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**MONTEREY, CALIFORNIA**

**THESIS**

**LEADS VS. CANVASSING: PREDICTING QUALITY  
AND ATTRITION OF ENLISTEES BY RECRUITING  
SOURCE**

by

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March 2022

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**LEADS VS. CANVASSING: PREDICTING QUALITY AND ATTRITION OF  
ENLISTEES BY RECRUITING SOURCE**

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## **ABSTRACT**

The Marine Corps trains recruiters to support their success in finding the best, brightest, and most capable young adults to serve as Marines. Marine recruiters must determine which recruiting methods and sources of information best support them in canvassing their local areas for prospective enlistees to reach their recruiting goals. This study examines how the quality of a prospective enlistee differs based on the recruiter's initial contact modality. Linear probability models are used to analyze data from Marine Corps Recruiting Command's (MCRC) Marine Corps Recruiting Information Support System for enlistees who joined the Delayed Entry Program from FY2015 to FY2019. The findings are robust when controlling for recruiters' rank and geographic location. This analysis provides a foundation for the discussion on whether Marine Corps recruiters should shift toward or away from specific methods on prospecting for enlistees.

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## LIST OF ACRONYMS AND ABBREVIATIONS

1MCD	1st Marine Corps District
4MCD	4th Marine Corps District
6MCD	6th Marine Corps District
8MCD	8th Marine Corps District
9MCD	9th Marine Corps District
12MCD	12th Marine Corps District
AFADBD	Armed Forces Active-Duty Base Date
AFQT	Armed Forces Qualification Test
AMOS	Additional Military Occupational Specialty
ASVAB	Armed Services Vocational Aptitude Battery
BRC	Basic Recruiters Course
CNA	Center for Naval Analyses
CNIP	civilian non-institutionalized personnel
DEP	Delayed Entry Program
ERR	Eastern Recruiting Region
FY	fiscal year
HQMC	Headquarters Marine Corps
HSST	HQMC SDA Selection Team
LPM	Linear Probability Model
MCRC	Marine Corps Recruiting Command
MCRD	Marine Corps Recruit Depot
MCRISS	Marine Corps Recruiting Information Support System
MMEA-2	Marine Corps Enlisted Assignments Branch
OLS	Ordinary Least Squares
PCS	Permanent Contact Station
PEBD	Pay Entry Base Date
PMOS	Primary Military Occupational Specialty
RS	Recruiting Station
RSS	Recruiting Sub-Station
SDA	Special Duty Assignment

SDAVP	Special Duty Assignment Volunteer Period
SNCOIC	Staff Non-Commissioned Officer in-charge
TFRS	Total Force Retention System
WRR	Western Recruiting Region

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## **I. INTRODUCTION**

The Corps continues to attract high quality Americans who are inspired to serve their country as Marines and our recruiters do an admirable job administering a recruiting program that satisfies the needs of our current manpower system. (Berger, 2021)

Ever since the institution of the all-volunteer military force, the military services have fought against the challenges of recruiting tomorrow's military force today. An all-volunteer military means an all-recruited military. Recruiting is an integral part of manning the force with the best and brightest individuals that can meet or exceed the standards for military service. Military recruiters must be aggressive in seeking prospective enlistees and appropriately screening those prospects for the intrinsic and extrinsic characteristics that will ultimately result in that enlistee wearing the military uniform in defense of their nation. Since all military services must recruit their own forces, competition is fierce and recruiters must also compete with civilian education and employment opportunities.

Marine Corps recruiters are selected based on their performance in their primary specialty and potential for future success in recruiting. The Marine Corps trains all of their recruiters in recruiting methodologies to propel their success in finding those intelligent and motivated young adults to serve the future fighting force. Those who enlist sign contracts requiring a minimum number of years of military service dedication. This also means that numerous military contracts expire in any given year, and servicemembers are trading in their uniform for other opportunities. The Marine Corps must recruit tens of thousands of young adults every year to maintain our illustrious fighting force. These large numbers of replenishment put the stressors on the Marine Recruiter to constantly find the future force today.

### **A. PURPOSE**

Given the challenges and demands of recruiting duty, Marine recruiters must determine which methods and sources of information work best for them to successfully canvass their local areas for prospective enlistees that will help them reach their recruiting

goals. Additionally, recruiters must consider their screening practices to determine if those enlistees are an appropriate fit for military service. They must consider the timing of when to send an enlistee to recruit training for both the individual's and the service's benefit. While some enlistees are ready to depart for recruit training right away, individuals will often enter the Delayed Entry Program until their recruit training ship date arrives. Some individuals find other opportunities while in the Delayed Entry Program while others sabotage their chances. Regardless, attrition is a reality causing recruiters to seek quality enlistees in large quantities.

This analysis aims to understand which methods and sources of recruiting are more effective and efficient in contracting prospective enlistees. If a specific recruiting source has a greater propensity to contract less than desirable enlistees, that method should be limited in recruiting efforts. If a given recruiting source has a greater likelihood of signing individuals who are more likely to complete recruit training, then those activities should be pursued more.

The research questions addressed in this thesis are as follows:

1. How does the desirability of a prospective enlistee differ based on the recruiter's initial contact modality?
2. How does the probability of a prospective enlistee making it through the Delayed Entry Program (DEP) differ based on the recruiter's initial contact modality?
3. How does the probability of a prospective enlistee making it through recruit training differ based on the recruiter's initial contact modality?

I find that contact modalities used to recruit Marines have equal likelihood of finding qualified individuals for military service. The findings are robust when controlling for the recruiter's rank and geographic location.

## **B. SCOPE AND METHODOLOGY**

I conduct a literature review focusing on current research and journal articles that examine the quality of recruits as identified by the recruiter that signs up the recruit. I use

econometric methods to analyze personnel data from the Marine Corps Recruiting Information Support System (MCRISS), matching first-term enlistees with their recruiter. Specific methods of analysis included multivariate regression models and linear probability models. I analyze recruiters by their respective recruiting station, recruiting district, and the enlistees they contract into military service. I also analyze the enlistees through variables such as Armed Forces Qualification Test (AFQT), education, gender, race, number of dependents, if waivers were required to enter military service, the number of necessary waivers to enter military service, based on the recruiter's recruiting source for initially contacting the enlistee.

There is not a defined standard or group of individual characteristics which determine a prospective enlistee's desirability for a Marine Corps recruiter. This necessitated generating a definition that is non-standard to depict a consistent metric to draw analysis upon. Alternatively, in other models, I use singular variables as a predictor of a prospective enlistee's desirability to a recruiter, such as ASVAB score or highest achieved education level. I use a combination of Department of Defense and Marine Corps standards for accession to categorize prospective enlistees to accomplish this analysis.

Through the data analysis, I establish if the recruiting method for initially contacting the enlistee is determinant on the desirability of the prospective enlistee (as defined by the enlistee's Armed Services Vocational Aptitude Battery (ASVAB) score and if they required a waiver or not). I will also establish if specific recruiting methods are more likely to contract an enlistee with a greater possibility of attrition from the Delayed Entry Program or recruit training. This comparison will provide a foundation for discussion of whether the Marine Corps should shift recruiters towards or away from specific methods of initially contacting prospective enlistees, thereby increasing the efficiency and effectiveness of the Marine recruiter, the recruiting station, and the recruiting district in attaining their recruiting goals.

### **C. ORGANIZATION OF STUDY**

Chapter II describes the makeup of the Marine Corps Recruiting Command and its recruiting stations, the recruiter selection and assignment process, and some key recruiting

elements. Chapter III reviews current and past literature on market conditions and their impacts on military recruiting efforts. Chapter IV describes the data and metrics used to perform the analysis and my methodology for the analysis. Chapter V contains the results of this research. This study concludes with Chapter VI, where I present some recommendations resulting from the research.

## II. BACKGROUND

The core objectives of all modern personnel management systems are to recruit individuals with the right talents, match those talents to organizational needs, and incentivize the most talented and high performing individuals to remain with the organization. (Berger, 2021)

This chapter serves as an overview of Marine Corps Recruiting Command (MCRC), its overall structure, and the relative structure of a recruiting station. It describes why the Marine Corps requires so many recruiters each year. Recruiters are assigned to recruiting duty each year, either through their own volunteerism or by order of the service and this chapter briefly describes the challenge that holds. Then, I briefly introduce how recruiters are assigned to recruiting stations. As a result of these assignments, the experience level of the collection of recruiters at any given recruiting office will fluctuate each year. Finally, I summarize a few of the factors and elements that challenge the recruiting station's leadership to plan and manage the distribution of their recruiters in a manner to be support those recruiters in reaching their recruiting goals.

Marine Corps Recruiting Command is charged with finding the best and the brightest young, talented, and capable individuals to join the illustrious ranks of the United States Marine Corps. MCRC's ultimate objective is "the preservation of the Marine Corps and the standards of preparedness and military vigor that Marines have upheld since 1775" (Headquarters, United States Marine Corps, 2020a, pp. 1-1). In that vein, MCRC supports the Marine Corps' mission to "Make Marines, Win Battles, and Return Quality Citizens" by instituting methodologies of prospecting for applicants to go through the process of becoming a U.S. Marine.

Those Marine recruiters who prospect the United States in pursuit of individuals who want to undergo the journey of becoming a Marine are charged with meeting the rigorous demands of identifying enough volunteers to meet future active-duty and reserve accession requirements. The success of these Marine recruiters depends on a combination of factors, some of which are within their span of control, but most of which are not. Those factors include congressionally mandated manpower requirements, labor market

demographics, alternate and competing labor and educational opportunities, sentiments on military service, and overall capabilities of youth. Regardless of the labor supply and labor demand conditions in their assigned area, the Marine recruiter must continue to pursue soliciting highly talented youth to serve in the Marine Corps ranks.

However, the individual recruiter is never alone in their pursuit of meeting mission and recruiting the highest in quality young adults to earn the title Marine. The quality of the individual recruiter will often be influenced by the quality of the team around them. The value and impact of that team are not to be overlooked, especially in evaluating, understanding, and determining the structure of that team. Personal interactions between these Marine Recruiters can increase or decrease the value, capability, and capacity of each Marine's ability to make mission. The structure and makeup of a recruiting station influences the individual recruiter's ability to meet their individual targets and the team's ability to meet their mission at the Recruiting Station and, eventually, the entire Marine Corps. If personal interactions can lift an individual to heights only possible by the capability of a team, then the impact on the quality of those individuals being recruited should also rise.

#### **A. MCRC ORGANIZATIONAL STRUCTURE**

Marine Corps Recruiting Command is organized by regions, districts, recruiting stations (RS), recruiting sub-stations (RSS), and permanent contact stations (PCS). As shown in Figure 1, MCRC has two Regions: Eastern Recruiting Region (ERR) and Western Recruiting Region (WRR). Each of these regions has three recruiting districts as part of their area of responsibility. The ERR provides oversight and direction to the 1st Marine Corps District (1MCD), 4th Marine Corps District (4MCD), and 6th Marine Corps District (6MCD). The WRR oversees the 8th Marine Corps District (8MCD), 9th Marine Corps District (9MCD), and 12th Marine Corps District (12MCD). Each of these respective districts has eight recruiting stations under their purview, and each recruiting station is designated by the city in which they are located (e.g., RS Denver, RS Charleston, RS Chicago, RS Portland). The Recruiting Stations manage innumerable RSSs, PCSs, and other local recruiting offices; however, the exact number will vary based on the size of the

area of responsibility, labor market analysis, and the determined number of contracts required within a given area. Regardless, this study focuses on the recruiting station level within the Marine Corps Recruiting Command organizational structure.



Figure 1. MCRC Districts.  
Source: J. Oldenkamp, personal communication (2021).

## B. RECRUITING STATION STRUCTURE

Recruiting stations are organized to sustain planning, managing, directing, controlling, and supporting recruiting operations. Each recruiting station is assigned an area with clearly defined boundaries within which they are required to operate. The boundaries are shaped with careful consideration for the available number of recruiters on production, total number of male high school seniors (with regards to local high school district boundaries), and various other factors. The resulting analysis of those factors help Recruiting Stations, and their respective district, consider changes in the number of

recruiters required in the area and the target numbers and demographics for recruitment consideration.

## **1. Structural Analysis**

According to Volume III of Marine Corps Order 1130.76D, *Guidebook for Recruiting Station Operations*, “The Command Group is responsible for all aspects of RS operations to include administration, personnel, fiscal and logistics, marketing and communication, recruiting operations, and training” (Headquarters, United States Marine Corps, 2020b). Overall, the RS Command Group is responsible for ensuring the RS is manned, trained, and equipped to achieve its recruiting mission successfully. To evaluate the RS’s overall ability to meet their recruiting mission, the RS Command Group must undergo a near-continuous structural analysis process even though structure changes are only executed once per year (Headquarters, United States Marine Corps, 2020b). Effectively, the internal organization of the Recruiting Station is evaluated to ensure assets are appropriately assigned to market areas, that each recruiter has an equal share of the quality market, and that the RS is structured such that they are able to meet their targeted recruiting goals, as assigned by the Recruiting District.

A key role in conducting a structural analysis is understanding the quality and quantity of the area’s available civilian non-institutionalized population (CNIP) market. MCRC defines civilian non-institutionalized population “as residential population less Armed Forces personnel stationed in the United States and persons residing in institutions (e.g., correctional institutions, hospitals, and mental institutions)” (Headquarters, United States Marine Corps, 2020b). For nearly two decades, Marine Corps Recruiting Command has derived a recruitable population metric from select economic and demographic data provided and projected by the most recently published U.S. Census Bureau data. Using that data, MCRC considers the 17–24-year-old male CNIP currently enrolled in a secondary or postsecondary educational institution or a graduate thereof. This analysis is broken down by zip code and weighted against estimates on the percentage of males that are predicted to meet aptitude requirements. Although these metrics and results are predominantly used

at the MCRC HQ, Recruiting Region, and Recruiting District levels, these measures are often preferred for an RS to structure and design their sectors for their recruiters.

Once all information is gathered on the available recruiting population, it is analyzed against the current number of recruiters required to write new contracts at the recruiting station (including those recruiters at recruiting substations, permanent contact stations, and local recruiting offices), the number of recruiters that are authorized per RS, the number of Staff Non-Commissioned Officers-In-Charge (SNCOICs) not required to write new contracts within the RS, the production statistics over the last three years, and other location information within the area of responsibility (number of square miles within respective boundaries, number and location of high schools, etc.). As the analytical process occurs, the purpose is to develop a stable structure for each RS where the production recruiter has a fair share of the quality market and assets within their respective boundaries. The resultant analysis and consideration allow for the assignment of a fair share of the Recruiting Station's "recruit-to-bootcamp" shipping quota to each of their substations.

