Honor, Courage, and Varying Forms of Commitment:
A Quantitative Study into the Career Affiliation Decisions
of United States Marine Corps Active Reserve Officers

Antonio L. Borrego

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Public Administration

College of Public Affairs

University of Baltimore
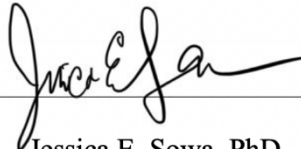Baltimore, Maryland

June, 2020

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Submitted to
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By

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School of Public Affairs
University of Baltimore
Baltimore, Maryland
June, 2020

DEDICATION

This dissertation is dedicated to my family, children, and most of all my wife. You are all very special to me. I could not have asked for children who are more caring, intelligent, and full of life. Neither could I have asked for a more supportive wife with a bigger heart. The cost to achieve this degree has been borne on your shoulders. Thank you for your patience, understanding, and support.

ACKNOWLEDGEMENTS

ABSTRACT

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The Active Reserve Program of the United States Marine Corps has three hundred

unrestricted officers who manage the Marine Corps' strategic reserve. These officers are

responsible for the mastery of reserve policy and mobilization. The mobilization of reservists in

support of combat operations abroad over the past twenty years makes an understanding of their

career decisions imperative. Small programs are sensitive to turnover from separation or

retirement. Current military literature has a deficit in studies surrounding the career decisions of

Active Reserve officers. Previous studies on military manpower and transitions into, between

components, and out of service are plentiful, but have only included active component or reserve

officers. This study uses Gottschalck's (2004) framework of personnel transitioning into,

between, and out of employment and Selden and Moynihan's (2000) framework as transition

occurring through the visage of individual, organizational, or economic variables to define the

variables that influence the propensities of Active Reserve officers to either separate or retire

from service. This dissertation found larger families, more deployments, and higher national

unemployment lessened the propensities of officers to separate from the Active Reserves and

found being a male and a higher national unemployment rate lessened the likelihood officers

would retire from the Active Reserve program earlier than expected. These results further inform

literature about the importance of gender, family size, and unemployment impacting retention and

may help guide the Marine Corps towards better policies to maintain key personnel.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1: INTRODUCTION

On September 11, 2001 Al-Qaida hijacked four commercial aircraft and attacked the United States of America on a scope not experienced since the Japanese attack of Pearl Harbor during 1941. American Airlines Flight 11 and United Airlines Flight 175 crashed into the World Trade Center towers, toppling both. American Airlines Flight 77 was flown into the Pentagon causing immense structural damage to the central node of United States military power. The final aircraft, United Airlines Flight 93 is believed to have been planned to strike either the Capitol Building or White House. The passengers aboard United Airlines Flight 93 instead rushed the Al-Qaida terrorists piloting the plane and forced it to crash in Shanksville, Pennsylvania (Kean, et al., 2004). These attacks resulted in 2,997 lives lost (CNN Library, 2019).

Reservists were central in the immediate and long-term actions associated with the United States' reactions to attacks upon its soil. Within hours of the attacks, military reservists were activated in support of civil operations. In less than a week, more than 10,000 reservists had volunteered to provide medical and military support. The attacks resulted in the United States Coast Guard initiating the largest reserve recall since WWII (Duehring, 2002). From 2001 to 2014, the United States Marine Corps[1] mobilized 62,688 Marine reservists in support of the United States' global efforts to combat terror abroad (Marine Forces Reserve, 2016). The United States' ability to quickly augment its regular forces with reserves was pivotal in its ability to strike back at a terrorist attack on the citizens of the United States.

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[1] From here forth the United States Marine Corps will be solely referenced as the Marine Corps.

A small cadre of three hundred Active Reserve officers likely played a significantly large part in training and mobilizing the Marine Corps reservists supporting operations at home and in Iraq and Afghanistan. This study focuses on the career decisions of these officers.

Reservists in Support of National Defense

The United States' willingness to use reservists in support of national defense has been standard for most military operations since the beginning of the 20th century. Reserve forces are those who train as military members to augment the active forces when national security requires it (10 USC § 10102, 2004). Reserve utilization in the past thirty years included more than 83,000 reservists to support Desert Storm and Desert Shield (US Army Reserve, n.d.; Naval History and Heritage Command, n.d.; Marine Forces Reserve, 2016), 91,000 reservists mobilized during military operations between Desert Shield and 2001 (Duehring, 2002), and more than 363,000 reservists mobilized to fight terrorism between September 11, 2001 and January of 2005 (Government Accountability Office, 2005)

The number of mobilizations since 1990 demonstrate the importance of reservists as a part of the national defense plans of the United States. Maintaining a viable reserve force requires a heavy investment of administrative capacity within the Department of Defense. Use of reservists in support of the national defense effectively pulls citizen-soldiers outside of their normal profession and transitioning them into active duty. Countless statutes and policies of various levels dictate how reservists can legally be approved for mobilization, mobilized, and returned to their normal lives. This research examines the retirement and separation career decisions of a small force of Marine Corps Active Reserve officers, who are the Marine Corps' solution to administering these processes for the Marine Corps Reserve. These officers are career bureaucrats who maintain expertise in all matters related to the Marine Corps Reserve and are central to integration of Marine Corps reservists into the active forces.

Reserve Usage and Programmatic Solutions

Deploying reservists to support national emergencies or contingencies is a complicated process. The factors and situations surrounding the recall of reserve forces vary greatly and are managed by statutes. Recall and mobilization of the reserves may be desired due to natural disasters and global catastrophe alike, for periods as short as fifteen days through undefined limitations in extreme situations. Three sections in national code discuss which entity owns approval rights for mobilization. Approval authority to mobilize reservists can be held by service secretaries (10 USC § 12301, 2004; 10 USC § 12304, 2018), the Secretary of Defense (10 USC § 12304, 2018), President of the United States (10 USC § 12304, 2018; 10 USC § 12302, 2011), or Congress (10 USC § 12301, 2004). The greater the authority vested in an individual or group, the larger the ability to call up reservists with less constraints. More authority increases length of deployment, increases the pool of who can be mobilized, increases the total number of reservists who can be mobilized, and transitions mobilizations from voluntary to involuntary. Mobilization constraint details by statute are shown in Figure 1.
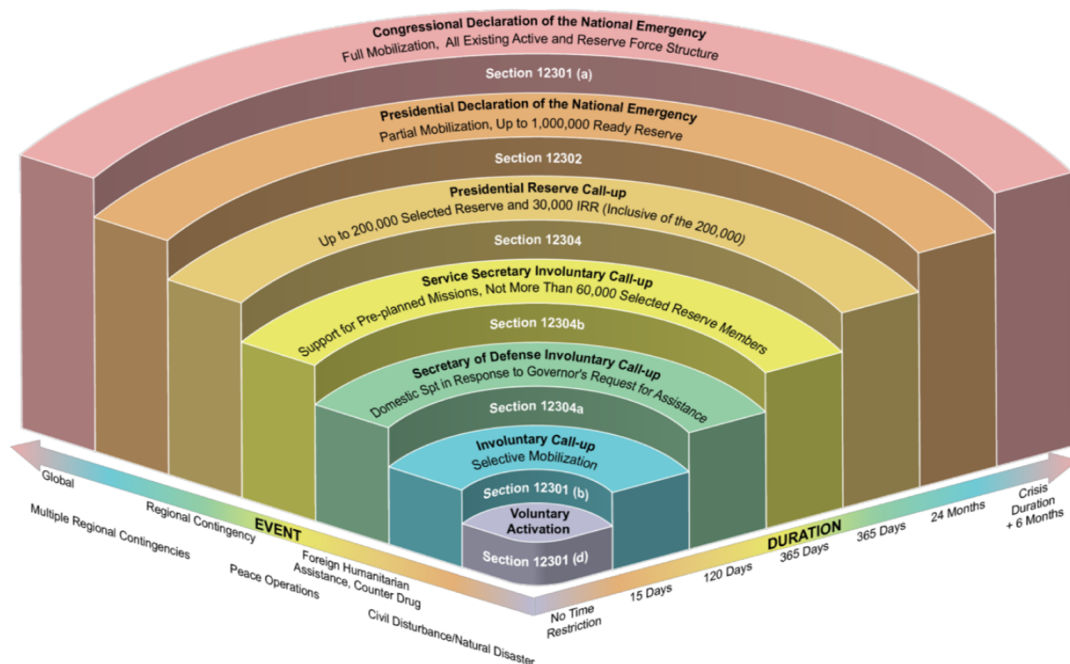
Figure 1: Activation Authorities by duration, event, and statutory permission. Reprinted from "Marine Corps Order 3000.19B, (Marine Corps, 2013, pp. 1-7)"

The bureaucracy of the mobilization processes across the military services (e.g., Army, Marine Corps, Navy, and Air Force) are likely similar; however, this research focuses solely on Marines and therefore only defines the process according to Marine Corps policies. The first step in mobilizations supporting combat operations abroad is a request from a global region's Combatant Commander for reserve forces from his Marine Corps force provider peer. An example of this process is when United States Central Command, a joint four-star General command, requests Marine Corps forces via Marine Corps Central Command, a Marine Corps force providing command led by a Marine Corps three-star General (Marine Corps, 2013). The reserve requirement is confirmed as available and ready to deploy by the Marine Corps and then approved by the Secretary of Defense for funding and approval. The requirement is validated as required by 10 USC § 12301, 12302, or 12304. Approved forces are then recalled and moved to the appropriate location. Forces arriving at the gaining unit are joined to their gaining unit's ranks administratively for training and deployment. Completion of the mobilization results in reservists redeploying to the continental United States, returning to their originating units, and returning to civilian life as a reservist. Tthis process requires intense administrative, logistical, and operational coordination and is managed by Active Reserve officers stationed within the offices of the Secretary of Defense, Secretary of the Navy, Headquarters Marine Corps, force provisioning commands, and within the ranks of Marine Forces Reserve (Marine Corps, 2013).

