of major and lieutenant colonel or selection for battalion command. The authors use SAT scores, academic GPA (AGPA), and military GPA (MGPA) as predictive variables. AGPA

is a 4.0 scale that measures the cadet's academic performance over 42 courses. MGPA is comprised of the subjective evaluation of a cadet's performance in leadership billets and of grades in military science courses. 70% of the MGPA comes from billet evaluations and 30% from the courses. Surprisingly, Spain et al. find that higher SAT scores are negatively associated with early promotion and selection for battalion command. Higher AGPA is only predictive of early promotion to major, while a higher MGPA is predictive of early promotion to both major and lieutenant colonel and selection for battalion command. Although this study is about cadets and U.S. Army officers, the findings are analogous and applicable to the Marine Corps as TBS's leadership grade is like the West Point's MGPA.

D. STUDIES ON PROMOTING TALENT AND LEADERSHIP

There is no shortage in studies and research into identifying and promoting talent in the civilian or private sector. The billet of lieutenant colonel command within the Marine Corps does not have a corresponding position or job in the private sector. However, due to the breadth of responsibility, duties, and influence of lieutenant colonel commanders, senior management positions within organizations are likely the most similar and provide an analogous private sector position.

Identifying and promoting talented leaders is a paramount to the success of organizations (Kotlyar, 2018), (Chambers et al., 1998). The crux of the problem is not whether talent or leadership matters, of course it does, but how one identifies and promotes these individuals with these qualities. Moreover, inquiry into what constitutes leadership, is also of interest, as leadership is not a simple trait, but rather an amalgamation of skills and attributes.

Dries and Pepermans (2012) conducts a qualitative and quantitative analysis to identify leadership potential. The authors find that the leadership potential consists of what he calls "four quadrants spanning thirteen factors (Dries & Pepermans, 2012). The four quadrants are analytical skills, learning agility, drive, and emergent leadership. Analytical skills include intelligence, but also the ability to transform knowledge into action. The learning agility quadrant includes willingness to learn, emotional intelligence, and adaptability. Dries and Pepermans find that young leaders cannot be expected to

demonstrate learning agility on par with senior leaders as they lack experience but can "demonstrate the learning agility needed to acquire leadership competencies in the future" (Dries & Pepermans, 2012). The drive quadrant contains the traits of dedication, perseverance, and results orientation. This quadrant of leadership is concerned with those who are willing to put in the necessary time, work, and sacrifices associated with leadership. The emergent leadership quadrant deals with an individual's "orientation, tendency or attraction towards leadership in order to identify a person as high in leadership potential" (Dries & Pepermans, 2012). Lastly, the authors find that these leadership qualities are highly valuable at different levels of leadership.

Igor (2018) conducts a case study based on interviews of 18 managers to analyze practices of companies to identify talent early in an employee's career then develop these employees into effective leaders. He finds that early leadership programs take time and need continuous monitoring and augmentation. There is also a risk where individuals earmarked for leadership are promoted to positions prior to the acquisition of necessary skills. Lastly, organizations that implement programs fast tracking individuals to leadership positions risk ostracizing employees that are not within the program resulting in negative reactions.

E. SUMMARY

This chapter summarizes historical research concerning predictive variables associated with promotion, performance early in an officer's career, and command related studies. The promotion related studies generally find that physical fitness, FITREP evaluations, personal awards, and combat deployments are positively correlated with lieutenant colonel command selection. The performance focused studies find that TBS performance is predictive of company grade performance as well as selection for CCLEB. The command related studies by Tarsiuk (2019), and Druffel-Rodriguez (2021) find that RS evaluations on FITREPs, physical fitness, deployments, and being the rank of major at the time of the CSB are predictive for selection for lieutenant colonel command. Druffel-Rodriguez finds that non-PME programs such as NPS are negatively correlated with command selection while resident ILS is positively correlated. Spain et al. (2020) study of

West Point cadets find AGPA is predictive for early promotion to major and MGPA is predictive of early promotion to both major and lieutenant colonel and selection for battalion command.

The results of these studies serve as a background for variables either directly or indirectly related to my study of lieutenant colonel command selection. Further, Tarsiuk and Druffel-Rodriguez's models provide the base for my models. However, I add additional variables as well as have career path centric models focusing on career progression.

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IV. DATA AND METHODOLOGY

This chapter details the data and their sources used in my models. Both dependent and independent variables are defined with associated descriptive statistics.

A. DATA SOURCES

My research uses data from four sources: (1) MMOA-3, (2) MMRP-30, (3) TFDW; and (4) TBS. The datasets are de-identified by giving a unique identification number and then merged across datasets.

1. MMOA-3

MMOA-3 provided the Marines screened on the FY 2015 and FY 2017–2022 lieutenant colonel CSBs as well as the board's results. This dataset is comprised of 4,225 observations and includes only those officers screened and excluded the officers that submitted an RBR. Within this dataset, there are 2,590 unique observations as the CSB screened the same officer in multiple FYs.

2. MMRP-30

MMRP-30- FITREP provided the dataset on officer performance as measured by FITREPs. This dataset is comprised of 4,225 observations. Variables from this dataset include RS and RO total cumulative averages, PMOS, AMOS including 88XX and Operational Planner AMOSs, rank at the time of the CSB, awards, and civilian education level.

3. TFDW

TFDW provided the demographic, physical fitness, and career progression data. The dataset from TFDW is comprised of 4,225 observations. Variables from this dataset include PFT, CFT, sex, race, military PME, and career progression information such as B-billets and resident PME.

4. TBS

TBS provided the leadership grade data. The dataset from TBS is comprised of 1,763 observations.

B. THE MODEL POPULATIONS

There are three populations I analyze in this study concerning the selection for lieutenant colonel command. The first population includes all MOSs screened on the FY 2015 and FY 2017–2022 lieutenant colonel CSBs. This population contains a total of 4,225 observations with 2,600 unique observations. There are more total than unique observations as officers can be screened multiple times by the CSB across different FYs. The second population is a subset of the first population as it drops all pilot MOSs and the 4402 MOS, Judge Advocate. This population has a total of 2,818 observations with 1,712 unique observations. The third population is also a subset of the first containing only Infantry officers with a PMOS of 0302, Artillery officers with a PMOS of 0802, Tank officers with a PMOS of 1802, and Assault Amphibious Vehicle (AAV) officers with a PMOS of 1803. This population as a total of 949 observations with 589 unique observations.

C. VARIABLES

The models in my statistical analysis have one dependent variable which is selection as a primary for lieutenant colonel command. The independent variables are grouped into 13 categories. Not all independent variable categories are used in every model. Specifically, the captain and major B-billet categories only apply to the career progression models for the third population. Table 1 provides information on each variable used in this study.

Table 1. Variable Descriptions

Variable Name	Variable Type	Range
Dependent Variables		
Selected for Command Non-select for Command	Binary	= 1 if selected, 0 otherwise = 1 if non-select, 0 otherwise
Independent Variables		
FY		
FY15 FY 17 FY 18 FY 19 FY 20 FY 21 FY 22	Binary	= 1 if on FY 15, 0 otherwise = 1 if on FY 17, 0 otherwise = 1 if on FY 18, 0 otherwise = 1 if on FY 19, 0 otherwise = 1 if on FY 20, 0 otherwise = 1 if on FY 21, 0 otherwise = 1 if on FY 22, 0 otherwise
Rank		
Major LtCol	Binary	= 1 if a Major, 0 otherwise = 1 if a LtCol, 0 otherwise
Sex		
Male Female	Binary	= 1 if Male, 0 otherwise = 1 if Female, 0 otherwise
Race		
White Non-white	Binary	= 1 if White, 0 otherwise = 1 if non-white, 0 otherwise
Primary MOS		
Combat Service Support Combat Arms Pilot/NFO	Binary	= 1 if CSS, 0 otherwise = 1 if CA, 0 otherwise = 1 if Pilot/NFO, 0 otherwise
Alternate MOS		
AMOS of 88XX AMOS of 0505	Binary	= 1 if 88XX, 0 otherwise = 1 if 0505, 0 otherwise
Training		
High PFT >=285 High PFT >=285	Binary	= 1 if >= 285 PFT, 0 otherwise = 1 if >= 285 CFT, 0 otherwise
Education		
Captain Resident PME Captain Non-Resident PME Major Resident PME Major Non-Resident PME Civilian Graduate Degree	Binary	= 1 if selected, 0 otherwise = 1 if non-res, 0 otherwise = 1 if selected, 0 otherwise = 1 if non-res, 0 otherwise = 1 if at least a grad degree, 0 otherwise
Performance		
TBS Leadership Grade RS Total Cumulative Upper RS Total Cumulative Middle RS Total Cumulative Lower RO Total Cumulative Above RO Total Cumulative With RO Total Cumulative Below Combat FITREPS Adverse FITREPS	Continuous	75- 96.99 0 - 100 0 - 76.5 0 - 72 0.9 – 68.6 14.8 – 52.6 8.7 – 81.5 0 - 14 0 – 2

Variable Name	Variable Type	Range
Awards		
Valor Meritorious Service Medal Bronze Star	Continuous	0 - 4 0 - 6 0 - 3
Captain B-Billets		
TBS Ft. Sill ANGLICO M&RA Marine Barracks MARSOC Armor/Amphib Instructor MCESG Security Forces Division or MEF MEU MLG OCS Recon Recruit Training Recruiting SOI TTECG MCSC Weapons Training Bn I-I HQMC Other Instructor Other Other None	Binary	= 1 if served at stated B-Billet, 0 otherwise
Binned Captain B-Billets		
B-billet in PMOS Non PMOS B-billet	Binary	= 1 if B-billet was in PMOS, 0 otherwise = 1 if B-billet is not PMOS, 0 otherwise

Variable Name	Variable Type	Range
Major B-Billets		
0505 Utilization Tour ANGLICO CD&I EWTG Ft. Sill I-I Joint Billet M&RA MAGFT Staff Training MARFOR MARSOC MCFPEP Security Forces MCTOG EWS Instructor MCWL MEU MOI PP&O RS CO SOI MCSC TBS TTECG Instructor Other HQMC Other Other None	Binary	= 1 if served at stated B-Billet, 0 otherwise
Binned Major B-Billets		
HQMC I-I Instructor Joint Billet RS CO TBS Stayed in MOS Other	Binary	= 1 if served at stated B-Billet, 0 otherwise

1. Dependent Variables

The dependent variable for all models is selected as a primary lieutenant colonel on the lieutenant colonel CSB. This is a binary variable where a "1" indicates that the CSB selected an officer as a primary for lieutenant colonel command. Table 2 provides summary statistics on the dependent variable for the three different populations analyzed from the FY 2015 and FY 2017–2022 lieutenant colonel CSBs. The all MOSs population includes

a total of 4,225 observations with a 24.4% selection rate as a primary for lieutenant colonel command. The second population is the same as the first, except I drop all pilots and Judge Advocates. This population includes 2,818 observations and has a 24.5% selection rate as primary for lieutenant colonel command. The third population contains only the officers with an 0302, 0802, 1802, and 1803 PMOS. This population has 949 observations with a 26.5% selection rate as a primary for lieutenant colonel command.

Table 2. Dependent Variable Summary Statistics

Dependent Variable	N	Mean	Std Dev.	min	max
All MOSs.					
Selected	1,030	.244	0.429	0	1
No Pilots or Judge Advocates					
Selected	695	0.245	0.431	0	1
0302, 0802, 1802, 1803					
Selected	251	0.265	0.441	0	1

2. Independent Variables

The independent variables used to determine the factors affecting lieutenant colonel selection are mostly identical across models save the B-billet variables which apply solely to the 0302, 0802, 1802, and 1803 PMOS population due to data availability. I selected most variables based on previous research that identified their correlation for either selection for lieutenant colonel command or promotion. I also include other variables that were untested in previous research. The independent variables are categorized into FY, rank, demographics, MOS, training, education, performance, awards, captain B-billets, and major B-billets.

a. Fiscal Year

There are seven FY variables included in my models. These variables are binary with "1" indicating the lieutenant colonel CSB screened an officer on a particular FY and "0" indicating otherwise. Table 3 provides the summary statistics for FY variables.

