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MONTEREY, CALIFORNIA

THESIS

**YOU RECRUIT WHO YOU ARE:
THE QUALITY RELATIONSHIP BETWEEN
MARINE RECRUITER AND ENLISTEE**

by

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March 2021

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THE QUALITY RELATIONSHIP BETWEEN
MARINE RECRUITER AND ENLISTEE**

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Submitted in partial fulfillment of the
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ABSTRACT

In recruiting, the phrase “you recruit who you are” describes a presumed relationship—recruiters attract and enlist individuals who are similar to themselves or within their in-group. This research evaluates the correlation of high-quality recruiters on high-quality enlistees. For the 264,681 recruiter-enlistee pairs from 2011 to 2019, quality is defined and determined for both recruiters and enlistees with five metrics using DOD enlistment standards and Marine Corps promotion and retention standards. I use linear probability models with RSS fixed effects and year fixed effects to hold constant market conditions and variations across years. Based on the five metrics, I find that high-quality recruiters have a consistently positive estimated effect on high-quality enlistees across all metrics with several effects statistically significant. I surmise that, by determining which Marines are high-quality prior to their assignment to recruiting, the Marine Corps may affect the quality of the enlistees at accession. Because force design necessitates higher-quality accessions, this thesis therefore recommends that the Marine Corps consider sending more high-quality Marines to recruiting duty to potentially improve the quality of the warfighting organization. Conversely, if the Marine Corps does not prioritize and send high-quality Marines to recruiting duty, then the Marine Corps may pay the price with lower quality enlistees.

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LIST OF ACRONYMS AND ABBREVIATIONS

AFADBD	armed forces active-duty base date
AFQT	armed forces qualification test
AFQT	armed services vocational aptitude and battery test
BCP	body composition program
BMI	body mass index
BRC	basic recruiter course
CFT	combat fitness test
DEP	delayed entry program
DI	drill instructor
EDIPI	electronic data interchange personnel identifier
FITREP	fitness report
HQ	high-quality
HQMC	headquarters Marine Corps
HSST	headquarters Marine Corps special duty assignment selection team
JEPES	junior enlisted promotion evaluation system
LPM	linear probability model
MCD	Marine Corps district
MCMAP	Marine Corps martial arts program
MCRC	Marine Corps recruiting command
MCRISS	Marine Corps recruiting information support system
MMEA-25	manpower management division enlisted assignments special duties
MOS	military occupational specialty
MSG DC	marine security guard detachment commander
OED	original entry date
PEBD	pay entry base date
PFT	physical fitness test
RS	recruiting station
RSS	recruiting substation
RV	relative value

SDA	special duty assignment
TFDW	total force data warehouse
TFRS	total force retention system

EXECUTIVE SUMMARY

“You recruit who you are” describes the presumed relationship between a recruiter and the individual they recruit, the enlistee, and how the recruiter will attract those enlistees most similar to themselves. This research focuses specifically on the quality relationship between the recruiter and the enlistee. First, I will define quality. Next, I will estimate the effect of high-quality (HQ) recruiters on HQ enlistees using historical data. As a disclaimer, it is important to note that correlation does not necessarily mean causation. Finally, I will recommend a more targeted approach to the assignment of high-quality (HQ) Marines to recruiting duty based on these estimates. Quality must first be defined since the term is used without a common definition. I use five separate metrics based on existing standards to objectively determine HQ while minimizing assumptions. Metrics 1–4 are depicted in Figure 1, with the numbers given representing each components weight within the score and the maximum possible score. Metric 5 for the recruiter and enlistee is not depicted.

Each of the metrics provides a separate definition of quality with some overlap. For both recruiters and enlistees, I determine HQ by Metric 1 if the individual graduated high school and scored above 50 on the AFQT (an Alpha). I determine HQ by Metrics 2–4 if the individual’s score within the metric exceeded the 60th percentile for either all enlistees or all recruiters.

For Metric 5, there is a different method for the recruiter and enlistee. I determine HQ by enlistee Metric 5 if they promoted to E5 within the first 25% of their MOS peer group. I determine HQ by recruiter Metric 5 if their average cumulative relative value was higher than 93.3 (they were in the top third). HQ recruiters are labeled HQR₁₋₅ for Metrics 1–5 and HQ enlistees are labeled HQE₁₋₅ for Metrics 1–5.

After determining which enlistees and recruiters were HQ, I evaluate the correlation to determine how well each of the metrics categorize HQ compared to the other metrics. Metrics 1 and 5 have low correlation and Metrics 2–4 have high correlation for both recruiters and enlistees.

Figure 1. Metric Components and Scoring

Metric 1: DOD Enlistment Standards

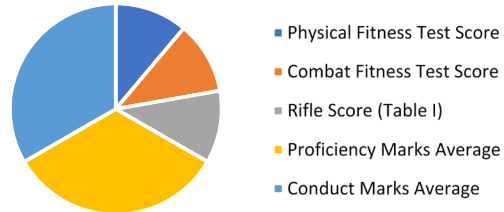
AFQT >= 50

Education Tier I

Metric 2: Legacy Composite Score Method

Physical Fitness Test Score	167	11%
Combat Fitness Test Score	167	11%
Rifle Score (Table I)	167	11%
Proficiency Marks Average	500	33%
Conduct Marks Average	500	33%

Total 1500

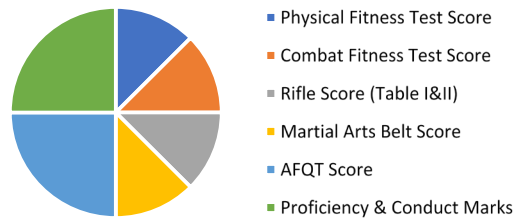


Metric 3: Junior Enlisted Performance Evaluation Method

Method

Physical Fitness Test Score	125	13%
Combat Fitness Test Score	125	13%
Rifle Score (Table I&II)	125	13%
Martial Arts Belt Score	125	13%
AFQT Score (Proxy)	250	25%
Proficiency & Conduct Marks (Proxy)	250	25%

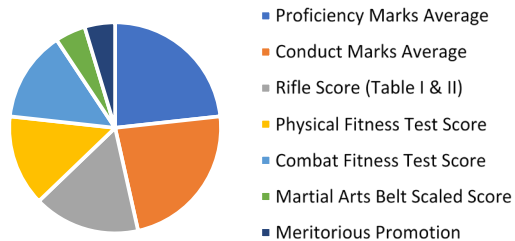
Total 1000



Metric 4: Reenlistment Tier Evaluation Method

Proficiency Marks Average	500	23%
Conduct Marks Average	500	23%
Rifle Score (Table I & II)	350	16%
Physical Fitness Test Score	300	14%
Combat Fitness Test Score	300	14%
Martial Arts Belt Scaled Score	100	5%
Meritorious Promotion	100	5%

Total 2150



As a means of defining quality, Metric 1 and 5 are less useful than Metrics 2–4. Metric HQE₁ has low correlation with the other metrics and, with 72% designated HQ based on metric HQE₁, Metric 1 is not very selective. Also, enlistees that attrite prior to completing MOS school can be determined HQ by metric HQE₁ though these individuals are not desirable. Metric HQE₅ is less useful for implementation to identify first-term HQ enlistees for three reasons: low correlation for metrics HQE₁₋₅ meaning individuals do not qualify as HQ across metrics; with only 5% of the enlistee population designated as HQ

based on HQE₅ this metric is too selective; and 48 months of service now required prior to promotion to E5 based on recent policy changes that limit the usefulness of this metric in the future. Metric HQR₅ is less useful because it excludes junior sergeants that lack FITREP data and, therefore, the metric would be difficult to implement by MMEA-25 to determine assignment of all Marines to recruiting duty. Metrics 2–4 are more useful to determine HQ for both the enlistees and the recruiters because these metrics have high correlation and categorize many of the same individuals as HQ. Additionally, the data for the Metric 2–4 components is available for all Marines and these scores can be computed regardless of time in service or rank.

With the defined HQ standards for 264,681 enlistees from 2011 to 2019 and 12,125 recruiters, this research evaluates the 264,681 recruiter-enlistee pairs. I control for the recruiting substation to remove bias due to differences in market conditions, and I control for the year the enlistee shipped to recruit training to remove bias between ship years. Table 1 depicts the coefficient estimates with positive estimated effects highlighted green. If the coefficient estimates are statistically significant, they are labeled with asterisks to denote the level of confidence at 99% (“***”), 95% (“**”), or 90% (“*”).

Table 1. Quality Effects of Recruiters on Enlistees

	HQE ₁	HQE ₂	HQE ₃	HQE ₄	HQE ₅
HQR ₁	0.010 ***	0.002	0.004 **	0.000	0.001
HQR ₂	0.003	0.004	0.004 *	0.003	0.000
HQR ₃	0.007 ***	0.004 *	0.002	0.003	0.002
HQR ₄	0.004	0.004 *	0.002	0.004 *	0.001
HQR ₅	0.005 **	0.005 **	0.005 *	0.004	0.003 ***

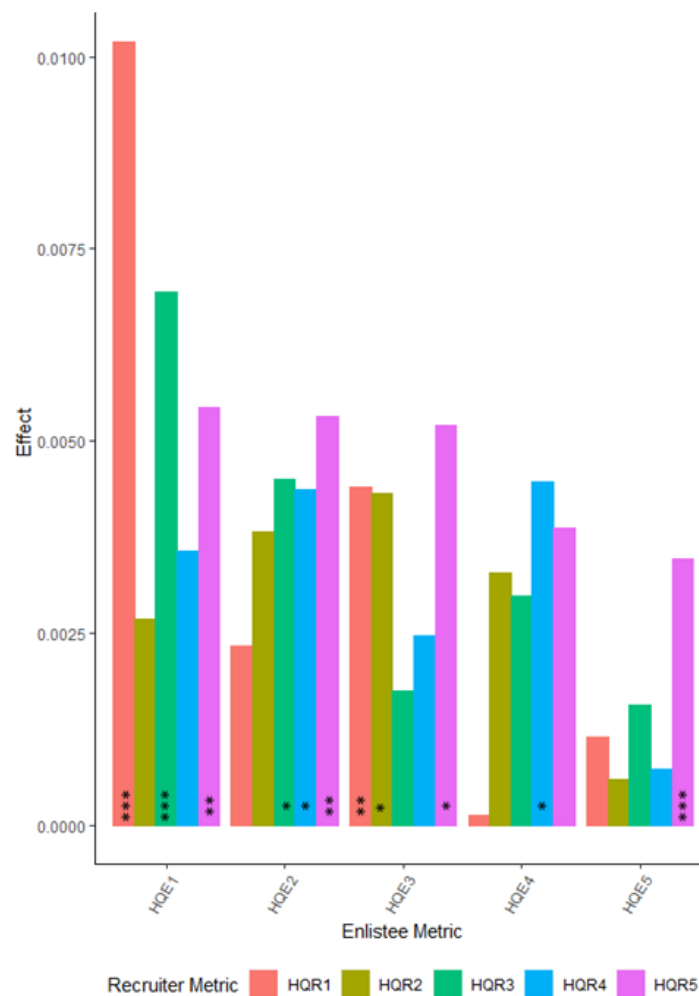
The models include recruiting station fixed effects to hold constant market conditions between RSSs and year fixed effects to hold constant the years the enlistees ship to recruit training. The results depict a total of 25 regressions using OLS LPMs with the metrics HQE₁₋₅ as the dependent variables and metric HQR₁₋₅ as the explanatory variables. The symbols “***” indicate significance at the 99% level of confidence, “**” at the 95% level of confidence, and “*” at the 90% level of confidence. The color green indicates a positive estimated effect for the coefficient estimates.

The results depict the estimated positive effects of the HQ recruiter metrics on the HQ enlistee metrics:

- Metric HQR₁ HQ recruiters contract HQ enlistees across all metrics and at statistically significant rates for metrics HQE_{1,3}.
- Metric HQR₂ HQ recruiters contract HQ enlistees across all metrics and at statistically significant rates for metric HQE₃.
- Metric HQR₃ HQ recruiters contract HQ enlistees across all metrics and at statistically significant rates for metrics HQE_{1,2}.
- Metric HQR₄ HQ recruiters contract HQ enlistees across all metrics and at statistically significant rates for metrics HQE_{2,4}.
- Metric HQR₅ HQ recruiters contract HQ enlistees across all metrics and at statistically significant rates for metrics HQE_{1-3,5}

Between these metrics, the Marine Corps should consider incorporating any of these metrics into the selection and assignment of Marines to recruiting duty. However, based on the statistically significant results for metric HQR₅, the Marine Corps should consider incorporating FITREPs into their selection and assignment process. As depicted in Figure 2, the estimates for the HQR₅ metric are consistent across all enlistee metrics. Although the HQR₁ metric has the highest effect on the HQE₁ metric, the HQR₁ is not consistent across the other enlistee metrics and near 0 for the HQE₄ metric. Furthermore, the metric HQR₅ outperforms 17 of the other 20 models within each enlistee metric.

Figure 2. Recruiter HQ Estimated Effect on Enlistee HQ by Metric



The graph depicts a total of 25 regression models for the estimated effects of the five- recruiter metrics on the five-enlistee metrics. “***” denotes significance at the 99% level of confidence, “**” denotes significance at the 95% level of confidence, and “*” denotes significance at the 90% level of confidence. All HQ recruiter metrics’ estimated effects are positive and grouped by the enlistee metric.

When MMEA-25 initializes its roster from WebMASS, I recommend they use the HQR5 metric to identify the HQ Marines for assignment to recruiting duty for those Marines that have FITREP data. Incorporating FITREP data will require changes to the existing process, but, based on these estimated effects using empirical evidence, by determining which Marines are HQ prior to assignment, the Marine Corps may be able to improve enlistee quality at accession. Because force design necessitates HQ accessions, the Marine Corps should consider sending more HQ Marines to recruiting duty to

potentially improve warfighting. Conversely, if the Marine Corps does not send HQ Marines to recruiting duty, then recruiters may contract lower quality enlistees.

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First of all, I would like to thank Col David Fallon for suggesting this topic. When I initially approached him and said that I wanted to get “left of bang” to improve the quality of Marines at accession, I had something completely different in mind. His suggestion was the genesis of this research and I am utterly grateful for his support and guidance along the way.

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I. INTRODUCTION

Recruiting, developing, and retaining a high-quality military and civilian workforce is essential for warfighting success. Cultivating a lethal, agile force requires more than just new technologies and posture changes; it depends on the ability of our warfighters and the Department workforce to integrate new capabilities, adapt warfighting approaches, and change business practices to achieve mission success. The creativity and talent of the American warfighter is our greatest enduring strength, and one we do not take for granted.

—John Mattis
Summary, National Defense Strategy (2018)

The Marine Corps reached a point of inflection in 2019, according to General Berger, the 38th Commandant. The service needed to make tough choices and understood that the transition to Great Power Competition (GPC) and the pivot to the Pacific required significant investment dollars for modernization that the Corps would not receive. Beyond the investment required in equipment, the Commandant understood that the service needed to invest in higher-quality individuals who could make difficult decisions at lower levels in the next fight. As a result, the Commandant has renewed focus on the quality of the force. He stated, “I understand the perspective of mass having a quality of its own, but right now, we need quality... and the force that we end up with will be much better” (Harkins, 2020). How does the Marine Corps define quality? Is quality based on the DOD enlistment standards? Or perhaps quality is based on an individual reaching a certain rank by the end of their first enlistment: A Marine who promotes to Sergeant in four years is certainly a high-quality (HQ) individual. Or maybe quality is defined by what it is not: An individual who attrites prior to the end of their enlistment—whether in the Delayed Entry Program (DEP), recruit training, during their military occupational specialty (MOS) school or first duty station—certainly is not a HQ individual. Without first defining quality, the term takes on a nebulous and abstract meaning that undermines policy for recruiting the HQ individuals the Commandant seeks.

Within the recruiting world, “you recruit you who are” is commonly heard and understood to mean that if an individual is HQ then they will attract and thereby enlist other

HQ individuals. This phrase, as the premise of this research, describes a relationship that underlies the transaction between the enlistee and the recruiter. One conclusion may be that the recruiter is the decision maker and decides whom to contract and therefore only approaches or contacts individuals who are similar to them. This conclusion may be wrong since the enlistee ultimately decides whether to contract and many recruiters face enormous pressure to meet mission. An alternative explanation is that the enlistee decides whether they are a fit for the Marine Corps based on their interaction and similarity with the recruiter. Either explanation supports in-group bias theory based on performance. Typically, in-group bias theory describes how individuals will favor groups similar to themselves (in-groups or we-groups) and, as a result, discriminate against groups dissimilar to themselves (out-groups or others-groups) (“In-Group Bias in the Minimal Intergroup Situation,” 1979). However, more recently, research has shown that in-group bias exists within performance measures as well. Instead of individuals discriminating against the out-group based solely on gender, race, or ethnicity; high performing individuals (based on their cognitive ability) also discriminate against the out-group (low performing based on cognitive ability) when making decisions (Paetzel & Sausgruber, 2018).

A. PURPOSE

The purpose of this research is twofold. First, this research seeks to define quality for the enlistee and recruiter. What defines quality for an individual Marine is based on the different methods the service currently uses to categorize and rank Marines at enlistment, during their service, and when evaluating them for reenlistment. Second, based on these categorizations of HQ individuals, this research will explore the relationship between high-quality (HQ) recruiters and HQ enlistees and estimate the effect of the HQ recruiters on HQ enlistees using historical data.

Upon determining the estimated effect of the recruiter on the enlistee, I will attempt to evaluate the existing policy for assignment of individuals to recruiting duty. If in fact HQ recruiters are more likely to contract HQ enlistees and the Commandant prioritizes quality of the future force over other competing alternatives such as Drill Instructor (DI) Duty or Marine security guard detachment commander (MSG DC), then perhaps the

service should increase the standards for recruiters and apply a more targeted policy toward assignment of individuals to recruiting. Alternatively, if my research finds no evidence for a relationship between the quality of recruiter and enlistee, then it could mean that the quality of the recruiter is not as important, and the status quo may be optimal. Further, the Marine Corps may need to focus more on predictors of recruiter success such as salesmanship, confidence, or grit for assignment.

B. SCOPE AND METHODOLOGY

Most of the existing literature focuses on market conditions with very little discussion of quality of recruiter or enlistee. The term “quality” is often used without definition and assumes an abstract meaning that is difficult to ascertain. The literature discusses market conditions as the major determinants for the enlistee’s quality: if an enlistee lives in an area with higher propensity to enlist and the area has a higher percentage of qualified males (high school graduates and higher scores on the AFQT), then the market is a HQ market. Unfortunately, the literature focuses little on the quality of the Marine recruiter and the resultant effect on the quality of enlistee who decides to join the Marines. This research will fill this gap and explore the relationship between the quality of the Marine recruiter and the quality of their enlistee. It is possible to evaluate low-quality Marine recruiters and low-quality enlistees when determining this relationship; however, this research focuses on the HQ relationship instead of low-quality.

The study evaluates two separate populations who are paired based on the enlistment contract: the individual Marine recruiter and the individuals they recruit (enlistees). For the enlistees, the data includes all individuals who started service after 2011 and before 2020. Recruiters are matched to the individuals they contract. The Marine Corps Recruiting Information Support System (MCRISS) records data at enlistment that includes characteristics such as the initial strength test scores, Armed Forces Qualification Test (AFQT) score derived from the Armed Services Vocational Aptitude and Battery Test (AFQT), demographic information, height and weight, level of education, geographic characteristics for the individual including their home of record and the specific recruiting substation, recruiting station, and district the individual enlisted within. If the individual

required a waiver or attrite during the delayed entry program (DEP) or recruiting training, this information also resides within the MCRISS. Performance data for the Marine is provided by the Total Force Data Warehouse (TFDW) and includes: promotion dates and ranks; service obligations and description such as MOS and duty stations; marital and dependents status; performance evaluations such as proficient and conduct marks; individual scores on the rifle range, physical fitness test (PFT), combat fitness test (CFT), and belt attained in the Marine Corps Martial Arts Program (MCMAP); separation data; and awards data. For the recruiter, the same information was provided by MCRISS and TFDW. Additionally, Headquarters Marine Corps Performance Evaluation Section (MMRP-30) provided fitness report (FITREP) data for the recruiters.

The data is used to develop metrics for quality and then evaluate the relationship between a HQ recruiter and a HQ enlistee as defined. There may be an effect given this relationship. Enlistees may encounter recruiters similar to themselves and determine the Marine Corps may pose a good fit for their personality and characteristics and in this scenario the enlistee makes the decision. Alternatively, there may actually be a negative relationship between the HQ recruiter and low-quality enlistee. The HQ recruiters may view the number of contracts as the criteria on which they will be evaluated and may prioritize quantity over quality. In this case, HQ recruiters will not attract HQ enlistees since the decision of who to contract is determined by the recruiter.

It is important to note that correlation does not always mean causation and that unobserved omitted variables may bias the estimates. To attempt to identify causal effects, I attempt to remove potential bias caused by differing market conditions. Often, when the quality of the RSS market is discussed, a perception exists that recruiters assigned to HQ markets or markets with a higher propensity to enlist are more successful and, as a result, contract higher-quality individuals. Using fixed effects at the Recruiting Substation (RSS) level is an effort to reduce any omitted-variables bias stemming from average differences over time in the quality of available recruits across the RSSs. I also include year fixed effects based on the enlistees' ship year to recruiting training to remove bias caused by differences in ship years.