Congress annually funds a small cadre of active duty reservists within each service, statutorily designed to manage reserve processes and personnel; including mobilizations processes (10 USC § 101(d)(5), 2012). In 2019, Congress authorized 128,589 reservists to serve on active duty as integrators between the active and reserve services among the four services. The Marine Corps was authorized 2,261 in its active duty reserve program in Fiscal Year 2019 (115th Congress, 2018). The full-time[2] reserve program in the Marine Corps is called the Active

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[2] Full-time and active duty are interchangeable descriptors. Both assume an individual is on orders for 365 days a year and rate federal military benefits.

Reserve Program by Marine Corps policy (Marine Corps, 2019). The Active Reserve Program is

specifically required by the Marine Corps to accomplish the following:

> *"...organizing, preparing and administering policies and regulations*
> *affecting the USMCR (United States Marine Corps Reserve); (2) training and*
> *instructing the USMCR; (3) recruiting and retention for the USMCR; (4)*
> *administration of USMCR personnel, and (5) developing mobilization plans*
> *and policies for the RC (reserve component); and (6) advising Active*
> *Component (AC) entities regarding mobilization plans and policies relevant*
> *to the Total Force (Marine Corps, 2019, p. 2)."*

The Active Reserve program is a small program. The 2,261-member program of full-

time reservists includes: 1,910 enlisted members, 51 restricted warrant officers, and 300

unrestricted officers. The unrestricted officers are statutorily limited to 32 Colonels, 99

Lieutenant Colonels, 135 Majors, and 34 Captains or Lieutenants. The Active Reserve Program

does not maintain any General Officers or Limited Duty officers in its ranks[3].

The Active Reserve program's small size and strict limits within senior officer ranks

creates a sensitivity to accession[4], retention, and retirement of officers. Challenges in accessing,

retaining, and promoting the right ranks, specializations, and experience-levels may limit the

Active Reserve program's efficiency at managing reserve-centric tasks. For example, certain

aviation fields may maintain four highly trained Majors in a platform[5]. If one of these officers is

promoted to Lieutenant Colonel, another leaves the Active Reserve Program, and the remaining

two choose to retire from service, the Active Reserve Program can quickly transition from fully

staffed and able to support the training of reserve pilots to a complete void in a specialty and

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[3] Specifics on the differences between enlisted and officers or restricted and unrestricted officers, ranks, and what defines Limited Duty Officer programs can be found the "Definitions of Terms" section later in this chapter.

[4] Accession is a term used by the Department of Defense to discuss the hiring or joining of an individual into a component of the military. A non-military personnel who enlists is noted as accessing into service. An active component or reserve member who joins the Active Reserve Program is noted as accessing into the program. The Department of Defense Office of the Under Secretary of Defense has a website specifically designed to frame accession policies for the services: https://prhome.defense.gov/M-RA/Inside-M-RA/MPP/Accession-Policy/

[5] Platform is defined as a specific type of airframe. For example: KC-130 and F/A-18 are different platforms.

rank. This void effectively impedes Marine Forces Reserve's ability to train reservists in a particular aviation platform; likely degrading the viability of those pilots' ability to mobilize in support of global contingencies. This example details why workforce planning in the Active Reserve Program is difficult, necessitating the need to understand patterns in officers' retention to ensure effective staffing of this critical component of the Marine Corps.

Statement of the Problem

There is currently an absence of literature studying the career decisions of Marine Corps Active Reserve officers. A Google Scholar search of the Active Reserve Program, and its sister service equivalents, yielded limited results. The results found were less about the propensities of the full-time reserve population, but instead were linked to pilot retention (Taylor, Moore, & Roll Jr., 2000; Robbert, et al., 2015), a generic overview of reserve structure (Heller, 1994), or as a function of how reservists would fare in cyber operations (Miller, Levin, & Horowitz, 2013). This is a logical gap in knowledge due to the fact that statutory full-time reservist programs are not designed as war-fighting programs. These full-time reservist programs are designed to serve as programmatic and systematic experts on all matters reserve, effectively creating a cadre of professionalized bureaucrats within war-fighting organizations. Research into career decisions of the reserve-specialized officers of the Marine Corps' Active Reserve Program may provide unique insights to the literature of career decisions of professionalized bureaucrats in non-war-fighting organizations, as well as insights beneficial to Army, Navy, and Air Force.

The active component and reservists[6] are oft studied with a robust literature surrounding the career decisions of their officers. The limited populace of three hundred Active Reserve Marine unrestricted officers should be studied in parity with their fellow reserve counterparts. Active Reserve officers have a dramatic impact on the ability of the active forces to properly use

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[6] Reservists include part-time Marines drilling with either active units and reserve units and include those who currently serve in the Individual Ready Reserves. Active Reservists are also reservists; however, for purposes of this study will only be discussed as Active Reservists, Active Reserve officers, or Active Reserves.

the reserve forces during times of national need. Their career decisions potentially impact the entire reserve force. Studies into Active Reserve officers' career decisions should help the Marine Corps understand and mold policies to better manage this limited, yet critical populace. Furthermore, findings may provide insights associated with retention and retirement valuable to other components within the Marine Corps.

Purpose of the Study

This quantitative research examined which economic, organizational, and individual factors were correlated with career decisions of Active Reserve officers over a thirty-year period starting in January 1989 and ending in January 2019. This study has two goals in adding to the literature surrounding military personnel. The first objective is to create an understanding of who left the Active Reserve Program via separation. Separation of these officers occurred through transition between components or via transition out of service. The second goal is to provide insights as to how the same economic, organizational, and individual variables impacted Active Reserve officers' propensities to retire from military service. The economic variable studied was national unemployment. The organizational variable studied was number of deployments an officer completed. Individual variables included gender, self-identification as a Caucasian or minority, and number of dependents. A deeper understanding of how these variables swayed the decisions of Active Reserve officers to separate or retire from service should assist the Marine Corps in designing retention plans for this cadre of specialized, reserve-focused bureaucrats.

Need for the Study

Reservists are essential to the success of the United States military and Active Reserve officers are central to the effective integration of reservists into the active forces. The literature surrounding the Active Reserve Program, and similar programs in other services, is lacking. This study seeks to improve upon the gap of studies into full-time reservists in the military manpower and human resources literature. The study itself provides insights into which variables impact the career decisions of Active Reserve officers as they choose to separate or retire from service.

These results should encourage the Marine Corps, and potentially the Army, Navy, and Air Force, to adapt retention policies to better maintain these officers within its ranks. The Literature Review chapter of this study reviews the literature on public and non-profit turnover as well as military manpower; showing how current literature would benefit from additional insights into this small, yet highly important, cadre of full-time reserve officers.

Research Questions

This research focuses upon the transition of Active Reserve officers from the Active Reserve Program. Transition occurs via two distinct methods: officers can separate[7] or retire[8] from service. Research questions center on these phenomena.

1. How do economic, organizational, or individual variables influence the decisions of Active Reserve Officers' transition from the Active Reserve Program via separation or retirement?

2. Are these factors similar or different to active component officers' career decisions to retire? Are these factors similar or different to reserve officers' decisions to retire?

Hypotheses

Hypotheses supporting these research questions provide a pathway towards answering the research questions noted above. Analysis focused upon the impact of gender, race and ethnicity, national unemployment, family size, and number of deployments. The variables were chosen due to their proven viability in other studies associated with turnover and military manpower studies as well as their association with the three types of influences on voluntary turnover according to Selden & Moynihan's (2000) framework. Hypotheses were defined by association as an individual, organizational, or economic variable. This research considers gender, race and

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[7] Separation from service is the act of leaving service at any point in a career without earning a retirement. Separation can occur out of service or into reserve service.

[8] Retirement from service occurs at the point when an officer elects to leave military service permanently. The act includes immediate receipt of retirement pay for those achieving twenty years of active service. Those achieving more than twenty years of reserve service, but less than twenty years of active service, are considered retired; however, will not receive retirement pay immediately.

ethnicity, and family size individual variables, number of deployments an organizational variable, and national unemployment an economic variable. Specific details on variables in the literature and how they apply to this research is annotated in depth during the literature review found in the Chapter 2 of this study.

Hypotheses based upon Individual Variables

Gender

H_1: Female Active Reserve officers separate from the Active Reserve Program after male Active Reserve officers.

H_2: Female Active Reserve officers retire from the Active Reserve Program before male Active Reserve officers.

H_3: Self-identified minority Active Reserve officers separate from the Active Reserve Program after Caucasian Active Reserve officers.

H_4: Self-identified minority Active Reserve officers retire from the Active Reserve Program before Caucasian Active Reserve officers.