Table 3. FY Summary Statistics

Independent Variable	N	Mean	Std Dev.	min	max
All MOSs					
FY2015	646	0.153	0.360	0	1
FY2017	561	0.133	0.339	0	1
FY2018	559	0.132	0.339	0	1
FY2019	528	0.125	0.331	0	1
FY2020	557	0.132	0.338	0	1
FY2021	682	0.161	0.368	0	1
FY2022	692	0.164	0.370	0	1
No Pilots or Judge Advocates					
FY2015	424	0.151	0.358	0	1
FY2017	388	0.138	0.345	0	1
FY2018	380	0.135	0.342	0	1
FY2019	353	0.125	0.331	0	1
FY2020	374	0.133	0.339	0	1
FY2021	436	0.155	0.362	0	1
FY2022	463	0.164	0.371	0	1
0302, 0802, 1802, 1803					
FY2015	165	0.174	0.379	0	1
FY2017	135	0.142	0.349	0	1
FY2018	132	0.139	0.346	0	1
FY2019	116	0.122	0.328	0	1
FY2020	118	0.124	0.330	0	1
FY2021	134	0.141	0.348	0	1
FY2022	149	0.157	0.364	0	1

The summary statistics for FY display the total number of officers screened on the lieutenant colonel CSB by FY according to the three populations within the study. For the all MOSs population, the lieutenant colonel CSB screened an average of 604 officers every year within the dataset. The range for this population is 164. For the second population, the lieutenant colonel CSB screened an average of 403 officers every year within the dataset. The range for this population is 110. The last population has an average of 136 officers screened each year and a range of 49. The flux in numbers is due to the number of eligible officers and the number of officers that choose to RBR as indicated by Figure 1.

b. Rank

Officers screened for lieutenant colonel command are either a major or a lieutenant colonel at the time of the CSB. These are binary variables. Table 4 displays the summary statistics of rank for the three populations within the study.

Table 4. Rank Summary Statistics

Independent Variable	N	Mean	Std Dev.	min	max
All MOSs					
Major	1,661	0.393	0.489	0	1
LtCol	2,564	0.607	0.489	0	1
No Pilots or Judge Advocates					
Major	1,069	0.379	0.485	0	1
LtCol	1,749	0.621	0.485	0	1
0302, 0802, 1802, 1803					
Major	382	0.403	0.491	0	1
LtCol	567	0.598	0.491	0	1

A preponderance of officers screened on the lieutenant colonel CSB are the rank of lieutenant colonel. In the all MOSs population lieutenant colonels comprise 60.7% of the population compared to 39.3% of majors. Without pilots or Judge Advocates, lieutenant colonels are 62.1% of the population while majors are 37.9%. For the infantry, artillery, AAV, and Tank officer population, 59.8% are lieutenant colonels and 40.3% are majors.

c. Demographics

There are four demographic variables included in the models. All the demographic variables are binary in nature. Table 5 details the summary statistics for the demographic variables.

Table 5. Demographic Summary Statistics.

Independent Variable	N	Mean	Std Dev.	min	max
All MOSs					
Male	3,951	0.935	0.246	0	1
Female	274	0.065	0.246	0	1
White	3,502	0.829	0.377	0	1
Non-white	723	0.171	0.377	0	1
No Pilots or Judge Advocates					
Male	2,620	0.930	0.256	0	1
Female	198	0.07	0.256	0	1
White	2,245	0.797	0.403	0	1
Non-white	573	0.203	0.403	0	1
0302, 0802, 1802, 1803					
Male	949	1	0	1	1
White	812	0.856	0.352	0	1
Non-white	137	0.144	0.352	0	1

The demographic summary statistics indicate that most officers screened for lieutenant colonel command are white and male. In this study the non-white variable indicates that the officer is any race except white. In the first population, 93.5% of the observations are male and 82.9% are white. In the population without pilots or Judge Advocates, 93% of the observations are male and 79.7% are white. In the last population, 100% of the officers are male. This is expected as the Department of Defense opened combat arms MOSs in 2015 resulting in no female officers having the career time in a combat arms PMOS to be screened for lieutenant colonel command during the periods within this dataset. Lastly, 85.6% of the observations in this population are white.

d. MOS

The MOS variables used in this study differ across the three populations within the study. There are three MOS variables created by grouping by like MOSs to determine differences amongst the MOS categories for lieutenant colonel command selection. The three categories are Combat Service Support, Combat Arms, and Aviation. Appendix A includes a detailed list of the MOS categories. Other MOS variables include the AMOSs of 88XX and Operational Planner. The AMOS of 88XX variable indicates that an officer received an AMOS from NPS. The AMOS of 0505 indicates that an officer possesses the AMOS of Operational Planner by graduating AILS. The MOS variables are binary in nature. Table 6 provides the summary statistics of the populations by MOS category.

Table 6. MOS Summary Statistics

Independent Variable	N	Mean	Std Dev.	min	max
All MOSs					
Combat Service Support	2,057	0.513	0.5	0	1
Combat Arms	1,031	0.244	0.43	0	1
Aviation MOS	1,137	0.269	0.444	0	1
AMOS of 88XX	442	0.105	0.306	0	1
AMOS of 0505	262	0.062	0.241	0	1
No Pilots or Judge Advocates					
Combat Service Support	1,787	0.634	0.482	0	1
Combat Arms	1,031	0.366	0.482	0	1
AMOS of 88XX	369	0.131	0.337	0	1
AMOS of 0505	228	0.081	0.272	0	1
0302, 0802, 1802, 1803					
AMOS of 88XX	55	0.058	0.234	0	1
AMOS of 0505	125	0.132	0.338	0	1

The first population contains all MOS category variables, while the second population excludes all pilot MOSs. The third population contains only combat arms MOSs. In all MOSs population 51.3% of the observations are combat service support MOS, while combat arms and aviation comprise 24.4% and 26.9% respectively. Within this population, 10.5% of the observations obtained an AMOS from NPS and 6.2% obtained the Operational Planner AMOS. For the second population 63.4% of the observations are combat service support and 36.6% are combat arms while 13.1% of the observations obtained an AMOS from NPS and 8.1% possess the Operational Planner AMOS. Within the last population, 5.8% possess and 88XX AMOS while 13.2% possess the Operational Planner AMOS.

e. Training

There are four training variables: high PFT, high CFT, below 235 PFT, and below 235 CFT. A score of 285 on either the PFT or CFT is considered high as it requires a directed comment by the RS in the Marine's FITREP (HQMC, 2019b). Additionally, "Marines who score a 285 and higher on both the PFT and CFT are exempt from maximum weight and body fat limits" (HQMC, 2021a). A score less than 235 is considered a second-class fitness test. However, for Marines screened on the FY 2015 lieutenant colonel CSB a second-class PFT and CFT was considered less than 225 as the Marine Corps updated its

PFT and CFT fitness standards in 2017. All training variables are binary. Table 7 displays the summary statistics of the training variables.

Table 7. Training Summary Statistics.

Independent Variable	N	Mean	Std Dev.	min	max
All MOSs					
High PFT >=285	936	0.222	0.415	0	1
High CFT >=285	2,728	0.646	0.478	0	1
Below 235 PFT	555	0.134	0.338	0	1
Below 235 CFT	219	0.052	0.222	0	1
No Pilots or Judge Advocates					
High PFT >=285	598	0.212	0.409	0	1
High CFT >=285	1,799	0.638	0.481	0	1
Below 235 PFT	397	0.141	0.348	0	1
Below 235 CFT	154	0.055	0.227	0	1
0302, 0802, 1802, 1803					
High PFT >=285	218	0.23	0.421	0	1
High CFT >=285	646	0.681	0.466	0	1
Below 235 PFT	130	0.137	0.344	0	1
Below 235 CFT	37	0.039	0.194	0	1

Across all three populations, 21–23% of the observations screened achieved a PFT score of 285 and greater with about 14% scoring less than 235. Regarding the CFT, 13–14% of the officers earned a 285 score or higher with about 4–5% of achieving a score less than 235.

f. Education

I use five education variables in this study. Four of the education variables concern resident military PME and include both resident and non-resident PME for both captain and major. The last education variable indicates whether an officer obtained at least a civilian graduate degree. All education variables are binary in nature. Table 8 displays the summary statistics of the education variables.

Table 8. Education Summary Statistics.

Independent Variable	N	Mean	Std Dev.	min	max
All MOSs					
Captain Resident PME	1,654	0.392	0.488	0	1
Captain Non-Resident PME	2,571	0.609	0.488	0	1
Major Resident PME	1,734	0.41	0.492	0	1
Major Non-Resident PME	2,491	0.59	0.492	0	1
Civilian Graduate Degree	2,627	0.622	0.485	0	1
No Pilots or Judge Advocates					
Captain Resident PME	1,457	0.517	0.5	0	1
Captain Non-Resident PME	1,361	0.483	0.5	0	1
Major Resident PME	1,255	0.445	0.497	0	1
Major Non-Resident PME	1,563	0.555	0.497	0	1
Civilian Graduate Degree	1,807	0.641	0.48	0	1
0302, 0802, 1802, 1803					
Captain Resident PME	688	0.725	0.447	0	1
Captain Non-Resident PME	261	0.275	0.447	0	1
Major Resident PME	431	0.454	0.498	0	1
Major Non-Resident PME	518	0.546	0.498	0	1
Civilian Graduate Degree	590	0.622	0.485	0	1

There exists a wide variance of attendance of resident captain PME between the three populations. Within the all MOS population, 39.2% of the observations attended resident captain PME compared to 51.7% and 72.5% of the second and third populations. The disparity between the all MOS population and the other two populations could possibly be attributed to pilots losing their qualifications on their respective platforms when attending resident PME. This dynamic creates a disincentive for pilots to attend resident PME early in one's career. This disparity is smaller for major resident PME as the all MOS population has a 41% attendance rate compared to 44.5% and 45.4% of the other two. Regarding the obtainment of at least a civilian graduate degree, 62–64% of all observations within the three populations possess at least a civilian graduate degree.

g. Performance

There are nine performance variables within this study. All performance variables, save one, are reflected in FITREP evaluations. The one exception is the TBS leadership grade which is assigned to officers while attending TBS and can range from 80–100. The variables captured by the FITREP evaluations include RS total cumulative upper, RS total cumulative middle, RS total cumulative lower, RO total cumulative above, RO total

cumulative with, and RO total cumulative below, combat FITREPS, and adverse FITREPS. The RS and RO cumulative values are in an officer's Official Military Personnel File (OMPF) that generate averages concerning an officer's RS and RO evaluations. Figure 6 provides an example of RS and RO cumulative total values found within an officer's OMPF.

	Reporting Senior							
	At Processing				Cumulative			
Grade	Upper 93.34 - 100	Middle 86.67 - 93.33	Lower 80.00 - 86.66	N/A	Upper 93.34 - 100	Middle 86.67 - 93.33	Lower 80.00 - 86.66	N/A
2NDLT	0.0%	0.0%	0.0%	5	0.0%	0.0%	0.0%	5
1STLT	0.0%	0.0%	100.0%	4	0.0%	0.0%	100.0%	4
CAPT	28.6%	42.9%	28.6%	4	44.4%	44.4%	11.1%	2
Total	25.0%	37.5%	37.5%	13	40.0%	40.0%	20.0%	11

	Reviewing Officer							
	At Processing				Cumulative			
Grade	Above	With	Below	Insuf	Above	With	Below	Insuf
2NDLT	0.0%	0.0%	0.0%	5	0.0%	0.0%	0.0%	5
1STLT	0.0%	100.0%	0.0%	4	0.0%	88.0%	12.0%	4
CAPT	7.9%	34.7%	57.4%	1	8.7%	27.4%	63.9%	1
Total	7.1%	41.6%	51.3%	10	7.8%	33.3%	58.8%	10

Figure 6. RS and RO Summary. Source: HQMC (2018b).

There are three observations in the dataset with missing variables for RS and RO cumulative values. I kept the observations by inputting the population averages for the three observations.

(1) RS total cumulative values

The RS total cumulative values are given numeric values within the OMPF. The RS cumulative upper ranges from 93.34 - 100, the middle from 86.67 - 93.33, and the lower from 80.00 - 86.66. The Marine Corps order on the performance evaluation system describes the RS cumulative value in the following manner: "This numeric value reflects the cumulative relative value of the MRO's fitness report based on the RS's rating history for Marines of the same grade as the MRO. This number is a variable and will change as the RS writes additional reports on Marines of the same grade as the MRO." (HQMC, 2018b). An individual officer's total cumulative value are three percentages spread across the upper, middle, and lower ranges. These three percentages when summed add up to

100%. Having a higher percentage of your FITREPS marked in the upper range is qualitatively better than those in the middle and lower ranges.