Other effects may bias the estimates. For example, Chapter V, Part C discusses an alternative theory which I invalidate. In this theory, a recruiter may be more selective with their contracts and thereby contract fewer enlistees but with a higher percentage categorized as HQ. Although a different recruiter may actually contract more HQ enlistees than the first recruiter, the first recruiter would have a higher percentage identified as HQ.

C. RESULTS AND FINDINGS

Although necessary to determine the standard for quality with which to gauge the individual recruiters and enlistees, in practice this approach is challenging. No current standard defines which Marines are HQ, which necessitated casting a wide net in an attempt to capture a consistent metric. Alternatively, I could have used a single predictor of quality such as the Armed Forces Qualification Test score or an individual's physical fitness score. But using these individual scores would have required me to make assumptions and these assumptions reduce the validity of the model. Therefore, I use multiple standards established by both the Department of Defense for accession and the Marine Corps for promotion and retention as the basis for five separate metrics to accomplish this task. By utilizing these metrics, I simplify the relationship and produced understandable and replicable results. Using four similar metrics for recruiters and enlistees and a fifth metric specific to each, I determine which Marines qualified as a HQ recruiter and HQ enlistee. HQ recruiters are labeled HQR₁₋₅ for Metrics 1–5 and HQ enlistees are labeled HQE₁₋₅ for Metrics 1–5.

I establish a final model using ordinary least squares (OLS) linear probability model (LPM) regressions to estimate the relationship between the HQ recruiters and HQ enlistees. The conceptual model was simplified with just the HQ enlistee for metric 1–5 (HQE₁₋₅) as the dependent variable and the HQ recruiter for metric 1–5 (HQR₁₋₅) as the explanatory variable. This conceptual model introduces significant bias due to differing market conditions based on the location of the RSS. The model also introduces bias due to variation of HQ enlistees and recruiters within metrics based on the calendar year the enlistee shipped. I discuss these biases further in Chapter IV, Part A. The final model includes RSS fixed effects to hold constant the RSS and attempt to remove the market conditions

variation between RSSs. The final model also includes year fixed effects based on the enlistee ship year to recruit training to attempt to remove variation between accession years. The final model estimated effects from each of the HQ recruiters and HQ enlistees' metrics are depicted within Table 1.

Table 1. The Final Model: Estimated Effects of HQR₁₋₅ Metrics on HQE₁₋₅ Metrics with Year and RSS Fixed Effects

	HQE ₁	HQE ₂	HQE ₃	HQE ₄	HQE ₅
HQR ₁	0.010 ***	0.002	0.004 **	0.000	0.001
HQR ₂	0.003	0.004	0.004 *	0.003	0.000
HQR ₃	0.007 ***	0.004 *	0.002	0.003	0.002
HQR ₄	0.004	0.004 *	0.002	0.004 *	0.001
HQR ₅	0.005 **	0.005 **	0.005 *	0.004	0.003 ***

The final model includes RSS fixed effects to hold constant market conditions between RSSs. The results depict a total of 25 regressions using OLS LPMs with the HQE₁₋₅ as the dependent variables and HQR₁₋₅ as the explanatory variables. *** indicate significance at 99% level of confidence. The color green indicates a positive estimated effect for the coefficient estimates, and the color red indicates a negative estimated effect for the coefficient estimates.

Based on these estimates, HQ recruiters defined by Metrics 1–5 are more likely to contract HQ enlistees defined by Metrics 1–5 but not at statistically significant rates across all metrics. HQ recruiters based on HQR₅ outperform 17 of the other 20 models in their estimated effects and at statistically significant rates for four of the five HQR₅ models.

The Marine Corps should consider using any of these HQ recruiter metrics to increase the recruiter's productivity of HQ enlistees. However, the most effective metric to increase HQ enlistees based on these estimates is metric HQR₅. MMEA-25 should consider incorporating HQR₅ into the identification and selection of Marines for assignment to the BRC. Based on this empirical evidence, HQ recruiters using the HQR₅ metric have the most consistent and statistically significant estimated positive effect on HQ enlistees.

D. ORGANIZATION OF THE STUDY

In Chapter II, I describe the assignment process to recruiting duty for both volunteers and Marines involuntarily assigned. This process starts with the volunteering or directed assignment to recruiting and ends with the Marine recruiter's assignment to a specific location or recruiting substation (RSS). Within Chapter III, I explore the current literature on market conditions and how that affects recruiters' performance. In Chapter IV, I describe the metrics used to categorize quality, my methodology, and summary statistics. Chapter V provides the results for this research. I then discuss the implications for these results and provide my recommendations in Chapter VI.

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II. BACKGROUND

This chapter will provide an overview of Marine Corps Recruiting Command (MCRC) structure and then describe the assignments process for recruiters. Recruiters receive assignment every fiscal year and the service must graduate approximately 1,066 Marine recruiters each year (every 36 months, the Marine Corps requires 3,198 recruiters, a three-year requirement). Marines can volunteer for recruiting or receive involuntary assignment if the Marine Corps needs to fill an unmet requirement. The chapter will also describe attrition for the recruiters both before (pre-class) and during (in-class) when the recruiter attends the Basic Recruiter's Course. The chapter then describes how Marines are selected for recruiting duty and then receive assignment to a specific RSS. Finally, other special duty assignments (SDA) are discussed since they select from the same population of individuals who receive assignment to recruiting. These other SDAs effectively "compete" for quality with recruiting. Extremely high attrition rates among Marines selected and even Marines who volunteer for recruiting duty makes it extremely difficult for the Marine Corps to fill the recruiting quotas each year.

A. RECRUITING ORGANIZATIONAL STRUCTURE

MCRC is separated between the Eastern Recruiting Region (ERR) and the Western Recruiting Region (WRR) and is further separated between six recruiting districts: 1st District (1MCD); 4th District (4MCD); 6th District (6MCD); 8th District (8MCD); 9th District (9MCD); and 12th District (12MCD). The districts are separated (*MCRC Units*, n.d.). Within the recruiting districts, 48 recruiting stations (RS) are further separated into 626 recruiting substations (RSS) (Davin & Tomlinson, 2009). For a geographic depiction of the RS, see Figure 1. For a geographic depiction of the RSS, see Figure 2.

Figure 1. A Geographic Depiction of MCRC Recruiting Stations. Source: Davin and Tomlinson (2009).

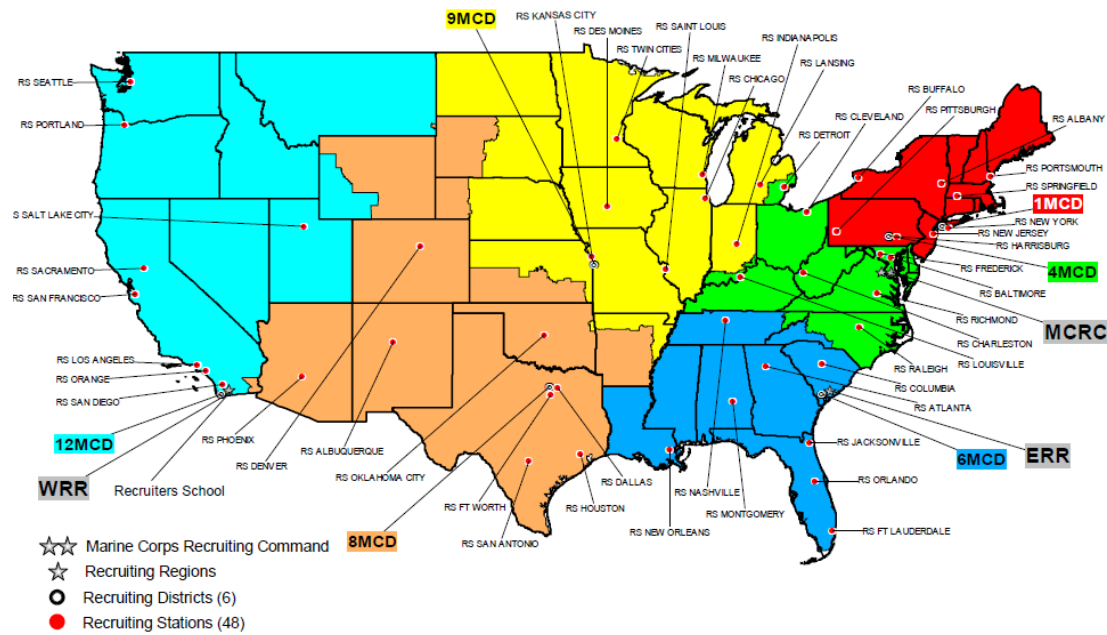
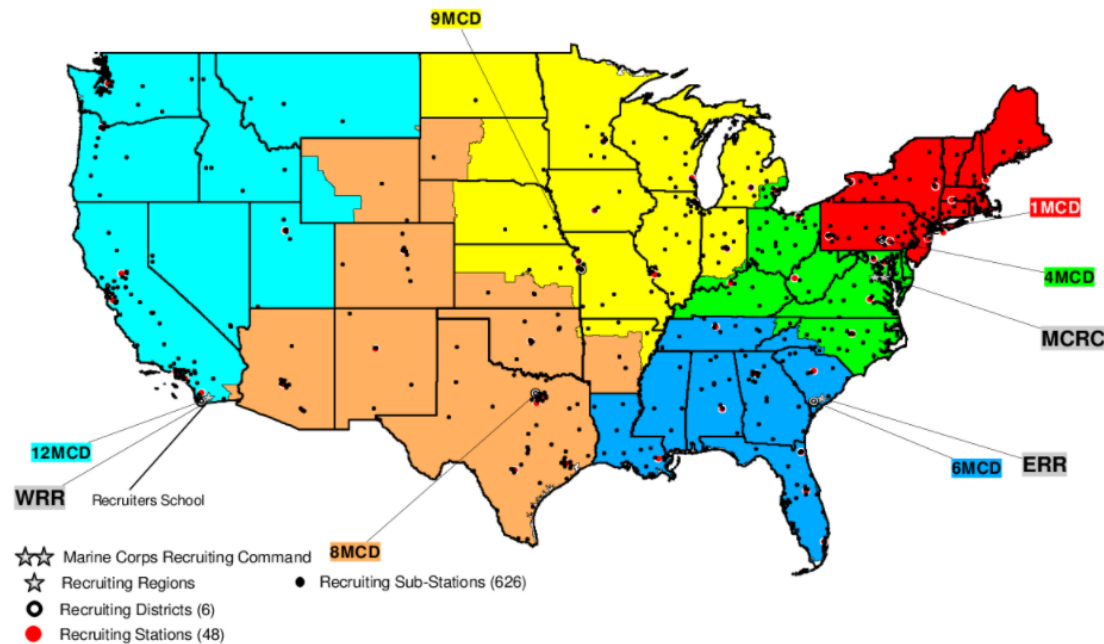


Figure 2. A Geographic Depiction of MCRC Recruiting Substations. Source: Davin and Tomlinson (2009).



B. ASSIGNMENTS PROCESS

Although Marines may either volunteer or receive involuntary assignment to recruiting duty, many of the Marines attrite during the process either pre-class or in-class. As a result, the Marine Corps must fill a high number of quotas to make up for this attrition. As an SDA, recruiting duty competes with MSG DC and DI Duty for the highest-quality individuals. Individuals receive assignment to a specific RSS during the BRC and most will communicate with an RS SgtMaj prior to their class. Marines have varying reasons for why they desire a specific location for recruiting, but they all have the option to request by-name assignments. The RS SgtMaj will either accept or reject an individual who requests a by-name assignment. Assignment for a 36-month tour to a specific RSS is determined most often by vacancies.

As part of this research, I interviewed individuals from Marine Manpower Enlisted Assignments (MMEA), specifically MMEA-25 (Special Duty Assignments) including the unit head and recruiting monitor. From Marine Corps Recruiters School, I collectively interviewed the director, deputy director, sergeant major, and chief instructor. To gain an operational perspective from MCRC, I conducted individual interviews with the previous commanding officer for the 9MCD, the current commanding officer and sergeant major for RS New Jersey, the current commanding officer for RS Indianapolis, and the 9MCD sergeant major. These interviews provided a more general understanding of the process for assignment of an individual to recruiting duty, BRC, and a specific RSS.

1. Assignment to the BRC

Individuals can either choose to become a recruiter by volunteering or receive involuntary assignment. Once selected for recruiting, the individual attends a BRC class and then receives their follow-on RSS assignment.

a. Volunteer

Headquarters Marine Corps (HQMC) solicits volunteers every year during the Special Duty Assignment Volunteer Period (SDAVP) approximately 12 months prior to the start of the fiscal year (FY) in October. Within this period from July 1 to December 31.

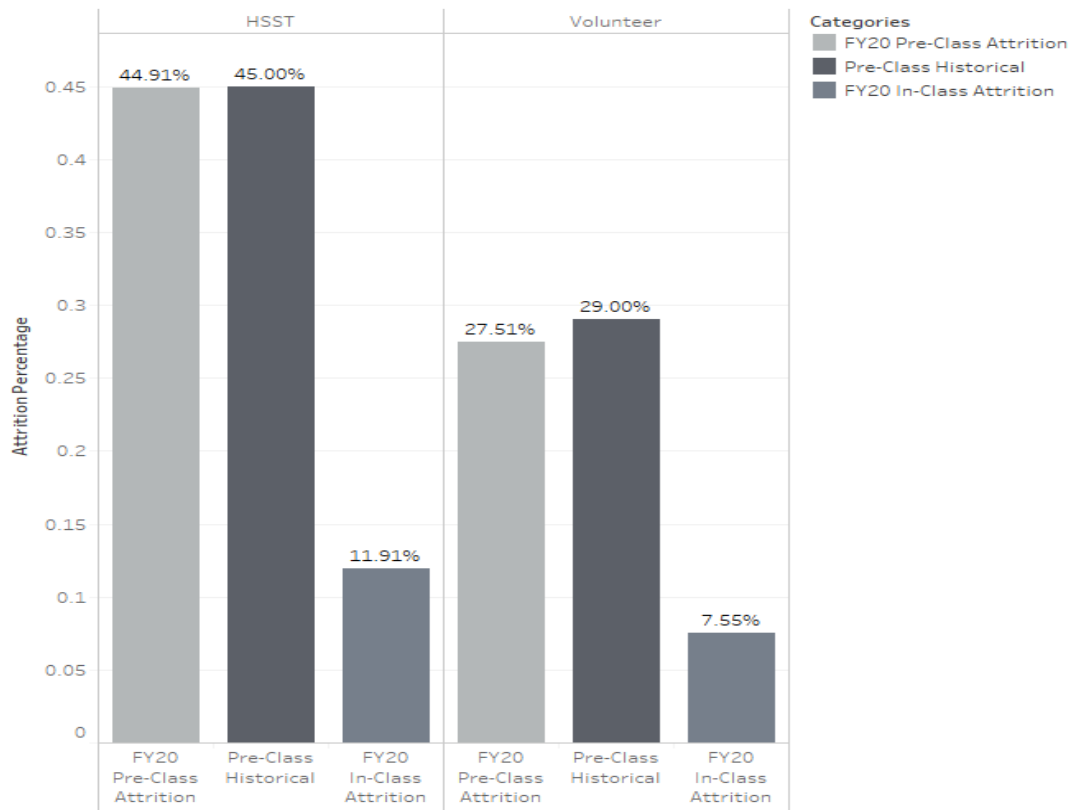
Marines can request the SDA of their choice. Typically, Marines who volunteer will submit their package and request to attend the BRC early in the FY (though they can volunteer year-round). Many Marines are told that if they volunteer, they can have more control over their career. From the commander's perspective, most commanders misunderstand the process and assume that if a Marine is assigned to a BRC they will attend immediately though they will not attend BRC until October of the next FY (at the earliest). When an individual decides to volunteer, they notify their career planner within their unit and the career planner assists the Marine with completing the SDA screening checklist. The screening checklist consists of personal information including the Marine's physical fitness scores, the Marine's comments for why they want to be a recruiter or do not want to be a recruiter, basic screening information to determine eligibility, and their leadership's recommendation (NAVMC 11704, 2019). The SDA screening checklist is the individual Marine's responsibility. If the Marine (either involuntary or voluntary assignment) is recommended by their CO, recommended by the primary military occupational specialty (PMOS) monitor, and have no conditions within their contract that would prevent them from serving on recruiting duty, then the package is routed from the PMOS monitor to the Recruiting Monitor for a more in-depth screening and then assignment. If a Marine (either involuntary or voluntary assignment) is not recommended by their CO but recommended by the PMOS Monitor, then either the MMEA-2 Section Head (lieutenant colonel) or the MMEA Branch Head (colonel) make the decision. Then, the Marine receives assignment to one of six BRC classes during the FY. Historically, volunteer numbers do not fill the requirement. For example, of the 658 who volunteered for recruiting duty in FY20, only 477 arrived to BRC (it is important to note that FY20 was affected by COVID-19).

b. Involuntary Assignment through HSST Selection

Alternatively, if a Marine has not volunteered during the volunteer period, an individual may receive involuntary assignment to recruiting duty by the HQMC SDA Selection Team (HSST). Although commonly understood as a "team," the HSST is actually a process with no actual "team." Through the HSST, Marines are assigned to fill unfilled requirements for the SDA including recruiting, MSG DC, or DI duty. The HSST is not scheduled but conducted as needed to meet the unfilled requirement, which historically

equates to convening at least once per FY. The first HSST is referred to as “HSST One” and the second as “HSST Two.” The requirement the HSST fills is based upon the graduation rate at BRC and requirements from MSG DC and DI. On average, five HSST Marines make one graduate and three volunteers make approximately two graduates at BRC due to attrition either pre-class or during the class (this topic will be discussed in depth in the next section titled “Attrition Pre-Class and During Class at BRC.”) In other words, approximately 80% of HSST Marines do not graduate. Figure 3 depicts the attrition for both pre-class and in-class.

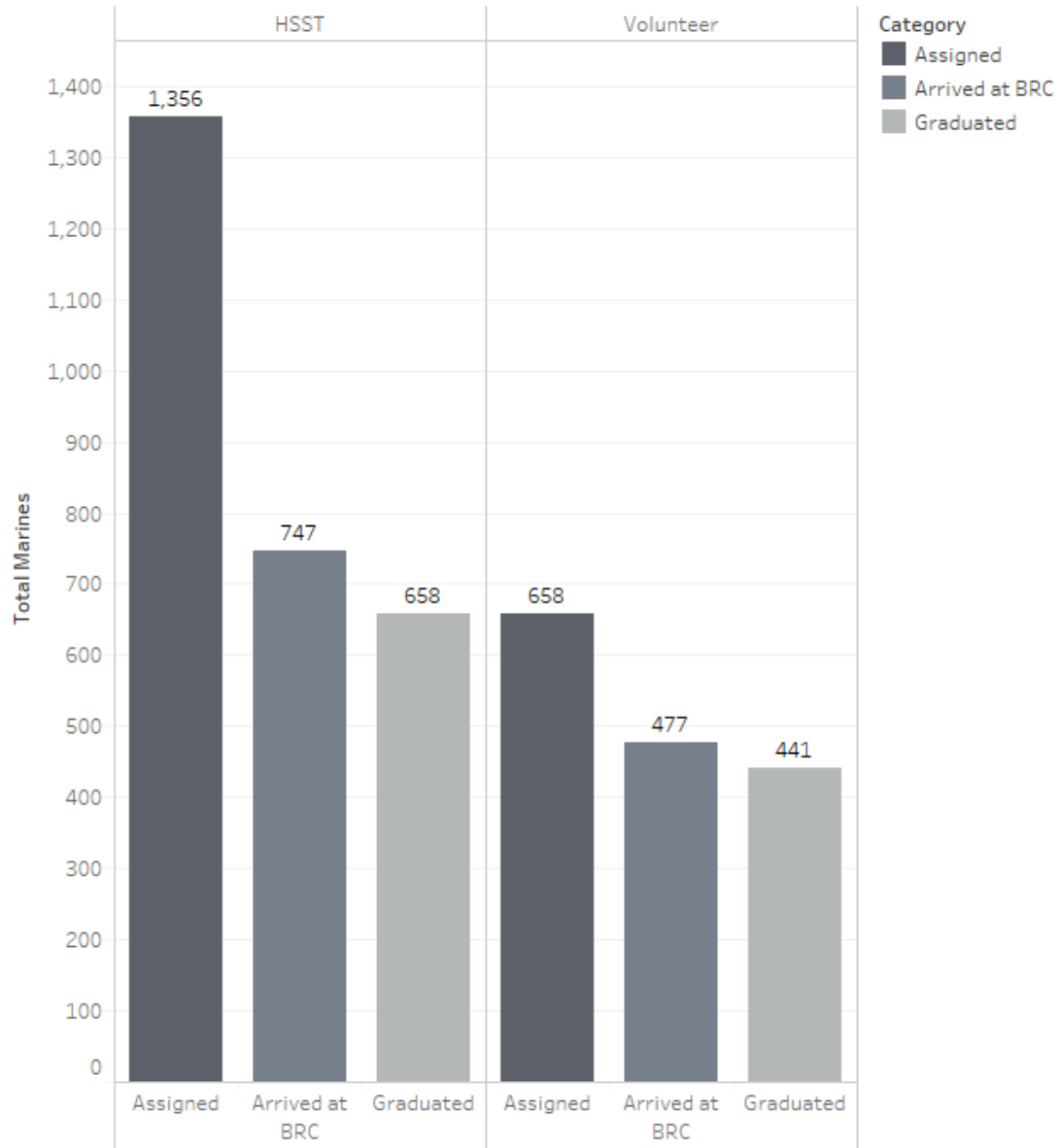
Figure 3. FY20 Attrition Percentages Pre-class and In-class.
Source: C. Petersen personal communication (November 25, 2020).