Family Size

H_5: The larger the family size an Active Reserve officer has the later the officer will separate from the Active Reserve Program

H_6: The larger the family size an Active Reserve officer has the longer an Active Reserve officer waits to retire from the Active Reserve Program.

Hypotheses based upon Organizational Variables

Number of Deployments

H_7: The more deployments an Active Reserve officer has completed the longer an officer waits to separate from the Active Reserve Program.

H_8: The more deployments an Active Reserve officer has completed the sooner an officer retires from the Active Reserve Program.

Hypotheses based upon Economic Variables

   National Unemployment

   H_9: Increased national unemployment will delay separation from the Active Reserve Program.

   H_{10}: Increased national unemployment will delay retirement from the Active Reserve Program.

   The research questions and hypotheses provided offer a pathway towards investigating the career decisions of Active Reserve officers. Providing insights into the offered hypotheses guides understanding in the research questions and offers additional awareness in the literature surrounding turnover among military personnel. Furthermore, these discernments fill a much-needed void in turnover literature among the full-time reserve population.

<div align="center">

Methodology

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   This research is conducted using quantitative methods. Two statistical tools are the basis of this research. The first tool, survival analysis, provides a visual analysis of turnover rates across the personnel and sub-categories of personnel studied. The second method, multivariate logistic regressions, determines the similarities and differences on how variables influence the career decisions of active component, reservists, and Active Reserve officers as they choose to separate or retire from service. Greater details on the methodology is included in Chapter 4 of this study. Specific definitions used for the selected variables are defined in the next section.

<div align="center">

Definitions of Terms

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   The military utilizes many concepts and terms requiring definition for the average reader to understand. In addition, the military is an acronym heavy enterprise and it can negatively impact a reader's ability to consume material. When acronyms are used, they are written out in full form during the first use on a new page and thereafter shortened into an acronym.

Terms in this section only speak about to officers unless otherwise specifically stated. This study does not seek to study the enlisted populations within the Marine Corps. Use of acronyms is purposefully limited.

Accession: The act of enlisting or commissioning non-military personnel into the military or transitioning from the reserve component into the active component. Service members shifting from active component to the reserves are considered transitioning vice accessing. This term has its basis in statute and is used throughout Title 10 of United States Code.

Active Component: This includes members who currently serve on active duty, receiving pay and allowances from the Military Personnel, Marine Corps line of funding.

Active Reserve: A specialized program of reservists selected into a career program, serving on active duty, paid by Reserve Personnel, Marine Corps line of funding. Marines within the Active Reserve Program are statutorily designed to provide expertise on reserve related matters to those serving in the active component.

Component: Military components are defined as either active component or reserve component. Active component defines those as noted above and is also discussed as regular component in statute. Active component members are funded by a line of accounting specifically designed for active component members. Reserve Components are those who serve part time or those who serve full time, paid from reserve manpower funds.

Marine Corps Officer Rank Structure: The Marine Corps officer corps includes fifteen distinct ranks in two ranking systems. The first system has five ranks of Warrant Officer ranks. Warrant Officers are system or subject matter experts who are hired and promoted specifically for an expertise. Ranks for Warrant Officers include Warrant Officer, Chief Warrant Officer 2, Chief Warrant Officer 3, Chief Warrant Officer 4, and Chief Warrant Officer 5. Figure 2 shows the insignias for Marine Corps Warrant Officer ranks.
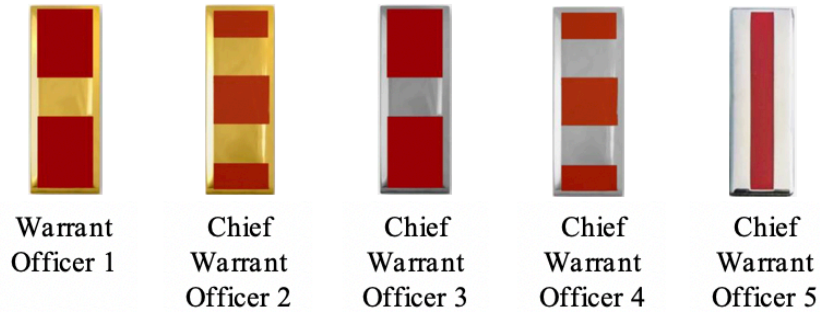
Figure 2: Marine Corps Warrant Officer Ranks

The second system includes the following ranks: Second Lieutenant, First Lieutenant, Captain, Major, Lieutenant Colonel, Colonel, Brigadier General (one-star General), Major General (two-star General), Lieutenant General (three-star General), and General (four-star General). The second system includes mostly unrestricted officers and limited amount of restricted Limited Duty Officers. Limited Duty Officers are restricted officers hired from within the Warrant Officer ranks as a Captain into the second officer system for systematic reasons. Most restricted officer populations occur in fields where seasoned expertise is needed to service to manage, procure, maintain, or plan on the evolution of nationally sensitive equipment. Limited Duty Officers can be promoted through Lieutenant Colonel within their fields. This study focuses upon the unrestricted population holding ranks between Second Lieutenant and General. Unrestricted and Restricted officer definitions are found later in this section. Figure 3 shows the insignias for Company Grade and Field Grade ranks. Figure 4 shows General Officer ranks.
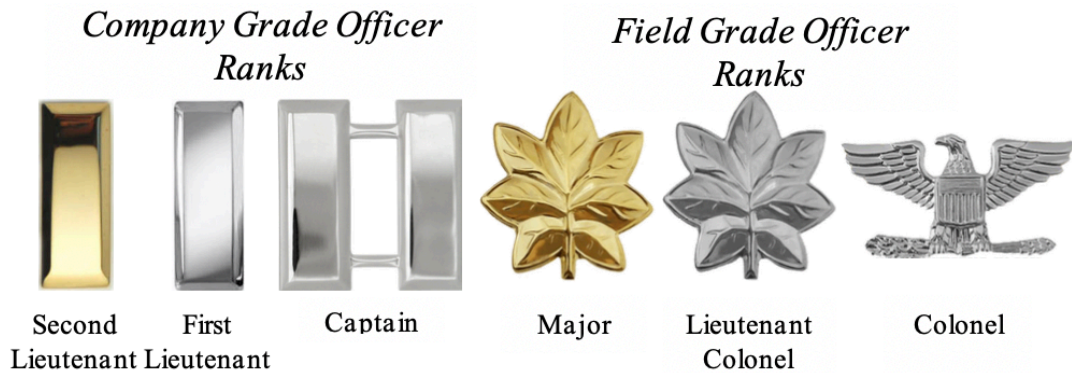
Figure 3: Marine Corps Company Grade and Field Grade Officer Ranks

Figure 4: Marine Corps General Officer Ranks

Mobilization: Reservists are considered mobilized when they are involuntarily or voluntarily called into active duty service by the President, Congress, Secretary of Defense, or Secretary of the Army, Marine Corps, Navy, or Air Force.

Restricted Officers: Restricted officers hail from small, specialized fields. These individuals are statutorily subject-matter experts who provide unique insights to senior military leadership. The Active Reserve Program maintains 51 unrestricted officers, all in warrant officer ranks. The Active Reserve Program does not currently maintain any unrestricted officers in Limited Duty Programs. This study does not focus upon the career decisions of the 51 restricted Warrant and Chief Warrant Officers serving with in the Active Reserves.

Reservists or Reserves: Used to define officers serving in the subcategories of the Ready Reserves with the exception of Active Reserve officers. These categories include Individual Ready Reservists, Select Marine Corps Reservists, Individual Mobilization Augmentees, and Initial Active Duty for Training Reservists.

- *Select Marine Corps Reservists* are reserve Marines serving with reserve units within Marine Forces Reserve. These personnel conduct monthly drills with their reserve units and are required to complete one fourteen-day annual training event. Reserve Marines in this capacity are defined as drilling or serving with reserve units during this study.

- *Individual Mobilization Augmentee* Marines are reservists assigned to active duty units. They drill and conduct their annual training as needed by their active duty

unit. Reserve Marines in this capacity are defined as drilling or serving with

active component units during this research.

- *Individual Ready Reservists* are those who are associated with the reserves but

   are not receiving any pay or entitlements. Furthermore, individuals in this

   category are not required to participate in any military related events. This

   research does not include other components of the reserves beyond those within

   the Ready Reserve. Those other components include retired active duty enlisted

   members and individuals who are in special situations not permitting them to

   drill or are being separated from the reserves.

Resignation. The act of choosing to end service in the active or reserve component.

Resigning an active commission transitions an officer from active service into civilian life or into

a reserve commission if a reserve commission has been requested and approved. Resignation

from a reserve commission transitions an officer into civilian life and out of military service.

Turnover: This study draws on a definition of turnover based on non-military personnel,

which defines turnover as: "the combined movements of people into, out of, and between jobs

(Gottschalck, 2004, p. 70)." The framework provided by Gottschalck is shifted slightly for use in

a military construct to: 1) "movement into" is re-defined as initial accession into military service,

2) "movement out" of service is defined as separation from active service or retirement from

service, and 3) "movement between jobs" is defined as both transition between active and reserve

components. This study places significant focus on the second of three definitions, focusing on

the transition out of military service for Active Reserve officers.