(2) RO total cumulative values

The RO total cumulative values are broken into three categories: above, with, and below. These values are referencing where the RO marks an officer on the comparative assessment pyramid within the FITREP compared to other officers of the same grade. Figure 7 provides an example of the comparative assessment pyramid contained within the FITREP.

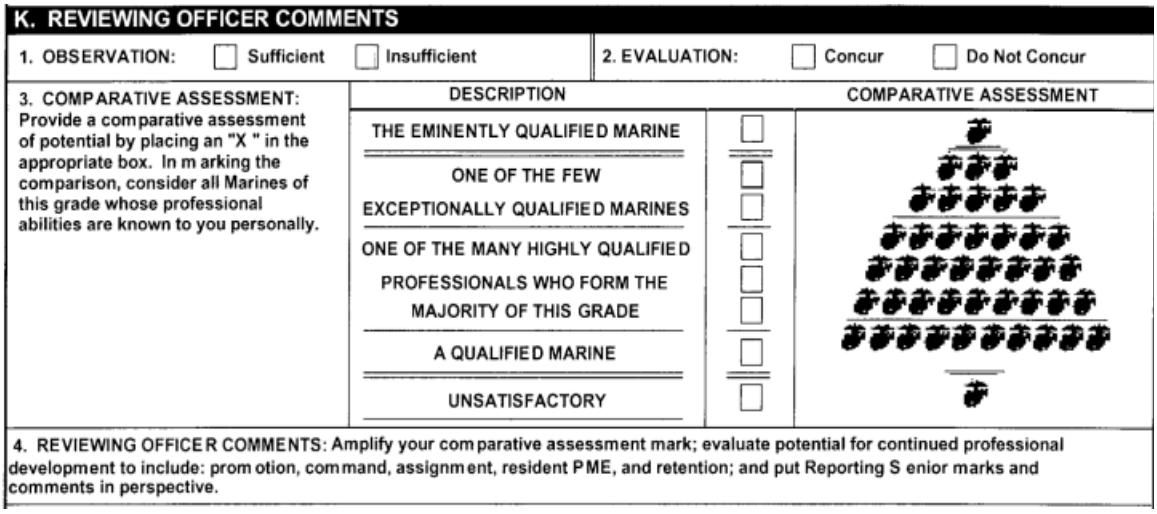

Figure 7. Comparative Assessment Pyramid. Source: HQMC (2018b).

The RO total cumulative takes the percentage of all officers that were ranked above, with (i.e., in the same block), and below. These three percentages sum to 100%. It is qualitatively better to have a higher percentage in the RO total cumulative below.

The other FITREP performance variables are combat and adverse FITREPs. Both variables are continuous in nature indicating the total number of combat and adverse FITREPs the officer received in his/her career. The last performance variable is the TBS leadership grade which is a continuous variable. Table 9 displays the summary statistics of the performance variables.

Table 9. Performance Summary Statistics.

Independent Variable	N	Mean	Std Dev.	min	max
All MOSs					
TBS Leadership Grade	1,763	86.228	5.189	75	96.989
RS Total Cumulative Upper	4,225	42.713	15.657	0	100
RS Total Cumulative Middle	4,225	38.59	12.019	0	76.5
RS Total Cumulative Lower	4,225	18.694	11.166	0	72
RO Total Cumulative Above	4,225	26.246	10.298	0.9	68.6
RO Total Cumulative With	4,225	35.958	4.833	14.8	52.6
RO Total Cumulative Below	4,225	37.797	11.357	8.7	81.5
Combat FITREPS	4,225	4.214	2.278	0	14
Adverse FITREP	4,225	0.015	0.128	0	2
No Pilots or Judge Advocates					
TBS Leadership Grade	1,115	86.365	5.6	75	96.989
RS Total Cumulative Upper	2,818	43.156	15.891	0	100
RS Total Cumulative Middle	2,818	37.868	11.885	0	73.1
RS Total Cumulative Lower	2,818	18.972	11.385	0	71.4
RO Total Cumulative Above	2,818	26.607	10.471	0.9	68.6
RO Total Cumulative With	2,818	36.033	4.702	14.8	50.9
RO Total Cumulative Below	2,818	37.36	11.292	8.7	81.5
Combat FITREPS	2,818	4.4	2.236	0	14
Adverse FITREP	2,818	0.016	0.016	0	2
0302, 0802, 1802, 1803					
TBS Leadership Grade	371	88.153	4.924	77.08	95.912
RS Total Cumulative Upper	949	42.723	15.332	10.7	100
RS Total Cumulative Middle	949	39.289	11.266	0	69
RS Total Cumulative Lower	949	17.98	11.043	0	58.3
RO Total Cumulative Above	949	26.526	10.646	3.2	68.6
RO Total Cumulative With	949	35.6	4.413	14.8	47.8
RO Total Cumulative Below	949	37.876	11.342	11.7	81.5
Combat FITREPS	949	5.113	2.113	0	14
Adverse FITREP	949	0.023	0.151	0	1

The three populations have near similar summary statistics regarding FITREP performance variables. The RS total cumulative upper average ranges from 42.713 – 43.156%, the RS total cumulative middle average ranges from 37.868 – 39.289%, and the RS total cumulative below average ranges from 37.36 – 37.876%. The RO total cumulative above is about 26%, RO total cumulative with is about 36%, and RO total cumulative below is about 37% for all three populations. On average combat FITREPs range from 4.2-5.1 and adverse FITREPs range from 0.015 – 0.023 for all populations. Regarding TBS leadership grades, the last population averages about two percentage points higher with 88.153% compared to the other populations. Of note, due to limitations within the data, there are 1,763 observations with a TBS leadership grade.

h. Awards

I use three award variables for this study. The three awards I use are the valor, Bronze Star, and Meritorious Service Medal (MSM). All three-award variables are continuous in nature. Table 10 displays the summary statistics of the award variables.

Table 10. Award Summary Statistics.

Independent Variable	N	Mean	Std Dev.	min	max
All MOSs					
Valor	4,225	0.489	0.678	0	4
Meritorious Service Medal	4,225	1.51	1.039	0	6
Bronze Star	4,225	0.197	0.468	0	3
No Pilots or Judge Advocates					
Valor	2,818	0.644	0.73	0	4
Meritorious Service Medal	2,818	1.782	0.995	0	6
Bronze Star	2,818	0.27	0.534	0	3
0302, 0802, 1802, 1803					
Valor	949	1.096	0.726	0	4
Meritorious Service Medal	949	1.671	0.951	0	6
Bronze Star	949	0.526	0.676	0	3

The summary statistics demonstrate that the last population, on average, possess more valor and Bronze Star awards. Regarding valor awards the last population averages 1.096 valor compared to 0.489 of all MOSs and 0.644 for the no pilots and Judge Advocates. The last population averages 0.526 Bronze Stars compared to 0.197 for the all MOSs population and 0.270 for the second population. All three populations average similar amount of MSM ranging from 1.51 – 1.782.

i. B-Billets

For this study, I analyze the effects of 24 captain B-billets and 27 major B-billets on selection for lieutenant colonel for the PMOSs of 0302, 0802, 1802, and 1803 population. Appendix C provides descriptions for each B-billet in this study. I also bin both the captain and major B-billets for analysis. For the captain B-billets, I create two bins: B-billets associated with an officer's PMOS, and B-billets not associated with an officer's PMOS. For the Major B-billets I create eight bins: HQMC B-billets, I-I duty, instructor B-billets, joint billets, RS CO, TBS, B-billets associated with an officer's PMOS, and other

B-billets. For a number of B-billets for both captain and major with low frequencies, I bin them in an "other" category. Of note, when confronted with an officer with multiple B-billets within a grade, I choose the B-billet that the officer served in for the longer duration of time. Table 11 displays the summary statistics of the B-billet variables.

Table 11. B-Billet Summary Statistics.

Independent Variable	N	Mean	Std Dev.	min	max
0302, 0802, 1802, 1803					
Captain B-Billet					
TBS	110	0.116	0.320	0	1
Recruit Training	91	0.096	0.295	0	1
Security Forces	84	0.088	0.284	0	1
SOI	82	0.086	0.281	0	1
ANGLICO	67	0.071	0.256	0	1
Recruiting	67	0.071	0.256	0	1
MEU	39	0.041	0.199	0	1
Ft. Sill	34	0.036	0.186	0	1
I-I	33	0.035	0.183	0	1
Division or MEF	31	0.032	0.178	0	1
OCS	27	0.029	0.166	0	1
MCSC	25	0.026	0.160	0	1
Recon	25	0.026	0.160	0	1
Instructor Other	21	0.022	0.147	0	1
MCESG	18	0.019	0.136	0	1
Marine Barracks	17	0.018	0.133	0	1
M&RA	17	0.018	0.133	0	1
Armor/Amphib School Instruct	16	0.017	0.129	0	1
HQMC Other	15	0.016	0.125	0	1
MARSOC	15	0.016	0.125	0	1
MLG	14	0.015	0.121	0	1
TTECG	14	0.015	0.120	0	1
Weapons Training Bn	10	0.011	0.102	0	1
Other	43	0.045	0.208	0	1
None	34	0.036	0.186	0	1
Binned Captain B-Billets					
B-billet Related to PMOS	432	0.455	0.498	0	1

Independent Variable	N	Mean	Std Dev.	min	max
0302, 0802, 1802, 1803					
B-billet not Related to PMOS	517	0.545	0.498	0	1
Major B-Billet					
I-I	125	0.132	0.338	0	1
RS CO	96	0.101	0.302	0	1
Joint Billet	79	0.083	0.276	0	1
Instructor Other	42	0.044	0.206	0	1
SOI	42	0.044	0.206	0	1
TTECG	39	0.041	0.199	0	1
TBS	38	0.040	0.196	0	1
HQMC Other	37	0.039	0.194	0	1
Security Forces	27	0.029	0.166	0	1
0505 Utilization	29	0.031	0.172	0	1
CD&I	29	0.031	0.172	0	1
EWTG	20	0.021	0.144	0	1
ANGLICO	15	0.016	0.125	0	1
Ft. Sill	15	0.016	0.125	0	1
EWS Instructor	27	0.029	0.166	0	1
MEU	25	0.026	0.160	0	1
MCSC	25	0.026	0.160	0	1
M&RA	24	0.025	0.157	0	1
PP&O	24	0.025	0.157	0	1
MARFOR	16	0.017	0.129	0	1
MAGTF Staff Training	15	0.016	0.125	0	1
MOI	14	0.015	0.121	0	1
MCFPEP	12	0.013	0.112	0	1
MCWL	12	0.013	0.112	0	1
MCTOG	11	0.012	0.107	0	1
MARSOC	10	0.011	0.102	0	1
Other	86	0.091	0.287	0	1
None	15	0.016	0.125	0	1
Binned Major B-Billets					
HQMC	151	0.159	0.366	0	1
B-billet Related to PMOS	138	0.145	0.353	0	1
Instructor	129	0.136	0.343	0	1
I-I	125	0.132	0.338	0	1
RS CO	96	0.101	0.302	0	1
Joint Billet	79	0.083	0.276	0	1
TBS	38	0.040	0.196	0	1
Other	193	0.203	0.403	0	1

The descriptive statistics show there to be a variety of B-billets with varying observational frequencies. Within captain B-billets the most common B-billet is TBS with 11.6% followed by recruit training with 9.6%. There are four other B-billets that have greater than 5% of the observations within the dataset: security forces, School of Infantry (SOI), ANGLICO, and recruiting. The remaining 19 other captain B-billets including no

B-billet have less than 5% of the observations with the smallest, Weapons Training Battalion with 1.1%. When binning the captain billets into B-billets associated with an officer's PMOS, and B-billets not associated with an officer's PMOS, 45.5% of the observations served in a B-billet associated with their PMOS and 54.5% serving in a B-billet not associated with their PMOS.

Regarding major B-billets, I-I is the most common B-billet with 13.2% of the observations serving followed by RS CO with 10.1% and joint B-billets with 8.3%. None of the other major B-billets have more than 5% of the observations serving in those respective units save the binned category of "other" with 9.1%. When binning major billets, the largest share of observations served in a HQMC B-billet with 15.9% followed by serving in a B-billet associated with an officer's PMOS with 15.5%. The remaining binned B-billets include 13.6% of the observations served as an instructor, 13.2% served on I-I duty, 10.1% of the observations were RS COs, 8.3% served in a joint-billet, 4% at TBS, and 20.3% served in "other."