The goal of analyzing a recruiting station structure is to achieve maximum productivity. The Marine Corps Recruiting Station Operations Guidebook states, "The RS must be able to assign shipping quotas with a reasonable assurance that each RSS has the capability to achieve the desired results" (Headquarters, United States Marine Corps, 2020b). Equally, the recruiters must also feel that their tasks are reasonable and achievable.

### **C. RECRUITER SELECTION PROCESS**

Recruiting Duty is one of the Special Duty Assignment (SDA) billets designated explicitly by the Commandant of the Marine Corps. Marine Corps Order 1326.6 CH-1 notes, "SDA billets involve demanding duties that require an unusual degree of responsibility outside of any Marine's primary skill and are significant to the Marine Corps mission" (Headquarters, United States Marine Corps, 2021b). Through the Special Duty Assignment selection process, the Commandant of the Marine Corps solicits and seeks highly qualified Marines to fill billet vacancies in positions that require an unusual degree of responsibility resulting from the personal burden imposed on the Marine to be successful. As a result of these demands and burdens, the attrition rate is higher than that

of standard billets in the Fleet Marine Force. This attrition rate requires the Marine Corps to be highly selective and scrutinize a Marine's records beyond what is normally required for selection and assignment. Consequently, the Marine Corps' quota for these billets is higher to account for the number of Marines likely to attrite throughout the selection, screening, and training process.

The recruiter selection process is primarily done through two mechanisms: a Marine volunteers for recruiting duty, or a Marine is involuntarily assigned to recruiting duty. Once a Marine is designated for recruiting duty, they will attend the Basic Recruiters Course (BRC) and subsequently be assigned to an RSS.

### **1. Volunteers**

Annually, Headquarters Marine Corps solicits volunteers during a Special Duty Assignment Volunteer Period (SDAVP) where Marines have the opportunity to apply for SDA billets, including Drill Instructor duty, Marine Security Guard Detachment Commander duty, and recruiting duty. These billets are highly competitive and seek the most highly qualified and capable Marines, regardless of primary military occupational specialty. Although Marines can volunteer for these duty assignments at any time, volunteering outside the SDAVP will limit the number of available billets.

When a Marine chooses to volunteer, they complete an SDA screening checklist and submit it through their unit's career planner. This SDA screening checklist consists of the Marine's personal information, physical fitness scores, an explanation by the Marine for their interest in recruiting duty, some assessment and screening questions to help determine eligibility, a medical assessment, and recommendations and endorsements by the Marine's leadership (Headquarters, United States Marine Corps, 2019). This checklist is the sole responsibility of the Marine; however, it does require favorable endorsements from their medical officer, Commanding Officer, and Primary Military Occupational Specialty (PMOS) monitor. If there is a divergence of endorsement between the Marine's Commanding Officer and the PMOS monitor, the decision for selection will be made by Headquarters Marine Corps (HQMC) Enlisted Assignments Branch (MMEA-2). Unfortunately, the number of volunteers does not singularly meet the number of recruiters

required. According to United States Marine Corps Captain Brandon Eliason, “of the 658 who volunteered for recruiting duty in fiscal year 2020 (FY20), only 477 arrived to BRC (it is important to note that FY20 was affected by COVID-19)” (Eliason, 2021).

## **2. HSST Selection**

On the other hand, Marines may be directed for screening through the HQMC SDA Selection Team (HSST). According to Marine Corps Order 1326.6 CH-1, “Directed assignments to remaining SDA billets are made during the annual directed screening period ... for vacancies that were not filled by volunteers in the upcoming FY” (Headquarters, United States Marine Corps, 2021b). Since these directed assignments are made on an “as needed” basis, the HSST screening process is not formally scheduled and may be conducted more than once per fiscal year if required to fill vacancies.

The SDA section in HQMC utilizes an integrated personnel management system to filter through the inventory of available Marines, as determined by time on station requirements, rank, deployment stabilization, duty status, and whether or not the Marine is already in receipt of orders. The resultant roster of Marines is then distributed to the PMOS monitors to further filter out ineligible Marines, based on MOS requirements of the individual and the needs of the Marine Corps. This finalized roster is published as a HSST selection roster through the Marine Administrative Message system and distributed to career planners via the Total Force Retention System (TFRS). Upon receiving directed orders, the Marine’s command must support and supervise the Marine in completing and submitting the same screening checklist as described for those Marines who volunteered.

## **3. Career Recruiter**

Any Marine with the Additional MOS (AMOS) of a Recruiter, ranking E-6 and above, is eligible to apply to become a career recruiter via a lateral move. MCRC’s Career Recruiter Program Command Order explains, “The career recruiter additional military occupational specialty (AMOS-8412) was re-designated as a PMOS in order to establish a cadre of professional career recruiters who, by virtue of long-term assignment to key recruiting billets; would enhance sustained recruiting operations” (Headquarters, United States Marine Corps, 2021a). One of the many advantages of career recruiters is reflected

in the ability for an RS to increase the number of recruiters on production while the career recruiter trains and mentors recruiters on production, manage administrative matters, and facilitates an effective and efficient workflow within the recruiting office.

#### **D. RECRUITER ASSIGNMENT TO RS**

Regardless of a Marine volunteering for recruiting duty, or being selected, the Marine has the opportunity to request to be stationed at an RS of their choice. This option may not always be taken; however, the requests are considered by the senior-enlisted advisor of the RS, the RS Sergeant Major (SgtMaj). The requesting process, when applied, allows the Marine to have a conversation with the RS SgtMaj regarding the possibility and opportunity to serve at a specific location. The Marine's logic for requesting a particular location may be valid (the Marine wants to be located where they have a better family support structure) or flawed (the Marine wants an area they feel will be "easy" to recruit in). Nevertheless, the Marine has the option to request, but the needs of the Marine Corps take precedence.

The RS SgtMaj considers the totality of the Marine who is requesting a specific location: the demographics of the Marine, the demographics of the local recruiting market, the Marine's performance marks reflected in their Basic Individual Record and Basic Training Record, as well as the information available in the Marine's recruiting duty screening checklist such as the previous chain of command's comments (Eliason, 2021). The RS SgtMaj will not know whether the Marine was a volunteer or selected for the program unless the Marine divulges that information during their communication. The RS SgtMaj will be looking at the current and projected billet vacancies within their respective RS and lower echelon recruiting elements to determine which Marines to accept or reject. The RS SgtMaj may require a Marine they perceive as a "high-performer" for placement at a Recruiting Sub-Station that has struggled to make mission or has other Marines who are lower performers. Alternatively, the RS SgtMaj may require a Marine who can speak Spanish to serve at an RSS in a predominantly Spanish-speaking area. Ultimately, the RS SgtMaj works with the leadership at the recruiting district and at MCRC to find an

appropriate balance of talent and performance within their RS to best support the Marine Corps' recruiting mission requirements for that region.

#### **E. RECRUITER PRODUCTION**

As the Recruiting Station Operations Manual describes, newly appointed recruiters are not required to canvas and write contracts for potential enlistees until they have completed a nine month observation period and have been certified by their SNCOIC (Headquarters, United States Marine Corps, 2020b). However, once the recruiter is certified, they are then required to contribute to meeting the recruiting station's mission for shipping new recruits to recruit training. This quota for new applicants is determined by the recruiting district and disseminated to the recruiting stations via the Annual District Mission Letter, according to the Recruiting Station Operations Manual (Headquarters, United States Marine Corps, 2020b). Through that dissemination, the recruiter will be given a specific set of quality requirements for new recruits. These quality requirements include education level, AFQT scores, and specific job specialty requirements, such as musicians.

#### **F. RECRUITER SOURCING**

The Recruiting Station Operations Manual states that the enlisted recruiting process, as displayed in Figure 2, is an eight-step process that the recruiter must navigate to accomplish their recruiting mission (Headquarters, United States Marine Corps, 2020b). The first two steps in that process focus on recruiters' methods to attain an endless stream of prospective names to consider. These names will flow through lists provided by Headquarters Marine Corps, employment agencies, local high schools, local newspapers, or other regionally available organizations. Prospective enlistees could call the recruiter through their own initiative to serve. Some names come through referrals from current enlistees, local reserve units, or other contacts in the local area. The recruiter also conducts their own canvassing, walking through local high schools, shopping centers, or other community events seeking out prospects for enlistment. These methods each have their advantages and challenges the recruiter must face; however, the recruiter must be involved

and active to ensure they have that continuous flow of prospects regardless of the method(s) utilized.

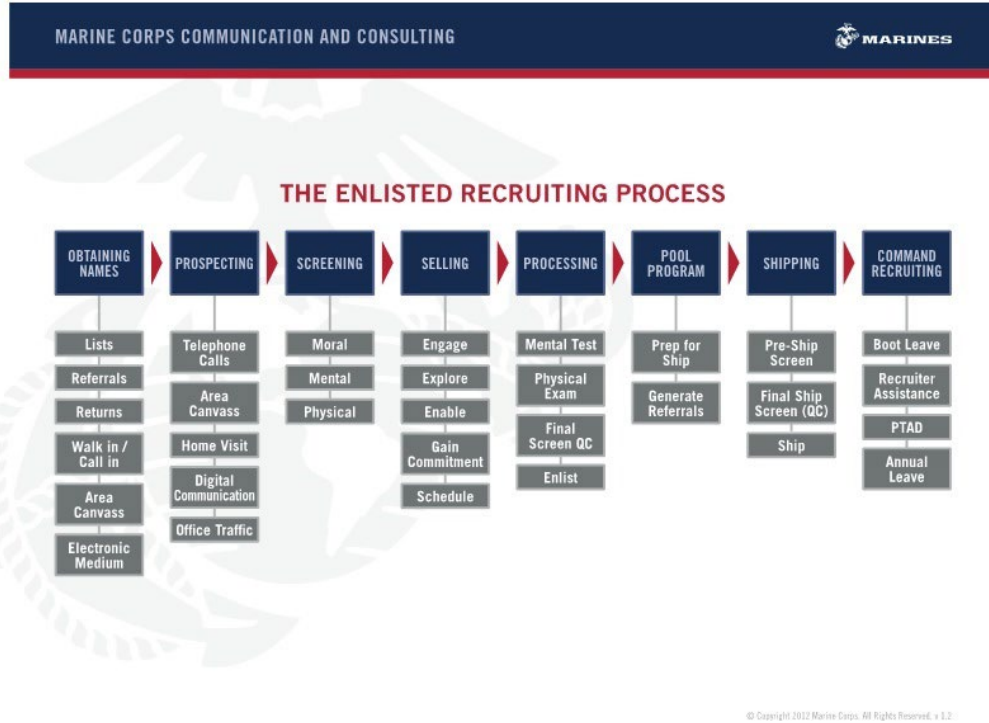


Figure 2. The Enlisted Recruiting Process. Source: Headquarters United States Marine Corps (2020b).

### G. KEY RECRUITING ELEMENTS

As stated by Gilroy et al. (2020), elements that influence recruiting can be categorized into three bins: environmental, recruiting resources, and policy considerations. The preponderance of elements that would be classified as environmental are not things the military can directly affect: such as, youth population and postsecondary education goals, current military conflict, influences upon youth, and the overall state of the economy. However, those elements in the second and third categories can be managed by the military, and the negative effects of those elements in the environmental category can sometimes be countered. Recruiting resources comprise the number of recruiters on production, market research and analysis, advertising, and enlistment bonuses or incentives. Policy

considerations include items that may be considered by the recruiters, such as enlistment waivers, or are items the military offers its servicemembers, like educational subsidies, medical and dental compensation, and opportunities for retirement benefits. The knowledge of these elements and their impacts is what challenges RS leadership in the planning, management, and execution of their recruiter distribution plan within their area of responsibility.

## **H. DISTRIBUTION OF THE RECRUITER FORCE**

The Marine Corps rotates their recruiting force annually as recruiters enter and exit the recruiting force throughout any given year. As a result, Marine Corps Recruiting Command, in combination with the recruiting districts and recruiting regions, must constantly manage recruiting billet vacancies, the assignment of new recruiters, the reassignment of experienced recruiters, and any other gaps against those recruiting elements. Typically, a recruiter's tour is three years in length. Therefore, in any given year, one-third of the recruiting force is rotating out, reducing the amount of experience at a recruiting station. This also means that, in any given year, one-third of the recruiting force is coming in and has less than 12 months of experience.

Consideration must be given to the distribution of experience across the recruiting force, especially if experience is a critical factor of ability. The relationship between a recruiter's productivity, their experience, and the cumulative experience of the recruiting team at a recruiting station must be evaluated. If billet vacancies and the challenges of filling those billets continue, as they have over the recent years, then it is expected that the experience level of the recruiting force will increase as existing recruiters become more experienced and new recruiters are not joining that recruiting station. Conversely, if the size of the recruiting force is increased, then the number of new recruiters joining a recruiting station would increase and the experience level within that recruiting station would decrease. The impact in that decreased experience level could equate to a decrease in productivity or quality of the recruits brought in. Each of these are important to the decision-making process within MCRC's determination of which billets to fill, which to leave vacant, and how many Marines must be screened and added through HSST in any

given year. Ultimately, these decisions affect the size of the recruiting force at any given RS.

## **I. SUMMARY**

MCRC holds a unique challenge with a geographically dispersed workforce: canvas the United States and find the best and brightest to become United States Marines. MCRC's structure supports this mission and that structure and support flows down the chain of command into the recruiting stations. To support that mission, the recruiting stations are manned with some of the Marine Corps' top service members, tasked to find new recruits to become Marines. Although their tasks are challenging, they have the support of their chain of command, SNCOICs, and peers to meet their new recruit shipping requirements. The fluid environment brought on by changes in the economy, labor availability, and educational opportunities further exacerbates these challenges for the recruiting force. An individual recruiter works tirelessly to meet their shipping requirements and the mission of their recruiting station. The influence of their peers on their team, and their immediate supervisors, allows the recruiter to rise to these challenges. However, what is not entirely understood is how much of an impact those peers and supervisors make on the recruiting station, the team overall, and their ability to meet or exceed their mission.