Using WebMASS, an integrated personnel management system, the SDA section casts a wide net and implement various filters that include careerist Marines, without orders, time on station requirements, rank requirements, stabilized for deployments, bonuses tied to financial incentives, and full duty status. These filters generate a roster of approximately 4,000 to 5,000 Marines (fluctuates based on the requirement) and much of the roster will fill the recruiting requirement. The MOS monitors receive the list and remove ineligible Marines and return the roster to MMEA-25. The DI monitor and MSG DC monitor select the individuals best qualified based on their strict requirements (such as first class PFT). Although the individual Marine's command may have recommended them for a specific SDA, MMEA-25 can override any recommendations from a Marine's local command but cannot override recommendations against recruiting duty (not recommended). The individual Marine's preference receives some consideration, but the needs of the Marine Corps is the higher priority.

Following completion of the roster, MMEA publishes the FY HSST roster via MARADMIN and Total Force Retention System (TFRS) message in January. Once it is confirmed that the requirement is met, the HSST results MARADMIN is released, at which point a decision is made whether a second HSST is required. If required, "HSST Two" fills any remaining unmet requirements for the year and, as a result, may include recruiting duty, DI, or MSG DC. If required, an announcement of FY HSST Two is published via MARADMIN in July. Upon receipt of the assignment, the Marine's command is required to supervise the completion and submission of the checklist. If the Marine attrites pre-class, the unit is required to notify HQMC via TFRS within a reasonable amount of time or else they can be found non-compliant. For FY20, 1,356 Marines were assigned by HSST to BRC. Only 747 of those Marines arrived to BRC with 658 graduating. Figure 4 provides a visual depiction of both HSST Marines and volunteers and their corresponding attrition.

Figure 4. FY20 Recruiting HSST Marines and Volunteers.
Source: C. Petersen personal communication (November 25, 2020).



2. Pre-class and In-Class Attrition at the BRC

Attrition for recruiting duty is high for both pre-class and in-class. According to MMEA-25, for FY19 and FY20, 45% of HSST Marines attrite pre-class and 29% of volunteer Marines attrite pre-class. During BRC, 16% of HSST Marines attrite in-class with 6% attrition of volunteers in class. In total, 61% of HSST Marines attrite compared

with the 35% of volunteers who attrite (C. Petersen, personal communication, November 25, 2020).

As previously described, the majority of volunteers request to attend BRC earlier in the FY. Because BRC conducts six classes per year with a maximum 250 students per class, most classes are not filled. For the first class, most of the students are volunteers. This proportion decreases and by the fourth class the split between volunteer and HSST Marine is close to even. By the sixth class, however, HSST Marines make up the majority of the class. Additionally, the quality of the Marines attending earlier in the FY is higher as evident by lower attrition. According to the BRC staff, overall, volunteers have lower percentage attrition for mental or medical health, better physical fitness, and recruiting duty is a better fit for their character and personality. As depicted in Table 2, during FY19, 50 HSST Marines were dropped due to failing PFTs compared to only 12 volunteers during that same year.

Table 2. Describes Attrition Compiled from BRC FY19 Drop Reports.
Source: A. Carroll Keeley personal communication (September 8, 2020).

In-Class Attrition Volunteers (Y) vs. HSST Marines (N)

Code Description	Class 1-19		Class 2-19		Class 3-19		Class 4-19		Class 5-19		Class 6-19	
	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y
PFT Failure	1	2	7	1	9	1	13		8	4	12	4
Medically Disqualified	4	4	8		20	1	7	1	6	1	3	2
Security Clearance Ineligibility	4	6	2		1				1			
HT/WT BF%							4		2		5	
Lacking Maturity & Good Judgment	3	1	1			1	1		3			
Not a good fit for Recruiting				1	3		4				2	
Drivers License			1				5		1			
Family Instability		1	1		3						1	
SACO		2	1				1					
Academic Drop	1	1	1									
Admin/Other	1						1					1
Financially Unstable	1		1									
Civilian or Military Conviction					1							
Morally/ Ethically Disqualified while a..		1										
Prohibited Tattoos					1							

Attrition at BRC is also high though many of the causes of attrition are not due to academics or misconduct. It is important to note that HSST Marines have higher attrition than volunteers at BRC. The issues that cause disenrollment are often issues the

individual's chain of command could have identified in advance such as: whether an individual possesses a driver's license; physical fitness level; and bodyfat percentage if an individual exceeds weight standards for their height. As a result, BRC conducts an additional screening upon the Marine's arrival, which can result in disenrollment prior to the class starting. Upon arrival, BRC assesses the Marine's mental, physical, moral capabilities and fitness for duty.

While at BRC, Marines receive their final assignments to a RS and RSS. Described in more detail within the following section, this process works through coordination between the receiving RS SgtMaj, MCRC, and HQMC. The assignment for the Marine typically meets their stated preference with 72% of Marines receiving assignment to their first-choice district and 67% receiving assignment to their first choice RS. 19% do not receive one of their top three districts and 25% do not receive one of their top three RS. The Marines who do not receive their preferred assignment are assigned based on the needs of the Marine Corps. Again, the majority of Marines receive their requested assignment.

3. Assignment to an RS

Marines often reach out to the Recruiting Monitor when contemplating volunteering for recruiting duty or once directed. Specific populations, such as dual active military, are required to reach out to an RS SgtMaj for a by-name request prior to reporting to BRC. Commonly asked questions about recruiting duty refer to specific challenges they may face, what the duty entails, and what technical skills could provide them with an advantage. Some Marines ask which recruiting markets are "easier" though this question is less common.

The recruiting monitor advises the Marine. Specifically, once the Marine's assignment to BRC is approved and six months prior to their report date, the recruiting monitor advises the Marine to reach out to the SgtMaj at their preferred RS and ask them for a "by-name request" (Headquarters, United States Marine Corps, 2019a). The by-name-request is between the Marine and the RS SgtMaj with no involvement from MMEA-25, BRC, or MCRC. For the "by-name request," the Marine contacts the respective RS SgtMaj

either prior to submitting their package if they are trying to make a decision or once assigned to BRC.

After initial communication, the RS SgtMaj will advise the Marine to continue communication prior to and during their BRC at which point they receive their orders and assignment. The RS SgtMaj comes to BRC and interviews the Marines. The SgtMaj then selects the individuals who they want (based on the by name requests). The roster is then sent to MCRC. The RS SgtMaj hold significant power for the specific RS assignment. As described during my interviews, the Marine requests a specific RS due to a wide variety of reasons. According to the RS SgtsMaj and staff at the Basic Recruiter Course who I spoke with, following are some of the more common reasons:

- The Marine wants to recruit back home because they either know the people and believe they will be more effective or due to their family support structure
- They want to recruit for leadership they served with previously
- They want to go to a successful RS
- Some want to go somewhere different or desire a specific geographic region
- If the Marine has an exceptional family member (special needs), they may request assignment based on those specific needs
- The Marine may be comfortable with a specific area due to a previous experience

Although less common, some Marines do not request a specific RS and are willing to go anywhere. Within the RS, some Marines request a specific RSS, typically when they or their spouse are from that area.

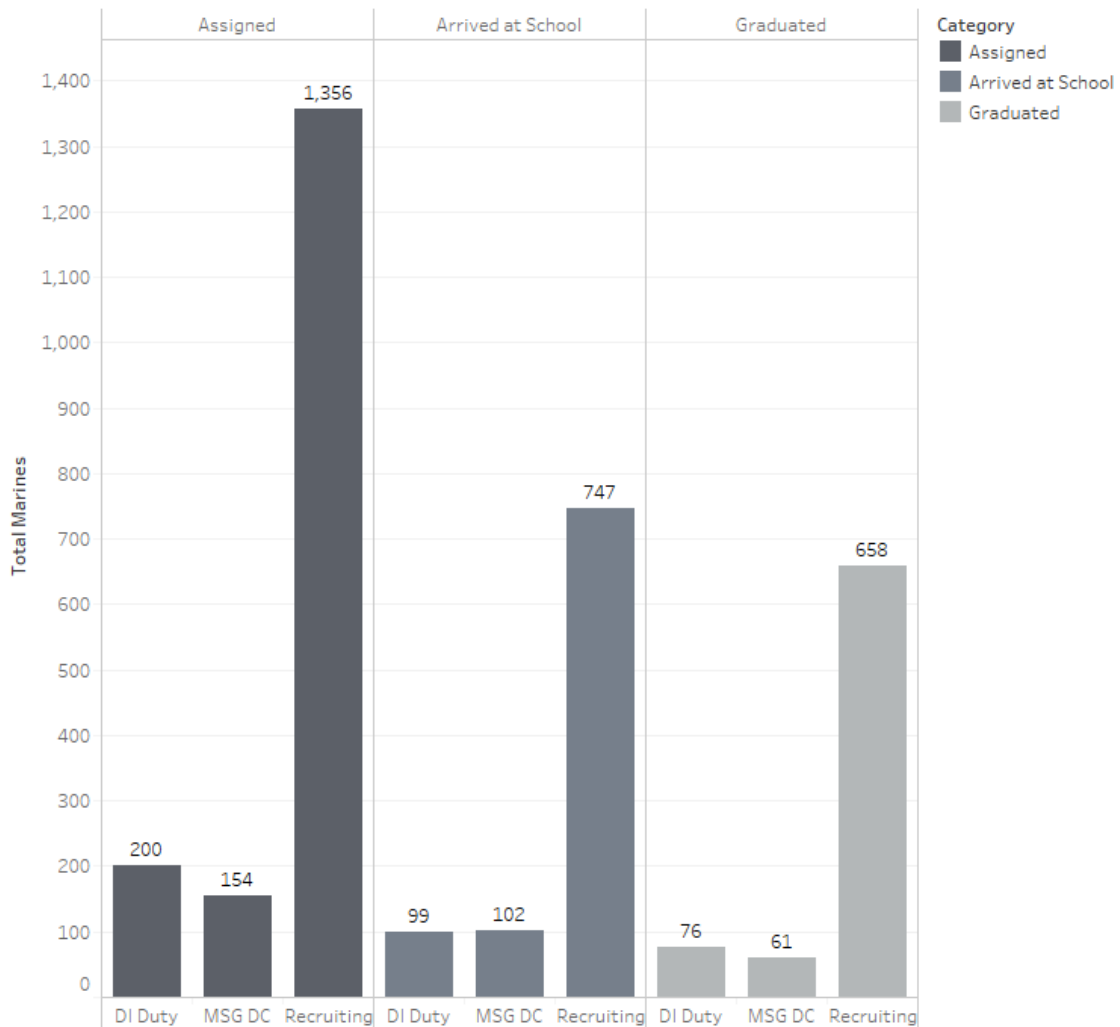
The RS SgtMaj receives the by-name-request and communicates directly with the Marine. The RS SgtMaj will not know whether the individual is a volunteer or directed assignment, they will simply determine whether they want the individual for their RS. Because some RSs are more competitive and receive excessive by-name-requests, depending on the RS the SgtMaj may need to rank them. When determining whether to add a Marine to the list and rank them among their other picks, the RS SgtMaj will consider the demographics of the Marine and of the recruiting market. Other criteria used include their performance as depicted on the Marine's Master Brief Sheet, their Basic Individual

Record and Basic Training Record, and the screening checklist completed by the Marine's chain of command. The RS SgtMaj may also look at their history of mental challenges and communicate back to BRC if the individual may not be qualified. The RS SgtMaj will also look at the individual's promotion photo to determine how they look in uniform and gauge their physical fitness by evaluating their PFT and CFT scores. Most importantly, each RS SgtMaj has their own method of ranking individuals and often it is based on the recruiting market. For those regions with fewer by-name-requests, the RS SgtMaj may not have the flexibility of ranking applicants and will only determine whether to accept or reject them. For assignment to an RSS, vacancies are the most important consideration though the RS SgtMaj will also attempt to balance any RSS that lacks a specific quality. For example, the RS SgtMaj may send a high performing Marine (based on their Master Brief Sheet) to an RSS with low performers or a Spanish speaking Marine to a predominantly Spanish speaking RSS.

4. Other SDA: DI and MSG DC

Recruiting Duty also competes with the other SDA for quality Marines though the recruiting duty requirement far exceeds the other SDA. Marines who do not complete an SDA in recruiting may complete another SDA such as DI duty. Although many Marines volunteer, not all class seats are filled, and the Marine Corps must HSST additional individuals. For DI duty, the screening evaluates physical fitness especially—as depicted in Marine Corps Order 1326.6 (2019b), individuals must have a first-class physical fitness test (PFT) and combat fitness test (CFT). A first-class PFT is one of the indicators used to screen Marines for their ability to serve on the physically demanding drill field. Because many Marines volunteer for this SDA, the remaining requirement is typically filled with “HSST One” and few if any Marines are required on a “HSST Two.” For FY20, 200 or 38.3% of the 522 Marines assigned to both depots were directed by the HSST. Figure 5 depicts the HSST Marines for the FY20 DI Duty in relation to the other SDA.

Figure 5. HSST Marines by SDA. Source: C. Petersen personal communication (November 25, 2020).



Finally, if a Marine does not volunteer or receive assignment to either recruiting duty or DI Duty, they may volunteer or receive assignment to MSG DC. Although there are less than 200 annual seats, as depicted in Figure 5, for FY20 154 HSST Marines were still required. Individuals must be highly competitive, highly recommended, and of excellent physical fitness (Headquarters, United States Marine Corps, 2019a). Applicants and their families must also have excellent health since some of the embassies where individuals may be assigned around the world lack specialized healthcare. As a result, many Marines attrite pre-class either due to their personal or family health needs. Finally,

this SDA is the most selective since qualified applicants must pass an interview with Department of State personnel. Because many Marines volunteer for this SDA, the remaining requirement is typically filled with “HSST One” and very few Marines are required on a “HSST Two. For the 154 Marines in FY20 assigned (volunteer and HSST) to MSG DC, 102 or 66.2% arrived at the school.

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III. LITERATURE REVIEW

Much of the literature that focuses on military recruiting evaluates on market conditions that determine the quality of the enlistee or effectiveness of the recruiter. Some of the other military recruiting literature focuses on characteristics of the recruiter such as demographics, MOS, and home of record (an individual's home address when they enlisted) in relation to their assigned location. Very little research has focused on individual recruiter match with the enlistee. What little research exists on this topic focuses on demographics (age, gender, race, and ethnicity) and their interaction but ignores the quality of the recruiter and corresponding quality of the enlistee. What research does explore the quality of an enlistee, limits quality to DOD enlistment standards and attrition. However, using this standard results in categorizing the majority of Marines who enlist as HQ since they meet DOD enlistment standards and also complete their obligated service.

“You recruit who you are” describes this relationship. Here is a possibility—that the Marine recruiter's quality affects the quality of enlistee who they attract and contract. This possibility means that a HQ recruiter will find, attract, and contract a HQ enlistee. This research seeks to fill this gap and explore the possibility that HQ recruiters attract HQ enlistees. In order to evaluate this relationship, quality must be defined and measured. Fortunately, some of the literature evaluates measures of quality and these measures will be used within this research.

A. MARKET CONDITIONS

Some of the existing literature focuses on market conditions as determinants of recruiter success. Sanchez (2018) studied individuals who joined the Marine Corps from 2007 to 2017, which consisted of 344,469 enlistments, 132 recruiter months, and 528 recruiter years to determine the optimal number of recruiters while also evaluating market conditions. Sanchez recommends increasing the quantity of recruiters per RS to provide additional contracts due to the anticipated shortage of qualified applicants in the future and unfavorable market conditions. These recommendations assume that market conditions, specifically the low unemployment rate, will continue indefinitely. Though unforeseen, the

unemployment rate increased dramatically in 2020 due to COVID-19. Sanchez recommends uniformly increasing the quantity of recruiters though he describes a recruiting market that is not uniform. If each RS has different quality markets, the Marine Corps ostensibly will implement a targeted approach, not a uniform policy.

The premise of Sanchez's research assumes that each market has different quality, and some markets are "saturated" or easier to recruit within than others due to higher market population, higher-quality per capita market, and higher propensity to enlist. Although the estimates were statistically insignificant, the author infers a generalization that recruiters in saturated markets have a higher probability of contracting quality applicants and enlistments in general. The author attributes this generalization due to the lack of observed effort of the recruiter. Furthermore, the interpretation that some recruiters may contract enlistees with less effort compared to their peers in other markets ignores the effect of the recruiter's quality on the enlistee (Sanchez, 2018).

Dertouzos and Garber (2006) reach a similar conclusion about unobserved characteristics. They analyze the productivity of Army recruiters from 1998 to 2000. Their research consists of monthly observations for more than 10,000 recruiters and 130,000 observations on recruiter-month pairs. The research details characteristics of successful recruiters and how their productivity relates to the market characteristics where assigned. They also find that the recruiter's AFQT and level of education has no measured impact on their productivity. Using fixed effects, the authors also suppose four unmeasured attributes account for more variation than the observed characteristics: (1) talent for selling; (2) motivation; (3) energy; and (4) time-management.

Dertouzos and Garber also consider the market conditions for success with Army recruiting. They conclude inequities (such as higher propensity to enlist or higher-quality individuals) exist among markets and recommend adjusting the mission for higher-quality markets to improve the equity as determined by their standard model. They also used recruiting station fixed effects with 1,600 separate variables to measure variation within stations and remove market characteristics. Importantly, this study analyzes Army recruiting and so applicability to the Marine Corps equitable recruiting model is limited. Unlike the Army, the Marine Corps does not assign missions to recruiters based on their

market and instead allocates boundaries to create equitable markets, so all recruiters are expected to similarly perform (Dertouzos & Garber, 2006).

Davin and Tomlinson (2009) attempt to further develop and refine a model to forecast, at the RSS level, the supply of HQ male contracts. They looked at data for the RSS-level recruiter contract and population from October 2002 to June 2007. At the county level, they evaluate data such as the unemployment rate and civilian youth population data and, at the state level, they evaluate veteran population and civilian wage data. They use fixed effects at the RSS level and determine the effects for recruiters, unemployment rate, military-to-civilian pay elasticity, other-service recruiters, and veteran population elasticity. Even though they use fixed effects at the RSS level, they still control for effects in the local market such as other service recruiters, youth population, the unemployment rate, and military-to-civilian pay ratio. For robustness, they calculated the same model without fixed effects. Through all their models, they found that an increase in the number of Marine recruiters resulted in an increase in the number of HQ male contracts. They also found that the local unemployment rate most affected the magnitude of the coefficient estimate. They used veteran population as a proxy for propensity to enlist because this metric is unobserved, though the results were not statistically significant. Because this research focused on the market conditions, they did not focus on any aspects of recruiter quality (Davin & Tomlinson, 2009). Plantz (2000) also found the county demographic variables including unemployment rate, population, and per capita income significant to Marine recruiting.

B. QUALITY: RECRUITER AND ENLISTEE

In addition to market conditions, some research looks at the quality of the enlistee or recruiter. However, the term quality is often used in a haphazard manner without clarity of meaning. Sanchez (2018) recommends implementing an assessment tool that would allow leaders to identify Marines with innate sales skills (salesmanship) with the expectation that these Marines would perform well in recruiting. The study does not provide any evidence that this is measurable or how well this predicts HQ contracts, and this seems based on their intuition. Throughout Sanchez's research, they use the term

quality without definition. Quality is initially assumed to consist of applicants who possess Tier I education and a Category IIIA or higher (Alpha) on the AFQT. However, Sanchez then uses the term quality to refer to recruiters who have more skill in communication, salesmanship, soft-skills, and also character and competence (Sanchez, 2018).

Similar to Sanchez, much of the other research references AFQT and education tier when using the term quality. For example, Hosek et al. (2018) studies military and civilian pay levels, trends, and recruit quality. Specific to recruit quality, they categorize quality by AFQT score category (I, II, IIIA, and IIIB) and HS graduate.

Other research defines quality specific to reenlistment. Crider (2015) evaluates the Marine Corps tiered evaluation system for reenlistment based on the fact that the majority of research for retention focuses on incentives and not how quality individuals are identified. While analyzing first term Marine reenlistments from FY 2000–2012 and observing them through their next enlistment term, Crider finds that the tiered system is valid and identifies the highest-quality individuals. To determine the quality of the individual, the tiered system utilizes the PFT score, CFT score, proficiency and conduct marks, the rifle score, the MCMAP belt attained and whether an individual received a meritorious promotion to their current grade. The top two tiers represent the top 40% of Marines with four total tiers. They evaluate the Marine's placement in tiers and their corresponding promotion speed (months until promotion to E6 and E7), career longevity, sustained physical performance (later PFT score) and performance evaluation as measured by scoring above the cumulative average for FITREPs. Crider finds that the tiered evaluation system is a good predictor of future outcomes such as promotion speed, career longevity, and sustained performance through FITREPs. Crider concludes the tiered evaluation system is therefore a good measure of quality. Although Crider evaluates promotion speed as a measure of quality, he measures promotion speed across all MOS. Enlisted Marines promote within MOS against their peers and my research will utilize this better approach. Additionally, instead of using a future PFT score to demonstrate sustained physical performance, using an average of the PFT scores and CFT scores in service better represent this consistency than a single score (Crider, 2015).