D. METHODOLOGY

I use multivariate binary outcome models for this thesis since the focus of my research is on whether the CSB selects an officer for lieutenant colonel command. The binary outcome model explains the effects of the independent variables and their associated predictive value on the dependent variable. As Woolridge notes, "Multiple regression analysis is more amenable to ceteris paribus analysis because it allows us to explicitly control for many factors that simultaneously affect the dependent variable" (Woolridge. 2016).

Logistic regression models are fitting for models when the dependent variable is binary in nature. For this study, I develop logistic regression models and apply them to all three populations within my dataset. In my analysis, I use the average marginal effects at the means of the variables to explain their relationship on the outcome variable of selection for lieutenant colonel command. Figure 8 displays the logistic regression model which is the basis for my multivariate models in this study.

$$G(z) = \frac{\exp(z)}{[1 + \exp(z)]}$$

Figure 8. Logistic Model. Source: Woolridge (2016).

My study models selection for lieutenant colonel command as a function of eight explanatory variable categories of FY, demographics, MOS, training, education, performance, awards, and B-billets in two logistic models. Figures 9 and 10 display the econometrics models for this study.

$$P(selected) = G(\beta_0 + \beta_{FY} + \beta_{demographics} + \beta_{MOS} + \beta_{training} + \beta_{education} + \beta_{performance} + \beta_{awards})$$

Figure 9. Predictive Variables Econometric Model

$$P(selected) = G(\beta_0 + \beta_{captain\_b\_billet} + \beta_{major\_B\text{-}billet} + \beta_{AMOS} + \beta_{captain\_PME} + \beta_{major\_PME})$$

Figure 10. Career Path Econometric Model

The dependent variable for both models, *selected*, is selection as a primary for lieutenant colonel command. The first model depicted in Figure 9 answers the first research question of this study which seeks to identify the predictive variables for selection to lieutenant colonel command. The first model includes 39 independent variables contained within Tables 3 – 10 and is applied to the three populations within the study: all MOSs; no pilots or Judge Advocates; and Infantry officers, Artillery officers, Tank officers, and AAV officers.

The second model depicted in Figure 10 answers the second research question which seeks to identify the predictive career paths for the 0302, 0802, 1802, and 1803 PMOSs. This model contains up to 54 independent variables included in Tables 6, 8, and 11.

E. SUMMARY

This chapter summarizes the data and methodology in this study including the variables and models to answer my research questions. Within my study, I analyze three populations contained within my dataset including the all MOS population, no pilot and Judge Advocate MOSs population, and the infantry, artillery, tank, and AAV MOSs population. There are 13 independent variable categories with up to 30 independent variables depending on the model and population. As my dependent variable of selected for lieutenant colonel command is binary in nature, I use a logistic multivariate regression model. I employ two general models each corresponding to the research questions. The first is the predictive variable econometric model that answers the first research question to identify the predictive variables for selection to LtCol command. The second is the career path econometric model that answers the second research question which seeks to identify the predictive career paths for the 0302, 0802, 1802, and 1803 PMOSs.

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V. ANALYSIS AND FINDINGS

This chapter presents the results and findings of the models discussed in the previous chapter. The results of the logistic regression models are presented with the average marginal effects at the means of the variables to explain their relationship on the outcome variable of selection for lieutenant colonel command.

A. PREDICTIVE VARIABLES FOR LIEUTENANT COLONEL COMMAND SELECTION

To answer my first research question, which seeks to identify the variables that predict selection for lieutenant colonel command, I analyze the variables that have a statistically significant correlation for selection for lieutenant colonel command across the following three populations: all MOSs; no pilots and Judge Advocates; and 0302, 0802, 1802, and 1803 MOSs.

1. All MOS Population

Table 12 presents the results of selection for lieutenant colonel command for all MOSs population. The reference group for this model is a white, lieutenant colonel male with an aviation MOS screened on the FY15 CSB that did not attend resident PME, does not have the Operational Planner or an 88XX AMOS and has a graduate degree. The first iteration of this model contains 1,763 observations due to limited data of the *TBS Leadership Grade* variable. The remaining iterations of the model has 4,225 observations.

Table 12. Selection as Primary for Lieutenant Colonel Command for All MOSs

	(1)	(2)	(3)	(4)	(5)
Major	0.009	0.051***	0.041***	0.039***	0.033***
	(0.022)	(0.012)	(0.013)	(0.013)	(0.013)
Female	0.021	0.004	0.020	0.019	0.021
	(0.042)	(0.025)	(0.025)	(0.025)	(0.025)
Racial Minority	0.027	0.002	0.004	0.005	0.006
	(0.030)	(0.017)	(0.017)	(0.017)	(0.016)
Combat Arms MOS	-0.097**	-0.025	-0.052***	-0.053***	-0.076***
	(0.038)	(0.016)	(0.020)	(0.020)	(0.021)

	(1)	(2)	(3)	(4)	(5)
Combat Service Support MOS	-0.081***	-0.043***	-0.042**	-0.036**	-0.043**
	(0.030)	(0.015)	(0.017)	(0.017)	(0.017)
Cumulative Total RS Upper	0.011***	0.009***	0.009***	0.009***	0.009***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Cumulative Total RS Middle	0.004***	0.004***	0.004***	0.004***	0.003***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Cumulative Total RO Below	0.012***	0.011***	0.010***	0.010***	0.010***
	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)
Cumulative Total RO With	0.003	0.004***	0.004***	0.004***	0.004***
	(0.003)	(0.002)	(0.001)	(0.001)	(0.001)
Combat FITREPs	0.012**	0.016***	0.012***	0.012***	0.011***
	(0.005)	(0.003)	(0.003)	(0.003)	(0.003)
Adverse FITREPs	-0.070	-0.135**	-0.129**	-0.127**	-0.112**
	(0.117)	(0.052)	(0.054)	(0.054)	(0.052)
High PFT (>=285)	0.031		0.028**	0.028**	0.030**
	(0.023)		(0.013)	(0.013)	(0.013)
High CFT (>=285)	0.081***		0.037**	0.038**	0.040***
	(0.024)		(0.015)	(0.015)	(0.015)
Low PFT (<=235)	-0.105**		-0.110***	-0.110***	-0.110***
	(0.053)		(0.024)	(0.024)	(0.024)
Low CFT (<=235)	-0.166**		-0.057	-0.059	-0.057
	(0.085)		(0.038)	(0.038)	(0.037)
Valor Award	0.009		0.014	0.013	0.011
	(0.021)		(0.011)	(0.011)	(0.011)
Bronze Star	0.025		0.032**	0.031**	0.030**
	(0.026)		(0.014)	(0.014)	(0.014)
Meritorious Service Medal	0.003		0.001	-0.000	-0.000
	(0.013)		(0.007)	(0.007)	(0.007)
AMOS 88XX	-0.024			-0.061***	-0.034*
	(0.037)			(0.020)	(0.020)
AMOS 0505	0.070*			0.025	0.031
	(0.040)			(0.022)	(0.021)
Resident Capt PME	0.044*				0.045***
	(0.023)				(0.013)
Resident Maj PME	0.037*				0.043***
	(0.022)				(0.012)
Grad Degree or Greater	-0.050**				-0.044***
	(0.024)				(0.013)
TBS Leadership Grade	-0.004				
	(0.002)				
Observations	1763	4225	4225	4225	4225

Model displays average marginal effects.

Not depicted but controlled for FY.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

The first iteration of the model has 30 independent variables with subsequent iterations ranging from 17 to 29 independent variables. The purpose of the first model is to determine whether *TBS leadership Grade* variable is statistically significant in selection for

lieutenant colonel command and I determine for the all MOSs population it does not. The final model has 17 variables, excluding the FYs, of varying statistical significance.

Majors have a 3.3 ppts higher probability of lieutenant colonel command selection and is significant at the 0.01 level across all iterations of the model, but with a decreasing coefficient. This finding corresponds to Druffel-Rodriguez's study but has a smaller coefficient as he finds majors have an 8.1 ppts higher probability of selection (Druffel-Rodriguez, 2021). Marines with a combat arms MOS are 7.6 ppts less likely to get selected versus combat service support MOSs who are 4.3 ppts less likely for lieutenant colonel command selection than those with an aviation MOS. This is likely due to the ratio between the number of combat arms officers screened to number of available PMOS lieutenant colonel command billets are greater than that of pilots. The relationship of the PMOS variables correspond closely to Druffel-Rodriguez's findings (Druffel-Rodriguez, 2021).

All performance variables, save the *TBS Leadership Grade,* are significant at either the 0.05 or the 0.01 level and have coefficient stability across the iterations of the model. Unsurprisingly, higher markings on FITREP evaluations increases the probability of selection for lieutenant colonel command. I find that both the RS and RO evaluations are nearly identical in their importance. Regarding the RS evaluations, every 1 ppt increase in the *Cumulative Total RS Upper* and *Cumulative Total RS Middle*, increases the probability of lieutenant colonel command selection by 0.9 ppts and 0.3 ppts respectively. Regarding the RO evaluations, every 1 ppt increase in the *Cumulative Total RO Below* and *Cumulative Total RO With*, increases the probability of lieutenant colonel command selection by 1.0 ppts and 0.4 ppts respectively. For every additional combat FITREP, the probability of selection for lieutenant colonel command increases by 1.1 ppts and decreases 11.2 ppts for every adverse FITREP. My findings on the FITREP variables are difficult to compare to other previous command studies as they include only RS performance variables. However, my finding regarding combat FITREPs is consistent with Druffel-Rodriguez's study which has a marginal coefficient of 0.14 ppts (Druffel-Rodriguez, 2021).

All training variables are statistically significant, save *Low CFT*, at either the 0.05 or 0.01 level and have coefficient stability across iterations of the model. Officers who have achieve a score greater than or equal to 285 on their PFT increase their probability for

lieutenant colonel command by 3.0 ppts while those who achieve a score greater than or equal to 285 on their CFT increase their probability by 4.0 ppts. Officers who have a have a score equal or less than 235 on their PFT reduce their probability for lieutenant colonel command selection by 11 ppts.

Regarding the award variables, only the *Bronze Star* variable is statistically significant and has a coefficient of 0.03. As this is a continuous variable, every Bronze Star awarded increases the probability of command selection by 3.0 ppts. Variables associated with an AMOS, only the *AMOS 88XX* variable is statistically significant, but only at the 0.1 level. I find officers who hold an 88XX MOS are 3.4 ppts less likely to be selected for lieutenant colonel command. My finding is not as drastic as Druffel-Rodriguez's where he finds that captains who attend a special education program such as NPS are 4.2 ppts less likely for lieutenant colonel command selection while majors are 14.1 ppts less likely (Druffel-Rodriguez, 2021). In my data, I am unable to determine when the officer obtained an 88XX MOS from NPS like Druffel-Rodriguez was able to in his study. It is likely that captains are less adversely affected than majors as their career timing to fill key billets in grade is not as drastically impacted.

I only apply the education variables in the last iteration of the model and find all variables are statistically significant at the 0.01 level. Attending a resident PME course increases the probability of lieutenant colonel command selection by 4.5 ppts for captain PME and 4.3 ppts for major PME. Unexpectedly, I find that officers who have a graduate degree or greater reduce their prospects for command selection by 4.4 ppts. These findings are not in concert with previous research. Druffel-Rodriguez finds no predictive value for resident captain PME and finds resident major PME increases lieutenant colonel command selection to have a greater affect at 5.4 ppts (Druffel-Rodriguez, 2021). Conlan's research, though focused on major and lieutenant colonel promotion finds that officers who possess a graduate degree are 4.51 and 3.66 times more likely to achieve promotion to major and lieutenant colonel respectively (Conlan, 2021). A possible explanation between this study and Druffel-Rodriguez's concerning the effect of resident captain PME is that this study has more observations (4,225 vs. 2,838). Concerning the effect of a possessing a graduate degree, a

possible explanation could be that the lieutenant colonel CSB is less concerned with civilian graduate degrees.

2. No Pilots or Judge Advocates Population

Table 13 presents the results of selection for lieutenant colonel command for the no pilots or Judge Advocate MOSs population. The reference group for this model is a white, lieutenant colonel, male with a combat arms MOS screened on the FY15 CSB that did not attend resident PME, does not have the Operational Planner or an 88XX MOS and possesses a graduate degree. The first iteration of this model contains 1,114 observations due to limited data of the *TBS Leadership Grade* variable. The remaining iterations of the model has 2,818 observations.