Unrestricted officers: These officers encompass the core officer leadership of the Marine

Corps. Unrestricted can be interpreted as able to serve in any capacity, at the determination of the

institution. Service for unrestricted officers can be both inside and outside specialization. Senior

leaders, including all General Officers making up the senior most four ranks of Brigadier General,

Major General, Lieutenant General, and General within the Marine Corps, and commanders at the Lieutenant Colonel and Colonel ranks in the Marine Corps hail from the unrestricted ranks.

Chapter Conclusion

Reservists are an integral part of how the United States defends its interests at home and abroad. Management of the Marine Corps' Reserves is accomplished via a small group of reserve Marines serving on active duty in a program called the Active Reserves. This cadre is tasked with understanding the statutes, policies, and procedures required to utilize reservists when needed. Current military literature has a void in studying the career decisions of these officers. This study seeks to determine what variables propense officers within the Active Reserve Program to choose to separate or retire from the program.

Chapter 2 of this study provides greater insights into the literature surrounding career transitions in the workforce. Two frameworks are used in the Literature Review. The first framework provides insights as to how personnel transition into the workforce, out of the workforce, or between jobs. The second framework shows how transition can be influenced by individual, organizational, and economic variables. Chapter 3 of this research offers a study into the differences in military service between the active and reserve components, including the categories within the reserves. Chapter 4 provides insights as to the methodology of this research including the data utilized and use of survival analysis and logistic regressions. Chapter 5 of this study provides an analysis of the data. Chapter 6 concludes this dissertation and provides an interpretation of analysis results, generalizations, implications of findings, and recommendations for future studies.

CHAPTER 2: REVIEW OF THE LITERATURE

Turnover is an expensive venture. It is estimated turnover costs United States businesses over one trillion dollars each year. The cost of replacing an employee is estimated at 50% to 200% of an employee's salary (Booz Allen Hamilton, 2010). More than half of employees believe their management could have influenced their turnover decision (Wigert & McFeely, 2019). Turnover is further theorized to levy a heavy cost to organizations in human and social capital. Loss in human capital is a loss in organizational experience, which is hard earned and cannot be replaced quickly. Social capital losses result in individual networks, both in and outside of the organization, requiring years to rebuild with new employees (Park & Shaw, 2013). The United States military has a need to continually fill its junior ranks with youth and vigor and maintain its mid-grade to senior personnel with experience and education on military matters. The military must balance its need for new accessions and experience.

Theoretical Framework

This chapter provides a summary of the two frameworks used in this study; while providing insights as to why variables were selected. The first framework defines turnover as into, out of, or between jobs (Gottschalck, 2004). The second framework defines turnover as swayed by economic, organizational, or individual variables (Selden & Moynihan, 2000). The literature review evaluates the frameworks with public, non-profit, and military personnel.

First Framework: Defining Turnover

Turnover is defined as "a "change in employment status or in employer" (Gottschalck, 2004, p. 2) and includes "the combined movement of people into, out of, and between job (Gottschalck, 2004, p. 70)." This study used Gottschalck's definitions as a baseline to define

transitions among military personnel. A change in employment status is defined as someone entering or leaving the active component, Active Reserve Program or reserves. Moving between jobs as a change in employment status is determined to have occurred when officers transition into a new component. Moving out of the job market or towards a new employer is defined as leaving military service or retiring from military service.

Gottschalck (2004) found turnover from 1996 to 1999 to be 5.5% with 35.5% of that group moving into the labor force, 33.8% moving out of the labor force, and 30.7% transitioning between jobs using data from the Census Bureau's Survey of Income and Program Participation Program[9]. Gottschalck used data from the Categorial analysis of industry groups, as defined by the 1990 Census Industry Classification System, yielded the lowest turnover rate among public administrators (3.2%), manufacturing (4.4%) and those supporting public utilities (4.8%). The highest turnover rates were found among the entertainment and recreation services (12.9%) and industries surrounding agriculture, forestry and fisheries (10.6%). Turnover by occupations shows the lowest turnover among managers (3.9%) and highest turnover among farming, forestry and fishing professionals (11.6%). The concepts of transitioning into the job market, out of the job market, or between jobs is applied to transitions from service in this research.

This research focuses on transitions between jobs and transitions out of the workforce. Gottschalck's framework offers a viable perspective to consider the career choices of Marine officers. Transition between jobs is defined here as moving between the Active Reserve program, reserves, or active component. Transitions out of the job market is defined as leaving military service via separation or retirement. Transition definitions are shown in the following sections.

Transition Between Jobs

This section considers transition between jobs for public employees, federal employees in particular, and military members. Information on private-sector employees provides an overview

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[9] Further details of the Survey of Income and Program Participation can be found at the following website: https://www.census.gov/sipp/

on how the market works in turnover. Perspectives on public and federal government work
normalize the private-sector experience to government work. The section closes considering the
literature surrounding the transition of Marine Corps officers between components.

Public and Federal Employment

There is a natural tendency for fluidity in the job market, whether private, public, or
military. Davis and Haltiwanger (1999) found the labor market on average loses 10% of its jobs
and gains an additional 10% in new jobs every year. The regular chaos of the job market as
businesses open and close creates a situation where transitions are necessary among the
population who desires to or must participate in the workforce. Those who were working among
the 10% of opportunities lost likely seek employment among the new portion of the market or
within the 80% of the market which was stable the previous year.

The high level of turnover is not representative of the public sector. The public sector
does not experience the same level of creation of opportunity and failure of businesses as found in
the private sector. However, the public sector has experienced continuous growth since at least
the 1950s. The federal government had nearly 1.9 million employees in 1948 and has grown to
nearly 2.1 million in 2019 (Jennings, 2019; Zumbrun, 2014). This level of growth is below 1%
annually, but still requires additional employees to fill the newly created opportunities. On
average Federal employees earn more with a high school diploma, some college, a bachelor's
degree, and a master's degree than their non-federal employee peers with the same level of
education (Falk, 2017). The federal service is known to attract a more experienced base into its
ranks; possibly due to the retirement, 401k, and vacation benefits (Boyd, 2017).

Most hires into federal employment are likely transitions between employers. The
federal government hired 100,821 new employees in 2018. Of the total, 28,252 were thirty or
younger and less than 4,000 were recent college graduates (Neal, 2019). At least some portion of
the college graduate hires and hires under the age of thirty were likely entering into the workforce
for the first time; however, a vast majority may have worked elsewhere before entering federal

employment. The remaining 72% were likely hired from other jobs. Racial representation, likely

via hiring into federal service from another employer, increased in the federal government

between 1982 and 1990 (Guajardo, 1996) and reached 35.3% in 2014 (FEDweek, 2020).

Changes in female hiring, likely between jobs, has involved decades of work to shift social

mores. For example, the FBI did not allow women to serve within its ranks until J. Edgar Hoover

passed away in 1972. The percentage and number of women serving within the FBI increased

from 1998 to 2008 (Yu, 2018). As more females choose to join the local law enforcement or the

military applicants to the FBI who are female should increase; leading to increased gender

diversity within its ranks. In 2014, females accounted for 43.3% of the federal workforce and

34% of those in the Senior Executive Service (Office of Personnel Management, 2014).

The ebb and flow of people into federal service by race, gender, and aggregate are

important factors to understand as they provide insights into the actions of civil servants working

within the federal government. Military members also serve the public, but in a different role as

members sworn to protect the nation's defense in lieu of the nation's administration.

Transition between military components

This research defines transition between jobs in the military as transitioning between

components. Studies thus far have focused on the actions of active component and reservists'

officers without focus on Active Reserve officers. Nearly 47% of the officers who separated

between 2000 and 2005 joined the reserves (Hattiangadi, Parcell, Gregory, & MacLeod, 2006).

Senior officers who served from 2001-2011 were found more likely to join the reserves than

officers with less time in service (Schulte & Dolfini-Reed, 2012). Furthermore, once senior

officers join the reserve ranks they are less likely to leave than junior officers (Schulte & Dolfini-

Reed, 2012; Hattiangadi, Parcell, Gregory, & MacLeod, 2006). More than 40% of officers who

transitioned in the decade between 2001 and 2011 had deployed (Schulte & Dolfini-Reed, 2012).

This was likely a function of the high deployment rate of peak fighting in Iraq and Afghanistan.

These studies provide the baseline to variables found to impact the transition of officers in

service. Officers are more likely to transition between components if they have deployed or are senior, which also correlates with a longer history of service. Both of these variables are included in this research as potential influencers to the career decisions of Active Reserve officers.

Type of service was found to impact in the transition of officers out of service. Officers who served in combat arms occupations were found more likely to separate after their initial tour and less likely to separate in subsequent terms when compared to their non-combat arms peers (Glaser, 2010). Officers who served in the active forces as specialists in support roles were more likely to join the reserves than their combat-arms peers (Schulte & Dolfini-Reed, 2012).

Family was found important for officers' separation. Mid-range captains with five to six years in service were less likely to separate than their unmarried peers. Glaser (2010) found officers who had served between three and a half to fifteen years in service with more dependents were 7 to 15% less likely to leave service compared to officers who did not have dependents. Schulte and Dolfini-Reed (2012) found officers with three or more children were more likely to continue serving than officers with less children or no children. State unemployment (Schulte & Dolfini-Reed, 2012) and gender (Schulte & Dolfini-Reed, 2012; Dolfini-Reed & McHugh, 2007) were not found statistically significant variables in the transition of Marines between components.