Quality of employees within civil service is measured using proxies for quality. Asch (2001) evaluates the pay, promotion, and retention of HQ civil service workers in the DOD using a longitudinal study spanning FY82 to FY96. Asch specifies, Q , at time, t , as a function of education, motivation, ability, and job factors (2001, p. 5):

$$Q^t = Q(\text{education, motivation, ability, job factors})$$

Asch relates the quality of the individual to their productivity in the workplace and, in this way, she provides value to the organization. Because some of these factors are unobserved, Asch defines quality using three measures as proxies: supervisor rating, level of education on entering the DOD, and promotion speed. Asch describes the measurement errors within education level and admits biased estimates when evaluating higher educated individuals' compensation, retention, and promotion rates; however, this measurement error is likely random and thus reduces the magnitude toward zero. Asch uses promotion speed for her analysis though, for those who exit service, this measure will not accurately describe their quality. Because of the aforementioned biases, Asch focuses on the direction of the results and less so on the magnitude (Asch, 2001).

Some of the research explores interaction effects and matching of the recruiter to the enlistee. Oh (2013) examines whether a gender, racial or ethnic interaction effect exists between the Navy recruiter and enlistee and the resulting effect on quality of the applicant. Oh recognizes that there is no statistically significant relationship based on the recruiter-enlistee match for gender, race, or ethnicity, but does acknowledge that further research should explore the individual characteristics or abilities of recruiters (p. 45). Oh finds that male recruiters are more likely to recruit Category Alpha (above 50 on the AFQT) applicants though females are more likely to recruit an individual who does not attrite during their first 12 months. Oh finds no consistent result with positive outcomes for HQ applicants with the same race or ethnicity of the recruiter. Oh uses six separate measures to define quality and separates them into two categories: measurable prior to enlistment and measurable during their military service. Prior to military service, they use AFQT percentile, whether an individual is a high school graduate, and whether they are an Alpha. For military service, Oh specifies quality as individuals who do not attrite: attrite from active duty within 12 months; between 13 to 24 months; and between 25 to 45 months.

Unfortunately, Oh does not measure the individual's performance in service by focusing only on attrition (Oh, 2013).

Other research explores recruiter individual personal characteristics and their effects on productivity. Plantz (2000) analyzed the effects of personal background characteristics for recruiters and market demographics on the recruiter's productivity using data on Navy and Marine recruiters assigned to recruiting duty from 1995 to 1999. Plantz found that both age and paygrade significantly affected monthly production with younger and lower ranking recruiters outperforming their counterparts. Race and ethnicity were found statistically insignificant when measuring background characteristics and their effect on recruiter productivity in the Marine Corps though both variables were statistically significant for Navy recruiting during the same period (Plantz, 2000). Similarly to the effect of race and ethnicity for Navy recruiting in Plantz's study, Dertouzos and Garber (2006) find that black Army recruiters are more productive in market areas with where black demographics are more predominant among the youth and females are more effective at recruiting females. The researchers also discover that Army recruiters with certain MOSs (technical, combat, and intelligence) and younger recruiters are more productive than their counterparts. Additional considerations include assignment to home state which increases the productivity of the Army recruiter (Dertouzos & Garber, 2006).

Much of the research on enlistee quality focuses on attrition. Marrone (2020) predicts 36-month attrition on average in the military across services. Marrone describes the importance of identifying individuals who will serve out their term and not attrite to maintain the readiness of the force. Marrone studies attrition as a qualifier for HQ individuals since attrition is costly at \$11,000 per enlistment in the Marine Corps (2020, p. 1). Malone et al. (2011) researched waived enlistees and their performance and attrition risk. They find that waived servicemembers are more likely to be male, older, and Tier II education credential (lack HS diploma) and come from the specific regions of the United States region (East North Central) compared to their counterparts. Malone et al. find that waived enlistees attrite at lower rates than Tier II/III enlistees.

More relevant to this research, Malone also evaluates the performance of the waived individuals relative to non-waived individuals. They use time to promotion to

E5 to define HQ though they only select eight MOSs within the Marine Corps (0121, 0151, 0311, 0621, 1371, 2844, 3521, and 3531) (Malone et al. 2011, p. 97). It is assumed they chose these MOSs as representative of the Marine Corps. They calculate the promotion time within these MOS and characterize them as fast promoting if they promote in the first 25% of their MOS accession cohort based on their accession year. Since they did not include all MOSs, even though some are small, their results are not robust. For example, out of the eight MOS, one is combat arms (infantry), one is combat support (combat engineer), and the rest are combat service support. With two of the eight from motor transport (3521, 3531) and two from administration (0121, 0151), much of the Marine Corps was excluded in their model and they likely introduced bias since certain MOSs not included may promote slower on average than those included. The authors conclude that many waived recruits become HQ servicemembers and therefore define quality as promotion ahead of peers to E5 (Malone et al. 2011, p. 65). Because quality has different meanings based on the application, my research will define this term in detail before introduction into the metrics.

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IV. DATA AND METHODOLOGY

Within this chapter, I first describe the various data sources used in this research. Second, in order to define quality, I describe and use multiple pre-defined standards to establish five metrics to categorize enlistees and recruiters as HQ or not. Third, I detail the various issues I encountered with the data and describe my remedies. Fourth, I provide summary statistics for the enlistees and recruiters. Within the methodology section, I describe the single final model used to estimate the relationship between the HQ recruiter and HQ enlistee metrics based on five separate metrics. I use OLS LPM regressions with the defined HQ enlistee dichotomous dependent variables and the defined HQ recruiter as the dichotomous explanatory variables.

A. DATA

1. Data Sources

I focus on enlisted personnel who shipped to recruit training from 2011 to 2019. In total, the useable data set consists of 264,681 enlistees and 12,125 recruiters for 264,681 recruiter-enlistee pairs. Multiple groups of enlistees were dropped from the useable data set for various reasons. First, only enlistees who started service (date of enlistment) January 1, 2011 were included. Additionally, this data set does not include those enlistees missing their recruiter's EDIPI (7,451) since they could not be paired with a recruiter.

Although I could have excluded enlistees who shipped after 2015 to ensure each enlistee would have four years of observed service (if they did not attrite), the recruiter data for enlistees between 2011 to 2015 was less complete than the data from recruiters later within the decade. I determine that including the more recent population would provide a larger sample with more complete data and thereby increase the recruiter-enlistee pairs resulting in more robust results. Similarly, the recruiter pool is limited to those recruiters who contracted the enlistees between this period of 2011 to 2019.

Data for this research was provided by the Total Force Data Warehouse (TFDW), Marine Corps Recruiting Information Support System (MCRISS), and the Performance Evaluation Section (MMRP-30). TFDW data consisted of pooled (PFT, CFT, rifle scores,

promotions, and dates of rank) and cross-sectional performance data for both recruiters and enlistees. The pooled data covered 2011 to 2019 for enlistees and all years prior to 2019 for the recruiters. The MCRISS data included cross-sectional data for both the enlistees and recruiters at the time of their enlistment. The MMRP-30 pooled data consisted of fitness reports (performance evaluations) for each of the recruiters beginning at grade E-5 and ending when the recruiter attended the BRC. The data from the various sources were merged using the Electronic Data Interchange Personnel Identifier (EDIPI) for both the recruiters and the enlistees. The recruiter and enlistee data were merged using the enlistee MCRISS data that includes their recruiter EDIPI.

The MCRISS data provided entry level information such as education tier, AFQT score, height and weight at contract, District, RS, RSS, initial strength test (IST) results, delayed entry program (DEP) discharge information, and demographics. The TFDW data included:

- performance evaluation information (average enlistment proficiency and conduct marks),
- demographic information,
- primary MOS,
- duty status; education,
- religion,
- marital status,
- number of dependents,
- unit assigned (Reporting Unit Code or RUC),
- number of assignments to weight control (Body Composition Program or BCP),
- PFT information such as date, class, score, and individual events,
- CFT information such as date; class, score, and individual events,
- an individual's home of record city, county, and state,
- ranks promoted to and the corresponding date of rank,
- enlistment waiver information,
- awards received by date and type, and
- separation information including the date, narrative, and characterization of the separation

The MMRP-30 data included all of the recruiters individual FITREPs though I only evaluated FITREPs prior to the Marine attending the BRC. The FITREP data provided the relative value for each of the fitness reports and the cumulative relative value over time.

2. Limitations

The number of observations for each metric varies since some of the metrics require more data than others. As a result, some of the metrics exclude individuals that are missing components of the metric. As a first example, Metric 1 is based on accession standards so there are more observations within this metric since it includes individuals that attrite in the DEP or in recruit training. Because these individuals will not receive proficiency and conduct marks, they will not have scores for Metrics 2–4. I choose to include these individuals that attrite within the Model because this Model is focused on the existing DOD enlistment standards which do not consider attrition (only AFQT and a high school diploma). Therefore, Metrics 2–4 will have fewer observations than Metric 1 for enlistees. As a sidenote, for the individuals that attrite in the DEP and lack a ship date, I truncated them based on their contract date or date of enlistment. As a second example, Metric 3 and 4 require the MCMAP belt as a component for the score, and enlistees and recruiters that lack the MCMAP belt data are excluded, resulting in fewer observations compared with Metric 2.

The recruiter data spans a significant period depending on the time in service when the recruiter attended the BRC. For example, a Marine Sergeant may attend at their five-year mark or a Gunnery Sergeant may attend at their 15-year mark. Because scores are calculated as the average over their service, a Gunnery Sergeant will have many more PFTs, CFTs, rifle scores, a higher MCMAP belt most likely, and more observed fitness reports than the junior sergeant who attends at their five-year mark. Evaluating the Sergeant and the Gunnery Sergeant in the same manner provides an apple to oranges comparison. However, some of the scores are constrained to below the rank E5. For example, the proficiency and conduct marks are given until a Marine promotes to E5, so these comparisons are more similar between higher and lower ranking Marine recruiters. Also, by using the average scores for PFT, CFT and rifle as opposed to their most recent score, I limit the effects of this bias since Marines will have to demonstrate sustained performance to be categorized as HQ.

Similar to the differences in rank for recruiters, the observed time for the enlistees differs. Because the data is cutoff by years of service, some enlistees may only have one

year in service while others who reenlisted may potentially have eight years of service. Although some of the characteristics of the metrics are limited by rank (such as proficiency and conduct marks), other characteristics may provide an advantage to those with more years of service. For example, a Marine with six years of service will likely have more opportunities to advance within the MCMAP than a Marine with only two years of service and therefore Marines with more years of service may have higher-quality scores within the metrics. A different example includes promotion to E5. Because the previous service policy restricts promotions to E5 prior to 24 months of service, those individuals with less than two years of service will not have the opportunity to promote to E5. Of note, recently the policy changed to require 48 months of service prior to promotion to E5.

HQ recruiters are categorized by the different metrics against their peers who are other recruiters. However, the enlistees are compared against all other enlistees. If a certain quality (low or high) Marine generally volunteers or receives assignment to recruiting duty, then the recruiters within this study may not represent the overall population of enlisted Marines. Also, because the enlistees and recruiters are compared against their peers, the results do not include differences between accession years or year the recruiter started recruiting and the Marines are evaluated against either all enlistees or all recruiters. As an aside, the metrics focus on HQ as defined and not low-quality. Of note, although the Marine Corps should evaluate the effect of low-quality recruiters on both low-quality enlistees and high-quality enlistees, these relationships exceed the scope of this research.

Recruiters may have some ability to self-select which RS they go to if they are a HQ recruiter. Because the assignment of a recruiter to an RS is dependent on the recruiter determining which RS they wish to receive assignment to and contacting the respective RS SgtMaj, they have some influence in where they are assigned. Further, because the RS SgtMaj has considerable power in determining which recruiters who request “by-name” assignment to their RS receive orders, it is expected that higher-quality Marine recruiters will have an advantage over lower-quality recruiters with assignment since the RS SgtMaj will screen them and select their top choices. If the recruiter views a certain RS market as easier or higher-quality and self-selects to that RS, they may be able to influence how many HQ enlistees they contract but only if they are placed in an RSS that is easier or higher-

quality. Importantly, as described in Chapter II, Part B, the RS SgtMaj assigns recruiters to the RSS based on vacancies and markets vary significantly between RSS within the RS. I use RSS fixed effects to attempt to remove this bias from the model. Additionally, assignment to recruiting duty is either through volunteering or involuntary assignment. Within this research, I am unable to differentiate between volunteers and those individuals who were directed to attend the Basic Recruiting Course.

Enlistees who have graduated high school are not restricted to a specific recruiter, whereas enlistees still enrolled in high school must contract with the recruiter assigned to that specific sector. As a result, if recruiter A encounters an applicant who is assigned to recruiter B's high school, then recruiter A must pass the applicant on to recruiter B. For those enlistees who have graduated, similarities between them and the recruiter may have a more pronounced effect since the enlistee can effectively "choose" the recruiter who they contract with, but the high schooler cannot.

Finally, the method used to determine this relationship, the OLS LPM, adds additional limitations to this research. Because the LPM assumes the probability falls within 0 to 1 and a skew could influence the results, I conduct logistic regression robustness checks to demonstrate the validity of the LPM. Also, because of the possibility of heteroskedasticity, I include robust standard errors.

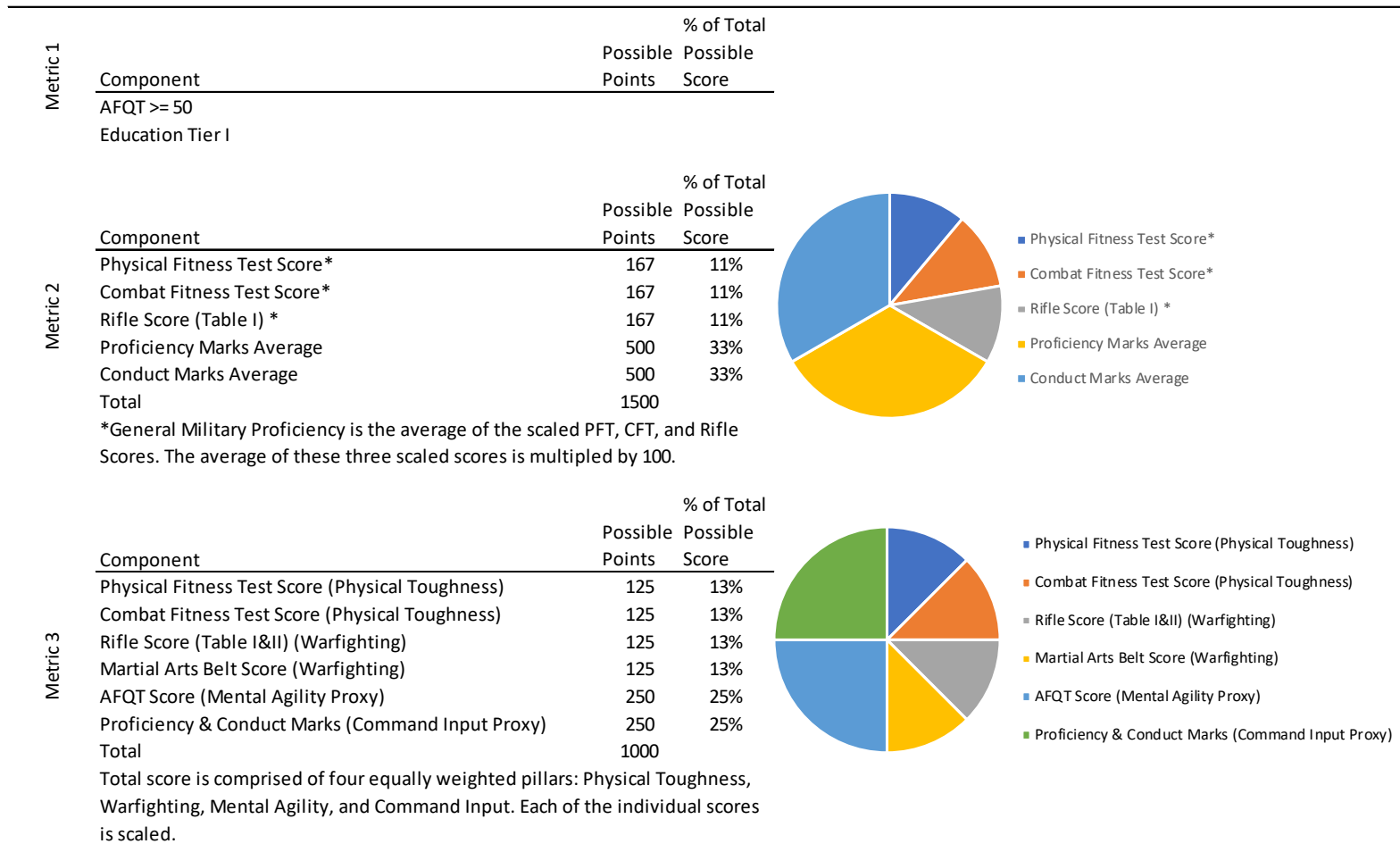
3. Metrics Used to Define and Measure Quality

In order to measure the quality of the Marine recruiter and enlistee, it is necessary to first define quality. Because quality lacks a standardized definition within the Marine Corps, quality can assume multiple meanings and proves difficult to measure. This research uses existing standards to define quality and evaluate the quality relationship between the Marine recruiter and enlistee within those methods. The existing methods include:

- DOD enlistment standards (Metric 1),
- the legacy promotion composite score (Metric 2)
- the new junior enlisted promotion evaluation score (JEPES) system (Metric 3),
- the reenlistment evaluation tier method (Metric 4),
- the enlistee promotion speed to E5 (enlistee Metric 5), and
- the recruiter FITREP performance evaluations (recruiter Metric 5)

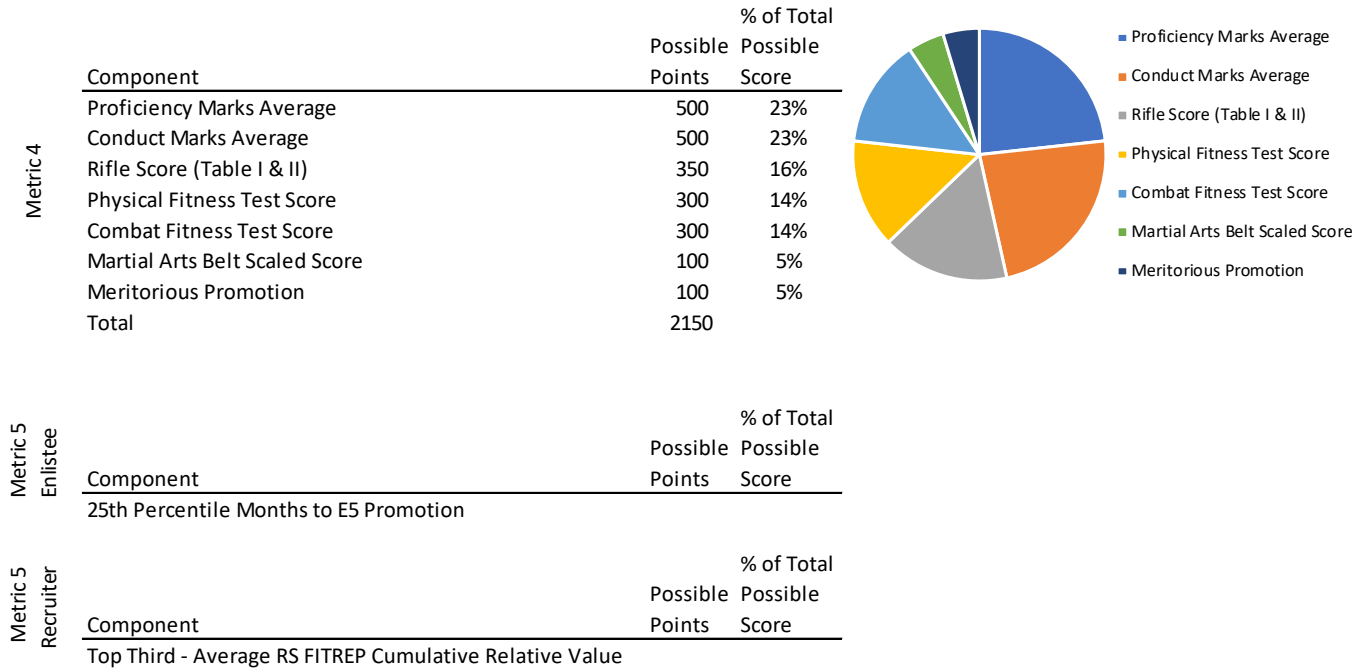
Figure 6 provides an overview of the components for each of the metrics. For Metric 1, individuals are determined as HQ if they meet the established criteria. For Metrics 2–4, if individuals possess scores above the 60th percentile for their peer group (either recruiters or enlistees), then they are considered HQ. I use a tier system based on the four tiers used within the reenlistment tier evaluation and, as Crider (2015, p. 64) concluded, the reenlistment tier evaluation system is a good measure of quality for the Marine. Because the Marine Corps labels the top two tiers as “eminently qualified” and “competitively qualified,” these individuals are considered HQ individuals. Tier I is the 90th percentile and Tier II is the 60th percentile. In Metric 5, enlistees who were the first 25% to promote to E5 are considered HQ and recruiters with cumulative relative values above 90 (scored above their peers) are considered HQ.