Table 13. Selection as Primary for Lieutenant Colonel Command for No Pilots or Judge Advocate MOSs

	(1)	(2)	(3)	(4)	(5)
Major	-0.007	0.035**	0.027*	0.025*	0.021
	(0.029)	(0.015)	(0.015)	(0.015)	(0.015)
Female	0.057	0.039	0.049*	0.048*	0.048*
	(0.050)	(0.027)	(0.026)	(0.026)	(0.026)
Racial Minority	0.041	0.003	0.004	0.005	0.005
	(0.038)	(0.019)	(0.019)	(0.019)	(0.018)
Combat Service Support MOS	0.001	-0.003	0.019	0.026	0.033*
	(0.039)	(0.015)	(0.017)	(0.017)	(0.017)
Cumulative Total RS Upper	0.013***	0.010***	0.010***	0.010***	0.009***
	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)
Cumulative Total RS Middle	0.005***	0.004***	0.004***	0.004***	0.004***
	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)
Cumulative Total RO Below	0.012***	0.011***	0.011***	0.011***	0.011***
	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)
Cumulative Total RO With	0.007*	0.008***	0.008***	0.008***	0.007***
	(0.004)	(0.002)	(0.002)	(0.002)	(0.002)
Combat FITREPs	0.004	0.017***	0.012***	0.012***	0.012***
	(0.007)	(0.003)	(0.004)	(0.004)	(0.004)
Adverse FITREPs	0.001	-0.129*	-0.100	-0.093	-0.093
	(0.126)	(0.077)	(0.078)	(0.078)	(0.078)
High PFT (>=285)	0.040		0.031*	0.031*	0.032**
	(0.031)		(0.016)	(0.016)	(0.016)
High CFT (>=285)	0.085***		0.046**	0.046***	0.047***
	(0.031)		(0.018)	(0.018)	(0.018)
Low PFT (<=235)	-0.152**		-0.123***	-0.123***	-0.121***
	(0.066)		(0.027)	(0.027)	(0.027)

	(1)	(2)	(3)	(4)	(5)
Low CFT (<=235)	-0.159*		-0.035	-0.038	-0.036
	(0.095)		(0.039)	(0.040)	(0.040)
Valor Award	0.015		0.009	0.007	0.006
	(0.026)		(0.012)	(0.012)	(0.012)
Bronze Star	0.027		0.027*	0.026*	0.025
	(0.031)		(0.015)	(0.016)	(0.015)
Meritorious Service Medal	0.020		0.005	0.003	0.003
	(0.016)		(0.008)	(0.008)	(0.008)
AMOS 88XX	-0.015			-0.067***	-0.048**
	(0.045)			(0.022)	(0.023)
AMOS 0505	0.037			0.027	0.028
	(0.045)			(0.023)	(0.023)
Resident Capt PME	0.012				0.030**
	(0.031)				(0.015)
Resident Maj PME	0.036				0.031**
	(0.030)				(0.015)
Grad Degree or Greater	0.017				-0.013
	(0.033)				(0.016)
TBS Leadership Grade	-0.004				
	(0.003)				
Observations	1114	2818	2818	2818	2818

Model displays average marginal effects.

Not depicted but controlled for FY.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

The first iteration of the no pilots or Judge Advocate MOS model has 29 independent variables including with subsequent iterations ranging from 16 to 28 independent variables. The purpose of the first model is to determine whether the *TBS leadership Grade* variable is correlated in selection for lieutenant colonel command, and it is not. The final model has 13 variables, excluding the FYs, of varying statistical significance ranging from 0.1 to 0.01.

Unlike the previous population's model, majors do not have a statistically significant coefficient in the final iteration but has a statistically significant relationship albeit with a diminishing coefficient over iterations two though four. Additionally, female officers have a 4.8 ppts higher probability than males for lieutenant colonel command selection but is significant at the 0.1 level. Marines with a combat service support MOS are 3.3 ppts less likely to get selected than combat arms MOSs.

All performance variables, save the *TBS Leadership Grade* and *Adverse FITREPs,* are significant at the 0.01 level and have coefficient stability across the iterations of the model. Regarding the RS evaluations, every 1 ppt increase in the *Cumulative Total RS Upper* and *Cumulative Total RS Middle*, increases the probability of lieutenant colonel command selection by 0.9 ppts and 0.4 ppts respectively. Regarding the RO evaluations, every 1ppt increase in the *Cumulative Total RO Below* and *Cumulative Total RO With*, increases the probability of lieutenant colonel command selection by 1.0 ppts and 0.7 ppts respectively. For every additional combat FITREP, the probability of selection for lieutenant colonel command increases by 1.2 ppts.

All training variables are statistically significant, save *Low CFT*, at either the 0.05 or 0.01 level and are consistently correlated across iterations of the model. Officers who have achieve a score greater than or equal to 285 on their PFT increase their probability for lieutenant colonel command by 3.2 ppts while those who achieve a score greater than or equal to 285 on their CFT increase their probability by 4.7 ppts. Officers who have a have a score equal or less than 235 on their PFT reduce their probability for lieutenant colonel command selection by 12.1 ppts. Variables associated with an AMOS, only the *AMOS 88XX* variable is statistically significant at the 0.01 and 0.05 levels depending on the iteration. I find officers who hold an 88XX MOS are 4.8 ppts less likely to be selected for lieutenant colonel command.

I only apply the education variables in the last iteration of the model and find both resident PME variables are statistically significant at the 0.05 level. Attending a resident PME course increases the probability of lieutenant colonel command selection by 3.0 ppts for captain PME and 3.1 ppts for major PME.

3. 0302, 0802, 1802, and 1803 MOSs Population

Table 14 presents the results of selection for lieutenant colonel command for the 0302, 0802, 1802, 1803 MOSs population. The reference group for this model is a white lieutenant colonel male screened on the FY15 CSB that did not attend resident PME, does not have the Operational Planner or an 88XX MOS and is a college graduate. The first iteration of this model contains 371 observations due to limited data of the *TBS Leadership Grade* variable. The remaining iterations of the model has 949 observations.

Table 14. Selection as Primary for Lieutenant Colonel Command for 0302, 0802, 1802, and 1803 MOSs

	(1)	(2)	(3)	(4)	(5)
Major	-0.007	0.051**	0.046*	0.045	0.040
	(0.059)	(0.026)	(0.027)	(0.027)	(0.027)
Racial Minority	0.166*	0.043	0.042	0.045	0.045
	(0.089)	(0.037)	(0.037)	(0.037)	(0.037)
Cumulative Total RS Upper	0.010**	0.009***	0.008***	0.008***	0.008***
	(0.004)	(0.002)	(0.002)	(0.002)	(0.002)
Cumulative Total RS Middle	0.005	0.003	0.003	0.003*	0.003*
	(0.004)	(0.002)	(0.002)	(0.002)	(0.002)
Cumulative Total RO Below	0.024***	0.016***	0.015***	0.015***	0.014***
	(0.004)	(0.002)	(0.002)	(0.002)	(0.002)
Cumulative Total RO With	0.018**	0.013***	0.015***	0.015***	0.013***
	(0.008)	(0.003)	(0.003)	(0.003)	(0.003)
Combat FITREPs	-0.015	0.018***	0.010	0.010	0.008
	(0.015)	(0.006)	(0.007)	(0.007)	(0.007)
Adverse FITREPs	-0.094	-0.166	-0.131	-0.134	-0.144
	(0.252)	(0.143)	(0.140)	(0.140)	(0.141)
High PFT (>=285)	0.070		0.053*	0.052*	0.054*
	(0.057)		(0.029)	(0.029)	(0.029)
High CFT (>=285)	0.055		0.061*	0.063*	0.066**
	(0.061)		(0.034)	(0.034)	(0.034)
Low PFT (<=235)	-0.220		-0.080*	-0.078*	-0.084*
	(0.141)		(0.046)	(0.047)	(0.046)
Low CFT (<=235)	0.198		0.007	0.007	0.017
	(0.213)		(0.073)	(0.072)	(0.070)
Valor Award	-0.016		0.018	0.020	0.022
	(0.049)		(0.020)	(0.021)	(0.020)
Bronze Star	0.058		0.034	0.031	0.030
	(0.044)		(0.022)	(0.022)	(0.021)
Meritorious Service Medal	0.057		0.001	-0.000	0.005
	(0.035)		(0.015)	(0.015)	(0.015)
AMOS 88XX	-0.143			-0.103*	-0.071
	(0.144)			(0.055)	(0.054)
AMOS 0505	0.065			0.012	0.027
	(0.076)			(0.033)	(0.034)
Resident Capt PME	-0.073				0.000
	(0.071)				(0.030)
Resident Maj PME	0.089				0.075***
	(0.062)				(0.026)
Grad Degree or Greater	0.023				-0.044
	(0.063)				(0.028)
TBS Leadership Grade	-0.008				
	(0.007)				
Observations	371	949	949	949	949

Model displays average marginal effects.

Not depicted but controlled for FY.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

The first iteration of the 0302, 0802, 1802, and 1803 MOSs model has 27 independent variables with subsequent iterations ranging from 14 to 26 independent variables. Like the previous two models, the purpose of the first model is to determine whether the *TBS leadership Grade* variable is correlated in selection for lieutenant colonel command and it is not. The final model has 8 variables, excluding the FYs, of varying statistical significance ranging from 0.1 to 0.01.

All performance variables related to FITREP evaluations are significant at the 0.01 level except the *Cumulative Total RS Middle* variable which is statistically significant at the 0.1 level. The FITREP evaluation variables have coefficient stability across the iterations of the model. Regarding the RS evaluations, every 1 ppt increase in the *Cumulative Total RS Upper* and *Cumulative Total RS Middle*, increases the probability of lieutenant colonel command selection by 0.8 ppts and 0.3 ppts respectively. Regarding the RO evaluations, every 1 ppt increase in the *Cumulative Total RO Below* and *Cumulative Total RO With*, increases the probability of lieutenant colonel command selection by 1.4 ppts and 1.3 ppts respectively.

All training variables are statistically significant, save *Low CFT*, at either the 0.05 or 0.1 level and has coefficient stability across iterations of the model. Officers who achieve a score greater than or equal to 285 on their PFT increase their probability for lieutenant colonel command by 5.4 ppts while those who achieve a score greater than or equal to 285 on their CFT increase their probability by 6.6 ppts. Officers who have a have a score equal or less than 235 on their PFT reduce their probability for lieutenant colonel command selection by 8.4 ppts. Regarding the education variables, only resident major PME is statistically significant at the 0.01 level. Attending a resident PME course increases the probability of lieutenant colonel command selection by 7.5 ppts.

4. Comparison Between the Populations

Table 15 displays the full models (the last iteration for Tables 12–14) to compare the variables amongst the three populations. There is no new information in the table, but it provides a single snapshot of the full models of each population.

Table 15. Selection as Primary for Lieutenant Colonel Command Comparing Populations

	All MOSs	No Pilots or Judge Advocates	0302, 0802, 1802, 1803
Major	0.033***	0.021	0.040
	(0.013)	(0.015)	(0.027)
Female	0.021	0.048*	
	(0.025)	(0.026)	
Racial Minority	0.006	0.005	0.045
	(0.016)	(0.018)	(0.037)
Combat Arms MOS	-0.076***		
	(0.021)		
Combat Service Support MOS	-0.043**	0.033*	
	(0.017)	(0.017)	
Cumulative Total RS Upper	0.009***	0.009***	0.008***
	(0.001)	(0.001)	(0.002)
Cumulative Total RS Middle	0.003***	0.004***	0.003*
	(0.001)	(0.001)	(0.002)
Cumulative Total RO Below	0.010***	0.011***	0.014***
	(0.001)	(0.001)	(0.002)
Cumulative Total RO With	0.004***	0.007***	0.013***
	(0.001)	(0.002)	(0.003)
Combat FITREPs	0.011***	0.012***	0.008
	(0.003)	(0.004)	(0.007)
Adverse FITREPs	-0.112**	-0.093	-0.144
	(0.052)	(0.078)	(0.141)
High PFT (>=285)	0.030**	0.032**	0.054*
	(0.013)	(0.016)	(0.029)
High CFT (>=285)	0.040***	0.047***	0.066**
	(0.015)	(0.018)	(0.034)
Low PFT (<=235)	-0.110***	-0.121***	-0.084*
	(0.024)	(0.027)	(0.046)
Low CFT (<=235)	-0.057	-0.036	0.017
	(0.037)	(0.040)	(0.070)
Valor Award	0.011	0.006	0.022
	(0.011)	(0.012)	(0.020)
Bronze Star	0.030**	0.025	0.030
	(0.014)	(0.015)	(0.021)
Meritorious Service Medal	-0.000	0.003	0.005
	(0.007)	(0.008)	(0.015)
AMOS 88XX	-0.034*	-0.048**	-0.071
	(0.020)	(0.023)	(0.054)
	All MOSs	**No Pilots or Judge Advocates**	**0302, 0802, 1802, 1803**
AMOS 0505	0.031	0.028	0.027
	(0.021)	(0.023)	(0.034)
Resident Capt PME	0.045***	0.030**	0.000
	(0.013)	(0.015)	(0.030)
Resident Maj PME	0.043***	0.031**	0.075***
	(0.012)	(0.015)	(0.026)

	All MOSs	No Pilots or Judge Advocates	0302, 0802, 1802, 1803
Grad Degree or Greater	-0.044***	-0.013	-0.044
	(0.013)	(0.016)	(0.028)
Observations	4225	2818	949

Model displays average marginal effects.