### III. LITERATURE REVIEW

There have been a myriad of NPS theses and studies by RAND and Center for Naval Analyses (CNA) on military recruiting, analyzing the quality of the individual recruited or on the effectiveness of the recruiter in attaining their recruiting goals. Within that literature, there is a focus on the characteristics of the individual recruiter and the individual enlistee, analyzing the effects based on demographics or MOS. These studies are not limited to the Marine Corps but span each of the respective services to analyze the efficiency and efficacy of recruiting efforts to meet the services' manning and staffing requirements. While these prior studies examine the relationship between individual recruiters and those they contract to enlist, there is a need to examine the productivity of the team of recruiters, which typically includes recruiters with varying degrees of recruiting skill and experience. Additionally, within the team of recruiters, individual methods of recruiting of individuals and the collective should be evaluated to analyze best practices as a whole, regionally, and locally.

The Edison (2007) and Ichniowski and Preston (2014) studies argue that higher quality and more talented individuals increase the productivity and performance of a team as a result of increasing the knowledge, skills, and abilities of their peers by improving their overall human capital. However, identifying specific mechanisms behind the increases in productivity and performance of the individuals and the team are difficult to pinpoint, according to those studies' authors. In the Marine Corps, the recruiting effort is predominantly made by a specifically selected, high-quality group of Non-Commissioned Officers who are beyond their initial enlistment contract (Headquarters, United States Marine Corps, 2021b). The *Marine Corps Screening Manual* (Headquarters, United States Marine Corps, 2021b) illustrates that these Marines have diverse skills and experiences that the organization feels make them of higher quality and more capable of such a demanding task. The Marine Corps also utilizes career recruiters as trainers and mentors to help expand the depth of knowledge, skills, and abilities of those less experienced and lower-quality recruiters. Therefore, this approach of examining recruiting methodologies

may offer valuable insights into recruiting quality enlistees into the service and provide support to managing recruiters' career paths.

Two RAND studies address the human capital management of the Air Force and the Army in attaining, training, and maintaining the right and the appropriate number of service members to serve as the face of their respective services to the greater public as a recruiter. The 2020 RAND study on the Air Force states they employ airmen as full-time recruiters, while the 2019 RAND study states the Army, like the Navy and Marine Corps, do not (Schulker et al., 2020). Additionally, each of the RAND studies references struggles by the services to identify and leverage a mix of resources needed to meet current and forecasted needs (Asch, 2019).

The CNA studies address some of the more common themes of studies with military recruiting in addressing the effectiveness of recruiting efforts in enlisting a more significant proportion of high-quality recruits. However, one of the CNA studies did address the balance of productivity based on the size of the recruiter force (Samuelson et al., 2006). Sanchez evaluated this when he conducted a multivariate analysis of Marine Corps recruiters and the market (2018). Alternatively, Samuelson et al.'s study references "the inverted-U" and how the Marine Corps may be able to reduce "the inverted-U" to more of an arc using full-time recruiters (2006).

#### **A. RECRUITER PRODUCTIVITY**

The CNA study Productivity Effects of Changes in the Size of the Enlisted Recruiter Force introduced the idea of a three-year recruiting tour equating to the looks of an inverted-U (Samuelson et al., 2006). Their regression results identified a recruiter's tour occurring in three phases of productivity: the learning phase, the high-productivity phase, and the helping/transition phase. In the learning phase, the recruiter has recently arrived at their recruiting station and is learning about the area, the market, the population, the schools, etc., and will not be very productive as they get established. The high-productivity phase is the preponderance of their time in recruiting (between six to 30 months of their three-year tour). The recruiter will experience periods of optimal output, peak productivity, and balances in efficiency and effectiveness. Samuelson et al. describe the final phase as

the helping/transition phase as the phase where the recruiter's productivity will decline as they prepare their transition out of recruiting duty in addition to facilitating a turnover with whoever is replacing them. This performance arc is what Samuelson et al. referred to as the inverted-U. Additionally, within their study, "the statistical results also indicate that the experience levels of other recruiters in the station significantly affect average recruiter productivity: at each month of experience, the larger the share of other recruiters in the station who are inexperienced, the lower the productivity of the average individual recruiter" (Samuelson et al., 2006).

Military recruiting is, for the most part, an individual effort where military members are surveying and scavenging the area for those individuals who will successfully adapt, conform, and transform into talented service members (Samuelson et al., 2006). However, Samuelson et al. discuss how those military recruiters are part of a team that makes up their respective recruiting station's manpower system (2006). Those recruiting teams must be fluid and flexible to dynamically-changing situations in their environment to ensure that they, individually and as a team, are effective in attaining their recruiting goal. Although not specific to military recruiting, Kozlowski and Ilgen analyzed the social-psychological perspective in studying teams and their effectiveness (2006). Their study discusses heuristic factors that can support the effectiveness of a team in the collection of individual characteristics and resources at the individual, group, and organizational levels. A task provides the primary source for goals, defines respective roles, and is the basis for which individuals interact with one another, they found; the task for the team sets the minimum requirements and helps determine the primary focus for individual activities within the team construct (Kozlowski & Ilgen, 2006). While these team constructs are cyclical in phases, as previously mentioned, so are their collective experiences and influences upon one another, according to their findings.

A recruiter's productivity and success can also be attributed to the resources available to the recruiting force and their environment. Gilroy et al. believe the number of recruiters across the force, the amount of investment made in marketing and advertising, and the amount of experience in the immediate area of a recruiting office will impact a recruiter's ability to attract high-quality enlistees (2020). Specifically addressing the

number of recruiters canvassing neighborhoods for high-quality individuals to make up the military, some studies have found a relationship between the number of recruiters and the number of high-quality enlistments. According to Gilroy et al., “this is an important finding because a decline in the number of experienced recruiters has a greater negative impact on enlistments than a positive impact of increasing the recruiter force” (2020). This finding also reflects the lower production output of newer recruiters as they take time to develop their rapport and experience, as noted in the Samuelson et al. study. Gilroy et al. raise points regarding the number of recruiters and recruiting stations and how they will increase and decrease depending on the enlistment goals and the favorability of the climate. They also note the impact of each service’s increase or decrease in the number of recruiters in a given area: “an increase in recruiter presence for one Service, however, will affect the recruiting production of another Service in the same recruiting area” (Gilroy et al., 2020). Interestingly, they also note that if all services were to proportionally increase the number of recruiters in the same recruiting area, the total number of enlistments in that area would increase for all services (Gilroy et al., 2020).

## **B. MARKET INFLUENCES**

A Marine recruiter’s success, or failure, is a byproduct of the factors that affect a young individual’s decision to enlist. According to Asch (2019), civilian employment opportunities, education opportunities, and family financial support are among the factors that may nudge an individual away from, or towards, military service. One of the more significant influences is the unemployment rate and associate market conditions within the specific geographic region of the recruiter and their respective recruiting station (Asch, 2019). Specifically, Asch states, “station success or failure is substantially affected by station performance goals, but mission difficulty varies considerably across stations because of differences in market demographics, economic conditions, market size, and other factors” (2019). Asch details how the military branches must understand the market, market conditions, the factors that affect those conditions, and the available employment opportunities that may, or may not, be present within that market.

Asch (2019) studied current and suspected emerging recruiting challenges the U.S. Army faces, explicitly focusing on tools and resources at the U.S. Army's disposal to help ensure they can meet their recruiting goals to sustain a military force structure. Within this report, it is called out that the U.S. Army could use more recently developed tools to inform their recruiting activities better, improve each recruiting station's productivity, and better utilize their outreach programs to overcome some of these challenges. This report suggests that the U.S. Army does not tailor its recruiting efforts based on market demographics. Instead, they maintain a generic and broad-brushed approach to recruiting. Asch's research comments, "for example, the Army might focus outreach efforts in New England on career aspirations of potential recruits, while those in the South might focus on intangible benefits of Army service, such as patriotism" (2019).

Similar to what Asch defined in her study, Steel (1996) also highlights some differences in nature between civilian and military employment and some of the benefits of each as the labor market shifts over time. Steel surveyed Air Force military personnel to weigh some of the perceptual and objective employment opportunity information that affects an individual's decision-making process. This research showed that the number of alternatives and regional preferences were significant predictors of whether an Air Force enlisted service member would reenlist. While Steel's study, and those he referenced throughout the report, found intercorrelation between variables, he stated, "the full model featured three significant predictors, one regionally themed variable (i.e., regional preferences), one occupationally themed measure (i.e., the historical retention rate), and one globalized perceptual variable (i.e., number of alternatives)" (Steel, 1996). These findings are in line with other studies that show that an individuals' preferences for staying in the military or exiting the service are impacted by factors of the labor market, personal preferences, and the list of alternatives.

### **C. QUALITY OF RECRUIT**

Marine Corps Recruiting Command Order 1100.1, Marine Corps Recruiting Command Enlistment Processing Manual, provides Marine Corps recruiters a framework for conducting the screening process for potential applicants and establishes the criteria for

enlistment into the U.S. Marine Corps (2020a). Although this Order does not establish definitions of what a “high quality” recruit is, it does outline characteristics of individuals that are more likely to their initial enlistment contract. Research on the quality of the individual recruit is framed on current practices of the enlisted screening process; however, a specific definition of what makes an individual “quality” and ideal for military enlistment is not clear. As Eliason (2021) points out, the term quality is often used without defining the term or its expected characteristics. However, much of the research presumes that a quality individual has a Tier I education and an Armed Forces Qualification Test score that is a Category IIIA or higher.

Asch (2019) provides a detailed overview of the reasons why youth make the decision to enlist into military service. Typically, the decisions of youth are made within an occupational choice framework, weighing the expected value of joining the military over the opportunity cost of other options available. Although military service is challenging, mentally and physically, there are plenty of nonmonetary benefits involved, according to Asch (2019). As military recruiters will lay out to prospective enlistees, patriotism, serving one’s country, travel opportunities, steady employment for a contracted period, and military training in several highly transferable skills are valuable benefits of joining the military. Often the decisions of youth are evaluated by weighing the differences between going to college and joining the military. Though, those that come from lower socioeconomic backgrounds are less likely to go to college right after high school and are more likely to enlist (Asch, 2019). Regardless, the military is filled with service members from all family income levels and, in 2016, were less likely to be from the lowest or highest quintiles of household incomes levels (Asch, 2019).

Additionally, Asch also finds that military accessions are not geographically distributed evenly. As she stated, “since the beginning of the all-volunteer force, accessions are predominately from Southern states” (Asch, 2019). The representation of the U.S. population in the military is not to scale. The reason for this could be about opportunities, education, political differences, or household influence of prior-service family members. Of those factors, having a family member who is currently serving, or has previously served, in the military appears to have the heaviest influence. “The majority (63 percent)

of new recruits in the 2016 New Recruit Survey reported having an immediate family member who is serving or has served, with 27 percent stating they had a parent who has served” (Asch, 2019). Although this 2016 data shows a substantial majority for military-connected families, that percentage continues to decline.

#### **D. IMPACT OF PEERS ON TEAM PRODUCTIVITY**

The measurement of individual performance, productivity, or proficiency is easy compared to a team’s respective performance, productivity, or proficiency. Productivity in a team is a complicated behavioral phenomenon involving multiple mechanisms. Edison references his own challenges with researching and measuring team performance as it’s a multifaceted system that makes identifying a single “cause” difficult to pinpoint (2007). In those establishments where team performance measurement systems do exist, they are usually not aligned with the current structure or initiatives of the organization (Edison, 2007). Although Edison’s study sought to identify a relationship between strategic intent and team performance, measuring team performance primarily relied upon self-assessed performance data coupled with a supervisor or leadership assessment. However, Edison does conclude that there is a statistically significant relationship between the team’s knowledge of the strategic intent and team performance, meaning that those teams with a higher understanding of the team’s purpose, objectives, and strategies perform better overall.

While Edison’s research occurred in a military setting, the preponderance of studies on team productivity occurs outside military organizations. Theoretical thinking generates pause when measuring a team’s productivity due to concern with individual social loafers that may not be full team participants. Regardless, there is value in evaluating peers’ effect on each other in a work environment. Hamilton et al. (2003) analyzed a garment plant that phased productivity analysis from an individual production rate to a group production rate over three years. The idea was that an assortment of worker abilities could increase productivity by facilitating mutual learning or generating a social influence in the group production standard, thereby increasing total overall production with teams. Overall, Hamilton et al. found teams in this setting increased worker productivity by 14 percent on

average. The authors emphasize, “our results also are consistent with the predictions of bargaining and mutual learning models for teams” (2003). Their analysis found that peer effects on team performance increased productivity and assessed the causes, although immeasurable, were a result of mutual learning, the exertion of bargaining leverage by high performers on lower performers within a team, and the impact of peer pressure (in not wanting to let other members of your team down). Of additional significance, Hamilton et al. found that an increase in the size of a team was not associated with a decrease in productivity, indicating that social loafing was not an issue in that environment.

Although the operations of a garment plant are hardly like military operations, it does provide a unique look into the effects of talented and quality peers on others. Similarly, Ichniowski and Preston (2014) measured the performance effects of top-level soccer players who gained exposure with a more elite club team and then returned to their respective national teams. European leagues are considered the elite level in the international soccer community, especially against that of the United States’ league, Major League Soccer. A legal change in 1995 generated a substantial increase in non-European players being eligible to play in those Elite European leagues (Ichniowski & Preston, 2014). Ichniowski and Preston used that to their advantage in their study to use a regression discontinuity model to generate more robust causal inferences on their estimates of peer effects.

Ichniowski and Preston sought to find how higher talented peers impacted their co-workers, if it is a short-term or long-term impact, and what can be inferred from those kinds of peer effects on others and the team (2014). They admit in their study that they were not able to dictate what method improves quality; however, they did find that individuals and teams did receive a bump in quality for those that were able to perform at the elite European league level as compared to other non-elite second teams that are of lower quality. They found that a national team that draws a high-quality individual has critical effects on the performance of that team. Specifically, the effect of the high-quality individual pulled up the average quality of the team, that the higher-quality individual realized their own quality boost from their work with other high-quality players on that elite team, and that those effects tended to last over longer periods of time on the national team.