Figure 6. Five Metrics that Define HQ for Recruiters and Enlistees



The numbers given represent the possible points and weight for each component and the maximum possible score.

Figure 6 cont'd. Five Metrics that Define HQ for Recruiters and Enlistees



The numbers given represent the possible points and weight for each component and the maximum possible score.

These different metrics of quality provide the foundation for the model I use to estimate the effect of the HQ recruiter on the HQ enlistee discussed in Part B of this chapter. Once I determine HQ using Metrics 1–5, I determine whether Marines are consistently identified as HQ across all metrics. As depicted in Table 3, Metrics 2–4 are closely related, with correlation coefficients above 0.5, and Metrics 1 and 5 are not as closely related to the other metrics, with correlation coefficients below 0.30.

Table 3. Correlation Matrix for Metrics that Define HQ

Enlistee Metrics					
	HQE ₁	HQE ₂	HQE ₃	HQE ₄	HQE ₅
HQE ₁					
HQE ₂	0.05				
HQE ₃	0.22	0.56			
HQE ₄	0.01	0.64	0.60		
HQE ₅	0.07	0.15	0.14	0.15	
Recruiter Metrics					
	HQR ₁	HQR ₂	HQR ₃	HQR ₄	HQR ₅
HQR ₁					
HQR ₂	0.10				
HQR ₃	0.25	0.58			
HQR ₄	0.07	0.73	0.71		
HQR ₅	0.06	0.26	0.25	0.27	

a. Metric 1: DOD Enlistment Standards

Based on the DOD enlistment standards, I infer that the DOD defines quality for an enlistee as someone who scores at or above 50 on the AFQT and possesses a high school diploma and this definition, therefore, forms the basis for the first metric. The Department of Defense Instruction (2013) establishes requirements for the services regarding quality distribution of manpower accessions. The qualitative distribution is defined as “the proportion (distribution) of two key characteristics or qualities, aptitude and education status, of accessions within a particular fiscal year” (*DODINST 1145.01*, 2020, p. 6).

Consequently, the qualitative distribution is comprised of the Armed Forces Qualification Test (AFQT) based on five categories and three education tiers as depicted in Table 4.

Table 4. DOD Qualitative Distribution: AFQT and Education. Adapted from DODINST 1145.01 (2020).

Armed Forces Qualification Test (AFQT)		Education Credential Tiers		
Category	Percentile Score	Tier	Priority	Description
I	93-99	I	High	HS Graduates, college degree holders or some college credits, and covered graduates
II	65-92			
IIIA	50-64			
IIIB	41-49	II	Medium	Alternative credential holders
IV	10-30	III	Low	Nongraduates with AFQT scores at or above 31st percentile (Category IIIB)
V	1-9			

The AFQT is broken into five categories with category III broken into two sub-categories all based on AFQT percentile score. Those above a 50 are referred to as Category III “Alphas” and those scoring below 50 are referred to as “Bravos.” Education is broken into three tiers based on high school diploma status.

The DOD prescribes benchmarks for the services that include 60% of accessions at or above the 50th percentile (Category IIIA, II, and I) and 90% with education credentials Tier I (*DODINST 1145.01*, 2020). A quality individual using this metric will score above a 50 on the AFQT and be Tier I for education credentials.

For Metric 1, I use these established DOD standards for HQ in Equation 1.

$$HQ_1 = 1 \text{ if } (AFQT \geq 50) \& (Education = Tier I) \quad (1)$$

where the HQE_i equal 1 if the enlistee is determined HQ and 0 otherwise and HQR_i equal 1 if the recruiters is determined HQ and 0 otherwise. The enlistee and recruiter are considered HQ if they graduated from high school (education tier I) and possess an AFQT score greater than or equal to 50. Table 5 depicts the components of Metric 1 and output.

Table 5. Metric 1 Components and Output

Enlistee					
	N	Mean	Std. Dev.	Min	Max
Education Tier	264,354	1.00	0.04	1.00	2.00
AFQT Score	264,354	61.66	17.72	0.00	99.00
HQE ₁	264,354	0.72	0.45	0.00	1.00
Recruiter					
	N	Mean	Std. Dev.	Min	Max
Education Tier	11,876	1.02	0.15	1.00	3.00
AFQT Score	11,876	59.36	17.54	21.00	99.00
HQR ₁	11,876	0.66	0.47	0.00	1.00

b. Metric 2: Marine Corps Enlisted Promotion Composite Scores (Legacy System)

The Marine Corps uses the promotion composite score system to rank Marines in grades E3 and E4 and determine who is best qualified for promotion. This scoring system provides the basis for the second metric. I will calculate promotion composite scores for each of the Marine recruiters and enlistees to rank them against their peers. Although the Marine Corps is presently replacing the legacy system with the Junior Enlisted Performance Evaluation System (JEPES), because this system was used during the observed period between 2011 to 2019, it is included as a metric.

The promotion scoring system is unique to E4 and E5 since regular promotions to E2 and E3 are based solely on time with promotions to E6 and higher using a promotion board system. Each quarter, E3 and E4 Marines receive a newly computed promotion composite score if they are eligible for promotion. The Marine Corps uses these composite scores to determine the cut score that determines promotions within a specific MOS (based on the requirement). All of the Marines possessing a composite score above the cut receive promotions. For the following months in the quarter, the Marine Corps could lower the cut score to promote more Marines or close the promotions based on the requirement. *The Marine Corps Promotion Manual for Enlisted Promotions* outlines this computation using

several measures including their rifle marksmanship score, physical fitness score, average proficiency marks, average conduct marks, time in grade, time in service, bonus points for volunteering to serve in a special duty assignment, education points for continuing education through the service or civilian education, and additional bonus points awarded for recruiting an individual who enlists. The computation as outlined in the *Marine Corps Promotion Manual, Volume II, Enlisted Promotions* (Headquarters, United States Marine Corps, 2006, p. 57) follows. I exclude Lines 9 to 13 and intentionally marked them out since they are not included in this metric. Lines 9 and 10 are awarded based on tenure alone. Line 11 is due to opportunities that not all Marines may have since a HQ Marine may only serve four years of honorable service and not attend DI, Recruiter, or MSG school. Line 12 is not observed since this score would normally include MarineNet courses and college courses completed. Line 13 is also not observed.

Line No.		Rating
1. Rifle Marksmanship Score	= _____	
2. Physical Fitness Score	= _____	
3. Combat Fitness Test	= _____	
4. Subtotal (line 1 + 2 + 3)		= _____
5. General Military Proficiency Score (line 3 divided by 2)		= _____
6. General Military Proficiency Score (from line 4) x 100		= _____
7. Average Duty Proficiency x 100		= _____
8. Average Conduct x 100		= _____
9. ~~Time in Grade (months)~~		= _____
10. ~~Time in Service (months)~~		= _____
11. ~~DI/Recruiter/MSG Bonus (maximum 100 points)~~		= _____
12. ~~Self Education Bonus: (maximum 100 points)~~		
13. ~~Command Recruiting Bonus: (maximum 100 points)~~		= _____
14. <u>Composite Score</u> (sum of lines 6 through 13)		= _____

In order to compute the composite score, many of the individual scores are converted to a 0.0 to a 5.0 scaled system as depicted in Table 6. For the Line 1 rifle score, the score was converted from the three-digit score to a rating between 0.0 to 5.0 with the highest individuals scoring between a 240–250 and the lowest unqualifying with a score between 0–189. For the requalification or sustainment course, the scoring is different spanning 0 to 65 with a 5.0 awarded to scoring 57 to 65 and 0 awarded to scoring less than 24. Also, important to note, these scores are based only on the Table I course of fire (known distance course) and do not include Table II. Many rifle scores include both Table I and

Table II and are thus out of a 350-point maximum vice the 250-point maximum depicted here.

Table 6. Rifle Conversion Table. Source: Headquarters, United States Marine Corps (2006).

<u>REQUALIFICATION/ SUSTAINMENT COURSE</u>		<u>ENTRY LEVEL COURSE</u>
EX	40	220
SS	35	210
MM	25	190

57 - 65 = 5.0	40 - 44 = 4.6	30 - 32 = 3.6
53 - 56 = 4.9	38 - 39 = 4.4	28 - 29 = 3.4
49 - 52 = 4.8	35 - 37 = 4.2	25 - 27 = 3.0
45 - 48 = 4.7	33 - 34 = 3.8	0 - 24 = 0.0

CONVERSION TABLE (Rifle Marksmanship Score to Rating)

<u>Score</u>	<u>Rating</u>
240-250	5.0
235-239	4.9
230-234	4.8
225-229	4.7
220-224	4.6
215-219	4.4
210-214	4.2
205-209	3.8
200-204	3.6
195-199	3.4
190-194	3.0
000-189	0.0

Lines 2 and 3 cover the Physical Fitness Test (PFT) and Combat Fitness Test (CFT) that each consist of a score between 0 to 300 for their respective three events. The Marine Corps MARADMIN 587/18 (2018) changed the scoring for both the CFT and PFT by standardizing the conversions between the two tests across all age groups as depicted in Table 7. Scoring a 300 on either test results in a 5.0 with a 4.9 awarded for scoring between 287 to 299. For those that score below a 150 and fail, they receive a 0.

Table 7. Physical Fitness Test and Combat Fitness Test Scoring.
Adapted from Headquarters, United States Marine Corps (2018).

Class	Score	Rating
1st	300	5.0
	287-299	4.9
	274-286	4.8
	261-273	4.7
	248-260	4.6
	235-247	4.5
2nd	228-234	4.4
	221-227	4.3
	214-220	4.2
	207-213	4.1
	200-206	4.0
	190-199	3.9
3rd	180-189	3.8
	170-179	3.7
	160-169	3.6
	150-159	3.5
	0-149	0.0
Unqualified		

The rifle score, PFT, and CFT rating are averaged to form the General Military Proficiency (GMP) score on Line 5 and then multiplied by 100 to generate line 6. Line 7 and Line 8 include the Average Duty Proficiency and Average Duty Conduct scores. Both of these scores are rated on a 0.0–5.0 scale and multiplied by 100. An average Marine is considered between a 4.0 to a 4.4 for both proficiency and conduct marks.

The resulting Line 14 provides the Marine’s individually calculated composite score for that quarter. Because the promotion system is a means to identify, retain, and grow talent, the composite score provides a metric for determining quality individuals. Additionally, because all Marines who receive assignment to recruiting duty have promoted beyond these ranks and Marines who complete their first enlistment will also have received a composite score, the composite score provides the second metric for quality. The calculated composite score will rank Marines against their peers based on their scores.

For Metric 2, I use these the legacy promotion composite score standards for HQ to determine whether the recruiter and enlistee are HQ. The Metric 2 score was computed as depicted in Equation 2.

$$Metric2Score = \frac{PFTScaled + CFTScaled + RifleScaled}{3} + Proficiency_{Avg} + Conduct_{Avg} \quad (2)$$

The enlistee and recruiter scores for the PFT, CFT, and Table 1 rifle score were averaged across their service (recruiters prior to attending the BRC) and then the average scores were converted to a 5.0 scale. The average proficiency marks and conduct marks were multiplied by 10 for a maximum 500 points. Table 8 depicts the different components of Metric 2.

The enlistee and recruiter are considered HQ if they exceed the 60th percentile for their composite score which is the Tier II. I use this cutoff that determines Marines above the 60th percentile as high-quality based on the reenlistment tier evaluation system discussed later within this chapter. Tier I is the 90th percentile. Equation 3 depicts the quality relationship between Marine recruiter and enlistee according to Metric 2.

$$HQ_2 = 1 \text{ if } Metric2Score \geq Metric2Score_{p_{60}} \quad (3)$$

where HQE_2 or HQR_2 equal 1 if the *Metric2Score* is above the 60th percentile for their group and 0 otherwise.

Table 8. Metric 2 Components and Tiers

Enlistee					
	N	Mean	Std. Dev.	Min	Max
Physical Fitness Test Average	240,212	242.21	35.44	23	300
Physical Fitness Test Average Scaled	240,212	4.38	0.77	0	5
Combat Fitness Test Average	240,212	272.56	25.02	37	300
Combat Fitness Test Average Scaled	240,212	4.72	0.38	0	5
Rifle Score Table I Average	240,212	214.30	11.38	21	250
Rifle Score Table I Average Scaled	240,212	4.16	0.69	0	5
Proficiency Marks Average	240,212	43.15	1.68	2	50
Proficiency Marks Average Scaled	240,212	431.53	16.80	20	500
Conduct Marks Average	240,212	43.00	1.90	4	50
Conduct Marks Average Scaled	240,212	430.01	19.00	40	500
Metric 2 Score	240,212	1303.21	59.48	507	1497
Metric 2 Tier I Cutoff	240,212	1360.00	0.00	1360	1360
Metric 2 Tier II Cutoff	240,212	1323.33	0.00	1323	1323
HQE ₂	240,212	0.41	0.49	0	1
Recruiter					
	N	Mean	Std. Dev.	Min	Max
Physical Fitness Test Average	7,979	250.81	27.53	97	300
Physical Fitness Test Average Scaled	7,979	4.53	0.39	0	5
Combat Fitness Test Average	7,979	268.04	29.25	70	300
Combat Fitness Test Average Scaled	7,979	4.65	0.55	0	5
Rifle Score Table I Average	7,979	217.99	9.58	152	248
Rifle Score Table I Average Scaled	7,979	4.35	0.48	0	5
Proficiency Marks Average	7,979	44.89	0.94	41	49
Proficiency Marks Average Scaled	7,979	448.87	9.41	410	490
Conduct Marks Average	7,979	44.87	0.99	39	49
Conduct Marks Average Scaled	7,979	448.66	9.92	390	490
Metric 2 Score	7,979	1348.70	35.77	1017	1443
Metric 2 Tier I Cutoff	7,979	1386.67	0.00	1387	1387
Metric 2 Tier II Cutoff	7,979	1360.00	0.00	1360	1360
HQR ₂	7,979	0.42	0.49	0	1

c. Metric 3: Junior Enlisted Performance Evaluation System (JEPES)

The third metric used within this research to measure quality of the Marine recruiter and enlistee is the JEPES. This new system will replace, by February 1, 2021, the legacy composite score method as the new evaluation system used to determine which grade E3 and E4 Marines receive promotion. The JEPES consists of a maximum 1,000 points consisting of four equal “pillars” worth up to 250 points each: warfighting, physical toughness, mental agility, and command input. The first three pillars are described by the Marine Corps as objective measurements and the Marine will be able to see their ranking against their peers through the online portal. The combined score for the four pillars is referred to as the Performance Evaluation System (PES) Score.

Although the system is automated within Marine Online, the Marine can use a worksheet to determine their individual score. The worksheet depicted in Table 9 shows the breakdown between the different scores and how they are computed (Headquarters, United States Marine Corps, 2020b).

Table 9. JEPES Manual Scoring Worksheet. Source: Headquarters, United States Marine Corps (2020b).

MRO NAME: _____ **EDIPI:** _____ **RANK:** _____
AFABD: _____ **Present Date of Rank:** _____

Line Number

1. Warfighting (SCORE) (VALUE) (DATE OF QUAL)
a. Rifle Score: _____ = _____
b. MCMAP: (BELT LVL) (VALUE) (DATE OF QUAL)
_____ = _____
c. LINE (1a + 1b) VALUE: _____
d. Warfighting Comp. (1c x 1.25): _____ (ROUND-MAX 250)

2. Physical Toughness (SCORE) (VALUE) (EFFECTIVE DATE)
a. PFT: _____ = _____
b. CFT: _____ = _____
c. LINE (2a + 2b) VALUE: _____
d. PT Comp. (2c x 1.25): _____ (ROUND-MAX 250)

3. Mental Agility: (SEE ATTACHED DOCUMENTATION FOR VALUE COMPUTATION)
(VALUE)
a. MARINENET courses: _____ = _____ (MAX 100)
b. Degrees: _____ = _____ (MAX 40)
(Num. Completed Courses) (VALUE)
c. CRS-SVS: _____ x 10 = _____ (MAX 30)
d. CRS-GRD: _____ x 10 = _____ (MAX 30)
e. LINE (3a+3b+3c+3d) VALUE: _____
f. Mental Agility Comp. (3e x 1.25): _____ (ROUND-MAX 250)

4. CMD Input (AVG SCORE IN GRADE 0.0-5.0) (VALUE)
a. MOS/MSN _____ x 50 = _____
b. Leadership _____ x 50 = _____
c. Character _____ x 50 = _____
d. LINE (4a + 4b + 4c) VALUE: _____
e. CMD Input Comp. (4d / 3): _____ (ROUND-MAX 250)

5. Bonus (Circle one) (VALUE: YES = 50, NO = 0)
a. DI School: YES / NO = _____
b. Recruiter School: YES / NO = _____
c. MSG School: YES / NO = _____
d. Combat Instructor: YES / NO = _____
e. MC Sec. Forces: YES / NO = _____
(Number)
f. Command Rec. Bonus: _____ x 20 = _____ (MAX 100)
g. LINE (5a+5b+5c+5d+5e+5f) VALUE: _____
h. Bonus Comp. (5g): _____ (MAX 100)

6. Total PES Score:
a. LINE (1d+2d+3f+4e+5h): _____ (MAX 1000)

The first pillar is warfighting and includes the rifle score and belt level attained within the Marine Corps Martial Arts Program (MCMAP). Depending on the MCMAP belt and potential instructor credentials, the Marine can receive additional points. Marines receive a tan belt during recruit training and can continue the MCMAP throughout their careers while progressing through gray, green, brown, and various black belt levels. The individual uses the scoring worksheet in addition to scoring tables for the MCMAP belt depicted in Table 10 to determine the value based on the highest MCMAP belt attained.

Table 10. JEPES MCMAP Belt Scoring. Source: Headquarters, United States Marine Corps (2020b).

Belt Level	Belt Code	Value
UNQUAL	MMA	0
TAN	MMB	16
GREY	MMC	33
GREEN	MMD	50
GREEN INSTRUCTOR	MME	66
BROWN	MMF	83
BROWN INSTRUCTOR OR ABOVE	MMG +	100

The second pillar, physical toughness, includes the PFT and CFT. Both the warfighting and physical toughness pillars use a relative scoring system that provides points based on their standing against their peers. Based on their peer's percentile, they are awarded the same level of points such as 88th percentile would award 88 points. The total points in each of these two pillars is multiplied by 1.25 for up to 250 points each (Headquarters, United States Marine Corps, 2020a). As depicted in Table 11, the Marine receives a specific value based on each of the three scores.

Table 11. JEPES PFT, CFT, and Rifle Scoring. Source: Headquarters, United States Marine Corps (2020b).

PFT Score	CFT Score	Rifle Score	Value		PFT Score	CFT Score	Rifle Score	Value
0-149	0-149	0-249	0			276	313	51
150	150-192	250	1		253	277		52
151-168	193-204	251-258	2		254		314	53
169-179	205-212	259-274	3		255	278		54
180-188	213-218	275-279	4					55
189-194	219-222	280-281	5		256	279	315	56
195-198	223-226	282-284	6		257	280		57
199-202	227-230	285	7		258			58
203-205	231-233	286-287	8			281	316	59
206-207	234-235	288	9		259			60
208-209	236	289	10		260	282	317	61
210-211	237-238	290	11			283		62
212-213	239-240	291	12		261			63
214-215	241-242	292	13		262	284	318	64
216-217	243	293	14			285		65
218-219	244-245	294	15		263		319	66
220	246	295	16		264	286		67
221-222	247	296	17		265			68
223	248-249		18			287	320	69
224	250	297	19		266			70
225-226	251	298	20		267	288	321	71
227	252	299	21					72
228-229	253		22		268	289		73
230	254	300	23		269	290	322	74
231	255	301	24					75
232	256		25		270	291	323	76
233	257	302	26		271			77
234	258	303	27		272	292	324	78
235	259		28			293		79
236	260	304	29		273			80
237	261		30		274	294	325	81
238		305	31		275			82
	262		32			295	326	83
239	263	306	33		276			84
240	264		34		277	296	327	85
241	265		35		278	297		86
	266	307	36		279		328	87
242			37		280	298	329	88
243	267	308	38		281	299		89
244	268		39		282		330	90
	269		40		283			91
245		309	41		284		331	92
246	270		42		285-286		332	93
247	271	310	43		287		333	94
248			44		288		334	95
	272	311	45		289-290		335	96
249	273		46		291-292		336	97
250			47		293-294		337-338	98
	274	312	48		295-298		339-340	99
251	275		49		299-300	300	341-350	100
252			50					

For the first two pillars, I calculate the scoring exactly how the JEPES is calculated except I use average scores in service for PFT, CFT, and rifle score. The JEPES would normally rely on the current score but by using an average I am including sustained

performance which will provide a more consistent result. For example, a Marine may typically score below a 250 on the PFT but while attending Corporals Course they may be in better shape and achieve a 280 PFT. By using their average score in service, I will “average out” these outliers. Of note, the MCMAP belt attained is the highest belt level the Marine achieved during their service.