Transition between jobs is a natural phenomenon for individuals desiring to work. In the private sector the job market fluctuates sufficiently it requires transition to occur for those interested in work to maintain employment. The public sector faces less transition than the private sector, but still experiences continual growth. Attaining federal during transition between jobs is likely more difficult due to the robust benefits package. In the military, transition between components occurs naturally. The greater the longevity an officer has the more likely they are to continue in service in the reserves. A larger family and deployments were found to propense officers to continue in service. This study further adds to the literature by determining the impacts of national unemployment, deployments, gender, dependents, and self-identified status as a minority have upon the transition rates of Active Reserve officers.

20

The second portion of Gottschalck's framework used in this dissertation includes transitions out of the job market. Here this transition is defined as leaving military service completely or retiring from military service. The next section discusses this portion of the framework according to literature on public and military service.

Transition out of the Job Market

Voluntary turnover is not the only choice that people make in terms of leaving employment. After a certain period of time, individuals may choice to voluntarily exit the labor force early, due to personal reasons, or through retirement. Retirement is defined as "working less than quarter time" (Leonesio, 1996, p. 34) This section provides insights into the actions of public employees, federal employees specifically, and military members as they leave the job market. Private sector data gives an insight into the movement of the masses of United States citizens who work outside of government service, particularly as they age and retire. Discussions on federal employment show how federal employees transition out of service via retirement. Information on military personnel provides details on transitions from service with or without retirement benefits.

Public and Federal Employment

Transition out of the job includes individuals who leave the workforce and become unemployed, retired, students, primary care providers for children or other family members, or those who are no longer seeking work (U.S. Bureau of Labor Statistics, n.d.). Transitions out of the labor market for men between sixty and sixty-four due to retirement increased from 20% percent to nearly 50% from 1960 to 1995. Most men chose to retire from the workforce between sixty and sixty five, with a small percentage retiring before sixty and another small portion of the populace retiring in diminishing levels through seventy-one. Women in the United States and European nations during the same period and who were aged 65 or older had a significantly lower labor participation at 5% (Lumsdaine & Mitchell, 1999).

Federal employment retirement statistics paint a picture similar to the literature noted above. Slightly over 3% of the federal workforce, or 62,155 employees, retired in 2017. Males

have retired at nearly the same rate since 2008. Female retirements increased by 15.3%, likely due to an increase in the female population of federal servants in recent decades. Women made up 43.8% of retirees in 2017. African Americans, Hispanic, and other minority groups similarly saw an increase in number of retirees. Caucasian retirements dropped slightly when comparing 2008 to 2017, but only by 2%. Minorities made up 29.6% of retirees in 2017. The average age of retirement was 62 years old with 25 years of service (Office of Strategy and Innovation Data Analysis Group, 2018). Furthermore, research into the actions of federal employees showed they were likely to continue in federal service until eligible for a pension (Cho & Lewis, 2012). Maximum retirement benefits occur at 62 years of service with at least five years of federal service or at sixty with twenty years of federal service (Retirement and Insurance Service, 1998). Understanding retirement among federal employees paints a picture of transition out of military service and is useful in understanding how similar groups may act in military service.

Transition out of military service

Transition out of the job market in this research is defined as either transitioning out of the military or retiring from the military. Transitioning can occur via two paths. Members who transition from service before achieving twenty years of active or reserve service do not receive long-term retirement benefits from their service. Individuals transitioning with twenty years or more of active service receive a fixed benefits pension and deeply discounted medical benefits immediately. Individuals transitioning out of service with twenty years or more of reserve service receive the same defined benefits pension as an active component member at sixty years of age, albeit in a proportionally lesser amount based upon days of active service. Additionally, reservists who served on periods of active duty for three months or more receive their pension earlier than sixty years of age by the same amount as time served on active duty. The earliest a reservist may receive a reserve retirement is at age fifty if they had completed ten years on active duty orders as a reservist. Personal choice to separate from service before retirement or after vestment in a retirement is likely impacted by how much time an officer has in military service.

The literature shows seniority continued to matter. Over half the officers leaving service between 2000 and 2005 left military service (Hattiangadi, Parcell, Gregory, & MacLeod, 2006). Junior members serving in the individual ready reserve were more likely to leave military service than senior officers. Furthermore, officers who are serving in the reserves and mobilize into active service from civilian life are more likely to leave service (Schulte & Dolfini-Reed, 2012).

Other variables had differing impacts upon an officer's desire to continue in service or leave service. Combat arms officers were found more likely to leave service and less likely to join the reserves when compared to their peers in combat support occupations (Schulte & Dolfini-Reed, 2012). Officers who had completed graduate education were less likely to leave the reserves than those who had not achieved additional education (Dolfini-Reed & McHugh, 2007). Non-African American minorities were found more likely to continue in service via service with active and reserve units than their Caucasian peers (Schulte & Dolfini-Reed, 2012). Unemployment at the state level (Dolfini-Reed & McHugh, 2007) and gender (Quester A. , Hattiangadi, Lee, Hiatt, & Shuford, 2007; Lien, Quester, & Shuford, 2008; Asch, Miller, & Weinberger, 2016) were not found statistically significant in transitioning from service.

Vestment in the military retirement at twenty years of service had a heavy impact upon the retention of officers. Achieving vestment immediately increases separations via retirement (Lien, Quester, & Shuford, 2008), specifically increasing separations to 30% (Quester, Kelley, Hiatt, & Shuford, p. 17). The trend for separation deviates little between those who retired in 2000 and 2007. Retirees who left service in 2000 would have separated before the Global War on Terrorism began and those in 2007 would have retired after the United States had been involved in conflict abroad for six continuous years (Quester, Kelley, Hiatt, & Shuford).

The active component of the Marine Corps purposefully seeks to transition a large portion of its junior officer corps to maintain a youthful posture (Marine and Family Programs, 2012; Snow, 2018). The Marine Corps of 2018 was manned by a force with 34% of its unrestricted officer corps serving within the first two ranks: Second Lieutenant and First

Lieutenant (United States Marine Corps, 2018). Officers promoted to First Lieutenant, are

limited to five years of active service if not selected for promotion (10 USC § 14505, 1995).

Maintaining this high a number of personnel in junior ranks requires attrition of officers out of

service, between components, and on rare occasions for junior officers, into military retirement.

Purposeful transition does not necessarily apply to the Active Reserve Program. The

Active Reserve Program does not currently hire, commission, nor have any structure designed for

Second Lieutenants. The Active Reserve Program solely hires active component or reservists.

The Active Reserve Program actively seeks to maintain hired personnel to their statutory limit;

defined as their maximum service due to non-selection to a higher rank or mandatory retirement.

The Active Reserve Program does not actively seek to transition any of its members into service

in the active component or reserves. Natural turnover among those retirement eligible tends to

systematically retain enough new membership into the program to maintain sufficient health[10].

The small population within the Active Reserve program and the large impact upon an

institution increase the importance of understanding turnover among a population. The limited

size of the Active Reserve Program's officer corps can result in separations or retirements causing

an immediate impact in the program's ability to complete its assigned mission. The literature

surrounding turnover within the Active Reserve Program, otherwise known as the Active Guard

Reserve (Army and Air Force) or Full Time Support (Navy) Programs is severely lacking.

Understanding the turnover among these specialists of reserve administration can better posture

the services to create and administer manpower policies surrounding these programs.

There are differences in how the components manage the input and output of officer

manpower. The active component of the Marine Corps' strives to transition sufficient officers

out of service early in their career to make space for newly commissioned officers. The Marine

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[10] Specifics on these details are not found in the literature. The author personally served as the Active
Reserve Program manager from 2015-2017 and gained a deep understanding of the ebb and flow of Active
Reserve officers.

Corps Reserves and Active Reserve Program seek to pull those separating from the active component into their ranks (between jobs according to the framework). The active component, reserves, and Active Reserve Program have sufficient transition out of service upon vestment to allow progress through the ranks for those who join the Active Reserve Program and reserves.

Gottschalck's definition of transition as into the workforce, between jobs, and out of the workforce provides a valuable framework with which to evaluate the career decisions of Active Reserve officers. The literature shown the influence of gender, unemployment, family size, and more influence how people in the private and public workforce make decisions to transition between jobs or out of the workforce. The concepts have further been often applied to explain the transition of military personnel between components and out of service via either separation or retirement. The same concepts are applied in this dissertation to provide conceptual framework in determining the career decisions of officers serving within the Active Reserve Program.

Second Framework: Defining Influences on Transition

The second framework defines the known influencers of turnover in the literature as economic, organizational, and individual factors (Selden & Moynihan, 2000) and further considered. Economic factors are those outside of the sway of individual or institutional parameters, such as unemployment rates. Organizational influencers include variables associated with work, human resource practices, and work environment (Kim S. , 2005). Individual factors include demographic and other information associated with an individual. Research highlighting these factors on turnover has examined these factors with associated government employees at the state, federal, and within international agencies. While levels and type of service may differ between those studied, the underlying tones of public service should be shared among those varying groups considered in the literature. Research is presented on non-profits, private businesses, and international businesses to compare and contrast where needed.

Selden and Moynihan (2000) built their framework via an analysis of the factors leading to turnover among literature. They found turnover was influenced three types of variables:

economic, organizational, and individual. The combination of the three factors results in an environment where any variable considered falls into an all-inclusive group. The variables considered in this study fit well within the confines of this framework. National unemployment is an economic factor. Number of deployments is an organizational factor. Gender, number of dependents, and self-identification as a minority are individual factors. Selden and Moynihan further defined some organizational factors as human resource management factors. This study includes human resource management factors as organizational factors.