Of particular significance to the regression discontinuity analysis and the Ordinary Least Squares (OLS) model results by Ichniowski and Preston (2014), the authors found that the positive effects of training and competing with higher quality workers have long-lasting effects, regardless of the work environment. This can deduce that these peer effects are not due to an increase in capability or productivity because of direct supervision or monitoring by any supervisors; instead, they result from an increase in the quality of human capital in that organization and those individuals. According to the authors, “the empirical results consistently show that performance improves more after an individual has been a member of an elite team than when he has been a member of lower level teams” (Ichniowski & Preston, 2014). Regardless of their results, caution should be given considering that these results may not apply to the military recruiting production process; however, in those areas where peer effects do exist, their impacts can be long lasting and may even build over time.

## **E. SUMMARY**

Cumulatively, those studies broadly touch on the numerous challenges that each of the military services faces in recruiting future service members. My approach is to estimate how the quality of recruiting, as measured by the quality of those individuals recruited into military service, is impacted by changes over time in the skill and experience in the recruiting team at the recruiting station. This approach is similar to that used in Arkes et al. (2020), where they analyze longitudinal personnel data to evaluate the relationship between diversity among leadership and colleagues and first-term enlisted Sailors and retention among junior officers. Their approach used a fixed-effects model to account for factors that didn’t change often over time, such as occupation and duty station, to estimate the effects of diversity on other outcomes. Additionally, Arkes et al. modeled the reenlistment decision separately for each demographic group while accounting for those fixed effects. While their findings show that an increase in diversity among peers, immediate supervisors, and senior leadership can lead to higher retention rates among minority and non-minority groups, the key to my analysis is the approach Arkes et al. took within their research report.

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## **IV. DATA AND METHODOLOGY**

This chapter presents the data source used in this research, including descriptions of the data and metrics and additional summary statistics on enlistees. The methodology section describes the models used to estimate the source of the relationship between the recruiter and the enlistee and how that source may signal the desirability of the enlistee's or the enlistee's probability to attrite from the Delayed Entry Program or recruit training. I use OLS linear probability model (LPM) regressions to determine the percentage point difference between variables as a result of the desirability of the enlistee, the probability that the enlistee attrites from DEP, the probability that the enlistee attrites from recruit training given that they made it through the DEP, and to analyze geographic fixed effects between regions and year fixed effects over calendar years.

### **A. DATA**

#### **1. Data Source**

This research focuses on enlisted personnel who joined the Marine Corps Delayed Entry Program from October 2015 to September 2019. The data for this research is from MCRC's MCRISS and includes cross-sectional data on both enlistees and their recruiters at the time of the enlistees' enlistments. Specifically, this data provides initial entry-level information such as the enlistee's Armed Forces Active-Duty Base Date (AFADBD), Pay Entry Base Date (PEBD), AFQT Score, education level, recruiting district, RS, RSS, individual demographics, a list of waivers the enlistee required for entry, and the enlistee's term of initial enlistment. The enlistee's recruiter information includes the recruiter's rank and a unique recruiter identification number.

I dropped less than 1 percent of observations from the analysis for discrepancies and contradictions between variables. As a result, the useable data set consists of 225,418 enlistees and 7,929 recruiters. The period makes it possible to analyze a recruit joining the DEP and attending recruit training without censoring enlistees' data from only being partially known. As described in Volume III of MCO 1130.76D, if an enlistee enters the DEP, they can be in the program for no more than 410 days (2020b). To

prevent data censoring, the last possible DEP join date in the data is 30 September 2019, meaning that the latest possible recruit training ship date is 13 November 2020.

Table 1 shows the definitions of variables derived from individual enlistee demographics and some variables generated to support this research, including whether the enlistee dropped from the DEP or recruit training. To determine an enlistee’s age when they joined the DEP, I subtracted the date they joined the DEP from their birthdate and divided it by 365.25. I use the same process to determine the enlistee’s age when they shipped to recruit training, but I use their PEBD instead of their DEP date. The recruiting station generates the education tier variable within the MCRISS data based on the amount of education completed by the applicant, to include how the enlistee completed that education. The recruiting stations follow MCRC Order 1100.1A, *MCRC Enlistment Processing Manual*, guidance to categorize this education tier variable (2020a).

Table 1. Variable Definitions

Variables	Definition
Number of Dependents	Continuous variable equal to the number of dependents the enlistee reported when they joined the DEP
Term of Enlistment	Continuous variable equal to the number of years the enlistee enlisted for in their initial contract
Age at MCRD Ship	The enlistee’s age when they started recruit training: $(PEBD - Birthdate) / 365.25$
Age at DEP Join	The enlistee’s age when they joined the DEP: $(DEP\ Join\ Date - Birthdate) / 365.25$
Male	= 1 if male; else = 0
Single	= 1 if single; else = 0
Hispanic	= 1 if Hispanic; else = 0
White	= 1 if White; else = 0
Asian	= 1 if Asian; else = 0
Black	= 1 if Black; else = 0
American Indian	= 1 if American Indian; else = 0
Pacific Islander	= 1 if Pacific Islander; else = 0
Race (Other)	= 1 if race is other/unknown/declined to respond; else = 0
Education Tier <sup>a</sup>	= 1 if Tier I if High School Senior or any Tier I graduate = 2 if alternative credential holder = 3 if non-high school graduate

Variables	Definition
DEP Drop	= 1 if enlistee dropped from DEP; else = 0
Recruit Training Drop	= 1 if enlistee dropped from recruit training; else = 0

Adapted from sources discussed in Chapter IV, Section A.1.

<sup>a</sup> Source: Headquarters, United States Marine Corps (2020a)

The variables listed in Table 1 are used as independent variables, with the exception of the DEP Drop and Recruit Training Drop variables which are used as both dependent and independent variables in different methods of analysis.

The cohort year variables capture the fiscal year when the enlistee joined the DEP. This research includes cohort dummy variables in the models to control for differences in labor markets, economies, and other factors uncontrollable to the recruiter in a given year. Table 2 describes the cohort year dummy variables.

Table 2. Cohort Year Dummy Variable Definition

Independent Variable	Variable Definition
Cohort FY15	= 1 if joined DEP in FY2015; else = 0
Cohort FY16	= 1 if joined DEP in FY2016; else = 0
Cohort FY17	= 1 if joined DEP in FY2017; else = 0
Cohort FY18	= 1 if joined DEP in FY2018; else = 0
Cohort FY19	= 1 if joined DEP in FY2019; else = 0

Adapted from sources discussed in Chapter IV, Section A.1.

The MCRISS data provides the ASVAB-AFQT scores for each applicant. I placed each applicant into a category based on that ASVAB-AFQT score to better differentiate between the desirability of prospective applicants throughout the analysis. Marine Corps Order 1130.76D, *Conduct of Recruiting Operations*, guides this mental group categorization, as reflected in Table 3 (Headquarters, United States Marine Corps, 2020b). These categories help determine defining desirability attributes of an enlistee, as described later in this chapter.

Table 3. Mental Group Categories. Source: Headquarters, United States Marine Corps (2020b).

Mental Group Category	AFQT Score
Category I	93 – 99
Category II	65 – 92
Category IIIA	50 – 64
Category IIIB	31 – 49
Category IV	21 – 30

## 2. Calculated Variables

Although the variables previously described are drawn from the MCRISS data, the following calculated variables are generated based on personal assessment, determination, and categorization, given the information available. These variables are critical to the development and assessment of the desirability of enlistees.

Important to assessing the desirability of prospective enlistees, the data also includes categories of waivers the enlistee required before signing their military contract. MCRC Order 1100.1D outlines the type of waivers, criteria for such waivers, and the level of review needed to authorize such a waiver (Headquarters, United States Marine Corps, 2020a). There are ten different categories of waivers with varying sub-categories that further refine the reason and criteria for the waiver. As an example, MCRC Order 1100.1D, MCRC Enlistment Processing Manual, states, “Applicants who will have their 29th birthday in the DEP, require a Region-level age waiver before [contracting]” (Headquarters, United States Marine Corps, 2020a). However, to avoid possible biases against various types or reasons for an enlistee requiring waivers, I categorized enlistees very simply: those who needed a waiver (regardless of type) and those who did not require a waiver.

Table 4 displays the definitions of different levels of desirability of a prospective enlistee to a recruiter. I use two primary attributes to develop this definition: AFQT categories and whether the enlistee required a waiver. As described in the background chapter, military recruiters are driven to bring the best prospects into military service so the service can grow in capability and quality. Part of the recruiter’s assessment is based on educational aptitude. Although waivers are not negative indicators, they increase the workload for a recruiter

preventing the recruiter from prospecting for other enlistees. The desirability consideration of a prospective enlistee is a valuable consideration for recruiters. These variables are used as dependent and independent variables in different methods of analysis

Table 4. Desirability of Prospective Enlistee Definition

Variable	Definition
Most Desirable	= 1 if enlistee has AFQT category I or IIA, and no waivers; else = 0
Moderately Desirable	= 1 if enlistee has AFQT category IIIA-IV and no waivers; else = 0
Desirable	= 1 if enlistee has AFQT category I-III A and required waivers; else = 0
Least Desirable	= 1 if enlistee has AFQT category IIIB or IV and required waivers; else = 0

Adapted from sources discussed in Chapter IV, Section A.1.

The MCRISS data provides a variable that specifies the source through which the recruiter and enlistee began on the path that led to the enlistee joining the DEP. This source variable has 21 unique categories defining how that professional relationship began. Table 5 displays how I categorized these variables into two different bins: lead-based or not lead-based. Enlistees who are referred to the recruiter make up the lead-based category. The category, *not lead-based*, applies if the enlistee sought out the recruiter by walking into the recruiting office or calling in, or if the recruiter met the applicant while canvassing the local mall or through a list of local high school seniors.

Table 5. Recruiter Source Variable Definitions

Variable	Definition
Lead-Based	= 1 if enlistee source code is command recruiter, marine corps reserve, poolee, recruiter aide, referral, or enlisted recruiting referral; else = 0
Not Lead Based	= 1 if enlistee source code is area canvassing, call in, electronic medium, list canvass, local mail-back, priority prospect card, other, other-PSR, reenlistment card, walk-in; else = 0

Adapted from sources discussed in Chapter IV, Section A.1.

### 3. Summary Statistics

The summary statistics for the data are reflected in Table 6, providing the variable name, the number of observations, mean, and standard deviation. There are 225,418 cumulative observations for all variables, except *Age at MCRD Ship*, which has 181,414 observations because those dropped during DEP do not have a recruit training ship date. 52 percent of the enlistees in this data did not require a waiver of any sort which is equally reflected in the 48 percent of the enlistees who are characterized as desirable or least desirable.

Table 6. Summary Statistics

<b>Variable</b>	<b>Observations</b>	<b>Mean</b>	<b>Standard Deviation</b>
<b><u>Sample Demographics</u></b>			
<b>Number of Dependents</b>	225,418	0.029	0.260
<b>Term of Enlistment</b>	225,418	4.494	0.744
<b>Age at MCRD Ship</b>	181,414	19.654	1.994
<b>Age at DEP Join</b>	225,418	19.177	1.993
<b>Male</b>	225,418	0.901	0.298
<b>Female</b>	225,418	0.099	0.298
<b>Single</b>	225,418	0.987	0.112
<b>Hispanic</b>	225,418	0.272	0.445
<b>White</b>	225,418	0.572	0.495
<b>Asian</b>	225,418	0.037	0.189
<b>Black</b>	225,418	0.102	0.302
<b>American Indian</b>	225,418	0.009	0.095
<b>Pacific Islander</b>	225,418	0.006	0.080
<b>Race (Other)</b>	225,418	0.004	0.064
<b><u>ASVAB AFQT Metrics</u></b>			
<b>ASVAB AFQT Score</b>	225,418	61.404	17.865
<b>Education Tier</b>	225,418	0.806	0.401
<b>AFQT Category I</b>	225,418	0.048	0.213
<b>AFQT Category II</b>	225,418	0.374	0.484
<b>AFQT Category IIIA</b>	225,418	0.291	0.454
<b>AFQT Category IIIB</b>	225,418	0.286	0.452
<b>AFQT Category IV</b>	225,418	0.001	0.024
<b><u>Waivers</u></b>			
<b>Waiver Needed</b>	225,418	0.482	0.500
<b>Count of Waivers</b>	225,418	0.678	0.858

Variable	Observations	Mean	Standard Deviation
<b><u>Quality of Recruit</u></b>			
<b>Most Desirable</b>	225,418	0.237	0.426
<b>Moderately Desirable</b>	225,418	0.281	0.449
<b>Desirable</b>	225,418	0.33	0.470
<b>Least Desirable</b>	225,418	0.152	0.359
<b><u>Attrition</u></b>			
<b>DEP Drop</b>	225,418	0.195	0.396
<b>Recruit Training Drop</b>	225,418	0.074	0.262
<b>DEP or Recruit Training Drop</b>	225,418	0.27	0.444
<b><u>Recruiter Source</u></b>			
<b>Lead Based</b>	225,418	0.424	0.494
<b>Not Lead Based</b>	225,418	0.576	0.494

Adapted from sources discussed in Chapter IV, Section A.1.

#### 4. Descriptive Statistics

To better show calendar year and geographic differences, this section contains more detailed information on the cohort year variables and the number of enlistees per recruiting station in each cohort year. This section also shows how respective districts manage their recruiting stations by opening and closing locations to support their recruiting operations. Sometimes this management of recruiting stations includes transitioning existing recruiting stations between districts; however, the tables that follow reflect the current alignment of recruiting stations in recruiting districts. Table 7 shows the number of enlistees that joined the DEP by cohort year, with a peak in FY17.

Table 7. Enlistees by Cohort Year

Cohort Year	Frequency
Cohort FY15	42,875
Cohort FY16	44,499
Cohort FY17	46,136
Cohort FY18	45,456
Cohort FY19	46,452
Total	225,418

Adapted from sources discussed in Chapter IV, Section A.1.

Table 8 and Figure 3 show the number of enlistees who join the DEP by year based on their recruiting district. The numbers reflected in Table 8 show the differences of total recruiting numbers between recruiting districts over the observation time. As an example, note the variance between the count of enlistees from 1MCD in the New England area and the count of enlistees from 12MCD on the West Coast.

Table 8. Annual Enlistees, by Recruiting District

	1MCD	4MCD	6MCD	8MCD	9MCD	12MCD
<b>FY15</b>	6482	6352	7796	7120	7213	7912
<b>FY16</b>	6641	6644	8047	7303	7275	8589
<b>FY17</b>	6809	6629	8515	7625	7236	9322
<b>FY18</b>	6810	6259	8273	7555	7227	9332
<b>FY19</b>	6881	6234	8878	7828	7297	9334

Adapted from sources discussed in Chapter IV, Section A.1.