I will use proxies for both the third and fourth pillar. The third pillar provides up to 250 points based on college degree attained, college courses completed and MarineNet courses completed though I will use AFQT as a proxy due to lack of observed data. The fourth pillar, command input, is a completely subjective measurement since the Marine’s leadership evaluates the Marine based on predetermined criteria. Since these scores have not yet been implemented, I use a combination of the proficiency marks and conduct marks as the proxy for this command input. Evaluation criteria includes performance within the Marine’s MOS, their contribution toward the mission, and their individual leadership and character. I multiply the proficiency and conduct marks by 1.25 to attain the 250-point maximum. The JEPES also provides the same bonuses that the legacy composite score provides though I do not include them because they are unobserved (Headquarters, United States Marine Corps, 2020a).

For Metric 3, I use these the JEPES score to determine whether the recruiter and enlistee are HQ. The metric score is depicted in Equation 4.

$$Metric3Score = [(JEPES_{Rifle} + JEPES_{MCMAP}) * 1.25]_{Warfighting} + [(JEPES_{PFT} + JEPES_{CFT}) * 1.25]_{PhysicalToughness} + (AFQT_{Score} * 2.5)_{MentalAgility} + [(ProficiencyAvg_{Service} * 2.5) + (ConductAvg_{Service} * 2.5)]_{CommandInput} \quad (4)$$

The enlistee and recruiter average scores for the PFT, CFT, and rifle score, and their MCMAP belt are converted to the JEPES 100-point scale. The sum of the four pillars is the *Metric3Score*. Similar to Metric 2, I use the 60th percentile as a cutoff for Tier II based on the reenlistment tier evaluation system discussed later within this chapter. The individual components of the score and tier cutoffs for Tier I and Tier II are listed in Table 12.

Table 12. Metric 3 Components and Tiers

Enlistee					
	N	Mean	Std. Dev.	Min	Max
Rifle Score (Table I & II) Average	219,535	303.07	19.45	83	346
Rifle Score (Table I & II) Average Scaled	219,535	38.18	25.25	0	100
MCMAP Belt Score Scaled	219,535	42.60	27.04	0	100
JEPES Warfighting Pillar	219,535	100.98	46.98	0	250
Physical Fitness Test Average	219,535	242.05	35.47	23	300
Physical Fitness Test Average Scaled	219,535	46.10	29.06	0	100
Combat Fitness Test Average	219,535	271.54	25.39	37	300
Combat Fitness Test Average Scaled	219,535	51.23	26.04	0	100
JEPES Physical Toughness Pillar	219,535	121.66	60.54	0	250
AFQT Score (as proxy)	219,535	61.98	17.71	0	99
JEPES Mental Agility Pillar	219,535	154.96	44.29	0	248
Proficiency Marks Average (as proxy)	219,535	43.22	1.53	2	50
Conduct Marks Average (as proxy)	219,535	43.09	1.68	4	50
JEPES Command Input Pillar	219,535	215.77	7.73	20	250
Metric 3 Score	219,535	593.37	104.09	251	959
Metric 3 Tier I Cutoff	219,535	732.50	0.00	733	733
Metric 3 Tier II Cutoff	219,535	618.75	0.00	619	619
HQE ₃	219,535	0.40	0.49	0	1
Recruiter					
	N	Mean	Std. Dev.	Min	Max
Rifle Score (Table I & II) Average	7,812	307.86	16.77	144	348
Rifle Score (Table I & II) Average Scaled	7,812	45.13	25.09	0	100
MCMAP Belt Score Scaled	7,812	81.63	22.50	16	100
JEPES Warfighting Pillar	7,812	158.45	43.00	24	250
Physical Fitness Test Average	7,812	251.08	27.37	97	300
Physical Fitness Test Average Scaled	7,812	53.12	27.94	0	100
Combat Fitness Test Average	7,812	268.11	28.95	70	300
Combat Fitness Test Average Scaled	7,812	48.39	28.50	0	100
JEPES Physical Toughness Pillar	7,812	126.89	54.86	0	250
AFQT Score (as proxy)	7,812	59.76	17.62	21	99
JEPES Mental Agility Pillar	7,812	149.39	44.05	53	248
Proficiency Marks Average (as proxy)	7,812	44.88	0.94	41	49
Conduct Marks Average (as proxy)	7,812	44.86	0.99	39	49
JEPES Command Input Pillar	7,812	224.37	4.63	203	245
Metric 3 Score	7,812	659.09	86.71	379	949
Metric 3 Tier I Cutoff	7,812	773.75	0.00	774	774
Metric 3 Tier II Cutoff	7,812	681.25	0.00	681	681
HQR ₃	7,812	0.40	0.49	0	1

The enlistee and recruiter are considered HQ if they exceed the 60th percentile, or Tier II, for their score. Tier I is the 90th percentile. Equation 5 depicts the quality relationship between Marine recruiter and enlistee according to Metric 3:

$$HQ_3 = 1 \text{ if } Metric3Score \geq Metric3Score_{p_{60}} \quad (5)$$

where HQE_3 or HQR_3 equal 1 if the *Metric3Score* is above the 60th percentile for their group and 0 otherwise.

d. Metric 4: Reenlistment Standards Tiered Evaluation System

The fourth metric uses the reenlistment standards tiered evaluation system to define quality. When Marines near the end of their enlistments, they must compete for “boat spaces” or compete to reenlist. The Marine Corps end-strength limits and own grade shaping mean the majority of Marines will leave service after their first enlistment. In order to rank the Marines by quality, the Marine Corps uses a tiered evaluation system for reenlistments. Crider (2015) describes and evaluates this system and the effectiveness for long-term retention. Four quality tiers describe each Marine’s quality and are based on an individual’s percentile in the population: Tier 1 are considered “eminently qualified” and comprise the 91st to 100th percentile; Tier 2 are considered “highly competitive” and comprise the next 30% (61st–90th percentile); Tier 3 are considered “competitive” and make up the next 50% (11th–60th percentile) and the remainder fall into Tier 4, the “below average” rank. Commanders recommend or do not recommend Marines for reenlistment and they consider their quality as described by the tiers in making this decision. The tier level itself does not determine whether an individual receives reenlistment, however.

The components within the tiered system consist of the physical fitness test, combat fitness test, proficiency and conduct marks, rifle score, MCMAP belt attained, and whether an individual was meritoriously promoted. Individuals are normally promoted on the 1st of the month and meritorious promotion dates of rank occur on the 2nd of the month (Headquarters, United States Marine Corps, 2006). Crider found that the existing tiered evaluation system is a good predictor of promotion speed, career longevity, and FITREP averages since any increases in tier level resulted in more favorable outcomes. Although

promotion speed, career longevity, and FITREP averages are not necessarily standard measures of HQ, Crider uses them as his metric for HQ. The reenlistment standards tier evaluation system provides the basis for the fourth metric.

For Metric 4, I use these the reenlistment tier evaluation score to determine whether the recruiter and enlistee are HQ. The Metric 4 score is depicted in Equation 6.

$$Metric4Score = Proficiency_{Avg} + Conduct_{Avg} + PFT_{Avg} + CFT_{Avg} + Rifle_{Avg} + MCMAP_{Rank} + (meritoriousPromotion * 100) \quad (6)$$

The scores for the enlistee and recruiter's average proficiency and conduct marks are multiplied by 100. The MCMAP rank is based on a 100-point scale similar to Metric 3 and the variable for Meritorious Promotion is binary and either 1 if promoted on the 2nd of the month to either E4 or E5 or 0 otherwise. The sum of the scores is the *Metric4Score*. The individual components of the score and tier cutoffs for Tier I and Tier II are listed in Table 13.

Table 13. Metric 4 Components and Tiers

Enlistee					
	N	Mean	Std. Dev.	Min	Max
Proficiency Marks Average Scaled	219,535	432.17	15.29	20	500
Conduct Marks Average Scaled	219,535	430.90	16.80	40	500
Physical Fitness Test Average	219,535	242.05	35.47	23	300
Combat Fitness Test Average	219,535	271.54	25.39	37	300
Rifle (Table I & II) Score Average	219,535	303.07	19.45	83	346
MCMAP Belt Score Scaled	219,535	12.87	10.37	0	95
Meritorious Promotion (to E4 or E5)	219,535	0.05	0.23	0	1
Metric 4 Tier I Cutoff	219,535	1794.00	0.00	1794	1794
Metric 4 Tier II Cutoff	219,535	1720.00	0.00	1720	1720
Metric 4 Score	219,535	1697.99	87.59	893	2052
HQE ₄	219,535	0.40	0.49	0	1
Recruiter					
	N	Mean	Std. Dev.	Min	Max
Proficiency Marks Average Scaled	7,852	448.86	9.40	410	490
Conduct Marks Average Scaled	7,852	448.66	9.91	390	490
Physical Fitness Test Average	7,852	251.01	27.42	97	300
Combat Fitness Test Average	7,852	268.13	28.95	70	300
Rifle (Table I & II) Score Average	7,852	307.85	16.79	144	348
MCMAP Belt Score Scaled	7,852	25.56	16.38	5	95
Meritorious Promotion (to E4 or E5)	7,852	0.19	0.39	0	1
Metric 4 Tier I Cutoff	7,852	1881.00	0.00	1881	1881
Metric 4 Tier II Cutoff	7,852	1779.00	0.00	1779	1779
Metric 4 Score	7,852	1768.72	78.07	1442	2047
HQR ₄	7,852	0.41	0.49	0	1

The enlistee and recruiter are considered HQ if they exceed the 60th percentile, or Tier II, for their score. Tier I is the 90th percentile. Equation 7 depicts the quality relationship between Marine recruiter and enlistee according to Metric 4.

$$HQ_4 = 1 \text{ if } Metric4Score \geq Metric4Score_{p_{60}} \quad (7)$$

where HQE_4 or HQR_4 equals 1 if the *Metric4Score* is above the 60th percentile for their group and 0 otherwise.

e. Metric 5: Promotion Speed to E5 and FITREPs

This research will also incorporate other more obvious measures of quality including promotion speed to E5 for enlistees and fitness reports (FITREPs) for recruiters. Individuals who promote faster are identified and selected by the Marine Corps as HQ—this is self-evident. Although existing literature does examine promotion speed and whether an individual promotes more slowly or more quickly than their peers, existing research evaluates the promotion relative to the entire peer group in the service as opposed to within the MOS. The Marine Corps promotes enlisted personnel within MOS and, as a result, promotion speed within MOS will provide a better gauge of quality.

For the enlistee Metric 5 (HQE_5), HQE_5 is determined using the promotion speed within MOS. Specifically, the enlistee is HQ if they promoted within the first 25% of their peer group within their MOS as depicted in Equation 8. I only included the MOS if there were more than 20 individuals who promoted to E5 within the MOS to ensure a large enough sample. Additionally, I used the MOS at the individual's promotion date to Sgt and not necessarily their initial PMOS.

$$HQE_5 = 1 \text{ if } monthstoE5 \leq monthstoE5(byE5MOS)_{p_{25}} \quad (8)$$

where HQE_5 equal 1 if the enlistee *monthstoE5* is less than the 25th percentile and 0 otherwise. Table 14 depicts the components and 25th percentile based upon the E5 MOS.

Table 14. Enlistee Metric 5 Components

	N	Mean	Std. Dev.	Min	Max
Months to E5 Promotion	53,083	46.28	8.69	0.00	107.50
By MOS, 25 th Percentile Cutoff for Months to E5 Promotion	53,083	41.59	4.00	33.00	56.80
HQE ₅	264,681	0.05	0.22	0.00	1.00

Additionally, performance evaluations within FITREPs will also provide a measure of quality. As described in the MCO P1610.7F Performance Evaluation System (Headquarters, United States Marine Corps, 2010, p. 4), the “fitness report provides the primary means for evaluating a Marine’s performance to support the Commandant’s efforts to select the best qualified personnel for promotion.” The senior Marine (“reporting senior,”) evaluates the subordinate Marine (Marine reported on, or MRO) against other subordinate Marines who the reporting senior observed. The relative value (RV), based on a range from 80 to 100 with 90 as the mean, is further broken down into the top third, middle third, and bottom third. The RV is calculated at report processing and then recalculated as a cumulative RV whenever the reporting senior writes another FITREP. As a result, the Marine can either stay near their existing ranking, move up, or move down depending on the future reports.

For the recruiter Metric 5 (HQR₅), HQR₅ is determined by whether or not the recruiter’s average cumulative relative value is greater than 93.3 (within the top third of their cumulative peer group average) as depicted in Equation 9. The *avgRelValue* is calculated by taking the average of all of the recruiter’s cumulative relative values for their FITREPs.

$$HQR_5 = 1 \text{ if } AvgRelativeValue > 93.3 \quad (9)$$

where *HQR₅* equal 1 if the recruiter’s *AvgRelativeValue* is greater than 93.3 and 0 otherwise. The components for HQR₅ are depicted in Table 15.

Table 15. Recruiter Metric 5 Components

	N	Mean	Std. Dev.	Min	Max
FITREP Average Cumulative Relative Value	10,119	90.84	3.31	80	100
HQR ₅	10,119	0.24	0.43	0	1

4. Issues and Remedies

While merging the data, I encountered various issues either due to data that was missing or incorrectly coded. The follow describes my attempts to remedy the issues I encountered.

a. Enlistment and Ship Dates

Various dates were missing entries and some of the data sources used separate names to describe the same event. For example, the TFDW data that provided the Armed Forces Original Entry Date (OED) and Armed Forces Active-Duty Base Date (AFADBD) were not listed for many of the enlistees and recruiters. I found the MCRISS data more complete with these dates and so used the date of enlistment as the OED and the ship date as the AFADB or Pay Entry Base Date (PEBD). Additionally, a small number of enlistees and recruiters had multiple enlistments dates and I used the most recent enlistment date and ship date.

b. Physical Fitness Test and Combat Fitness Test

Because both the PFT and CFT will be included in the metrics, I needed to calculate a single PFT and CFT score to use for each enlistee and recruiter. Using longitudinal PFT and CFT scores, I calculated the average PFT and CFT score for each individual over their service. Although many of the metrics I will describe use a single score (typically the most recent score), using an average provides a better guage of an individual's sustained physical performance over their career.

c. Proficiency and Conduct Marks

Marines in grades E1 to E4 receive proficiency and conduct marks semi-annually. These marks are recorded as average in grade, average in enlistment, and average in

service. Some of the data was missing for Marines, so those Marines did not receive scores for the metrics that required them.

d. Rifle Score

Some of the rifle scores for the enlistees and recruiters were not numeric since the score was recorded as a three-digit alphanumeric score with either E for expert, S for sharpshooter, or M for marksman in front of the two-digit score. I dropped these alphanumeric observations. Additionally, Metric 2 required the Table 1 score only though the rifle score is normally composed of the sum of Table I (250 point maximum) and Table II (100 point maximum) for a combined 350 point maximum. Metric 3 required the combined rifle score. If an individual only had a combined Table I and II score, then they were omitted from Metric 2.

e. Recruiter FITREPs

In order to cutoff the FITREPs for when the recruiter attended the BRC, I use the billet MOS (BMOS) 8411 to determine the FITREP they received when they first attend BRC. I then filtered and dropped all the FITREPs succeeding the BRC FITREP. To calculate the average cumulative value, I first removed FITREPs that were written by RS who were not active-duty Marine Corps officers. I removed these additional reports to ensure that the standards would be uniform across the recruiters since, in my opinion, Marine Corps officers will evaluate more uniformly than other service or civilian raters. I also removed reports if they were end of service, active reserve component, or reserve training. Because FITREPs may be subjective in nature, I filtered the results to only include Marines with three or more observed FITREPs. Finally, only reports that were observed were included.

f. Children (dependents at contract)

Although the MCRISS data details whether an individual has dependents at contract, it does not describe whether they are children or a spouse. In order to determine whether they have children, I assume that a dependent of one with a status of married means the spouse is the dependent and a dependent of two or more with a marital status of married

means the individual has children. I also assume that individuals with at least one dependent and a marital status of single or divorced means that they have children.

g. Promotion to E5

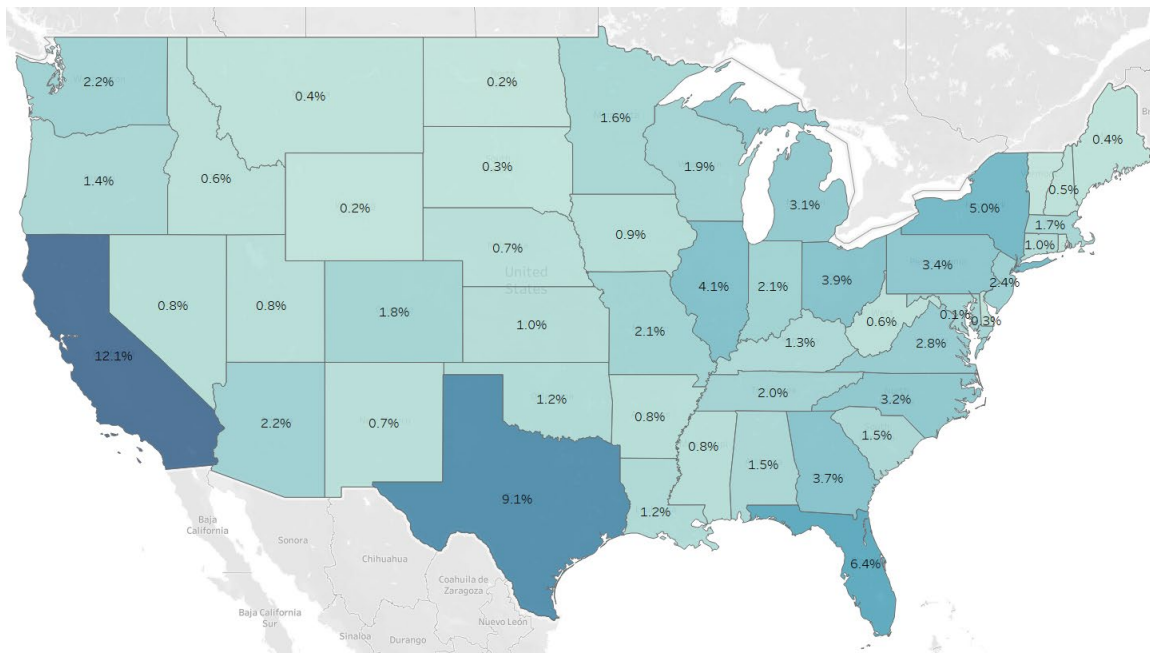
An easy means to calculate promotion speed would be to use all Marines without accounting for specific MOS. However, this method is rudimentary and does not account for differences in promotion speed by MOS. Certain MOS promote extremely slow while other low-density MOS may promote more quickly. So, instead, I calculated the first 25% to promote within their MOS. I used the MOS at each enlistee's date of rank to E5 and calculated their months to E5 based on their ship date. Since some of the MOS listed have low density or may be erroneous entries, I exclude any MOS with fewer than 20 individuals who promoted to E5. Also, given that many Marines will not promote to E5 within their first enlistment, the quantity of HQE₅ is significantly smaller than the other metrics.

5. Summary Statistics

a. Enlistees

The 264,381 enlistees were recruited from across the United States as depicted in Figure 7 with the most enlistees coming from California, Texas, Florida, and New York. The summary statistics for these enlistees are depicted in Table 16. The majority of enlistees are male with only 10% female. The majority are also under the age of 19 at enlistment with just 23% older than 19. Only 2% are married and just 6% have attended at least one semester of college. The Southeast economic region represents the largest percentage of enlistees with 26% followed by the Far West with 17%. Combat service support MOS are the highest density at 41% with combat arms representing 30% of enlistees. For waivers at enlistment, 29% of enlistees required a waiver for drugs or alcohol abuse.

Figure 7. Geographic Representation of Enlistees by State Home of Record
(48 Contiguous States)



This figure depicts the enlistees from 2011 to 2019 and their respective state home of record. The percentages depicted are determined by the total enlistees from this period and the proportion for each state. The colors provide a visual representation of the same information. The percentage of enlistees from Alaska and Hawaii are 0.3% and 0.4% respectively.