The following sections delve into each of these factors and variables associated with them. Many variables are discussed to show how they tie to Selden and Moynihan's framework; however, only the variables discussed above are studied in this research.

Economic Factors Impacting Turnover

Economic factors associated with turnover are those beyond the control of the individual and organization. These factors include local, state, and national unemployment, average income rates, population, external opportunities, policies, and social norms that impact employment opportunities. The impact of economic factors across the literature varies. National unemployment was found both positively correlated with turnover (Selden & Moynihan, 2000) and statistically insignificant in voluntary turnover of government employees (Llorens & Stazyk, 2011). Median state income was not found significant in influencing turnover (Selden & Moynihan, 2000; Llorens & Stazyk, 2011). State population rates were not statistically significant in voluntary separation of state employees (Llorens & Stazyk, 2011).

The literature on economic factors impacting the choice of officers to transition out of service or into the reserves varies. National unemployment was found statistically significant variable for active component officers who have completed their service obligations and are between six and ten years of service (Glaser, 2010). State unemployment was found statistically insignificant when active component officers transition to the reserves (Schulte & Dolfini-Reed, 2012) and in impacting retention of reserve officers before or after a mobilization (Dolfini-Reed

26

& McHugh, 2007). Higher state unemployment rates were found to have a positive correlation to guard and reserve retention (Hansen, MacLeod, & Gregory, 2004).

Economic variables were found to have positive, negative, and statistically insignificant correlations to active and reserve military service. State unemployment rates were found to have limited impact in studies on Marine Corps officers; however, they did impact the retention of guard and reserve officers. National unemployment negatively correlated to officers leaving the service. Economic variables are important for consideration in any study associated with officer career decisions and should consider at the minimum state or national unemployment. Studying the transition of officers from the Active Reserve Program utilizes national unemployment as Active Reserve officers serve on active duty.

Organizational Factors Impacting Turnover

Organizational influences on turnover in the literature include the type of organization, promotion opportunities, training, work difficulty, job satisfaction, pay, performance and more. The literature associated with the impact of organizational factors on turnover is robust. A majority of the reviewed literature surrounds work in government agencies at the state and federal level, with some review of materials associated with international and public employment. Most of the variables found in the literature surrounding organizational variables have little impact upon military officers; including promotion opportunities, training, at-will employment, performance ratings, pay, and position. Another variable considered, but not applicable to most of the literature, is deployment impact. Deployments were considered organizational as they are driven by service in the military, not by individual desire or preference. The literature surrounding these variables and the logic behind their limited value in this study are noted below. Tenure, retirement, and deployment are influential, and thus considered in this study

Promotion Opportunities

Employees who have a promotion potential to may consider career growth as a factor when determining whether to continue working for an organization, transitioning to a new job, or

leave the workforce. Promotions were found to decrease turnover rates among state government, federal employees, and non-profit workers. Promotion opportunity was found to decrease turnover in state government (Selden & Moynihan, 2000). Federal employees experience less turnover than public employees with higher promotion rates (Lewis & Hu, 2005). Non-profits also experienced increased retention with increased promotion opportunity (Kim & Lee, 2007).

The literature did not expressly discuss turnover rates and promotion within the military structure. Military rank among officers statutorily permits extended service. Officers serving as Captains are permitted to serve for a total of thirteen years of commissioned service, Majors up to twenty years of commissioned service, Lieutenant Colonels twenty-eight years of commissioned service, and Colonels up to thirty years of commissioned service (10 U.S. Code § 631-634 , 2018). Vestment in twenty years of active service is a large draw for most Marine Corps Officers who are selected to Major and beyond. Failure for selection to Lieutenant Colonel would theoretically impact retention; however, most officers who are not selected for promotion to Lieutenant Colonel are less than four years away from vestment into the military retirement plan. Furthermore, they are normally not permitted to serve beyond vestment.

Additionally, selection rates are supportive of officers serving through retirement as desired. The Department of Defense offers guidelines to the services as to preferred promotion goals within the Armed Forces of the United States in the Department of Defense Commissioned Officer Promotion Report Policy. Selection to Major should occur for 80% of officers who have continued in service long enough for consideration for promotion from Captain to Major by policy (Under Secretary of Defense (Programs & Resources), 2014). The combination of promotion and retirement policies should result in promotion opportunity having little to no effect upon military officer turnover; further validating the turnover rates as shown by the 2008 Center of Naval Analysis study on officer turnover (Quester, Kelley, Hiatt, & Shuford). The lack of influence promotion has directly upon retention choices strongly influence the exclusion of the variable in this research.

Training

Individuals who are offered, accept, and apply additional skills gained from training should increase their professional abilities. Advanced skills training is economically believed to creates more valuable employees to current employers and other employers in a similar industry. In the military, highly trained individuals may be more likely to leave military service for a lucrative career outside. Training has varying levels of impact, but is generally found not statistically significant in studies, whether organizationally provided or personally attained. A study of state government-managed training programs for state employees revealed these training programs have evolved towards decentralization from state management towards management by department (Lynn, 2000). Moynihan and Landuyt (2008) found the implementation of developmental programs did not decrease turnover rates among state government employees. While the research indicated the use of training programs were decentralized and varied, every state supported additional education with some form of tuition assistance (Lynn, 2000).

Studies showed training was not statistically significant in swaying government employee turnover (Cho & Lewis, 2012; Selden & Moynihan, 2000). A study by Kim showed supervisor supported training improved job satisfaction of federal employees working for the Department of Energy in Nevada. These employees experienced additional satisfaction when these skills were used by the Department of Energy (Kim S. , 2002). Theoretically, employees with higher job satisfaction turnover less often. In similar studies of South Korean citizens, personal development significantly impacted the satisfaction of employees in less than 40% of the years studied and found more impactful among men than women (Jung & Hahm, 2007).

The literature review did not reveal studies on the impacts of training or formal military education on the turnover of military personnel. Formal education for officers is defined as completing a multi-year grade-specific curriculum as a Captain, Major and Lieutenant Colonel. These courses can be completed via full-time residency, regular seminars, or online. Training may be defined as attending a one-week to several month course with the goal of providing

occupational or military insights. The impact of training or formal education upon Marine Corps

Officers is likely carried over as a component of rank. Individuals who have received formal

education and training are considered as more competitive for promotion over their peers.

Training's strong tie to promotion, vice retention, results in its exclusion in this research.

Performance ratings

An employee's desire to be viewed as a quality worker and valuable organizational asset

may impact their desire to continue in service within a government bureaucracy. Employee

performance reviews offer an opportunity for employers to discuss work quality with employees.

Performance ratings can signal to an employee how well regarded they are with an employer.

Employees with below-average evaluations may seek employment elsewhere and employees with

high performance ratings may also believe they are valued at their current employment.

Performance systems and the ratings within them were found to impact turnover. Kim

(2002) found Department of Energy employees working for the federal government in Nevada

found higher job satisfaction with a fair and equitable performance appraisal system.

Organizations with robust performance management practices, including fair evaluations,

rewarding successful employees, and holding non-successful employees accountable were found

to improve loyalty and decrease turnover intentions (Lee, 2011).

Evaluations in the Marine Corps are not designed to act as a counseling tool but to serve

as direct communications to promotion boards upon the future potential of officers. Ninety-five

percent of officers continuing onto a second tour in the Marines are be promoted to Captain;

evaluations play a strong role as to who is among the 5% cut from service. Eighty percent of

officers remaining at the nine-year mark are considered for promotion to Major at ten years of

service as an officer. Evaluations need only be of sufficient quality to surpass 20% of a peer

group to be eligible for twenty years of service and a retirement. Selection to Lieutenant Colonel

and Colonel requires larger cuts in the remaining force (top 65% for selection to Lieutenant

Colonel, and top 50% for selection to Colonel) and allow individuals to continue in service until

twenty-eight and thirty years of commissioned service. Performance ratings likely have little

impact upon retention of officers directly. However, performance ratings directly influence

selection rates which then impact promotion and retention. Most officers promoted to Major

continue in service until retirement regardless of quality of performance ratings. Lieutenant

Colonels and Colonels choose when they desire to leave service regardless of performance

ratings. Evaluation's link to promotions prohibit them as a viable variable in this research.

Pay

Military pay is based upon time in service and rank/pay grade. Most government

employment opportunities include a similar pay scale, with variances possible by specialty and

with the potential for bonuses based upon quality of work. Increases in pay decreased turnover

among federal employees (Cho & Lewis, 2012), state employees (Selden & Moynihan, 2000;

Moynihan & Landuyt, 2008) and non-profits (Kim & Lee, 2007). Benefit packages were not

found to statistically impact desire to leave employment (Moynihan & Landuyt, 2008).

The private sector has more freedom in pay and may determine pay via a combination of

skillset demand, institutional desire to pay, and negotiations between the employee and employer.

Literature shows pay differentials between private and public pay is not significant in state

government turnover (Llorens & Stazyk, 2011). Globally most countries were found to pay

government workers at or above the market rate. Of the fifteen countries studied, the United

States paid its bureaucrats the least compared to the market at a 60% wage efficiency ratio

(Taylor & Taylor, 2011). Government employment job security may negate minimize turnover;

however, job security was not specifically discussed in the literature reviewed.