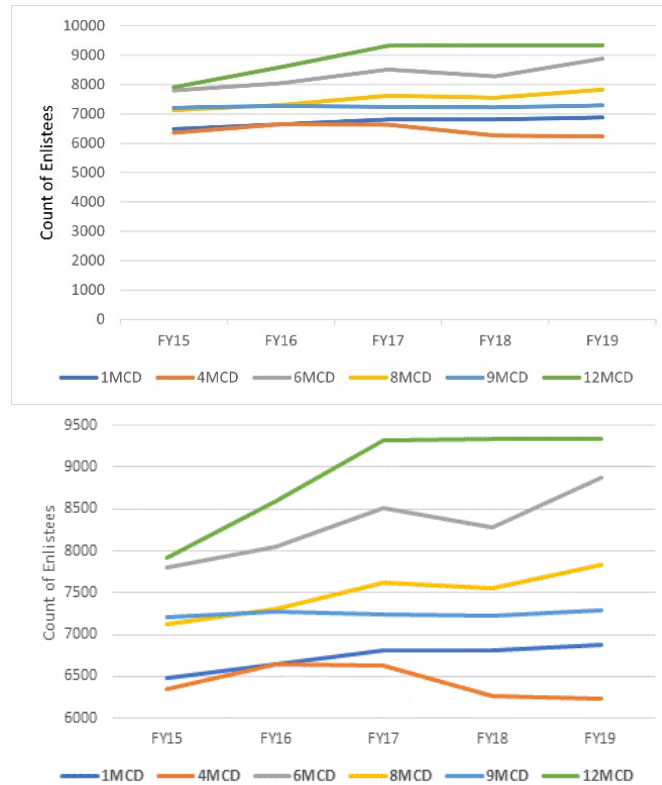


Figure 3. Annual Enlistees, by Recruiting District

## B. METHODOLOGIES

The data for this research is cleaned and analyzed using the Stata statistical software package, version 17. There are instances where outputs from the statistical software package are output to Microsoft Excel to refine the appearance of tables and graphs. I use the statistical software package R to build some graphs and charts; however, the data source is the same across all analytical platforms.

The analytical models presented in this chapter are multivariate regression models examining the source of an enlistee encountering a Marine recruiter. The outcome variables are binary, analyzed through linear probability models, and I use OLS techniques to develop estimates of probability. The resultant estimate coefficients in each LPM represent the change in the probability of the outcome variables for every one-unit change in an independent variable, holding all other variables in the model constant (Wooldridge, 2013). When the independent variable is binary, that coefficient represents the extent to which it will affect the dependent variable when the independent variable is 1, compared to when the independent variable takes the value 0.

### 1. Desirability of Prospective Enlistee Models

The models specified in equations (1-4) examine differences in the desirability of a prospective enlistee based on how the prospect encountered the recruiter. How the prospective enlistee met the recruiter is binned into two categories: lead-based and not lead-based. The outcome variables are binary, taking on a value of 1 if the enlistee is of most desired, moderately desire, desired, or least desired, in each respective model. Each enlistee desirability model estimates the probability based on whether the recruiter had a lead on the enlistee, personal demographics, geographic recruiting district, and the year they joined the DEP.

$$\Pr(\text{MostDesired} = 1 | x) = \beta_0 + \beta_1 \text{LeadBased}_i + \beta_2 (\text{Demographics})_i + \beta_3 (\text{District})_i + \beta_4 (\text{Cohort})_{it} + \mu \quad (1)$$

$$\Pr(\text{ModeratelyDesired} = 1 | x) = \beta_0 + \beta_1 \text{LeadBased}_i + \beta_2 (\text{Demographics})_i + \beta_3 (\text{District})_i + \beta_4 (\text{Cohort})_{it} + \mu \quad (2)$$

$$\Pr(\text{Desired} = 1 | x) = \beta_0 + \beta_1 \text{LeadBased}_i + \beta_2 (\text{Demographics})_i + \beta_3 (\text{District})_i + \beta_4 (\text{Cohort})_{it} + \mu \quad (3)$$

$$\Pr(\text{LeastDesired} = 1 | x) = \beta_0 + \beta_1 \text{LeadBased}_i + \beta_2 (\text{Demographics})_i + \beta_3 (\text{District})_i + \beta_4 (\text{Cohort})_{it} + \mu \quad (4)$$

## 2. Attrition from Delayed Entry Program

The model in equation (5) examines the probability of an enlistee dropping from the DEP based on the same variables in equations (1-3). However, this model also considers the enlistee desirability categorization to identify the propensity for any given desirability of enlistee to drop from the DEP. The *Demographics* variable consists of the enlistee's number of dependents, if sex is female, if their marital status is single, and an indicator variable for the enlistee's race. Of note, the *Desired* categorization variable is removed to avoid collinearity issues with the results

$$\Pr(\text{DEP\_Drop} = 1 | x) = \beta_0 + \beta_1 \text{ASVABScore} + \beta_2 \text{WaiverCount} + \beta_3 \text{LeadBased}_i + \beta_4 (\text{Demographics})_i + \beta_5 (\text{District})_i + \beta_6 (\text{Cohort})_{it} + \beta_7 \text{MostDesired}_i + \beta_8 \text{ModeratelyDesired}_i + \beta_9 \text{LeastDesired}_i + \mu \quad (5)$$

## 3. Attrition from Marine Corps Recruit Training

The model in equation (6) examines the probability of an enlistee not completing the recruit training at their respective Marine Corps Recruit Depot (MCRD) based on the same variables listed in equation (5). Similar to equation (5), this model considers the enlistee desirability categorization to identify the propensity for any given type of enlistee to fail out of the recruit training pipeline.

$$\Pr(\text{MCRD\_Drop} = 1 | x) = \beta_0 + \beta_1 \text{ASVABScore} + \beta_2 \text{WaiverCount} + \beta_3 \text{LeadBased}_i + \beta_4 (\text{Demographics})_i + \beta_5 (\text{District})_i + \beta_6 (\text{Cohort})_{it} + \beta_7 \text{MostDesired}_i + \beta_8 \text{ModeratelyDesired}_i + \beta_9 \text{LeastDesired}_i + \mu \quad (6)$$

## **C. SUMMARY**

This chapter describes the breakdown of data, how variables are defined and categorized, and how each of the variables are critical to the methods of analysis. I outline and define the variables derived from the MCRISS data. I also describe the development of calculated variables, which required an analysis of characteristics of enlistees and the recruiter's source for contacting the enlistee. Additionally, the methods of analysis are delineated to determine the desirability of an enlistee to the recruiter and the propensity for an enlistee to attrite from the DEP or recruit training.

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## V. RESULTS

This chapter shows the results from the OLS LPM methodology for the source of an enlistee. I estimate models to analyze the desirability of an enlistee, the likelihood of an enlistee dropping from the DEP, and the likelihood of an enlistee dropping from recruit training given the enlistee didn't drop from the DEP. I seek to analyze if the modality of a recruiter finding enlistees impacts the probability of an enlistee being more desirable for military service. First, I distinguish the recruiting sources the recruiters categorize their contact with enlistees. Then, I analyze the distribution of those enlistees amongst those sources against their desirability and whether they attrited from the DEP or recruit training. After analyzing each particular source, I seek to determine if there is a difference in enlistees based on if the recruiter initially contacted the enlistee through their effort or by referral from someone else. Next, I consider differences amongst the enlistees to determine if there's a difference in the probability of completing recruit training or attriting based on the enlistees' desirability metric. Lastly, I explore trends across the years to determine if more desirable enlistees are more or less likely to enlist or attrite during particular times of the year.

### A. RECRUITING SOURCE

I analyze the specific recruiting sources recruiters categorize their initial contact with a prospective enlistee. Through this analysis, I seek to determine if any recruiting source or method shows a greater propensity for better prospective enlistees or more enlistees who fail to make it through the DEP and recruit training process.

Figure 4 shows the number of enlistees by the method their recruiter specified as the source of contacting that enlistee. This figure shows the recruiter found the preponderance of enlistees through area canvassing, whether at schools or local shopping centers or through other poolees who had already joined the DEP. Further, this figure's colors show the differences between lead-based and not lead-based recruiting sources.

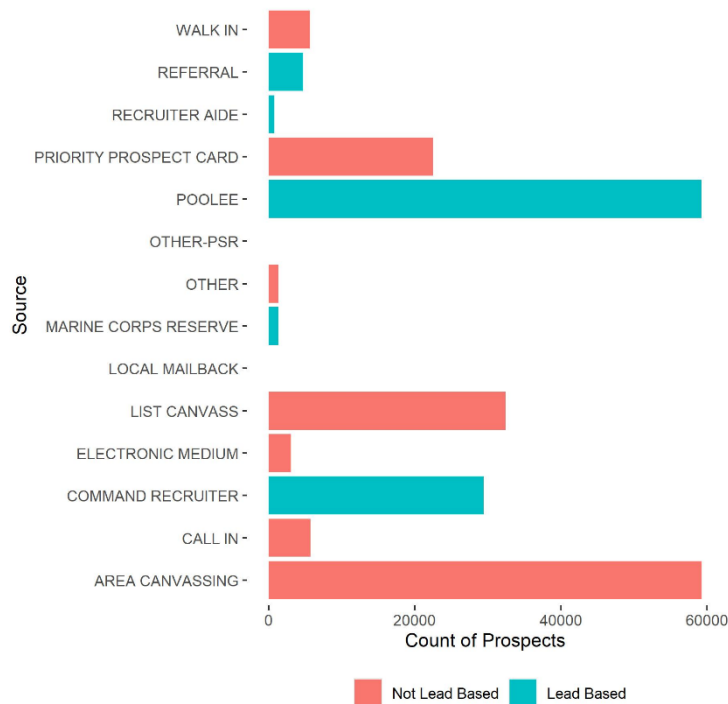


Figure 4. Recruiter Sources, by Count

Figure 5 shows the method which recruiters specified as the source of contacting prospective enlistees but color-coordinated with the desirability factor of the prospective enlistees. This figure shows a similar breakdown of desirability across the recruiting sources; however, Figure 6 provides a better visual to understand that dissection by offering the numbers as a percentage of enlistees by that source. Although the counts of enlistees are vastly different by recruiting source, the percentages across each recruiting source are similar. These results mean that no one recruiting source has a greater or lesser probability of bringing a more or less desirable category of prospective enlistees into the Marine Corps than any other source. The *local mailback* variable does appear to have a greater probability of recruiting most desirable enlistees; however, the total count of enlistees recruited via that method is pointedly smaller, as depicted in Figures 4 and 5. Do not interpret these percentages as anything significant.

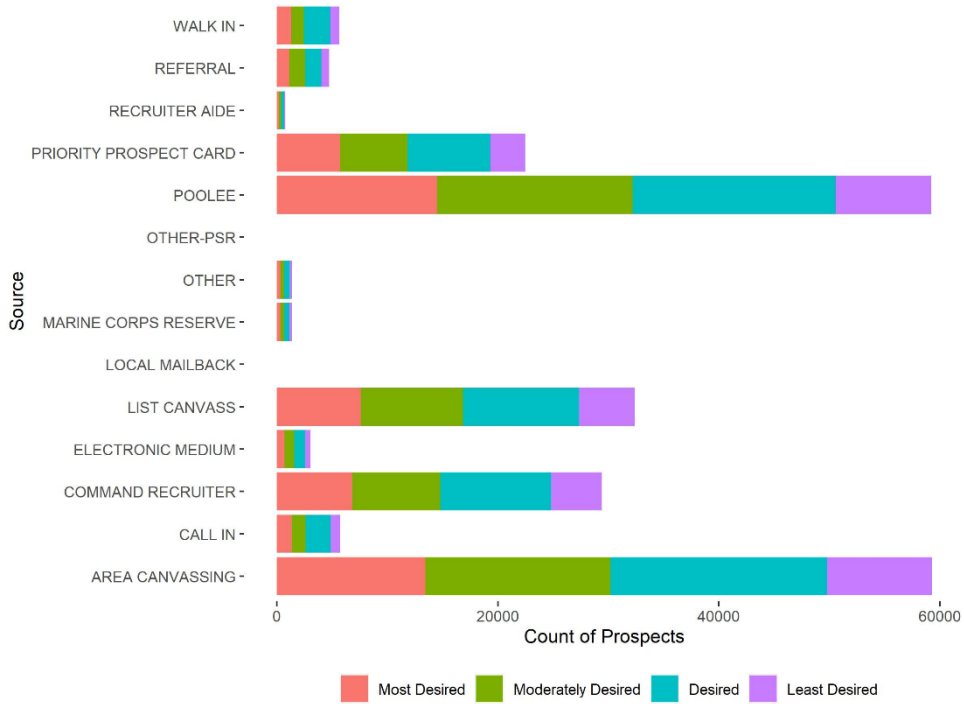


Figure 5. Recruiter Sources by Desirability of Prospect, by Count

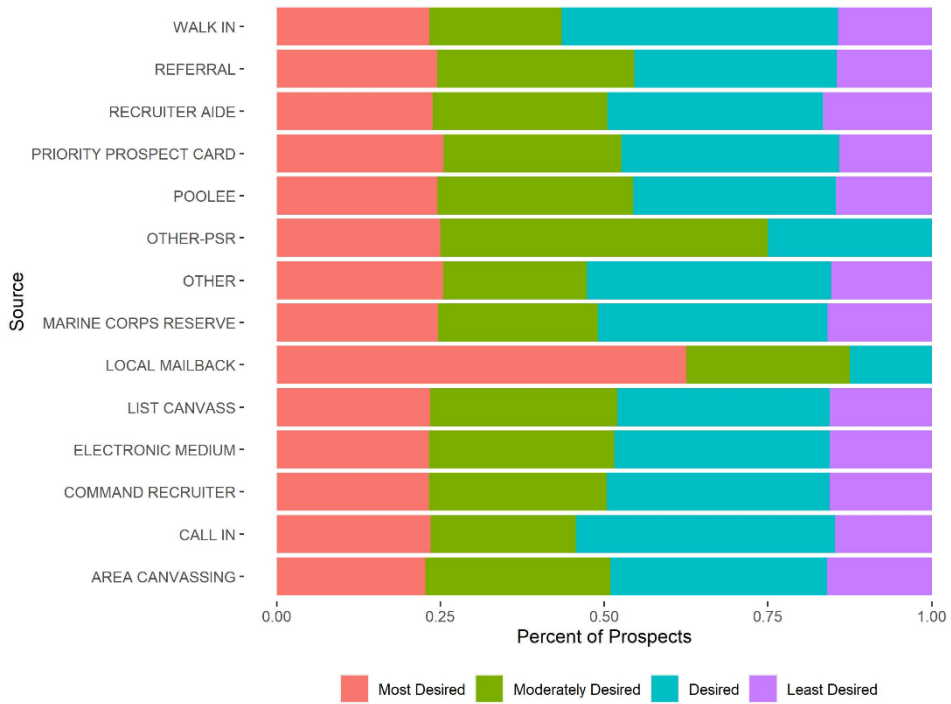


Figure 6. Recruiter Sources by Desirability of Prospect, by Percentage

Figure 7 shows the percentage of enlistees and whether they attrited from the DEP or recruit training against the method their recruiter specified as the source of contacting that prospective enlistee. Figure 8 removes those that completed recruit training and focuses on those who dropped from the DEP or recruit training. Figure 9 further shows that between 65–75 percent of enlistees attrite from the DEP and do not ship to recruit training. The two outliers, *other-PSR* and *local mailback*, reflect differently; however, neither of these outliers have enough enlistees to draw any conclusions on and, therefore, cannot be interpreted as anything significant.