Table 16. Enlistee Summary Statistics

	Obs.	Percent
Demographics		
Female	25,439	10%
Male	239,242	90%
Asian	7,656	3%
Black	28,659	11%
Hispanic	56,695	21%
White	223,112	84%
Age 19 or Younger at Accession	204,467	77%
Age Over 19 at Accession	60,214	23%
Single at Accession	260,112	98%
Married at Accession	4,070	2%
Divorced, Separated, Widowed at Accession	480	0%
Children at Accession	3,341	1%
Education: Attended College (at least one semester)	15,795	6%

Table 16 cont'd. Enlistee Summary Statistics

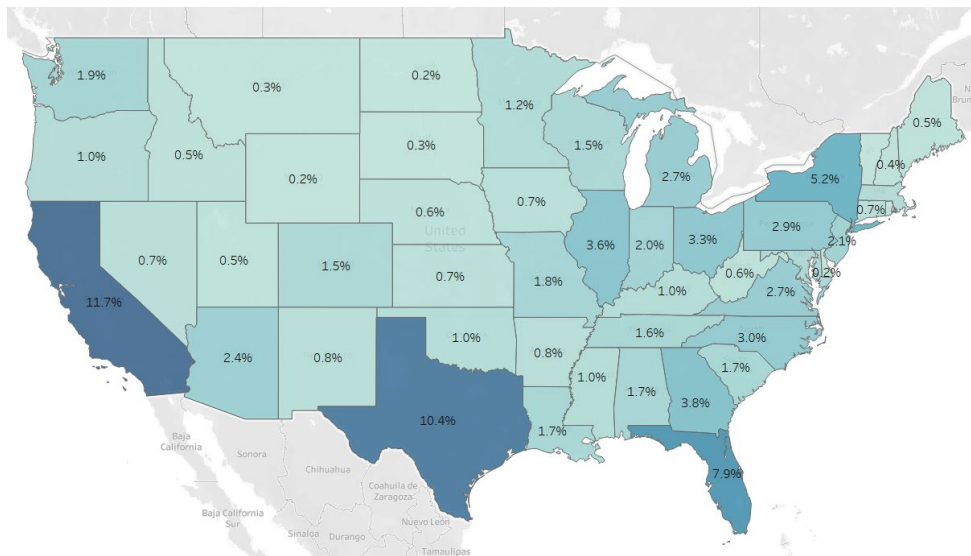
	Obs.	Percent
Physical Characteristics		
BMI Category Obese	5,071	2%
BMI Category Overweight	90,817	34%
BMI Category Normal	163,667	62%
BMI Category Underweight	5,120	2%
Exceeded Retention Weight Standards at Accession	40,379	15%
BCP Assignment During Enlistment	10,838	4%
Home of Record		
Economic Region New England	10,585	4%
Economic Region Mideast	34,108	13%
Economic Region Great Lakes	39,986	15%
Economic Region Plains	17,864	7%
Economic Region Southeast	68,410	26%
Economic Region Southwest	34,860	13%
Economic Region Rocky Mountain	9,944	4%
Economic Region Far West	45,278	17%
Military Occupational Specialty (MOS)		
Combat Service Support MOS	109,621	41%
Other MOS	26,534	10%
Combat MOS	80,447	30%
Aviation MOS	47,496	18%
Waivers Required at Accession		
Waiver at Accession for Age	95	0%
Waiver at Accession for Citizenship	1	0%
Waiver at Accession for Dependents	3,421	1%
Waiver at Accession for Drugs, Alcohol Abuse	77,916	29%
Waiver at Accession for Legal	21,510	8%
Waiver at Accession for Physical or Medical (height, weight, BUMED)	34,556	13%
Waiver at Accession for Mental Health	12	0%
Waiver at Accession for Education Level	6	0%
Waiver at Accession for Prior Military Service	515	0%
Waiver at Accession for Unique (e.g., tattoo)	30,587	12%
Total Observations	264,681	

The table provides summary statistics for the recruiters. Of note, some of the data was missing such as the accession characteristics for height, weight, and state home of record and MOS. Race and ethnicity are separate categories. Not included are the “declined to respond” and other smaller categories or both race and ethnicity. Percentages were rounded to the nearest whole percentage.

b. Recruiters

The 12,125 recruiters were recruited from across the United States as depicted in Figure 8 with the most recruiters coming from California, Texas, Florida, and New York. The summary statistics for the recruiters are depicted in Table 17. The majority of recruiters are male but with only 5% female compared with the 10% female enlistees. The majority are also under the age of 27 when assigned to recruiting duty with just 40% older than 27. Much different from the enlistees, the majority of the recruiters are married with just 15% single. Exactly the same as enlistees, only 6% have attended at least one semester of college. The Southeast economic region also represents the largest percentage of enlistees with 28% followed by the Far West with 17%. As with the enlistees, combat service support MOS are the highest density at 42% with only 20% of combat arms MOS represented. Just as with the enlistees, 29% of recruiters required a waiver for drugs or alcohol abuse at accession.

Figure 8. Geographic Representation of Recruiters by State Home of Record (48 Contiguous States)



This figure depicts the recruiters paired with enlistees that enlisted from 2011 to 2019 and the recruiter's respective state home of record. The percentages depicted are determined by the total enlistees from this period and the proportion for each state. The colors provide a visual representation of the same information. The percentage of recruiters from Alaska, Hawaii, and Puerto Rico are 0.2%, 0.6%, and 0.5% respectively.

Table 17. Recruiter Summary Statistics

	Obs.	Percent
Demographics		
Female	592	5%
Male	11,532	95%
Asian	304	3%
Black	1,573	13%
Hispanic	2,267	19%
White	7,164	59%
Older than 27 at Assignment to BRC	4,848	40%
27 or Younger at Assignment to BRC	7,276	60%
Single at Assignment to BRC	1,842	15%
Married at Assignment to BRC	9,385	77%
Divorced at Assignment to BRC	887	7%
Children at Assignment to BRC	6,167	51%
Education: Attended College (at least one semester)	711	6%
Physical Characteristics		
BMI Category Obese at Accession	468	4%
BMI Category Overweight at Accession	3,155	26%
BMI Category Normal at Accession	7,925	65%
BMI Category Underweight at Accession	378	3%
Exceeded Retention Weight Standards at Accession	1,584	13%
Assigned to BCP During Service	223	2%
Home of Record		
Economic Region New England	377	3%
Economic Region Mideast	1,551	13%
Economic Region Great Lakes	1,720	14%
Economic Region Plains	688	6%
Economic Region Southeast	3,349	28%
Economic Region Southwest	1,811	15%
Economic Region Rocky Mountain	403	3%
Economic Region Far West	2,026	17%
Military Occupational Specialty (MOS)		
Combat Service Support MOS	5,033	42%
Other MOS	927	8%
Combat Arms MOS	2,423	20%
Aviation MOS	2,961	24%

Table 17 cont'd. Recruiter Summary Statistics

	Obs.	Percent
Waivers Required at Accession		
Waiver at Accession for Citizenship	3	0%
Waiver at Accession for Dependents	587	5%
Waiver at Accession for Drugs, Alcohol Abuse	3,552	29%
Waiver at Accession for Legal	1,441	12%
Waiver at Accession for Physical or Medical (height, weight, BUMED)	1,050	9%
Waiver at Accession for Mental Health	4	0%
Waiver at Accession for Education Level	10	0%
Waiver at Accession for Prior Military Service	78	1%
Waiver at Accession for Unique (e.g., tattoo)	1,342	11%
Total Observations	12,125	

The table provides summary statistics for the enlistees. Of note, some of the data was missing such as the accession characteristics for height, weight, and state home of record and MOS. Race and ethnicity are separate categories. Not included are the “declined to respond” and other smaller categories or both race and ethnicity. Percentages were rounded to the nearest whole percentage.

B. METHODOLOGY

1. A Conceptual Model

Prior to presenting my final model, I specify a conceptual model with the HQ enlistee metric as the dependent variable and HQ recruiter metric as the explanatory variable. The HQ enlistee and HQ recruiter are determined using five metrics discussed in Part B of this chapter. In the simplest form, Equation 10 describes this relationship.

$$HQE_i = \beta_0 + \beta_1 HQR_i + \varepsilon_i \quad (10)$$

where HQE is either 1 for HQ or 0 otherwise for enlistee for recruiter-enlistee pair i , HQR is either 1 for HQ or 0 otherwise for the recruiter. This conceptual model likely involves significant bias because it does not consider that metric quality varies over time and also does not consider differences in market conditions. For market conditions, it is possible that HQ recruiters are more likely to be assigned to markets with higher propensity to enlist among HQ candidates. Because they have a more “desirable” recruiting market, they will more likely contract higher quality enlistees and this may be unrelated to their quality as a

recruiter. I attempt to correct for both of these potential omitted variables bias in the following two sections.

2. Including Year Fixed Effects (Enlistee Ship Year)

The recruiter and enlistee quality varies by time and metric. Because recruiter data is more limited earlier on and the recruiters with missing data do not receive scores for the metrics, the number of HQ recruiters is lower for the earlier years. As a result, there are fewer recruiter-enlistee pairs within the models and, as a result, fewer HQ enlistees. Towards the end of the time period, junior Marines will be at a disadvantage since they will have lower proficiency and conduct marks following their initial training and will not have received the higher marks typically received at their final duty station. Therefore, because Metrics 2–4 are composed of proficiency and conduct marks, fewer enlistees will be determined as HQ in these later years due to their lower average scores. Also, the HQE5 metric is limited for the later years since policy required 24 months of service prior to promotion to E5 and Marines with less than 24 months of service will not have had the opportunity to promote to E5. Figure 9 depicts the HQ enlistees by metric for their ship year. Figure 10 depicts the HQ recruiters by metric and the year they started recruiting duty. For simplicity, the data within the figure excludes recruiters that started recruiting duty prior to 2009.

Figure 9. Quantity of HQ Enlistees by Metric and Ship Year

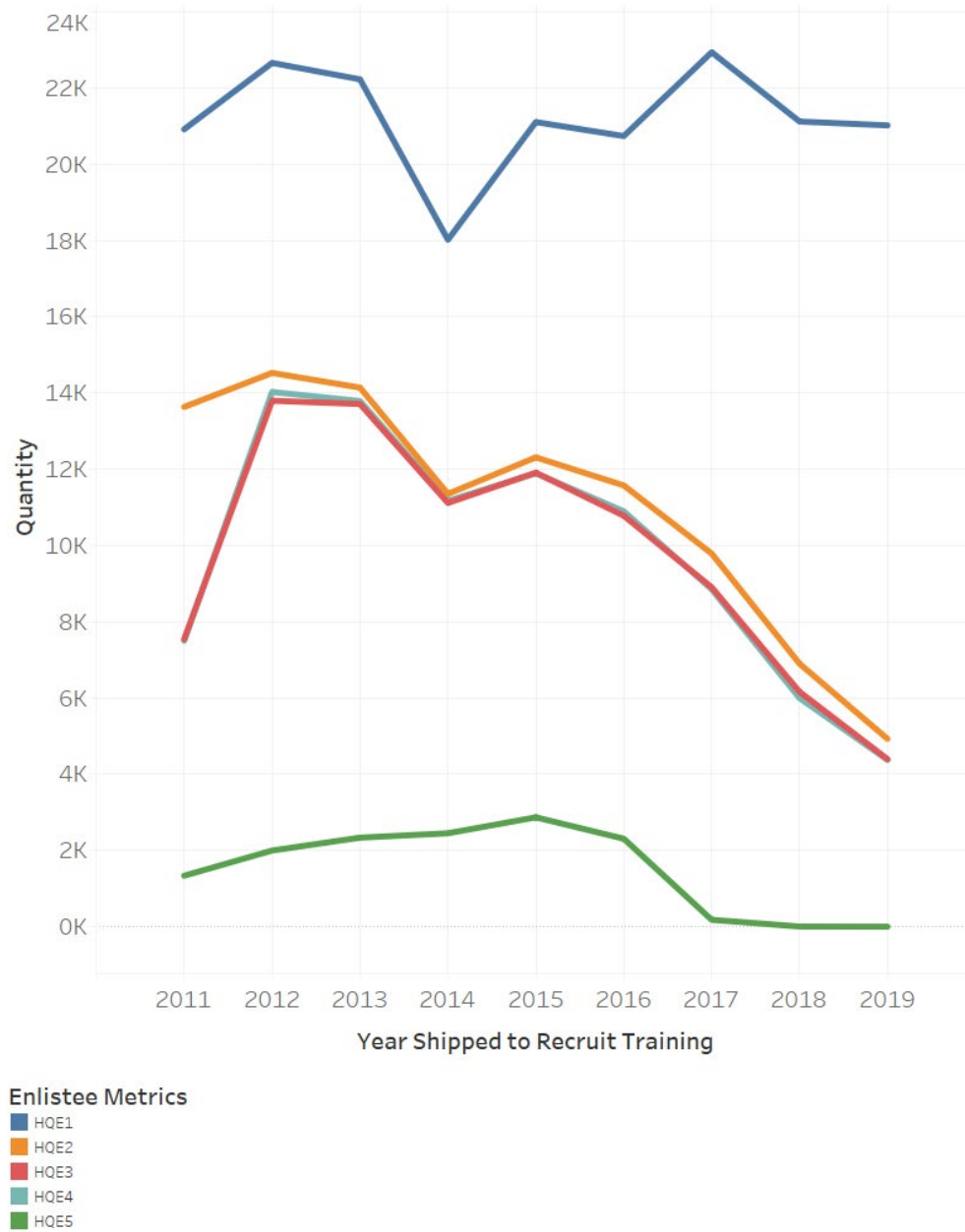
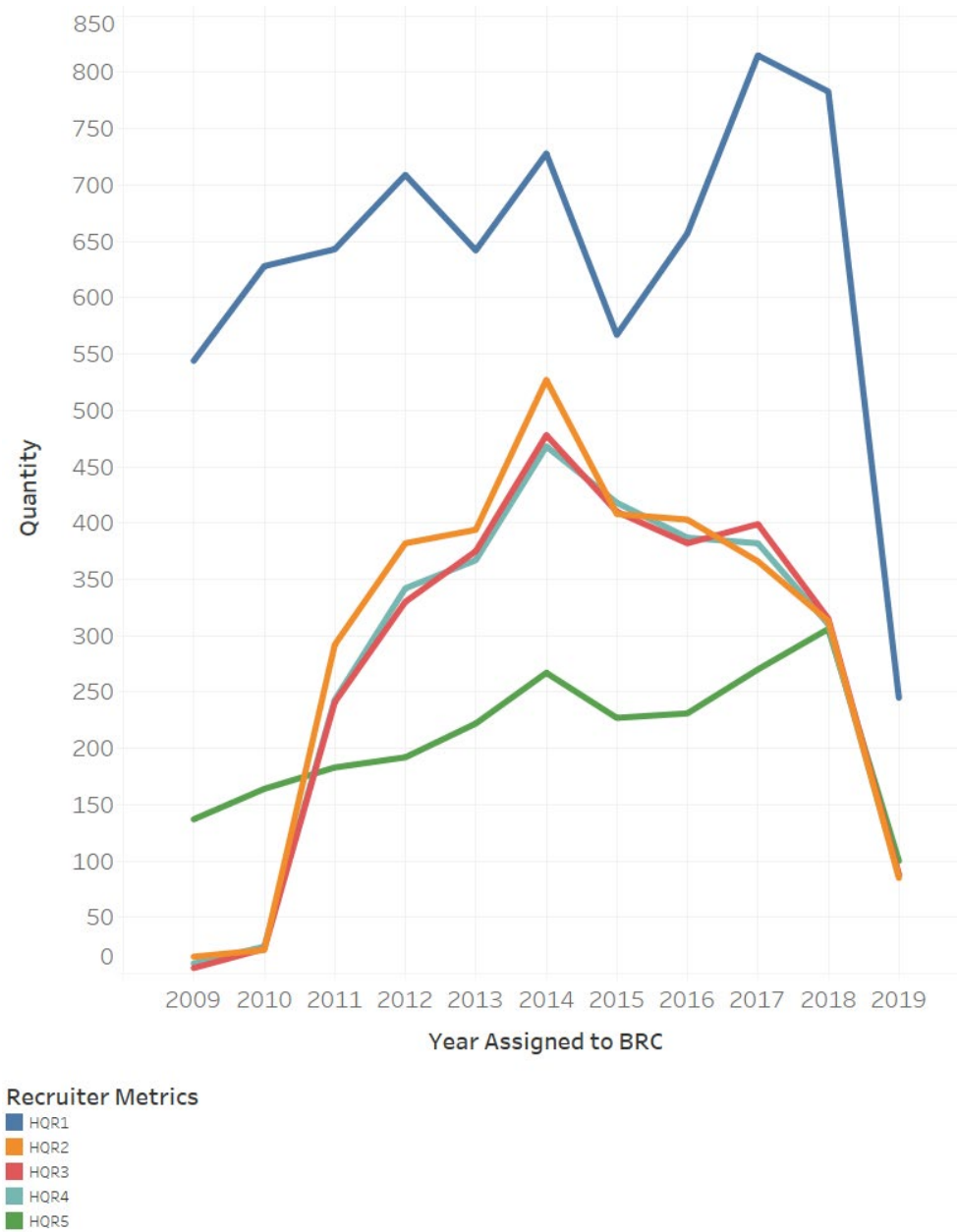


Figure 10. Quantity of HQ Recruiters by Metric and Enlistee Ship Year



In order to remove the bias caused by the variation over time for the different HQ metrics, I use year fixed effects based on the ship date of the enlistee. By including these fixed effects and holding constant the year that the enlistee shipped to recruit training, I attempt to remove the variation between years and evaluate the variation within each calendar year (2011–2019).

3. Including Recruiting Substation Fixed Effects

Recruiting markets vary by RSS and these differences can bias the estimates. Common elements that vary between RSSs correspond to propensity to enlist, availability within the market, and market quality. Propensity to enlist may be affected by a multitude of factors such as: size of the veteran population, general attitudes toward the military, general political affiliation, proximity to a military installation, previous recruiter misconduct within the RSS or local area, current recruiter influence within the high schools, the presence of Junior Reserve Officer Training Cadre (JROTC) programs at the schools, and marijuana legalization since some applicants may be unwilling to discontinue their use. Availability of the market or applicants is also affected by many factors such as: the proximity of applicants in a rural vs. urban area; size of the RSS thereby determining the mission; geographic location; age of the population whether younger or older; the local unemployment rate; gender ratios since more males typically enlist than females; the military and civilian wage rate; and competition from other services recruiters. Market quality varies by RSS due to median income, education attainment, college enrollment, crime rates that affect eligibility, drug use and convictions that affect eligibility, and general aptitude as measured by the AFQT (whether predominantly Alphas or Bravos). Figure 11 depicts a conceptual diagram of the HQ recruiter effect on the HQ enlistee. The market conditions affect the quality of the enlistee.

Figure 11. Conceptual Diagram of the Effect of Market Conditions on Enlistee Quality



In order to remove the bias caused by the variation between recruiting markets at the RSS level, I include RSS fixed effects based on the RSS that the enlistee contracted with the recruiter. By including these fixed effects and holding constant the RSS that the enlistee was recruited from, I am attempting to remove the variation between recruiting markets such as propensity to enlist, availability of applicants, and average quality of candidates and instead only analyze the variation within each specific RSS.

4. The Final Model

For the final model, I attempt to remove the bias caused by differences in years that the individuals shipped to recruit training and due to differences in recruiting markets. I include year fixed effects (based on the calendar year the enlistee shipped) and RSS fixed effects to hold constant the market conditions. Equation 11 depicts the final model.

$$HQE_{i,Y,RSS} = \beta_0 + \beta_1 HQR_i + \mu_Y + \mu_{RSS} + \varepsilon_{i,Y,RSS} \quad (11)$$

where μ_Y are calendar year fixed effects based on the year the enlistee from recruiter-enlistee pair i shipped to recruit training and μ_{RSS} are RSS fixed effects based on the

recruiter-enlistee pair i RSS. It is important to note that on average, Marine recruiters' contract approximately 12 enlistees each year. Given that this final model includes year fixed effects, the model will be measuring the effect of HQ recruiters on HQ enlistees within specific accession years and within a specific RSS. This means that the model will have less statistical power because it is only considering variation within each RSS. As a result, the coefficient estimates will be less-precisely estimated. Still, this is likely the most appropriate model to avoid potential omitted-variables bias.

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V. RESULTS

This chapter provides the results from the LPM final model for enlistee and recruiter Metrics 1–5 for a total of 25 regressions. Recruiter metrics are labeled HQR_{1-5} for Metrics 1–5 and enlistee metrics are labeled HQE_{1-5} for Metrics 1–5. I close this chapter with an alternative theory for why the estimated effect of HQ recruiter is positive on HQ enlistee and then provide supporting evidence that is consistent with my interpretation of the results.

A. OVERALL RESULTS

With the defined HQ standards for 264,681 enlistees from 2011 to 2019 and 12,125 recruiters, I evaluate the 264,681 recruiter-enlistee pairs. I control for the recruiting substation to attempt to remove bias due to differences in market conditions, and I control for calendar year that the enlistee shipped to recruit training to attempt to remove additional bias from the estimates due to differences between calendar years. The estimated effects of HQR_{1-5} on HQE_{1-5} for the LPM are depicted in Table 18.

Table 18. OLS LPM Final Model Estimated Effects between HQ Recruiter Metrics 1–5 and HQ Enlistee Metrics 1–5

	HQE_1	HQE_2	HQE_3	HQE_4	HQE_5
HQR_1	0.010 ***	0.002	0.004 **	0.000	0.001
HQR_2	0.003	0.004	0.004 *	0.003	0.000
HQR_3	0.007 ***	0.004 *	0.002	0.003	0.002
HQR_4	0.004	0.004 *	0.002	0.004 *	0.001
HQR_5	0.005 **	0.005 **	0.005 *	0.004	0.003 ***

The models include recruiting station fixed effects to hold constant market conditions between RSSs and year fixed effects to hold constant the years the enlistees ship to recruit training. The results depict a total of 25 regressions using OLS LPMs with the metrics HQE_{1-5} as the dependent variables and metric HQR_{1-5} as the explanatory variables. The symbols “***” indicate significance at the 99% level of confidence, “**” at the 95% level of confidence, and “*” at the 90% level of confidence. The color green indicates a positive estimated effect for the coefficient estimates.