Salary among United States military members is defined annually by Congress. Pay

raises can occur by percentage, specified numeric increase on a certain population and time in

service, or a combination thereof. The direct linkage of pay to time in service and rank disallows

divorcing of rank, income, and longevity during analysis outside of specific qualitative

questioning. Salary is important to the populace as a representation of institutional value. In the

military construct, pay is directly linked to promotion and longevity and should be considered only via proxy during survival analysis in this dissertation. Table 1 shows a portion of the monthly 2019 military officer pay scale displaying how pay shifts by pay grade (rank) and years of service completed. A full pay chart would show all ranks through 40 years of service.

Table 1: *2019 Military Pay Table Sample. Sourced from: (Department of Defense, 2019)*

Pay Grade	Years of Service					
	<2	2 to less than 3	3 to less than 4	4 to less than 6	6 to less than 8	8 to less than 10
Major General	$10,668.90	$11,018.70	$11,250.60	$11,315.40	$11,604.90	$12,088.20
Brigadier General	$8,865.30	$9,276.90	$9,476.70	$9,619.20	$9,893.40	$10,164.60
Colonel	$6,722.70	$7,385.70	$7,870.50	$7,870.50	$7,900.50	$8,239.20
Lieutenant Colonel	$5,604.30	$6,313.50	$6,750.00	$6,832.50	$7,105.50	$7,268.40
Major	$4,835.40	$5,597.40	$5,971.20	$6,054.00	$6,400.80	$6,772.80
Captain	$4,251.60	$4,819.20	$5,201.40	$5,671.50	$6,241.50	$6,434.40
First Lieutenant	$3,673.50	$4,183.80	$4,818.30	4,981.20	$5,083.80	$5,083.80
Second Lieutenant	$3,188.40	$3,318.90	$4,011.90	$4,011.90	$4,011.90	$4,011.90

Tenure

An employee's longevity within an organization either speaks to their desire to continue working for that enterprise, limited options elsewhere, or unwillingness to seek other opportunities. Multiple studies have shown increased tenure decreases the desire to leave an organization (Moynihan & Landuyt, 2008); including employees serving among state and federal governments (Cho & Lewis, 2012). Satisfaction was not found linked to tenure in government service (Cho & Sai, 2012; Bae, Sabharwal, Smith, & Berman, 2017), likely meaning some other factors are minimizing turnover, likely the benefits of employment or retirement plans.

Tenure among military personnel is directly related to rank achievement, age, and quality of performance ratings. Promotion to senior ranks permits continuation in military service.

Promotion only occurs with sufficient quality of work and selection upon promotion boards. Policies surrounding Marine Corps officer promotions strive for six years between ranks. Systematically these variables all link age to tenure.

Officers who choose to leave service maintain their rank and tenure upon joining the reserves. An officer leaving service without affiliating to the reserves drops from service rolls and ceases to gain time in rank and tenure of service. Nearly 47% of the Marine Corps officers who separated from the active component between 2000 and 2005 affiliated with the reserves (Hattiangadi, Parcell, Gregory, & MacLeod, 2006). Affiliating directly after transitioning from the active component permits an officer to maintain tenure. Separating from service without a reserve commission pauses an officer's tenure in service. Tenure can continue once an officer requests a reserve commission and rejoins the service's ranks. Tenure is directly linked to salary, promotions, and evaluations and is not be included in this research.

Position

Literature revealed varying insights into the influence position holds over turnover rate in federal, state, or military service. Position in this research is defined as either a particular opportunity within a paygrade or the paygrade itself. Positional differences found varying responses to turnover in state government. Higher position in state government was found to decrease turnover (Moynihan & Landuyt, 2008). Service as a supervisor showed no impact to turnover (Bae, Sabharwal, Smith, & Berman, 2017). Individuals receiving a meritorious promotion were less likely to seek alternate employment (Moynihan & Landuyt, 2008).

Higher position in federal service not found statically significant in turnover among federal employees when there were paygrade disparities during hiring (Lewis & Hu, 2005) or during service (Kim S. , 2002). Supervisors were found more likely to discuss intentions to leave federal service than non-supervisors (Cho & Perry, 2012). Team leaders in the federal government showed more satisfaction in their work than non-team leaders (Cho & Sai, 2012). Air Force Security personnel found appropriate assignment of position positively correlated with

job satisfaction (Reiner & Zhao, 1999). International federal service found position to not be statistically significant in the turnover of bureaucrats in Pakistan (Quratulain & Khan, 2015; Quratulain, Khan, & Sabharwal, 2017) or South Korea (Campbell & Im, 2016).

Field grade officers in the individual ready reserves are 88% more likely to join the reserve or active units than junior officers (Schulte & Dolfini-Reed, 2012). Officers with longevity attain rank and are likely to continue in service. Position in the military context is strictly be defined as a particular rank within the military hierarchy and has varying impact depending upon the level of rank and component of service within the military. Rank was found to negatively impact retention of Lieutenants who served as part-time reservists in active duty units. Majors or Lieutenant Colonels serving as drilling reservists in active duty or reserve units were less likely to leave reserve service. Majors or Lieutenant Colonels not currently serving with active duty or reserve units were 88% more likely to join active duty or reserve units than Lieutenants or Captains (Schulte & Dolfini-Reed, 2012). Majors and Lieutenant Colonels not currently serving in a unit are likely taking a break reserve service; whereas Lieutenants and Captains are likely not serving in a unit while in the reserves while fulfilling the last of their military obligation in the Individual Ready Reserves[11]. Position in this study is directly linked to tenure, salary, promotions, and evaluations and is not be included in this research.

Retirement Policies

Retirements are the carrot that may keep employees past a point where they may otherwise have moved on to different employment. Changes in retirement systems can create changes in retention rates. In 1997, the Clinton Administration offered early retirement to civil servants in the Federal Aviation Administration, causing the rates of intention to leave service to increase to 12.6%. Shortly after the policy ended intention to leave service in the Federal Aviation Administration dropped to 5% (Dollar & Broach, 2006). Cho and Lewis believe federal

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[11] The Individual Ready Reserves is a category of reservists who are not serving within active or reserve units, but are still affiliated with the Marine Corps enterprise.

employees plan on leaving service at higher rates than occurs (2012), likely in part due to benefits, quality of life, and retirement benefits. Cohen, Blake, and Goodman (2016) found desired turnover rates are positively correlated with actual turnover.

Federal policies have remained stable with rare exceptions. Retirements have similarly maintained a relatively stable trajectory with an average retirement of 100,000 federal employees annually from 2010-2016. The low number of retirements in 2010 was likely due to the economy healing after the Great Recession. Individuals retiring generally note retirement is due to longevity, federal buyouts, and achievement of financial retirement goals (Ogrysko, 2018).

Retirement eligibility was found to negatively impact the retention of officers who were retirement eligible from December 2006 to December 2007 (Lien, Quester, & Shuford, 2008). This was further validated in Marine and Family Programs 2012 study of retention of Marines. The statistics show many officers choose to stay in service until vestment at which many leave military service. The statistics do not show how many are forced out due to service limitations, vice desire to leave service. These numbers would include Majors without prior enlisted service who are permitted by statute to serve to retirement, but not beyond without a service waiver. Retirement policies are studied via the action of retirement. This study directly uses the act of separation or retirement in its evaluation of Active Reserve officer career decisions.

Deployments

The impact of deployments upon retention has varied among the literature studied; including its impact upon active and reserve officers. A pre-Global War on Terrorism study using data from December 1987 through September 1999 by Fricker (2002) showed junior Marine Corps officers more like to continue in service if they participated in non-hostile deployments, and less likely to continue in service with hostile deployments. The effects were either mitigated or reversed for mid-grade career officers mobilized supporting hostile deployments. Deployments have been found to positively impact officer retention in numerous year groups studied: December 2004 to December 2005 (Quester A. O., Hattiangadi, Lee, &

35

Shuford, 2006), December 2006 to December 2007 (Lien, Quester, & Shuford, 2008).

Deployments for non-crisis events and into combat operations resulted in an increased retention (Lien, Quester, & Shuford, 2008). Lien, Quester, and Shuford (2008) found active duty officers vested in the military retirement system who served between December 2006 to December 2007 are less likely to retire if deployed to non-crisis operations, Iraq, or Afghanistan.

Deployments among reserve officers occurred at a greater rate than normal since the terrorist attacks of 2001 on the United States. Schulte and Dolfini-Reed (2012) showed 40% of officers separating from the active component into the reserves from 2001 through 2011 deployed, with a heavier majority of the deployments occurring towards the 2001 vice 2011. Total months activated was not found statistically significant when analyzing the retention of reserve officers mobilized into active service between January 2002 and September 2006, with the exception of officers who were mobilized for more than twenty-four months. Officers with extended mobilizations greater than twenty-four months are 47% more likely to leave service in the Marine Forces Reserve or Individual Mobilization Augmentee units. Officers activated from the individual ready reserve were found to be 42% less likely to join active or reserve units as reservists (Schulte & Dolfini-Reed, 2012) Lieutenants and Captains mobilizing are 42% more likely to leave service after a mobilization (Dolfini-Reed & McHugh, 2007). The findings of increased mobilization hindering retention were proven using pre- and post-9/11 mobilization data (Dolfini-Reed, Parcell, & Horne, 2005).