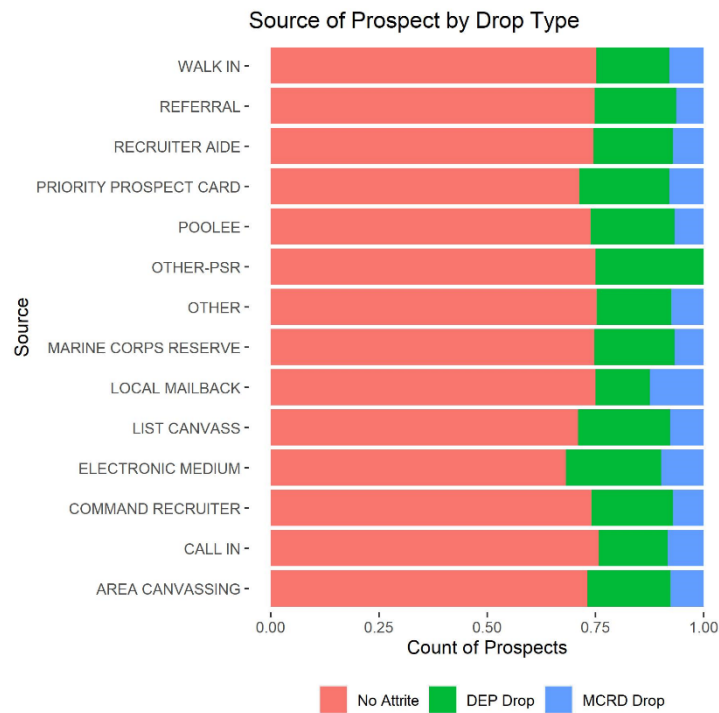


Figure 7. Recruiter Sources and Attrition Type, by Count

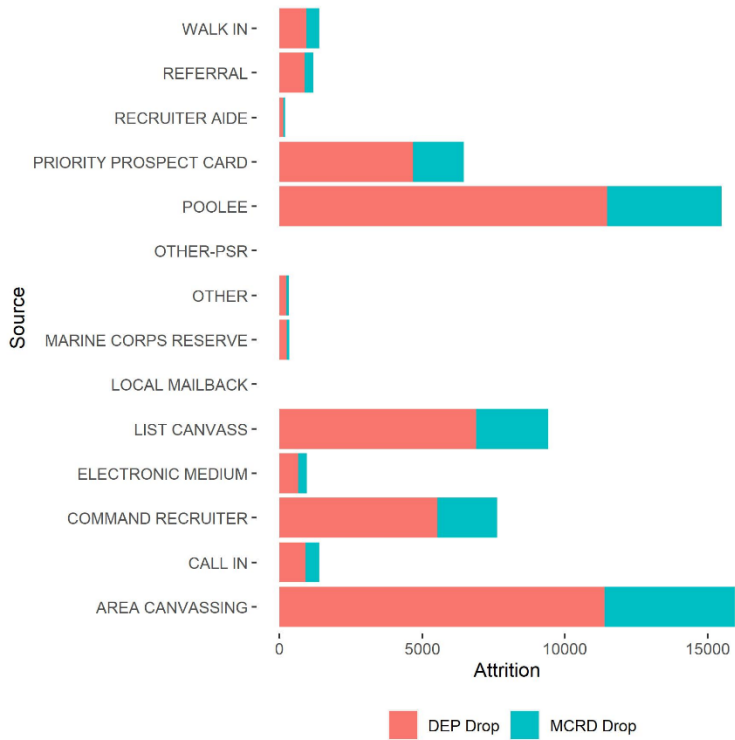


Figure 8. Recruiter Sources and Attrition Only, by Count

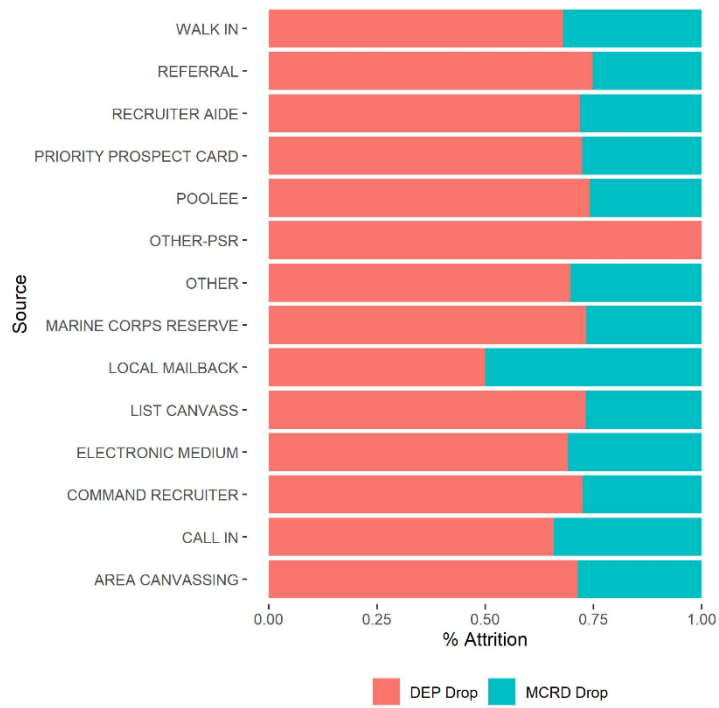


Figure 9. Recruiter Sources and Attrition Only, by Percent

## **B. LEAD-BASED VS. NOT LEAD-BASED**

The recruiting source variable specifies the source through which the recruiter and the prospective enlistee first interacted. Since recruiting sources do not show a greater probability individually, I categorize the sources into two bins. I try to understand further how a recruiters' initiative and effort to find prospective enlistees supports them in finding more or less desirable enlistees or if those enlistees are more or less likely to attrite from the DEP or recruit training.

Figure 10 shows the desirability of prospective enlistees by the method the recruiter contacted the enlistee, specifically, if the enlistee was found by canvassing, *not lead-based*, or referral, *lead-based*. This figure shows that a greater number of prospective enlistees are found through the recruiters' initiative to canvass rather than waiting for or pursuing those referred to them. However, Figure 11, which shows the same breakdown but as a percentage of enlistees, reflects that there is similar proportionality of desirability of enlistees, regardless of the source through which the recruiter contacted them. This result means that no singular recruiting effort has a greater or lesser probability of bringing a more desirable prospective enlistee into the Marine Corps than any other source.

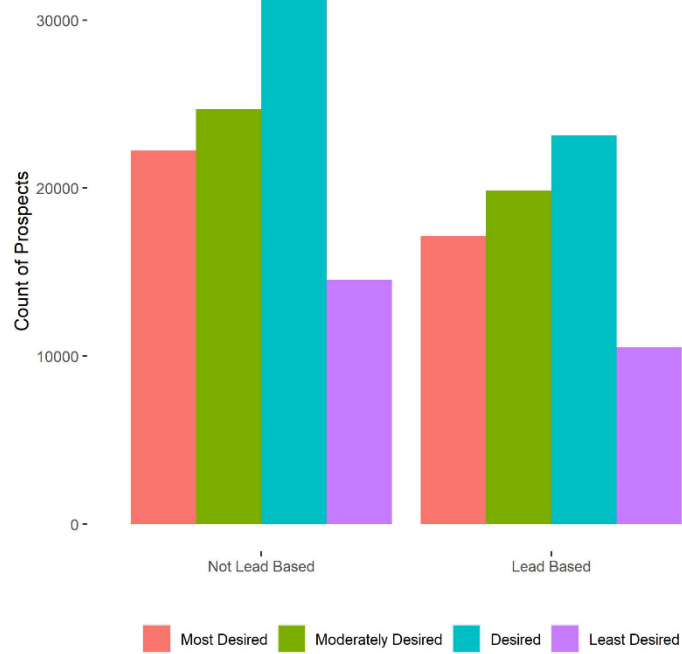


Figure 10. Desirability of Enlistee by Recruiter Source Type, by Count

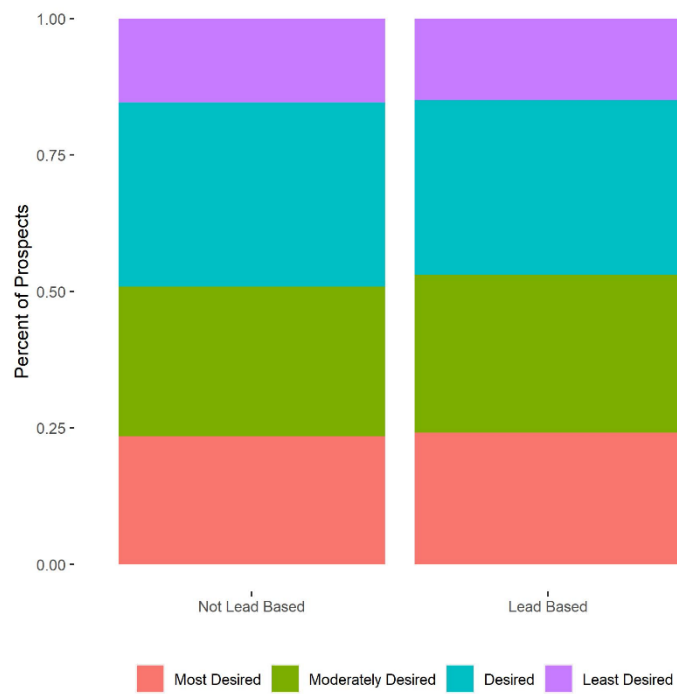


Figure 11. Desirability of Enlistee by Recruiter Source Type, by Percentage

In analyzing the binning of recruitment sources, Figure 12 shows the number of prospective enlistees who completed recruit training or attrited from the DEP or recruit training. This figure reflects a low number of enlistee attrition through lead-based recruiting efforts; however, Figure 13 shows the percentages of those attrition numbers for each recruiting method. Although the lead-based recruiting efforts show fewer drops from the DEP and recruit training, the proportionality of those numbers reflects little difference between the methods.

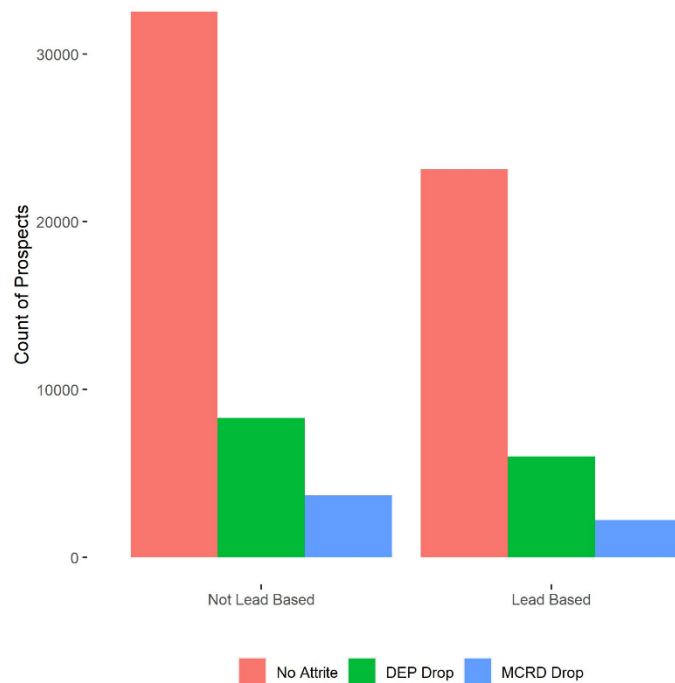


Figure 12. Enlistee Attrition by Recruiter Source Type, by Count

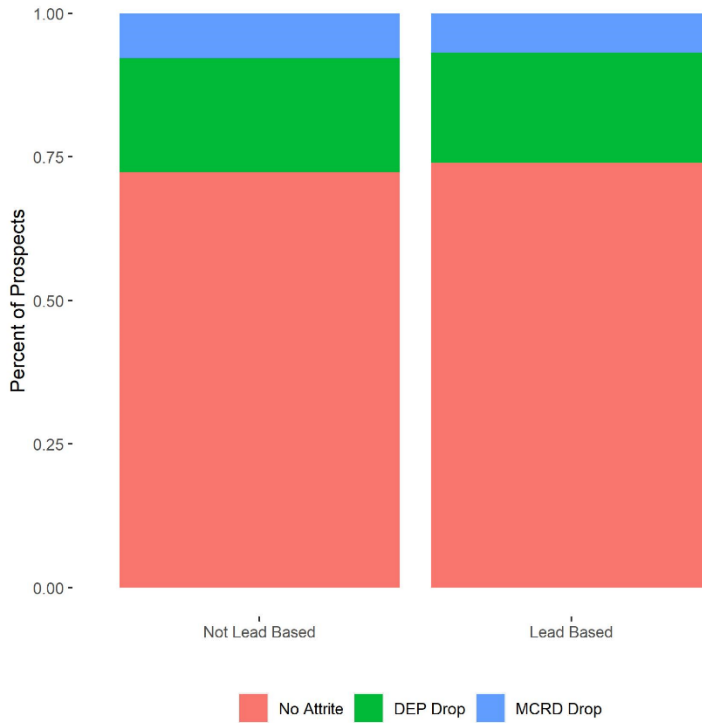


Figure 13. Enlistee Attrition by Recruiter Source Type, by Percentage

**C. DESIRABILITY OF ENLISTEE AND ATTRITION**

Figure 14 shows the number of enlistees and whether they attrited from the DEP or recruit training by desirability criteria of the prospective enlistee to the recruiter. Figure 15 shows similar proportions of the desirable enlistee populations across those who succeeded through recruit training, those dropped from the DEP, and those dropped from recruit training.