Not depicted but controlled for FY.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notable differences between the three populations include the *Major*, *Combat FITREPs*, *Adverse FITREPs*, PFT, CFT, *AMOS 88XX,* and resident PME variables. The *Major* and *Adverse FITREPs* variables are only statistically significant for the all MOSs population while *Combat FITREPs* and *AMOS 88XX* variables are only statistically insignificant for the 0302, 0802, 0802, and 1803 population. Achieving a high PFT and CFT has approximately two more percentage points in their explanatory relationship with lieutenant colonel command selection for the 0302, 0802, 1802, and 1803 population compared to the other populations. Resident captain PME has the highest correlation with lieutenant colonel command selection for the all MOS population with a coefficient of 0.045 versus 0.030 for the no pilots or Judge Advocates population and is statistically insignificant for the last population. Resident major PME is most predictive for lieutenant colonel command selection for the 0302, 0802, 1802, and 1803 population with an increased probability of selection by 7.5 ppts compared to 4.3 and 3.1 ppts of other populations. Of note, all four of the RS and RO FITREP variables have approximately the same relationship with the dependent variable across all three populations.

B. PREDICTIVE CAREER PATHS FOR LIEUTENANT COLONEL COMMAND SELECTION

To answer research question two, I analyze career paths that are correlated for selection for lieutenant colonel command for the 0302, 0802, 1802, and 1803 MOSs. The results of all models are given as marginal effects at their means.

1. Unbinned B-Billets Model

Table 16 displays the results of predictive career path model with unbinned captain and major B-billet variables. The first iteration of the model only contains captain B-billet

variables; the second iteration contains major B-billet variables; the third contains both captain and major B-billet and resident PME variables, and the last iteration contains all previous mentioned variables in addition to the two AMOS variables associated with the 88XX and Operational Planner AMOSs.

The reference group for this model are Marines who did not have a captain or major B-billet, did not attend either resident captain or major PME, and do not possess an 88XX or the Operational Planner AMOS. The first iteration of this model contains 949 observations while the remaining iterations contain 934 observations as the model removes 15 observations as the Ft Sill Major B-billet has a mean of zero.

Table 16. Unbinned B-Billet Model

	Captain B-Billets	**Major B-Billets**	**Captain & Major Billets with PME**	**Captain & Major B-Billets with PME & AMOS**
Captain B-Billets				
TBS	0.259***		0.086	0.069
	(0.097)		(0.096)	(0.094)
Ft. Sill	0.164		0.033	0.039
	(0.114)		(0.115)	(0.114)
ANGLICO	0.181*		0.077	0.087
	(0.102)		(0.100)	(0.098)
I-I	0.007		-0.205	-0.186
	(0.128)		(0.139)	(0.138)
M&RA	0.214		0.201	0.208
	(0.130)		(0.138)	(0.137)
Marine Barracks	0.040		-0.035	-0.017
	(0.149)		(0.143)	(0.141)
MARSOC	0.069		-0.008	0.006
	(0.150)		(0.158)	(0.156)
Armor or Amphib School Instructor	-0.035		-0.048	-0.066
	(0.167)		(0.154)	(0.157)
MCESG	0.198		0.156	0.163
	(0.129)		(0.121)	(0.117)
Security Forces	0.178*		0.113	0.109
	(0.100)		(0.097)	(0.096)
Division or MEF	-0.088		-0.127	-0.108
	(0.144)		(0.156)	(0.152)
MEU	0.010		-0.022	-0.003
	(0.122)		(0.131)	(0.126)
MLG	0.085		0.014	0.021
	(0.151)		(0.141)	(0.132)
OCS	0.002		-0.039	-0.058

	Captain B-Billets	Major B-Billets	Captain & Major Billets with PME	Captain & Major B-Billets with PME & AMOS
	(0.135)		(0.129)	(0.128)
Recon	0.113		-0.010	0.000
	(0.125)		(0.123)	(0.120)
Recruit Training	0.091		-0.044	-0.041
	(0.102)		(0.099)	(0.098)
Recruiting	0.024		-0.112	-0.106
	(0.109)		(0.111)	(0.108)
SOI	0.195*		0.098	0.101
	(0.100)		(0.098)	(0.095)
TTECG	0.497***		0.330**	0.320**
	(0.143)		(0.136)	(0.134)
MCSC	-0.264		-0.271	-0.321
	(0.208)		(0.210)	(0.229)
Weapons Training Bn	0.069		-0.025	-0.011
	(0.172)		(0.165)	(0.164)
Instructor Other	0.111		0.002	-0.002
	(0.131)		(0.138)	(0.136)
HQMC Other	0.251*		0.149	0.152
	(0.133)		(0.137)	(0.133)
Other	0.211*		0.114	0.106
	(0.108)		(0.099)	(0.098)
Major B-Billets				
Operational Planner Utilization		0.146	0.131	0.018
		(0.126)	(0.126)	(0.138)
ANGLICO		0.000	0.071	0.084
		(0.150)	(0.158)	(0.163)
CD&I		-0.209	-0.182	-0.188
		(0.153)	(0.150)	(0.156)
EWTG		-0.068	-0.049	-0.036
		(0.147)	(0.135)	(0.141)
Ft. Sill		0.000	0.000	0.000
		(.)	(.)	(.)
I-I		-0.118	-0.100	-0.100
		(0.115)	(0.113)	(0.120)
Joint Billet		-0.013	-0.036	-0.035
		(0.116)	(0.114)	(0.121)
M&RA		0.058	0.088	0.073
		(0.132)	(0.134)	(0.139)
MAGFT Staff Training Program		-0.157	-0.141	-0.208
		(0.174)	(0.171)	(0.176)
MARFOR		0.041	0.049	0.003
		(0.145)	(0.143)	(0.156)
MARSOC		-0.216	-0.146	-0.135
		(0.219)	(0.213)	(0.216)
MCFPEP		0.058	0.185	0.197
		(0.154)	(0.144)	(0.149)
Security Forces		-0.276	-0.210	-0.190
		(0.170)	(0.176)	(0.181)
MCTOG		-0.090	-0.138	-0.147

	Captain B-Billets	Major B-Billets	Captain & Major Billets with PME	Captain & Major B-Billets with PME & AMOS
		(0.178)	(0.177)	(0.177)
EWS Instructor		0.252**	0.236*	0.222*
		(0.128)	(0.125)	(0.130)
MCWL		-0.252	-0.214	-0.211
		(0.217)	(0.180)	(0.185)
MEU		-0.395*	-0.317*	-0.317*
		(0.211)	(0.189)	(0.183)
MOI		-0.052	-0.028	-0.030
		(0.159)	(0.164)	(0.166)
PP&O		0.058	0.109	0.108
		(0.132)	(0.127)	(0.132)
RSCO		0.337***	0.298***	0.296**
		(0.115)	(0.112)	(0.119)
SOI		-0.079	-0.028	-0.029
		(0.128)	(0.129)	(0.135)
MCSC		-0.179	-0.143	-0.138
		(0.154)	(0.167)	(0.173)
TBS		0.021	0.044	0.049
		(0.125)	(0.121)	(0.127)
TTECG		-0.211	-0.227	-0.216
		(0.143)	(0.144)	(0.150)
HQMC Other		-0.050	-0.095	-0.080
		(0.129)	(0.134)	(0.138)
Instructor Other		-0.079	-0.065	-0.051
		(0.128)	(0.127)	(0.134)
Other		-0.022	0.004	-0.008
		(0.116)	(0.112)	(0.120)
Resident PME				
Resident Capt PME			0.052	0.049
			(0.037)	(0.037)
Resident Maj PME			0.152***	0.151***
			(0.032)	(0.032)
AMOS				
AMOS 88XX				0.019
				(0.068)
AMOS 0505				0.129***
				(0.046)
Observations	949	934	934	934

Model displays average marginal effects.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

The first iteration of the career paths model focuses solely on the predictive value of captain B-billets. Within this iteration, two variables are statistically significant at the 0.01 level. Officers that had TBS as a captain B-billet are 25.9 ppts more likely to get

selected for lieutenant colonel command while those that had Tactical Training Exercise Control Group (TTECG) as a B-billet are 49.7 ppts more likely to selected for lieutenant colonel command. Five B-billet variables are significant at the 0.1 level: *ANGLICO, Security Forces, SOI, HQMC Other, and Other.* The coefficients for these variables range from 0.178 to 0.251 indicating about a 20 ppt increased probability of lieutenant colonel command selection. Of note, the variables *TBS, TTECG*, *ANGLICO, Security Forces,* and *SOI* are associate with B-billets immersed in the practicing or instruction of tactics at the individual and small unit level.

In the second iteration of the model focusing exclusively on the major B-billets, three variables have predictive value. Officers who were EWS instructors have a 25.2 ppt increased probability of selection for lieutenant colonel command. Officers who served on Marine Expeditionary Unit (MEU) staffs are 39.5 ppts less likely to get selected for lieutenant colonel command and this variable is statistically at the 0.1 level. The last major B-billet variable correlated with lieutenant colonel command selection in the second iteration of the model is the *RSCO* variable. Officers who served as RS COs are 33.7 ppts more likely to get selected for lieutenant colonel command.

The third iteration of the model contains both captain and major B-billet and resident PME variables. Within this iteration, five variables are statistically significant: *TTECG* as a captain B-billet, *EWS Instructor*, *MEU*, and *RSCO* as a major B-billets, and *Resident Maj PME*. Officers who served at TTECG during their captain B-billet have a 33 ppt increased probability of lieutenant colonel selection. Marines who served on MEU staffs a major are 31.7 ppts less likely to get selected for lieutenant colonel command while those that were instructors at EWS are 23.6 ppts more likely for selection. Both variables are significant at the 0.1 level. RS COs are 29.8 ppts more likely to get selected for command. Lastly, only resident major PME is correlated. Officers who attended resident major PME are 15.2 ppts more likely to get selected for lieutenant colonel command.

The last iteration of the model has all previous mentioned variables but also adds the *AMOS 08XX* and *AMOS 0505* variables. This result of this iteration has little change from the previous iteration with one notable difference. The *AMOS 0505* is correlated with lieutenant colonel command selection. Officers who possess the 0505 AMOS of

Operational Planner are 12.9 ppts more likely to get selected for lieutenant colonel command.

Across the iterations of the un-binned B-billet career path model, *TTECG* is the only captain B-billet statistically significant while the *MEU*, *EWS Instructor*, and *RSCO* are consistently significant at varying levels. Both the *TTECG* and *MEU* variables are less correlated when adding additional variables, while *EWS Instructor* and *RSCO* possess coefficient stability across iterations. Additionally, *Resident Maj PME* has coefficient stability in iterations four and five.

2. Binned B-Billets Model

Table 17 displays the results of predictive career path model with binned captain and major B-billet variables. The first iteration of the model contains one captain B-billet independent variable; the second iteration contains major B-billet variables; the third contains both captain and major B-billet and resident PME variables, and the last iteration contains all previous mentioned variables in addition to the two AMOS variables associated with the 88XX and the Operational Planner AMOSs.

The reference group for this model are Marines who did not have a B-billet associated with PMOS as a, served on I-I duty as a major, did not attend either resident captain or major PME, and do not possess an 88XX or 0505 Operational Planner AMOSs. All iterations of this model contain 949 observations.