The results depict the estimated effects of the HQ recruiter metrics on the HQ enlistee metrics:

- Metric HQR₁ HQ recruiters contract more HQ enlistees across all metrics and at statistically significant rates for metrics HQE_{1,3}.
- Metric HQR₂ HQ recruiters contract more HQ enlistees across all metrics and at statistically significant rates for metric HQE₃.
- Metric HQR₃ HQ recruiters contract more HQ enlistees across all metrics and at statistically significant rates for metrics HQE_{1,2}.
- Metric HQR₄ HQ recruiters contract more HQ enlistees across all metrics and at statistically significant rates for metrics HQE_{2,4}.
- Metric HQR₅ HQ recruiters contract more HQ enlistees across all metrics and at statistically significant rates for metrics HQE_{1-3,5}.

These results are simply interpreted. For example, in the upper left box with HQE₁ and HQR₁ for the OLS LPM: On average, when removing variations due to market conditions between RSSs and across accession years, the estimated effect of a HQR₁ metric recruiter on a HQE₁ metric enlistee is 1.0 percentage point at the significance level of .01. For example, this means that an increase in the number of recruiters who are high school graduates with an AFQT greater than 50 (an Alpha) by 15 percentage points would correspondingly increase the number of enlistee Alphas by 15 percentage points (due to the coefficient estimate of 0.01). If 60% of enlistees were alphas, the increase in HQ recruiters would lead to Alphas comprising 75% of enlistees based on these estimates.

B. DETAILED RESULTS

Table 19 provides the detailed coefficient estimates, standard errors, t statistics, P-values, and number of observations for the OLS LPM regressions. HQE₁₋₅, as the dependent variables, are depicted vertically and HQR₁₋₅, as the key X variables, are depicted horizontally. The final model attempts to remove potential biases caused by variations between recruiting markets and variations between accession years. The

constants and estimated effects for these fixed effects are omitted from the table results. Standard errors are robust.

Table 19. Detailed Results for the Final Model OLS LPM Regressions

		HQE ₁	HQE ₂	HQE ₃	HQE ₄	HQE ₅
HQR ₁	β_1	0.010	0.002	0.004	0.000	0.001
	Std. Err.	0.002	0.002	0.002	0.002	0.001
	t	5.320	1.081	1.991	0.061	1.223
	P-value	0.000	0.280	0.047	0.952	0.221
	Obs.	260,556	236,564	216,824	216,824	260,583
HQR ₂	β_1	0.003	0.004	0.004	0.003	0.000
	Std. Err.	0.002	0.003	0.003	0.003	0.001
	t	1.180	1.507	1.722	1.306	0.433
	P-value	0.238	0.132	0.085	0.192	0.665
	Obs.	183,976	163,998	160,971	160,971	183,994
HQR ₃	β_1	0.007	0.004	0.002	0.003	0.002
	Std. Err.	0.002	0.003	0.003	0.003	0.001
	t	3.040	1.769	0.693	1.186	1.587
	P-value	0.002	0.077	0.489	0.235	0.113
	Obs.	180,949	161,154	158,330	158,330	180,967
HQR ₄	β_1	0.004	0.004	0.002	0.004	0.001
	Std. Err.	0.002	0.003	0.003	0.003	0.001
	t	1.564	1.718	0.978	1.774	0.764
	P-value	0.118	0.086	0.328	0.076	0.445
	Obs.	181,687	161,840	158,964	158,964	181,705
HQR ₅	β_1	0.005	0.005	0.005	0.004	0.003
	Std. Err.	0.002	0.003	0.003	0.003	0.001
	t	2.312	1.998	1.922	1.428	3.057
	P-value	0.021	0.046	0.055	0.153	0.002
	Obs.	217,382	196,898	181,337	181,337	217,400

C. AN ALTERNATIVE THEORY

Although the findings describe a relationship that suggests a positive effect of HQ recruiters on HQ enlistees (determined HQ by the metrics), one could argue that the HQ recruiters may be more selective and therefore may recruit fewer enlistees than the lower-quality recruiters. To examine this theory, I analyze recruiter-enlistee pairs for enlistees that shipped to recruit training during 2015 and recruiters that attended the BRC after 2013. If recruiters attended earlier, they may not be on recruiting duty for all of 2015 and the number of contracts for that year would most likely be lower. In order to determine whether the recruiters in that year were more selective, I count the number of enlistees that they contracted and include this as the key X variable. I include the HQ enlistee metrics as the dependent variable. The results are depicted in Table 20 for models HQE₁₋₅ with the constants omitted. Each of the models include an enlistment metric as the dependent variable and the number of contracts by their respective recruiter within that year as the key X variable. Based on these estimates, the number of contracts the recruiter made has no statistical significance on any of the metrics except HQE₁. However, the results show that each additional contract within this time period increased the likelihood of contracting a HQ enlistee and this result provides cautious optimism. seemingly the recruiters are not lowering their contract numbers in order to be more selective.

Table 20. Robustness Check for Recruiter Selection of HQ Enlistees

	(1) HQE ₁	(2) HQE ₂	(3) HQE ₃	(4) HQE ₄	(5) HQE ₅
Number of Contracts (2015)	0.00292*** (3.5)	0.00161 (1.67)	-0.000377 (-0.39)	0.00131 (-1.36)	-0.000328 (-0.60)
<i>N</i>	11264	10581	10555	10555	11266

VI. CONCLUSION

Within this chapter, I discuss how the five metrics for both enlistees and recruiters correlate and their useability for determining HQ. Next, I discuss how the Marine Corps should utilize and implement these metrics when identifying Marines for assignment to the BRC. I provide my recommendations and then conclude with additional topics for further research.

Before I estimate the effect of HQ recruiters on HQ enlistees, I define quality using existing standards. These five metrics allow me to determine HQ recruiters and enlistees. Defining something as abstract as HQ is no easy feat. I use pre-existing standards to build metrics to determine quality in an ad-hoc manner. As I show above, there are multiple metrics employed by the Marine Corps, but not all of these metrics are equally useful.

A. IMPLICATIONS FOR A HIGH-QUALITY DETERMINATION

As a means of defining HQ for recruiters, Metric 1 and 5 are less useful than Metrics 2–4. Although the majority of existing research focuses on the AFQT as a measure of the enlistee’s quality, using metric HQR_1 to determine HQ recruiters is not useful. First, with 66% of the recruiter population categorized as HQE_1 , the metric limits the researcher’s ability to differentiate HQ from the average. With only 44% remaining, average and low-quality take on a similar meaning. Second, given the low correlation between the HQR_1 metric and the other HQR_{2-4} metrics (0.10, 0.27, 0.07, and 0.06 respectively), these metrics are not identifying the same individuals as HQ. If the Marine Corps used Metric 2 and now Metric 3 to determine who to promote and Metric 4 to determine who to retain, Metric 1’s value is less obvious—ostensibly the recruiter’s AFQT score may be less important. Because of the low correlation, the Marine Corps may seek to focus less discriminately on individuals that have a high school diploma and an AFQT higher than 50 (Alphas). Consequently, Metric 1 is less useful for defining quality for the potential Marine recruiter.

The HQR_5 metric is also less useful for determining HQ. First, because Marines do not receive FITREPs until the rank of sergeant and this metric only included those with three or more observed FITREPs, only 10,119 of the 12,125 recruiters were included in the

metric which creates bias towards more senior Marines. Also, excluding those recruiters that do not have a score prevents the widespread implementation of this metric for the identification and assignment of all Marines, including junior sergeants, to recruiting. Second, although counterintuitive, consistently scoring in the top third of one's RS on their FITREPs is not highly correlated with the other HQ metrics (0.06, 0.26, 0.25, and 0.27 for Metrics 1–4 respectively). Because HQR₅ cannot be widely implemented and does not correlate with the Marine Corps existing HQ standards for promotion and retention, this metric is also less useful.

For enlistees, the HQE₅ metric is also less useful for determining HQ. With only 13,494 enlistees qualifying as HQ according to this metric, this small group is only five percent of the enlistees. Although many Marines may promote to E5 prior to the end of their first enlistment, recent policy changes requiring Marines to possess 48 months of service prior to promotion to E5 will prevent any Marines with a four-year contract from promoting to E5 within their first enlistment. Because many HQ Marines will not reenlist and will never exceed 48 months of service, these individuals would be excluded with a metric that focuses on promotion to E5. For determination of HQ enlistees in their first enlistment, promotion speed to E5 is therefore less useful for defining quality.

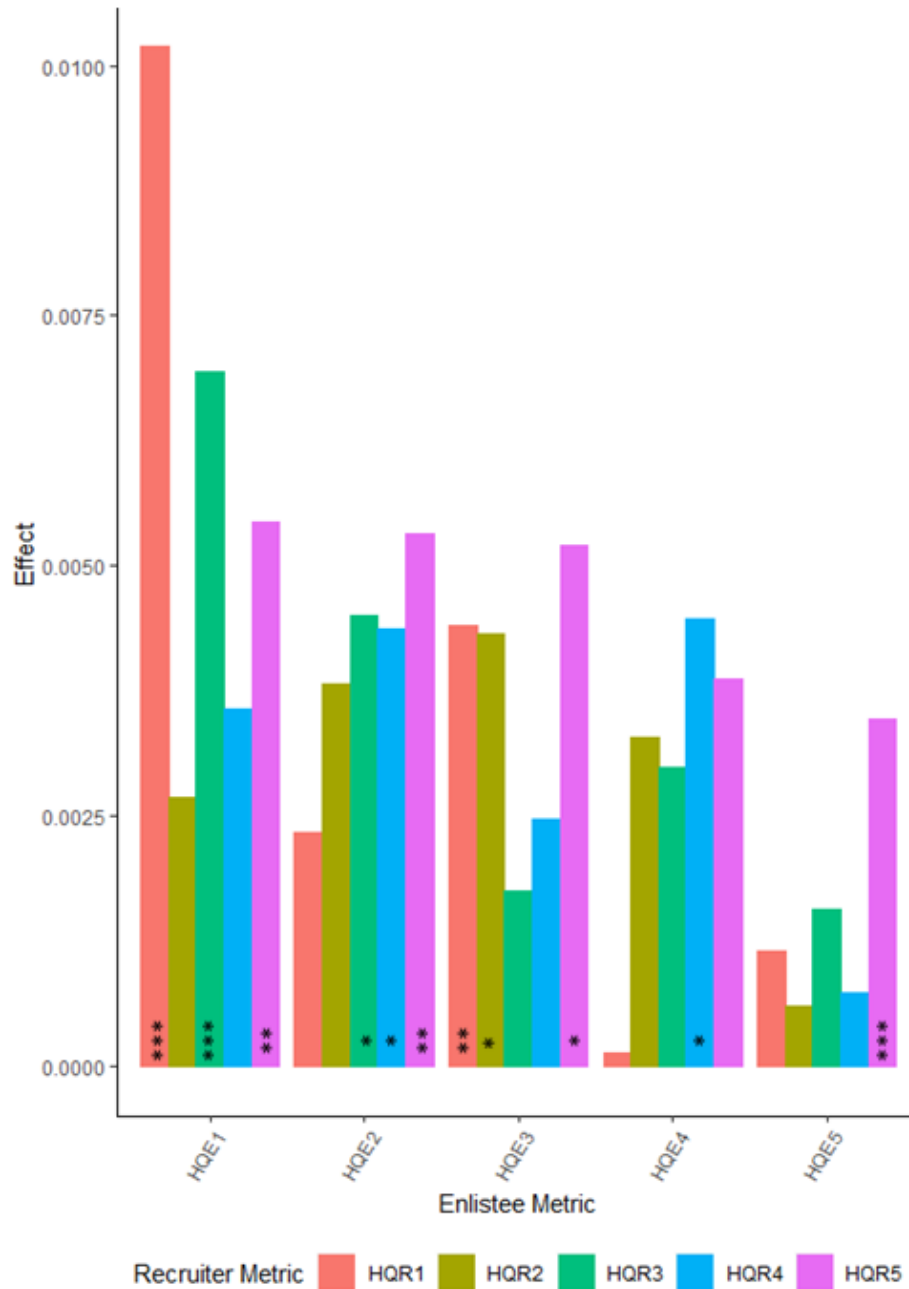
The recruiter Metrics 2–4 are more useful than Metrics 1 and 5 for determining quality. First, each of these metrics is highly correlated. For example, the HQE₂ metric correlation is 0.56 and 0.64 for metrics HQE₃ and HQE₄ respectively and the HQE₃ metric's correlation with metric HQE₄ is 0.60. These metrics are measuring shared characteristics that the Marine Corps has determined important and, because they overlap, they collectively represent the best approach to determining which Marines to assign to recruiting duty. Second, each of these metrics is positively correlated with the quality of the enlistees they recruit—regardless of the HQ enlistee metric. Third, the inputs for these metrics are available early during a Marine's enlistment. There is no waiting period prior to implementing these metrics as Marines semi-annually complete PFTs, CFTs, receive command marks (formerly proficiency and conduct marks but now the JEPES command input), and complete MCMAP training. Finally, the Marine Corps already uses these metrics to evaluate who to promote and retain.

In my opinion, Metric 2 is the most useful metric for determining HQ. First, the correlation between Metric 2 and Metric 4 is 0.64 for the enlistees and 0.73 for the recruiters. These correlations are the highest between any of the metrics. Second, although Metric 2 is the legacy promotion composite score, the metric can be used to determine quality since all Marines that would be evaluated for recruiting currently have these scores. If using Metric 3, the JEPES is new and Marines will not have the actual scores for both the command input and mental agility pillars. Although I used proxies for these scores with the AFQT score for mental agility and a combination of the proficiency and conduct marks for the command input pillar, Metric 2 requires no assumptions and proxies. Third, Metric 3 and Metric 4 include the MCMAP belt as a component though including this measure biases those with more time in service. A Marine with only two years in service will have had less opportunities to conduct MCMAP training and “belt up” than a Marine with six years of service. Furthermore, a Marine in a unit with a motivated MCMAP instructor will have more opportunity to advance in MCMAP than a Marine in a unit with no MCMAP instructor. As a result, including the MCMAP belt may provide an advantage to individuals based on their environment and to no fault of their own. Finally, because including the MCMAP belt creates bias with regard to length of service, when using Metrics 3 and 4, individuals should be evaluated for quality against their peer group. Moreover, Metric 2 is versatile and can be used to evaluate individuals against other peer groups since they will also have a PFT, a CFT, and proficiency and conduct marks.

B. IMPLICATIONS FOR ASSIGNMENT OF MARINES TO RECRUITING

The Marine Corps should consider incorporating any of these metrics into the identification and selection of Marines for assignment to recruiting duty. However, based on the statistically significant results for metric HQR₅, the Marine Corps should primarily consider incorporating FITREPs into the assignment process. As depicted in Figure 12, the estimates for the HQR₅ metric are consistent across all enlistee metrics. Although the HQR₁ metric has the highest estimated effect on the HQE₁ metric, the HQR₁ is not consistent across the other enlistee metrics and near zero for the HQE₄ metric. Furthermore, the metric HQR₅ outperforms 17 of the other 20 recruiter models within each enlistee metric. The HQR₅ metric is depicted by the magenta bar.

Figure 12. Recruiter Metrics 1–5 Estimated Effects on Enlistee Metrics 1–5



The graph depicts a total of 25 regression models for the estimated effects of the five-recruiter metrics on the five-enlistee metrics. “***” denotes significance at the 99% level of confidence, “**” denotes significance at the 95% level of confidence, and “*” denotes significance at the 90% level of confidence. All HQ recruiter metrics’ estimated effects are positive and grouped by the enlistee metric.

Instead of merely estimating the effect of a HQ recruiter on the HQ enlistee within a single metric, I estimate the effect of each of the HQ recruiter metrics on all of the enlistee metrics. This approach provides a stronger argument for using any of these metrics for the assignment of Marines to recruiting duty since each of these metrics has a positive estimated effect with many having statistically significant coefficient estimates.

Although the HQR₅ metric has limitations, MMEA-25 could utilize a combination of the HQR₅ and HQR₂ metrics. FITREPs were evaluated prior to recruiting duty, and as previously mentioned, they were filtered so only individuals with at least three FITREPs were included. This means that junior sergeants with few FITREPs or perhaps no observed FITREPs were not included. Because sergeants may only receive one FITREP each year, it is possible that many junior sergeants that are screened for recruiting duty will not have any observed FITREPs and even probable that the majority of sergeants will not have three observed FITREPs. To address this issue, MMEA-25 could incorporate the HQR₂ metric for Marines that lack FITREPs and utilize the HQR₅ metric for those with FITREPs.

If MMEA-25 used metric HQR₂ in addition to HQR₅, they would in effect be capturing many of the same individuals from Metrics 3 and 4. Because Metrics 2–4 are highly correlated they are measuring shared characteristics that the Marine Corps has determined important: PFT, CFT, rifle score, MCMAP (Metrics 3 and 4), and command input. Also, as previously mentioned, given the limitations of the MCMAP belt as a measure of quality, using Metric 2 would ensure those HQ Marines with limited access to a MCMAP instructor would still be determined HQ.

Alternatively, the Marine Corps could choose a metric based on a different goal such as increasing the average AFQT of the force. Consider the average AFQT is 61.7 with a standard deviation of 17.7 for enlistees within this research. Given that 27.7% of the Marines score below 50 on the ASVAB, the Marine Corps could attempt to increase the average AFQT for the force by sending more Marines to recruiting duty based on the HQR₁ metric. HQ recruiters based on the HQR₁ metric had the highest estimated effects on HQ enlistees based on the HQE₁ metric with a statistically significant estimated effect of .01. Unfortunately, if the Marine Corps implemented the metric HQR₁, they would likely not

improve the quality across all enlistee metrics. For example, HQ recruiters based on metric HQR₁ have a very low estimated effect on HQ enlistees based on metric HQE₄.

A more optimal solution would be to implement metric HQR₅ to increase enlistee HQ for metric HQE₁ since this would also have favorable impacts across all the other enlistee metrics. Using the metric HQR₅ as an example, consider that 24% of the recruiters within this research were determined HQ by metric HQR₅. By increasing the number of HQ recruiters by an estimated 10 percentage points to 34%, the estimated number of HQ enlistees by metric HQE₁ would increase by an estimated 5 percentage points (given that the coefficient estimate is 0.005). Because 72% of enlistees were determined HQ based on metric HQE₁, increasing the number of HQ recruiters would increase the HQ enlistees to an estimated 77%. This increase in the HQ recruiters comes at a cost, however. If the Marine Corps sends more HQ Marines to recruiting duty, other competing requirements such as the other SDAs discussed in Chapter II, Part B, Section 4 would receive lower quality Marines. Moreover, the operational forces would lose a higher quantity of their HQ Marines to the recruiting force. However, given the focus on improving the quality of the force at accession, these benefits may be worth the cost.

C. RECOMMENDATIONS

The Commandant's force design requires a modernization of the manpower model. The industrial model that relied on mass by calculating how many "x" recruiters are required to produce "y" enlistees is archaic and sacrificed quality for quantity. The Marine Corps must modernize the selection and assignment process for Marines to recruiting duty in order to improve the quality and overall lethality of the future force. The Marine Corps should consider prioritizing quality when determining which Marines to assign to recruiting duty. The results from this thesis show all of the recruiter metrics have a positive estimated effect and many of the metrics are statistically significant.

Based on my interviews with individuals at MMEA-25, FITREPs (and therefore HQR₅) are not currently utilized when determining assignment of individuals to recruiting duty. I recommend MMEA-25 includes FITREPs in this process. Without needing to comb through FITREPs, MMEA-25 personnel would simply need the individual Marine's

average of their reporting senior's cumulative relative value. I recommend MMRP provides this metric to MMEA-25 for the assignment process.

When MMEA-25 initializes their search for Marines within WebMass to determine the highest quality individuals, they could implement Metric 5 for Marines with FITREPs and Metric 2 for Marines that do not have FITREPs. Then, they would assign those identified HQ individuals to recruiting duty. In a minimum of four years, for those Marines that lack FITREP data, I recommend MMEA-25 shift to Metric 3 for determining HQ Marines to assign to recruiting duty since the JEPES scores will be recorded and available. By sending more HQ Marines to recruiting duty, the service may increase the quality of the enlistees and thereby improve the quality of the warfighting organization.

Finally, although not the aim of this research, the interviews I conducted as the background for the recruiter assignment process uncovered abnormally high attrition for Marines both pre-class and in-class at the BRC. Chapter II, Part B discusses this attrition in depth. Since 61% of the HSST Marines attrite either pre-class or in-class, the Marine Corps is expending enormous dollars and wasted effort in the assignment of these individuals that will not ultimately graduate the BRC. Compared with the 35% of the volunteers that attrite either pre-class or in-class, the process for the involuntary assignment and screening seems ineffective. Based on my interviews, I recommend the service focus on the screening checklist and command involvement during that process.

D. FURTHER RESEARCH

Throughout my research, I explored the recruiter assignment process and detailed how individuals either volunteer or receive involuntary assignment to the BRC and eventually receive assignment to a specific RSS. This topic was unexplored prior to this research. I then created and utilized five metrics for determining HQ based on existing DOD and Marine Corps standards. Using these metrics, I categorized recruiters and enlistees as HQ and estimated the effects of the HQ recruiters on HQ enlistees. Finally, I proposed recommendations for the Marine Corps writ large and for MMEA-25 to incorporate these metrics into their selection and assignment of Marines to recruiting duty.

Because my research covered significant ground, there are now more areas for further research. The researcher could explore low-quality relationships between the recruiter and enlistee. The researcher could also explore whether Marines that volunteer for recruiting duty differ in quality from those that are involuntarily assigned. Because I established metrics that can determine HQ, the researcher can now explore many additional fields that were previously unavailable.

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