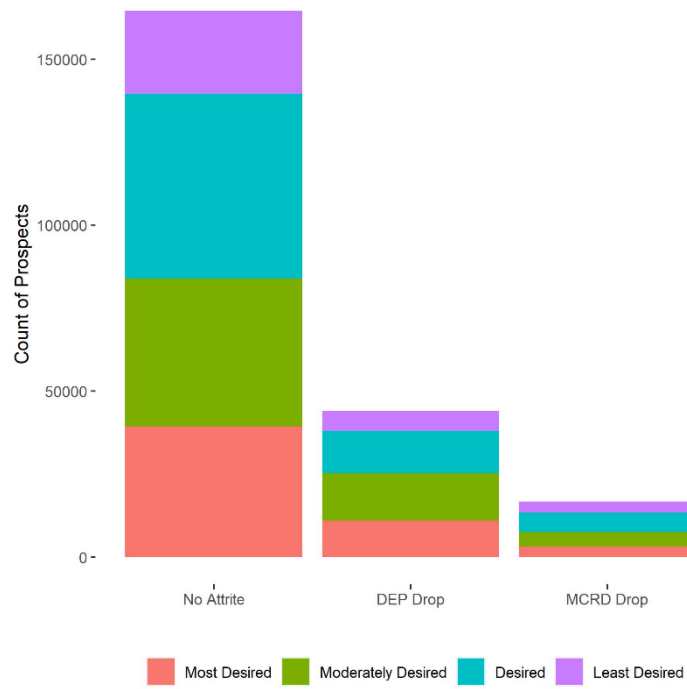


Figure 14. Desirability of Enlistee and Attrition, by Count

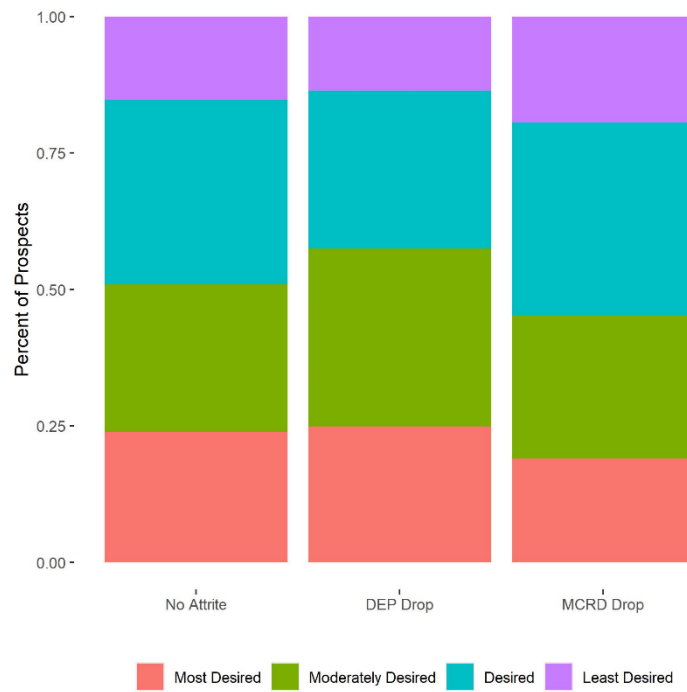


Figure 15. Desirability of Enlistee and Attrition, by Percentage

## D. TRENDS

Recruiters are assigned to perform as recruiters in a given geographic region for three years. This duration of time provides a seasonality expectation for recruiters. This section seeks to identify if there are indications that any particular season has a greater tendency for more desirable prospective enlistees or a specific season where more enlistees are likely to attrite from the DEP or recruit training.

Figure 16 displays the trends of enlistees in monthly intervals across the observation period, separated by the desirability of the prospective enlistees. The “most desired” and “moderately desired” prospective enlistees dominate the middle portion of the figure. Still, those categorized as least desired remain at the bottom part of the chart and do not encroach near other categories. Figure 16 exposes seasonal peaks and valleys collectively over each year. The peaks are reflected during the summer months each year, suggesting high school seniors are graduating and beginning the next phase in their lives. Alternatively, the valleys are predominantly in the winter months. Figure 17 shows the monthly interval trends of enlistees and whether they attrited from the DEP or recruit training. This figure shows similar peaks and valleys as those exposed in Figure 16. The peaks in Figure 17 suggest high school seniors entered the DEP but dropped from the program in the summer months, perhaps after graduating high school and finding alternative employment or educational opportunities.

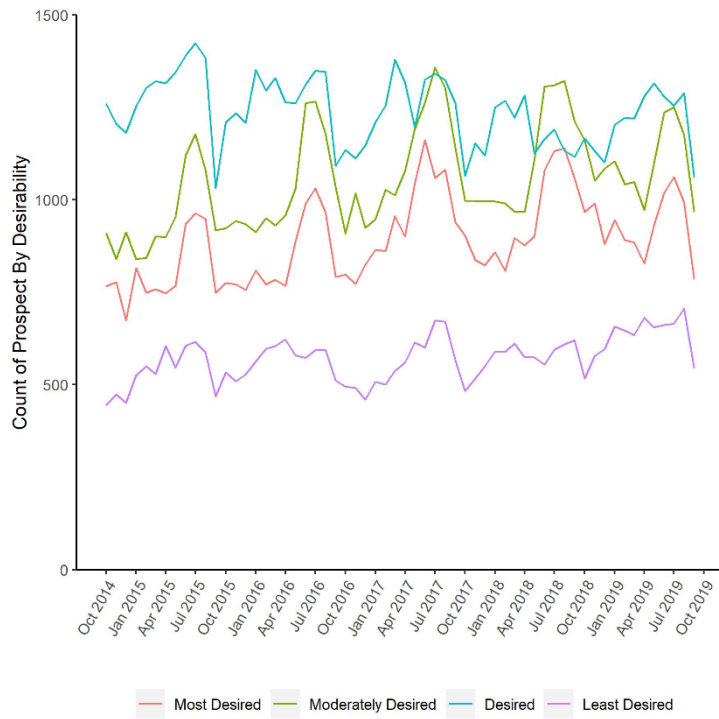


Figure 16. Trend in Desirability of Prospective Enlistee

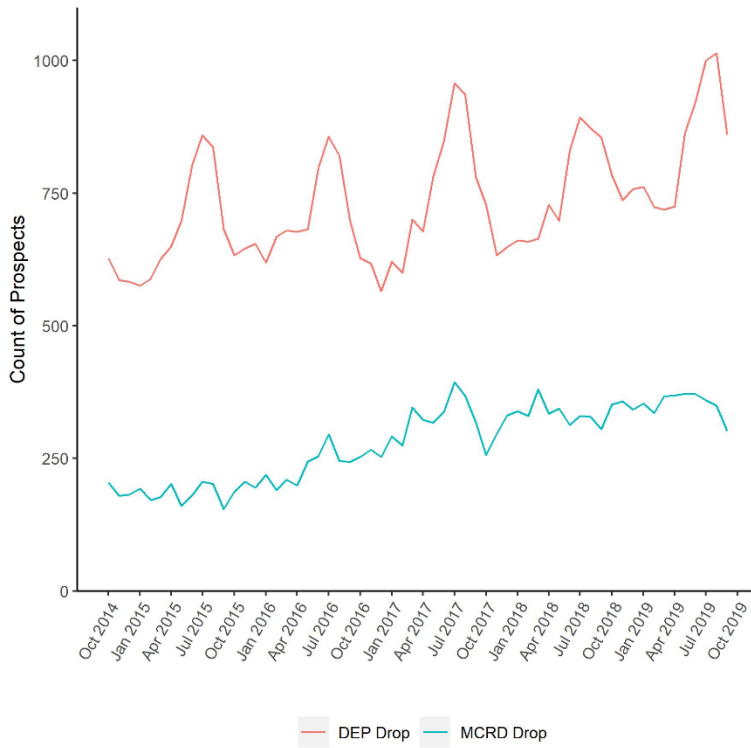


Figure 17. Trend in Prospective Enlistee Attrition

**E. DESIRABILITY OF ENLISTEE RESULTS**

The results of the recruiting source do not indicate that any particular recruiting method fares better than another. I now analyze the enlistees, based on their desirability from the recruiter’s perspective, to determine if there are variables that recruiters should further consider or seek in their recruiting operations.

Table 9 displays the results of the desirability of an enlistee, given other variables. Model 1 of Table 9, the first column, shows the probability that the prospective enlistee is “most desired.” Continuing across the models in Table 9, Model 2 shows “moderately desired” enlistees, Model 3 shows “Desired” enlistees, and the final column reflects the “least desired” enlistees. In these models, I control for the recruiting district of the recruiting station and the year the enlistee joins the DEP using fixed-effects modeling to hold constant economic and labor market conditions between locations and over time. This method attempts to remove biases due to geographical differences in labor markets and the variation of those conditions across calendar years.

As an example of interpreting Table 9, Model 2 of the table shows that for every additional dependent a prospective enlistee has, the probability of the enlistee being ‘moderately desired’ decreases by 6.5 percentage points. Given that factors such as waivers and ASVAB scores are used to determine a prospective enlistee’s desirability to a military recruiter, these variables are excluded from the model. Of statistical and economic significance, those enlistees who are Black or Hispanic are at least 10 percentage points less likely to be ‘more desirable’ enlistees compared to other races.

Table 9. Desirability of Prospective Enlistee Model Analysis

	(1) Most Desired	(2) Moderately Desired	(3) Desired	(4) Least Desired
Number of Dependents	-0.059*** (0.003)	-0.065*** (0.003)	0.091*** (0.005)	0.034*** (0.004)
Female Enlistee	-0.021*** (0.003)	0.001 (0.003)	0.011*** (0.003)	0.009*** (0.003)
Single	-0.014 (0.009)	0.058*** (0.008)	-0.072*** (0.011)	0.027** (0.008)

	(1) Most Desired	(2) Moderately Desired	(3) Desired	(4) Least Desired
Black	-0.125*** (0.003)	0.050*** (0.003)	-0.053*** (0.003)	0.128*** (0.003)
Hispanic	-0.105*** (0.002)	0.056*** (0.002)	-0.029*** (0.002)	0.078*** (0.002)
Asian	0.017** (0.005)	0.006 (0.005)	-0.032*** (0.005)	0.010** (0.004)
Race - Other	-0.089*** (0.007)	0.026*** (0.007)	-0.009 (0.008)	0.072*** (0.006)
Lead-Based	0.005** (0.002)	0.013*** (0.002)	-0.014*** (0.002)	-0.004** (0.002)
Constant	0.281*** (0.009)	0.185*** (0.008)	0.447*** (0.011)	0.087*** (0.008)
Observations	225,418	225,418	225,418	225,418

Standard errors in parentheses

The models include recruiting station fixed effects. This holds constant market conditions between recruiting stations. The models also include year fixed effects which hold constant the years the enlistee joins the DEP.

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

As described in Chapter III, data for this table is compiled from the MCRC MCRIS database.

## F. ATTRITION RESULTS

In this section, I focus on attrition and the proclivity of a prospective enlistee to attrite from the Delayed Entry Program or recruit training. The intent is to identify any factors that recruiters should limit or avoid when contacting and interacting with prospective enlistees in their recruiting operations.

Model 1 of Table 10 shows the results of the probability an enlistee drops from the DEP. Model 2 of Table 10 shows the results of the likelihood an enlistee drops from recruit training, given that they did not drop from the DEP. In these models, I control for the recruiting district of the recruiting station and the year the enlistee joins the DEP using fixed-effects modeling to hold constant economic and labor market conditions between locations and over time. This method attempts to remove biases due to geographical differences in labor markets and the variation of those conditions across calendar years.

Table 10. Attrition Model Analysis

	(1) DEP Drop	(2) Boot Camp Drop
ASVAB - AFQT Score	-0.001 <sup>***</sup> (0.000)	-0.001 <sup>***</sup> (0.000)
Number of Waivers	-0.040 <sup>***</sup> (0.001)	0.012 <sup>***</sup> (0.001)
Number of Dependents	0.010 <sup>**</sup> (0.004)	0.005 (0.004)
Female Enlistee	0.058 <sup>***</sup> (0.003)	0.053 <sup>***</sup> (0.003)
Single	0.009 (0.009)	-0.005 (0.008)
Black	-0.007 <sup>*</sup> (0.003)	0.008 <sup>**</sup> (0.003)
Hispanic	-0.009 <sup>***</sup> (0.002)	-0.033 <sup>***</sup> (0.002)
Asian	0.004 (0.005)	-0.018 <sup>***</sup> (0.003)
Race - Other	-0.017 <sup>**</sup> (0.006)	-0.019 <sup>***</sup> (0.005)
Lead-Based	-0.008 <sup>***</sup> (0.002)	-0.011 <sup>***</sup> (0.001)
Most Desired	-0.015 <sup>***</sup> (0.003)	0.003 (0.003)
Moderately Desired	-0.013 <sup>***</sup> (0.003)	-0.001 (0.003)
Least Desired	-0.015 <sup>***</sup> (0.003)	-0.001 (0.003)
Constant	0.261 <sup>***</sup> (0.011)	0.108 <sup>***</sup> (0.009)
Observations	225,418	181,414

Standard errors in parentheses

The models include recruiting station fixed effects. This holds constant market conditions between recruiting stations. The models also include year fixed effects which hold constant the years the enlistee joins the DEP.

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

As described in Chapter III, data for this table is compiled from the MCRC MCRISS database.