Table 17. Binned B-Billet Model

	Captain B-Billets	**Major B-Billets**	**Captain & Major Billets with PME**	**Captain & Major B-Billets with PME & AMOS**
B-Billets Associated with PMOS (Capt)	0.138*** (0.028)		0.108*** (0.030)	0.105*** (0.029)
HQMC Billets (Maj)		0.057 (0.059)	0.042 (0.059)	0.050 (0.059)
Instructor Billets (Maj)		0.125** (0.058)	0.098* (0.058)	0.093 (0.058)
Joint Billet (Maj)		0.108 (0.066)	0.073 (0.066)	0.077 (0.066)
Other Billets (Maj)		0.108**	0.095*	0.071

	Captain B-Billets	Major B-Billets	Captain & Major Billets with PME	Captain & Major B-Billets with PME & AMOS
		(0.055)	(0.054)	(0.055)
RSCO (Maj)		0.467***	0.387***	0.387***
		(0.063)	(0.064)	(0.064)
B-Billets Associated with PMOS (Maj)		-0.045	-0.051	-0.039
		(0.066)	(0.065)	(0.066)
TBS (Maj)		0.142*	0.119	0.130*
		(0.081)	(0.078)	(0.077)
Resident Capt PME			0.042	0.038
			(0.035)	(0.035)
Resident Maj PME			0.154***	0.147***
			(0.030)	(0.030)
AMOS 88XX				-0.009
				(0.068)
AMOS 0505				0.141***
				(0.039)
Observations	949	949	949	949

Model displays average marginal effects.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Officers who have a captain B-billet associated with their PMOS are 10.5 ppts more likely to get selected for lieutenant colonel command while RS COs have a 38.7 ppt increased likelihood of selection for lieutenant colonel command. Majors who serve at TBS have a 13 ppts increased probability for selection to command but is statistically significant at the 0.1 level. Regarding non-B-billet variables, only *Resident Maj PME* and *AMOS 0505* are correlated with lieutenant colonel command selection. Majors who attend resident PME are 14.7 ppts more likely for lieutenant colonel command selection while officers who possess the Operational Planner AMOS have a 14.1ppt increased probability of selection for lieutenant colonel command.

C. SUMMARY

This chapter presents the quantitative results of the models and answers both research questions. I apply logistic regression models to identify the predictive variables for lieutenant colonel command selection as well as identify which career paths are predictive for lieutenant colonel command for the 0302, 0802, 1802, and 1803 MOSs. Regardless of the populations analyzed, results indicate physical fitness as measured by the PFT and CFT, RS and RO FITREP evaluations, and resident major PME are positively

correlated with lieutenant colonel command selection while obtaining a low PFT score is negatively correlated with selection. I find that TBS leadership grades, rank sex, race, and awards are generally statistically insignificant in predicting lieutenant colonel command selection. Of note, two of the models identified that obtaining an 88XX MOS from NPS is negatively correlated with lieutenant colonel command selection. Lastly, Marines with an aviation MOS are more likely to get selected for command than combat arms and combat service support MOSs.

Regarding predictive career paths, officers who fill a B-billet as a captain associated with their PMOS have an increased probability of selection for lieutenant colonel command. Individual B-billets positively correlated with command selection include TTECG as a captain, EWS instructor as a major, and RS CO. Assignment to a MEU staff as a major is negatively correlated with command selection. Attending resident major PME and possessing the Operational Planner AMOS is also positively correlated with lieutenant colonel command selection.

VI. CONCLUSIONS AND RECOMMENDATIONS

This chapter discusses the interpretation and analysis of my statistical models as they relate to both the research questions and ends with recommendations for further research related to command in the Marine Corps.

A. CONCLUSIONS

The purpose of my study was twofold. First, determine the variables associated with selection for lieutenant colonel command. Second, determine what career paths predict selection for lieutenant colonel command for the 0302, 0802, 1802, and 1803 PMOSs. Regarding the first, I analyzed three populations within my data: the all MOSs population; no pilots or Judge Advocates population; and the infantry, artillery, tank, and AAV officer MOSs population. I used multivariate logistic regression with 13 independent variable categories with up to 30 independent variables depending on the model and population.

I find that lieutenant colonel command selection is positively correlated with physical fitness as measured by the PFT and CFT, FITREP evaluations including both RS and RO markings, aviation MOSs, and attendance of resident major PME. Notable differences amongst the populations include being a rank of major at the time of CSB, adverse FITREPs, Bronze Stars, and obtaining a graduate degree are correlated with lieutenant colonel command selection only in the all MOSs population while combat FITREPs, possessing an 88XX AMOS, and attending resident captain PME are correlated with lieutenant colonel command selection for both the all MOSs and the no pilots or Judge Advocates populations. I find that TBS leadership grades, rank sex, race, valor awards, MSMs, and the Operational Planner AMOS of 0505 are generally statistically insignificant in predicting lieutenant colonel command selection.

The TBS leadership grade requires further clarification as there is a disagreement regarding the effect of TBS performance on future performance or selection on various boards including CCLEB, promotion, and command. I find that the TBS leadership is not correlated with lieutenant colonel command selection. However, I possessed limited observations of this variable in my data. Hurndon and Wiler determine strong correlation

with TBS performance as a company grade officer. Stolzenberg in his models, finds nothing statistically significant between officers that graduate in the different thirds for promotion outcome while Conlan finds those that graduate in the top third of their TBS class are less likely to get promoted than those that graduate in the middle third.

Regarding predictive career paths, captains who fill a B-billet associated with their PMOS have an increased probability of selection for lieutenant colonel command compared to officers whose B-billet is not associated with their PMOS. Individual B-billets positively correlated with command selection include TTECG as a captain, EWS instructor as a major, and RS CO. Assignment to a MEU staff as a major is negatively correlated with command selection. Lastly, attending resident major PME and possessing the AMOS of Operational Planner are also positively correlated with lieutenant colonel command selection.

B. FURTHER RESEARCH

This research is the third NPS study focusing on lieutenant colonel command selection within the Marine Corps. However, there are no studies focusing on colonel command selection. O6 command, as one would expect, becomes much smaller in command opportunities and should be of interest as these colonel commanders feed into its General Officer population.

Further qualitative research on career progression should be investigated including the effect of B-billets on officer performance in key billets. For example, do officers that fill certain B-billets perform better as company commanders or operations officers.

Lastly, previous research on the lieutenant colonel CSB by Tarsiuk and Druffel-Rodriguez attempted to qualitatively evaluate the Marine Corps' current system for command selection. In 2020, the U.S. Army implemented a new system of selecting its battalion commanders called the Battalion Commander Assessment Program. This new program completely overhauled the way U.S. Army selects its commanders. A study analyzing the effectiveness of this system and comparing it to the Marine Corps would be worthwhile.

APPENDIX A. MOS DESIGNATOR GROUPS

	Military Occupational Specialties
Combat Arms MOS	0302, 0370, 0802, 1802, 1803
Combat Service MOS	0102, 0180, 0202, 0402, 0602, 1302, 1701, 1702, 3002, 3404, 4302, 4402, 4502, 5803, 5902, 6002, 6602, 7202
Aviation MOS	7301, 7315, 7509, 7518, 7523, 7525, 7532, 7543, 7557, 7562, 7563, 7564, 7565, 7566, 7588

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APPENDIX B. CAPTAIN B-BILLET DESCRIPTIONS

Captain B-Billet	Description
TBS	The Basic School. Tasked to train and educate newly commissioned officers.
Ft. Sill	Marine Artillery Detachment, Ft Sill. Trains 08XX and 2887 MOSs.
ANGLICO	Air-Naval Gunfire Liaison Company. Provides MAGTF commanders a fires capability.
M&RA	Manpower & Reserve Affairs. Oversee the manpower system for the Marine Corps.
Marine Barracks	Marine Barracks. Units include Silent Drill Platoon, Body Bearers, and Marine Band.
MARSOC	Marine Forces Special Operations Command. Performs special operations missions assigned by Special Operations Command.
Armor/Amphib School Instructor	Assault Amphibian School and Army Armor School. Entry level schools for AAV and tanker Marines.
MCESG	Marine Corps Embassy Security Group. Provides Marines for MSG duty.
Security Forces	Marine Corps Security Forces. Provides anti-terrorism security forces.
Division or MEF	Billets at the Division or Marine Expeditionary Force levels of command.
MEU	Billets on Marine Expeditionary Unit staffs.
MLG	Billets at the Marine Logistics Group level.
OCS	Officer Candidate School. Educates and trains Marine officer candidates.
Recon	Reconnaissance Battalions. Conducts reconnaissance in support of MAGTFs.
Recruit Training	Recruit Training. Produce basically trained enlisted Marines.
Recruiting	Marine Corps Recruiting. Recruits civilians into the Marine Corps.
SOI	School of Infantry. Conducts entry-level infantry and advanced infantry training.
TTECG	Tactical Training Exercise Control Group. Designs and facilitates service level training exercises.
MCSC	Marine Corps Systems Command. The acquisition command of the Marine Corps.
Weapons Training Bn	Weapons Training Battalion. Conducts marksmanship training
I-I	Inspector-Instructor Duty. Develop and train Marine reservists
HQMC Other	Includes billets with Marine Corps Warfighting Lab, Programs and Resources, Training and Education Command, training command, and billets with unspecified HQMC units. These units are binned due to low frequency observations.
Instructor Other	Includes billets with Expeditionary Warfare Training Group, Expeditionary Operations Training Group, Very Shallow Water mine countermeasure detachment, Marine Corps Mountain Warfare Training Center, and Marine Corps Tactics and Operations Group. These units are binned due to low frequency observations.
Other	Includes Defense Threat Reduction Agency, Expeditionary Strike Group, H&S Battalions at Marine Corps Instillations, Marine Forces billets, Marine Corps Operational Test and Evaluation Activity, Marine Corps Personnel Exchange Program, Military Entrance Processing Station, Olmsted Scholar Program, Marine Officer Instructor, Seabee Readiness Group, United States Naval Academy, Marine Corps liaison at MCCC, Joint Command, Foreign Area Officer. These units are binned due to low frequency observations.
Binned Captain B-Billets	**Description**
B-billet Related to PMOS	Includes Ft. Sill, MCSF, TBS, SOI, ANGLICO, TTECG, Armor/Amphib School Instructor, Recon.

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APPENDIX C. MAJOR B-BILLET DESCRIPTIONS

Major B-Billet	**Description**
Operational Planner Utilization	Utilization tour for obtaining 0505 AMOS.
CD&I	Command Development and Integration. Plans, designs, and implements service guidance to organize and equip the Marine Corps.
ANGLICO	Air-Naval Gunfire Liaison Company. Provides MAGTF commanders a fires capability.
EWTG	Expeditionary Warfare Training Group. Provides instruction in tactics and doctrine of expeditionary warfare.
Ft. Sill	Marine Artillery Detachment, Ft Sill. Trains 08XX and 2887 MOSs.
I-I	Inspector-Instructor Duty. Develop and train Marine reservists
Joint Billet	Joint Billet. Executed a billet on a Joint Staff.
M&RA	Manpower & Reserve Affairs. Oversee the manpower system for the Marine Corps.
MAGTF Staff Training Program	MAGTF Staff Training Program. Provides training in MAGTF operations to senior commanders and staffs.
MARFOR	Marine Forces. Service component of combatant commands.
MARSOC	Marine Forces Special Operations Command. Performs special operations missions assigned by Special Operations Command.
MCFPEP	Marine Corps Foreign Personnel Exchange Program. Conducts engagement with allied partners.
Security Forces	Marine Corps Security Forces. Provides anti-terrorism security forces.
MCTOG	Marine Corps Tactics and Operations Group. Provides advanced trained to operations and intelligence personnel and staffs.
EWS Instructor	Expeditionary Warfare School Instructor. Instructor at EWS which is the Marine Corp's resident PME for captains.
MCWL	Marine Corps Warfighting Lab. Creates operating concepts and capabilities.
MEU	Billets on Marine Expeditionary Unit staffs.
MOI	Marine Officer Instructor. Instructor at specified colleges and universities.
PP&O	Plans, Polices, and Operations. Develops and executes service plans and policies regarding structure and employment of Marine forces.
RSCO	Recruiting Station Commanding Officer. Board selected commander in charge of recruiting for designated geographic areas.
SOI	School of Infantry. Conducts entry-level infantry and advanced infantry training.
MCSC	Marine Corps Systems Command. The acquisition command of the Marine Corps.
TBS	The Basic School. Tasked to train and educate newly commissioned officers.
TTECG	Tactical Training Exercise Control Group. Designs and facilitates service level training exercises.
Instructor Other	Includes billets with Marine Aviation Weapons and Tactics, MCCC, Assault Amphibian School, EOTG, United States Naval Academy, United States Military Academy. These units are binned due to low frequency observations.
HQMC Other	Includes billets with Marine Corps Recruiting Command, Cyber Command, Programs and Resources, Training Command, Training and