Model 1 of Table 10 shows that for every additional waiver an enlistee requires to join the Marine Corps, the probability of that enlistee dropping from the DEP decreases by four percentage points. However, if the enlistee does not attrite from the DEP and makes it to recruit training, the probability of that enlistee dropping from recruit training increases

by 1.2 percentage points for every additional waiver the enlistee required. Those enlistees who are initially contacted through lead-based recruiting actions, such as referrals, are less than 1 percentage point less likely to drop from the DEP compared to those who are contracted through not lead-based recruiting efforts, such as canvassing. Compared to enlistees who are categorized differently, those enlistees who are categorized as ‘most desirable’ are 1.5 percentage points less likely to drop from the DEP.

#### **G. RANK OF RECRUITERS**

I also performed an analysis to determine if the recruiter’s rank, and the reflective level of military experience inferred by that rank, have any influence on the recruiter’s ability to attract more desirable prospective enlistees. While some of the results are statistically significant, the values of those results are not practically significant. They have a negligible impact on a recruiter of a specific rank being better at finding the most or least desirable prospective enlistee. The tables of results for the most desirable and least desirable enlistees by recruiter rank are in Appendix A and B, respectively.

I performed a similar analysis to determine if the recruiter’s rank, and the reflective level of military experience inferred by that rank, have any influence on the likelihood of a prospective enlistee attriting from the DEP or recruit training. Equal to the results from the desirability analysis, the attrition results showed statistical significance; however, the values reflected a less than 1 percentage point change in the probability of attrition. These results mean that a recruiter’s rank has no beneficial impact on the chances of enlisting individuals with greater desirability traits or a greater likelihood to attrite.

#### **H. RECRUITING DISTRICTS**

Additionally, I performed an analysis to determine differences across geographic regions. This analysis considered the desirability of prospective enlistees and the likelihood of attrition during the DEP and recruit training. Although some of the results show statistical significance, the values of those results are not economically significant. This table is in Appendix C.

## **I. SUMMARY**

This chapter showed results of uncontrolled proportions and regression results. The graphs and charts showed differences in recruiting sources, desirability of enlistees, and likelihood of attrition from the DEP and recruit training in various methods of analysis. Regression results from the linear probability models showed the percentage point differences of variables compared to dependent variables of enlistee desirability or likelihood of attrition. Overall, these graphs and regression results depict that there is limited variation across recruiting methodologies and sources to show that a Marine recruiter will have more or less success with contracting enlistees compared against other recruiting methods.

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## VI. CONCLUSION

This thesis explored the Marine Corps recruiter's sources for contacting prospective enlistees and evaluated if a recruiter's specific recruitment methods generated more enlistees with more desirable qualities. This research also sought to determine if a particular method for initiating contact with prospective enlistees generated more attrition than other methods. Specifically, this research looked for differences in prospective enlistees based on whether the recruiter contacted the enlistee through their search or the enlistee's initiative compared to when the recruiter is provided a referral for a specific prospective enlistee. Further, I sought to examine if there's a higher probability of one particular group of prospective enlistees to attrite from the Delayed Entry Program and recruit training compared to other groups of prospective group's enlistees. Lastly, I considered the timeline for recruiters on recruiting duty and wanted to determine if there was a difference across years for any particular group of prospective enlistees to join the military or showing an increased likelihood of attriting from the DEP or recruit training.

### A. SUMMARY

The estimating results from the multivariate regression models using MCRC's MCRISS data of enlistees from FY2015 to FY2019 did not reflect a greater likelihood of any specific or generic recruiting source having more success in finding and contracting more desirable prospective enlistees than any other group. These results show that Marine Corps recruiters find prospective enlistees of varying backgrounds and educational aptitude through every available method they can engage. Regardless of how the recruiter finds their prospective enlistees, those recruiters spend their three-year tour canvassing, communicating, researching, seeking, and screening the individuals available that can meet or exceed the standards the Marine Corps has set. No one method fares better than any other method.

Furthermore, this thesis found that no one specific group or type of individual is more or less likely to attrite from the DEP or recruit training than any other individuals. Factors that impact an individual's post-secondary school decisions, such as educational

aptitude, geographic location, time of year, and other economic factors, appear to have no more significant effect than other factors when normalizing those factors for those enlistees' situations. Although the research shows statistical significance in some of those factors, none of those factors retained economic or managerial value to offer a truly significant impact on those decision points.

Lastly, the rank and experience of those recruiters diligently working to contract prospective enlistees continuously shows that there is no economically significant difference between those enlistees recruited by Sergeants, Staff Sergeants, or Gunnery Sergeants. While the considerations in these factors are singularly focused on the enlistee, it shows that a recruiter's rank is not a factor of concern for contracting better enlistees. The trend charts show seasonal peaks and valleys for recruiting that align with the school year's timing. However, those charts do not display more significant dips across the whole of the model, inferring that the network of recruiters continues to meet their recruiting goals regardless of the timing of changeover of recruiters.

In the end, the Marine Corps recruiting methods continue to show successful efforts at the grander scale, even though more than 25 percent of contacted enlistees will attrite from the DEP or recruit training. This high percentage of attrition shows that there continues to be room for improvement in efficiency and effectiveness in recruiting methods. Still, that measure will never reach absolute perfection because the nature of human decision-making is constantly evolving as circumstances change.

## **B. LIMITATIONS**

This thesis was limited to the data received from MCRC's MCRISS database. The inputs for this database rely on the diligence and attention to detail of those military recruiters who are also trying to contact, screen, and evaluate prospective enlistees to meet the recruiting station's recruitment goals each month. The data input for the MCRISS database was inconsistent or even contradictory. For example, some enlistee birthdate years were listed in 2113 and later. Other information was sometimes left blank and created a situation where the individual applicant's information could not be considered part of the research. As a result, this analysis did not consider some variables due to incompleteness

or conflict. In addition to variables not being considered, I dropped less than 1 percent of the total observations due to these inconsistent inputs.

### **C. FURTHER RESEARCH**

Throughout my research, I sought to explore the impacts of recruiters based on the sources of the enlistees they contract into the Marine Corps. Fortunately, I received data from MCRC's MCRISS database to support that research. However, the initial concept of my research sought to explore two questions: how does the quality of the recruiters at a recruiting station relate to the quality of recruits contracted from that recruiting station; and, how does the ratio of recruiters (volunteers, selected through HSST, and career recruiters) relate to the quality of recruits from that recruiting station? Unfortunately, I could not explore those questions since I did not receive the data necessary to support that research from the Manpower and Reserve Affairs Total Force Data Warehouse.

Although I did not receive the initially requested data, it would still be beneficial for the Marine Corps to understand the impact in recruiting duty output based on the ratio of Marines at a given recruiting station. The effect of the cumulative years of experience in the Marine Corps or on recruiting duty may influence the quality of the enlistees brought into service. Additionally, there is currently no research on the differences in the quality of enlistees related to how the recruiter came on recruiting duty. It could be argued that a Marine who volunteers to become a recruiter is more motivated to influence higher quality individuals to join the service compared to a Marine that is directed to recruiting duty, against their desires, to perform the same mission. The Total Force Retention System does not currently retain the data specifying how a Marine came on recruiting duty; additional research to better understand the impacts of the Marine Corps' decisions to force a Marine to recruiting duty should be conducted.

Other research has evaluated factors of consideration at the enlistee level, the recruiter level, and those levels against each other; however, little research has been performed to determine factors at the aggregate recruiting station level to evaluate the impact of human capital on others. Specifically, a study should be conducted to understand the dynamic effect of a career recruiter on a given recruiting station or recruiting sub-station

to determine if quality and production increase with a Marine of that level of recruiting experience directly involved in those recruiting operations. This evaluation would demonstrate methods and effects of human resource management policies in supporting the Marine Corps' ambitious recruiting requirements.

**APPENDIX A. RECRUITER PAY GRADE COMPARISON OF MOST DESIRABLE PROSPECTIVE ENLISTEES**

	E-5 Recruiter Most Desired	E-6 Recruiter Most Desired	E-7 Recruiter Most Desired
Number of Dependents	-0.061*** (0.005)	-0.060*** (0.004)	-0.038** (0.013)
Female Enlistee	-0.010 (0.005)	-0.024*** (0.004)	-0.031** (0.011)
Single	-0.040** (0.015)	-0.002 (0.011)	0.012 (0.032)
Black	-0.122*** (0.004)	-0.127*** (0.003)	-0.119*** (0.010)
Hispanic	-0.102*** (0.004)	-0.107*** (0.003)	-0.103*** (0.008)
Asian	0.001 (0.009)	0.025*** (0.007)	0.007 (0.020)
Race - Other	-0.085*** (0.012)	-0.094*** (0.009)	-0.081*** (0.023)
Lead-Based	0.003 (0.003)	0.007** (0.002)	0.005 (0.007)
Constant	0.304*** (0.015)	0.271*** (0.012)	0.256*** (0.034)
Observations	75,026	133,611	16,172
$R^2$	0.020	0.022	0.020

Standard errors in parentheses

The models include recruiting station fixed effects. This holds constant market conditions between recruiting stations. The models also include year fixed effects which hold constant the years the enlistee joins the DEP.

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

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**APPENDIX B. RECRUITER PAY GRADE COMPARISON OF  
LEAST DESIRABLE PROSPECTIVE ENLISTEES**

	E-5 Recruiter Least Desired	E-6 Recruiter Least Desired	E-7 Recruiter Least Desired
Number of Dependents	0.033*** (0.007)	0.036*** (0.006)	0.021 (0.014)
Female Enlistee	0.006 (0.005)	0.008* (0.003)	0.034*** (0.010)
Single	0.038** (0.014)	0.028* (0.011)	-0.032 (0.033)
Black	0.126*** (0.005)	0.129*** (0.004)	0.129*** (0.011)
Hispanic	0.075*** (0.003)	0.081*** (0.002)	0.070*** (0.007)
Asian	0.012 (0.007)	0.010* (0.005)	0.002 (0.014)
Race - Other	0.078*** (0.011)	0.073*** (0.008)	0.047* (0.019)
Lead-Based	-0.002 (0.003)	-0.005* (0.002)	-0.007 (0.006)
Constant	0.078*** (0.014)	0.087*** (0.011)	0.137*** (0.033)
Observations	75026	133611	16172
$R^2$	0.018	0.019	0.020

Standard errors in parentheses

The models include recruiting station fixed effects. This holds constant market conditions between recruiting stations. The models also include year fixed effects which hold constant the years the enlistee joins the DEP.

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

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## APPENDIX C. DISTRICT BY DISTRICT COMPARISON

	(1)	(2)	(3)	(4)	(5)	(6)
	1st MCD	4th MCD	6th MCD	8th MCD	9th MCD	12th MCD
ASVAB	-0.000	-0.000 <sup>***</sup>	-0.000 <sup>***</sup>	0.000 <sup>***</sup>	-0.000 <sup>***</sup>	0.001 <sup>***</sup>
AFQT Score	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Needed Waiver	0.009 <sup>**</sup>	-0.017 <sup>***</sup>	0.011 <sup>**</sup>	0.014 <sup>***</sup>	-0.029 <sup>***</sup>	0.012 <sup>***</sup>
Number of Waivers	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Number of Dependents	-0.017 <sup>***</sup>	0.031 <sup>***</sup>	0.012 <sup>***</sup>	-0.013 <sup>***</sup>	0.009 <sup>***</sup>	-0.022 <sup>***</sup>
	(0.001)	(0.002)	(0.002)	(0.001)	(0.002)	(0.001)
Female Enlistee	-0.007 <sup>*</sup>	0.012 <sup>**</sup>	0.007	-0.012 <sup>***</sup>	0.006	-0.005
	(0.003)	(0.004)	(0.004)	(0.004)	(0.003)	(0.003)
Single	-0.001	0.008 <sup>**</sup>	0.004	-0.006 <sup>*</sup>	0.007 <sup>**</sup>	-0.011 <sup>***</sup>
	(0.003)	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)
Black	0.030 <sup>***</sup>	0.015	-0.019 <sup>*</sup>	-0.061 <sup>***</sup>	0.034 <sup>***</sup>	0.000
	(0.007)	(0.008)	(0.009)	(0.009)	(0.007)	(0.008)
Hispanic	0.032 <sup>***</sup>	-0.000	0.152 <sup>***</sup>	-0.034 <sup>***</sup>	-0.101 <sup>***</sup>	-0.049 <sup>***</sup>
	(0.003)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)
Asian	-0.029 <sup>***</sup>	-0.138 <sup>***</sup>	-0.045 <sup>***</sup>	0.128 <sup>***</sup>	-0.114 <sup>***</sup>	0.198 <sup>***</sup>
	(0.002)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)
Race - Other	0.013 <sup>**</sup>	-0.093 <sup>***</sup>	-0.076 <sup>***</sup>	-0.030 <sup>***</sup>	-0.086 <sup>***</sup>	0.271 <sup>***</sup>
	(0.004)	(0.003)	(0.003)	(0.004)	(0.004)	(0.005)
Most Desired	-0.095 <sup>***</sup>	-0.116 <sup>***</sup>	-0.098 <sup>***</sup>	0.083 <sup>***</sup>	-0.061 <sup>***</sup>	0.287 <sup>***</sup>
	(0.004)	(0.004)	(0.004)	(0.007)	(0.006)	(0.008)
Least Desired	-0.004	-0.002	-0.007 <sup>*</sup>	0.004	0.006 <sup>*</sup>	0.003
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
DEP Drop	0.005	0.001	-0.014 <sup>***</sup>	-0.007 <sup>*</sup>	0.009 <sup>**</sup>	0.006
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Boot Camp Drop	-0.001	-0.000	0.002	0.006 <sup>**</sup>	0.008 <sup>***</sup>	-0.014 <sup>***</sup>
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Constant	0.018 <sup>***</sup>	0.016 <sup>***</sup>	0.010 <sup>**</sup>	-0.026 <sup>***</sup>	0.008 <sup>**</sup>	-0.026 <sup>***</sup>
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
	0.149 <sup>***</sup>	0.190 <sup>***</sup>	0.212 <sup>***</sup>	0.171 <sup>***</sup>	0.198 <sup>***</sup>	0.080 <sup>***</sup>
	(0.009)	(0.009)	(0.010)	(0.010)	(0.008)	(0.009)
Observations	225418	225418	225418	225418	225418	225418
R <sup>2</sup>	0.005	0.034	0.026	0.028	0.022	0.076

Standard errors in parentheses

The models include year fixed effects which hold constant the years the enlistee joins the DEP. ‘Moderately desired’ and ‘desired’ enlistee variables are omitted because of collinearity.

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

As described in Chapter III, data for this table is compiled from the MCRC MCRIS database.

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