Major B-Billet	**Description**
	Education Command, and billets with unspecified HQMC units. These units are binned due to low frequency observations.
Other	Includes 22d Naval Construction Regiment, Advisor Training Group, Center for Naval Analysis, Expeditionary Strike Group, , H&S Battalions at Marine Corps Instillations, Augment and Training Support Unit, Marine Corps detachment Ft Leavenworth, Marine Corps Logistics Operations Group, Marine Corps liaison Bethesda, Information Operations Center, MCESG, Marine Corps Training Mission UAE, Marine Barracks, MEF, MLG, Naval Sea Systems Command, OCS, Osan Nuclear Threat Reduction Branch, Regional Area Officer, Reconnaissance, Recruit Training. These units are binned due to low frequency observations.
None	No B-billet within grade.
Binned Major B-Billets	**Description**
HQMC	Includes, CD&I, MCSC, MCWL, PP&O, M&RA, and HQMC other
I-I	Inspector-Instructor Duty. Develop and train Marine reservists
Instructor	Includes MOI, EWS Instructor, MCTOG, MAGTF Staff Training Program Center, EWTG, and Instructor other
Joint Billet	Joint Billet. Executed a billet on a Joint Staff.
RSCO	Recruiting Station Commanding Officer. Board selected commander in charge of recruiting for designated geographic areas.
TBS	The Basic School. Tasked to train and educate newly commissioned officers.
B-billet Related to PMOS	Includes MCSF, TTECG, SOI, Ft. Sill, and ANGLICO
Other	Includes Operational Planner Utilization, MCFPEP, MARFOR, MARSOC, MEU, other, and none

LIST OF REFERENCES

9th Marine Corps District. (2008, June). Staying Marine. Retrieved from https://www.9thmcd.marines.mil/Portals/82/Docs/Mod%208-Staying%20Marine%20Section.pdf

Chambers, E. G., Foulon, M., Handfield-Jones, H., Hankin, S. M., Michaels III, E. G. The war for talent. *The Mckinsey Quarterly*, (3), 44–57. ProQuest.

Churchill, W. S. (1915). *The world crisis, 1911–1918.* Free Press, 2005.

Conlan, D. (2021). *Marine Corps officer accession: an analysis of effects on career-level promotion*. [Master's thesis, Naval Postgraduate School]. NPS Archive: Calhoun. https://calhoun.nps.edu/bitstream/handle/10945/67118/21Mar_Conlan_David.pdf?sequence=1&isAllowed=y

Dries, N., & Pepermans, R. (2012). How to identify leadership potential: development and testing of a consensus model. *Human Resource Management*, *51*(3), 361–385. https://doi.org/10.1002/hrm.21473

Druffel-Rodriguez, K. C. (2021). *Foxes and hedgehogs: building range in 21st Century.* [Master's thesis, Naval Postgraduate School]. NPS Archive: Calhoun. https://calhoun.nps.edu/bitstream/handle/10945/67702/21Jun_Druffel-Rodriguez_Kevin.pdf?sequence=1&isAllowed=y

Headquarters Marine Corps. (2008, January 25). *Professional military education (PME)*, (Marine Corps Order 1553.4B). https://www.marines.mil/Portals/1/MCO%201553.4B.pdf

Headquarters Marine Corps. (2017a, March 23). *Command screening program (CSP)* (Marine Corps Order 1300.64B). https://www.marines.mil/portals/1/Publications/MCO%201300.64B_Final_MK.pdf?ver=2017-04-05-071442-330

Headquarters Marine Corps (2017b, December 13). *FY18 commandants career-level education board results* (MARADMIN 673/17, 2017). https://www.marines.mil/News/Messages/Messages-Display/Article/1396035/fy18-commandants-career-level-education-board-ccleb results/#:~:text=The%20Fiscal%20Year%202018%20(FY18,utilization%20in%20the%20Marine%20Corps

Headquarters Marine Corps (2017c, December 13). *FY18 commandants professional intermediate-level education board results* (MARADMIN 674/17, 2017). https://www.marines.mil/News/Messages/Messages-Display/Article/1396086/fy18-commandants-professional-intermediate-level-education-board-cpib-results/

Headquarters Marine Corps (2017d, December 22). *Academic year 2018–2019 marine corps school of advanced warfighting student selection results message* (MARADMIN 696/17, 2017). https://www.marines.mil/News/Messages/Messages-Display/Article/1403342/academic-year-2018-2019-marine-corps-school-of-advanced-warfighting-student-sel/

Headquarters Marine Corps. (2018a). MCDP 1 *Warfighting*. Washington, DC: U.S. Government Printing Office. https://www.marines.mil/portals/1/Publications/MCDP%201%20Warfighting%20GN.pdf?ve r=2019-01-31-110543-300

Headquarters Marine Corps. (2018b, May 10). *Performance evaluation system* (Marine Corps Order 1610.7A). https://www.marines.mil/Portals/1/Publications/MCO%201610.7A.pdf?ver=2018-05-07-074813-187

Headquarters Marine Corps (2018c, December 4). *FY19 commandants career-level education board results* (MARADMIN 681/18, 2018). https://www.marines.mil/News/Messages/Messages-Display/Article/1704381/fy19-commandants-career-level-education-board-ccleb-results/#:~:text=The%20Fiscal%20Year%202019%20(FY19,utilization%20in%20the%20Marine%20Corps

Headquarters Marine Corps (2018d, December 4). *FY19 commandants professional intermediate-level education board results* (MARADMIN 682/18, 2018). https://www.marines.mil/News/Messages/Messages-Display/Article/1704398/fy19-commandants-professional-intermediate-level-education-board-cpib-results/

Headquarters Marine Corps (2018e, December 20). *Academic year 2019–2020 marine corps school of advanced warfighting student selection results message* (MARADMIN 717/18, 2018). https://www.marines.mil/News/Messages/MARADMINS/Article/1718993/academic-year-2019-2020-marine-corps-school-of-advanced-warfighting-student-sel/

Headquarters Marine Corps. (2019a). *Commandants' planning guidance*. 38th commandant of the Marine Corps. https://www.hqmc.marines.mil/Portals/142/Docs/%%20Commandant%27s%20Planning%20Guidance 2019.pdf?ver=2019-07-16-200152-700

Headquarters Marine Corps. (2019b, March 13). *Marine Corps physical fitness and combat fitness tests (PFT/CFT)* (Marine Corps Order 6100.13A Ch 1). https://www.fitness.marines.mil/Portals/211/documents/MCO%206100.13A%20CH-2.pdf

Headquarters Marine Corps (2019c, December 5). *FY20 commandants professional intermediate-level education board results* (MARADMIN 666/19, 2019). https://www.marines.mil/News/Messages/Messages-Display/Article/2033048/fy20-commandants-professional-intermediate-level-education-board-results/

Headquarters Marine Corps (2019d, December 12). *Academic year 2020–2021 marine corps school of advanced warfighting student selection results message* (MARADMIN 685/19, 2019). https://www.marines.mil/News/Messages/Messages-Display/Article/2038261/academic-year-2020-2021-marine-corps-school-of-advanced-warfighting-student-sel/

Headquarters Marine Corps (2020a, January 7). *FY20 commandants career-level education board results* (MARADMIN 002/20, 2020). https://www.marines.mil/News/Messages/Messages-Display/Article/2051491/fy2 0-commandants-career-level-education-board-results/#:~:text=The%20Fiscal%20Year%202020%20(FY20,utilization%20in%20the%20Marine%20Corps

Headquarters Marine Corps (2020b, December 9). *Academic year 2021–2022 marine corps school of advanced warfighting student selection results message* (MARADMIN 741/20, 2020). https://www.marines.mil/News/Messages/Messages-Display/Article/2440987/academic-year-2021-2022-advanced-intermediate-level-school-student-selection-re/

Headquarters Marine Corps (2020c, December 9). *FY21 commandants professional intermediate-level education board results* (MARADMIN 742/20, 2020). https://www.marines.mil/News/Messages/Messages-Display/Article/2441462/fy21-commandants-professional-intermediate-level-education-board-cpib-results/

Headquarters Marine Corps (2020d, December 23). *FY21 commandants career-level education board results* (MARADMIN 766/21, 2020). https://www.marines.mil/News/Messages/Messages-Display/Article/2455749/fy21-commandants-career-level-education-board-results/

Headquarters Marine Corps. (2021a, February 23). *Marine Corps body composition and military appearance program* (Marine Corps Order 6110.3A Change-3). https://www.marines.mil/Portals/1/Publications/MCO%206110.3A%20with%20CH-3.pdf?ver=xHFM3KLmZH8JZ6Uwo9-hJA%3d%3d

Headquarters Marine Corps (2021b, July 23). *Academic year 2022–2023 advanced intermediate level school application message* (MARADMIN 381/21, 2021). https://www.marines.mil/News/Messages/MessagesDisplay/Article/2705311/academic-year-2022-2023-advanced-intermediate-level-school-application-message/

Headquarters Marine Corps (2021c, November 11). *FY22 commandants professional intermediate-level education board results* (MARADMIN 674/21, 2021). https://www.marines.mil/News/Messages/MessagesDisplay/Article/2854000/fy22-commandants-professional-intermediate-level-education-board-results/

Headquarters Marine Corps (2021d, November 24). *Academic year 2022–2023 advanced intermediate level school student selection results* (MARADMIN 670/21, 2021). https://www.marines.mil/News/Messages/Messages-Display/Article/2853561/academic-year-2022-2023-advanced-intermediate-level-school-student-selection-re/

Headquarters Marine Corps (2021e, December 16). *FY22 commandants career-level education board results* (MARADMIN 715/21, 2021). https://www.marines.mil/News/Messages/MessagesDisplay/Article/2876797/fy22-commandants-career-level-education-board-results/

Hoffman, J. M. (2008). *Significant factors in predicting promotion to Major, Lieutenant Colonel, and Colonel in the United States Marine Corps*. [Master's thesis, Naval Postgraduate School]. NPS Archive: Calhoun. http://hdl.handle.net/10945/4227

Hurndon, N. A. & Wiler, Darby A. L. (2008). *An analysis of performance at the basic school as a predictor of officer performance in the operating forces*. [Master's thesis, Naval Postgraduate School]. NPS Archive: Calhoun. https://calhoun.nps.edu/bitstream/handle/10945/4223/08Mar_Wiler.pdf?sequence=1&isAllowed=y

Kotlyar, I. (2018). Identifying high potentials early: case study. *The Journal of Management Development*, *37*(9), 684–696. ProQuest.

Manpower Management Officer Assignments. (2020). Manpower Management Officer Assignments Roadshow Brief. Retrieved from https://www.youtube.com/watch?v=j1K7 W15nv3Y

Manpower & Reserve Affairs. (n.d.). *LtCol CSB Stats*. (2017-2022) [Data set]. https://www.manpower.usmc.mil/webcenter/portal/MMOA3_BUI/pages_fy15

Marine Corps University. (n.d.). *Blended Seminar.* Retrieved April 25, 2022, from https://www.usmcu.edu/CDET/officer-blended/

Marr, D. C. (1997*). A statistical analysis of the U.S Marine Corps Lieutenant Colonel Command Screening Process*. [Master's thesis, Naval Postgraduate School]. NPS Archive: Calhoun. https://calhoun.nps.edu/handle/10945/9009

Spain, E. S., Lin, E., & Young, L.V. (2020). Early predictors of successful military careers among West Point cadets. *Military Psychology, 32*(6), 389–407. https://www.tandfonline.com/doi/full/10.1080/08995605.2020.1801285

Stolzenberg, M. R. (2017). *Exploring Marine Corps officer quality: an analysis of promotion to lieutenant colonel*. [Master's thesis, Naval Postgraduate School]. NPS Archive: Calhoun. https://calhoun.nps.edu/handle/10945/53053

Tarsiuk, A. L. (2019). *Complacency kills: a systemic analysis of the USMC command screening program.* [Master's thesis, Naval Postgraduate School]. NPS Archive: Calhoun. https://calhoun.nps.edu/handle/10945/62306

Training Command. (n.d.) The Basic School. Retrieved April 26, 2022, from https://www.trngcmd.marines.mil/Northeast/The-Basic-School/

Wooldridge, J. M. (2016). *Introductory econometrics: A modern approach* (6th Edition). South-Western Cengage Learning.

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