Hansen, MacLeod, and Gregory found deployments and mobilizations improved the retention of reservists both directly before and after the 9/11 terrorist attacks (2004, p. 2). Marine Corps officers have the highest loss rate among all services for officers separating after deployment abroad, mobilization within the United States, and non-activated reserve officers serving from FY00 through July 2004. The Marine Corps' loss rate is near double that of other services (Dolfini-Reed, Parcell, & Horne, 2005). Senior ranks, gender, race, ethnicity, lack of

dependents, and home state unemployment were found not statistically significant in turnover after deployment (Dolfini-Reed & McHugh, 2007).

The literature surrounding organizational influencers on turnover in state government, federal government, and military service, and international government is robust. Many of the variables considered were not likely to impact military turnover. Variables not included were promotion opportunities, training, at-will employment, performance ratings, pay, and position. Literature surrounding tenure and retirement policies are important to this study and is further informed via this study. Number of deployments is utilized in this study as an organizational variable. Its use as a variable over a multitude of studies has shown how organizationally mandated service abroad has influence over the turnover of military personnel.

Individual Factors Impacting Turnover

Economic and organizational factors have been shown to have potential influence in the turnover of employees working for the state government, federal government, international governments, and the military. The final factor of the trifecta considered includes individual factors. These factors include variables personal to those in employment; including education, gender, race and ethnicity, age, and marriage and children. Military specific factors include military occupational specialty and choice to serve in the reserves.

Education

The impact of education upon turnover was found to vary across the literature. Increased education positively impacted turnover among Texas government employees (Pitts, 2005; Moynihan & Landuyt, 2008). A study by Bae, Sabharwal, Smith, and Berman (2017) found no statistical significance for education and turnover among state government employees. Increased education among non-profit employees was found to increase turnover intentions (Kim & Lee, 2007). Federal employees are least likely to leave federal service with a bachelor's degree or some college, more likely to leave with a high school diploma, and most likely to transition from federal service with a doctorate. A master's degree was found statistically insignificant in

37

turnover rates of federal employees (Cho & Lewis, 2012). Education was not found to have any influence upon Pakistani government employee job satisfaction (Quratulain, Khan, & Sabharwal, 2017) or turnover intentions (Quratulain & Khan, 2015).

The impact of education on officers was found to be the opposite of those experienced by fellow graduate-level educated peers working for government. Officers with a graduate degree were 34% more likely to join active or reserve units as reservists (Schulte & Dolfini-Reed, 2012). Once these officers join the reserves, they are 20% less likely than their peers without graduate degrees to leave the reserves (Dolfini-Reed & McHugh, 2007). Studies focused on retention, vice transition, found no correlation with education for officers serving within reserve or active duty units (Schulte & Dolfini-Reed, 2012). Members with graduate degrees are more likely to continue in service by seven percentage points when mobilized (Dolfini-Reed & McHugh, 2007).

Officers progressing through the professional military educational requirements for Major and Lieutenant Colonel are offered the opportunity to attain graduate level degrees during this coursework. Requirements to attain graduate degrees through these ten month courses vary by service. For example, officers attaining a master degree from the Army's Command and Staff curriculum results in students shifting some of their eight electives to Research Methods, Thesis Seminar, and a Thesis course. During the thesis course, officers complete a 50-125 page thesis (United States Army, n.d.). The vigor required of a 10-month course and thesis may not be on par with eighteen to twenty four months required for a normal master's degree from a non-Command and Staff or War College curriculum. The number of officers who attend these schools and receive a master's degree may skew research into the impact of educational upon retention.

Education increases an individual's marketability in private and government employment. This facet is reflective in the increased troubles in retention among state and federal government agencies. However, for military members transitioning out of active service, education was found to increase their desire to serve in the reserves. Furthermore, once in the reserves, educated officers were more likely to continue in service than non-educated peers.

Gender

An individual's gender impacts their perspective via social and organizational norms. Gender's impact to turnover varied across types of government and service. Gender was not statistically significant in turnover among state employees (Moynihan & Landuyt, 2008; Bae, Sabharwal, Smith, & Berman, 2017) and had varying impact among federal employees depending upon the study's scope. A macro-level study of federal service showed females were less like to desire to leave service (Cho & Perry, 2012) and found higher levels of satisfaction in federal service (Cho & Sai, 2012). Females serving in the United States Department of Energy were found less satisfied with work (Kim S. , 2002) and gender was not found a significant variable impacting satisfaction with work among Air Force security personnel (Reiner & Zhao, 1999).

Internationally, gender's impact continued to vary by study. Women are more likely to turnover than their male counterparts in government service (Campbell & Im, 2016). Gender was not found to impact turnover intention (Quratulain & Khan, 2015), job satisfaction, or compassion towards government work (Quratulain, Khan, & Sabharwal, 2017) among civil servants working for the Pakistani government. Turnover rates were found higher for women than men among a government run Mexican pharmaceutical distributer (Clercq & Belausteguigoitia, 2017). Cultural and organizational norms likely played a large difference in turnover rates between Koreans, Pakistani, and Mexican bureaucrats.

Gender has been regularly found as an insignificant variable in numerous studies of military retention or career decisions. Those studies included military retention of officers (Quester A. O., Hattiangadi, Lee, & Shuford, 2006; Lien, Quester, & Shuford, 2008), the decision for reserve officers to join reserve or active units (Schulte & Dolfini-Reed, 2012), retention of personnel who served in the reserves (Dolfini-Reed & McHugh, 2007), retention of officers who did not mobilize while serving in the reserves (Schulte & Dolfini-Reed, 2012), retention of officers who were promoted to either Major or Colonel (Asch, Miller, & Weinberger, 2016), and in the retention of officers with less than twelve year of service (Lien, Quester, & Shuford, 2008).

The sole study found where gender was significant showed female officer were promoted at a slightly higher rate than males from 1977-1989 (Baldwin & Rothwell, 1993). Military studies into gender's impact become more important as the percentage of women as a total of the military population increases or as services desire additional women to continue in service.

Gender is a standard variable to consider when analyzing via statistical analysis. It provides insights into the different experience between the sexes which inevitably creates a different reaction to stimuli. Gender is included in the variables used to analyze turnover amongst Active Reserve officers.

Race and Ethnicity

The social construct of race plays a significant role in many aspects of life in the United States. Identification as a minority has been shown to negatively impact individual empowerment among government workers (Pitts, 2005). African Americans were more likely to express a desire to leave employment in state government than Caucasian employees. Multiracial employees were less likely to desire to leave over Caucasians. Ethnicities were not found to have a statistical impact in state employee turnover intentions. State workforce practices that focus on diversity can reduce intentions to leave by 1.5 percentage points (Moynihan & Landuyt, 2008).

In 1991, the federal workforce from entry level through director level positions was made up of over 50% Caucasians. Federal employees serving as Directors and Deputy Directors were 88% Caucasian. The senior, non-appointed, positions above directors were filled by 92% non-minority employees (Page, 1994). Federal representation of minorities has likely increased since 1991; however, the low turnover rate among federal employees, likely slows the transition.

Self-identification as a minority or Caucasian may play an integral role in workplace experiences. Minorities in the federal service are more likely to express a desire to leave federal service and less satisfied with federal work than Caucasians (Cho & Perry, 2012). Asian, African American, and Latino federal employees, regardless of gender, are less likely to leave federal

service than Caucasian males (Cho & Lewis, 2012). Ethnicity was not statistically significant in the job satisfaction rates of Air Force Security Personnel (Reiner & Zhao, 1999).

The impact of race upon the retention of military officers varies significantly depending upon study parameters and group considered. Quester, Hattiangadi, Lee, and Shuford (2006) found non-retirement eligible, African American officers more likely to continue in service than their Caucasian peers. Having a non-Caucasian ethnicity positively impacted retention from December 2006 to December 2007 (Lien, Quester, & Shuford, 2008). Non-Caucasians serving between 1980 and 1990 were 12% less likely to separate between forty-two and sixty months of service than their Caucasian peers. In other cases self-reporting as an African American was not found statistically significant in studies surrounding retention (Lien, Quester, & Shuford, 2008; Quester A. , Hattiangadi, Lee, Hiatt, & Shuford, 2007). Similarly, race and ethnicity were not found statistically significant from sixty months of service through fifteen years of service or when using the entirety of the data regardless of time in service (Glaser, 2010). The lack of statistical significance in the later years is likely due to nearing a career status in time past six years of service and the importance of vestment as officers cross over the ten-year mark.

Research into race and ethnicity associated with the reserves provided several intriguing insights. Non-African American minorities who are part-time reservists not joined to a unit are more likely to join as reserve units or active duty units. Other races and ethnicity did not have any impact upon transitioning to an active duty or reserve unit (Schulte & Dolfini-Reed, 2012). Race or Ethnicity, with the exception of non-African American minorities, was not found statistically significant in retention of officers serving in the Reserves during the initial years of fighting abroad in Afghanistan and Iraq (Dolfini-Reed & McHugh, 2007). Furthermore, race and ethnicity were not found statically significant in retaining reserve officers serving with active or reserve units who did not mobilize, with the exception of the non-African American officers serving in Marine Forces Reserve. These officers are more likely to continue in service than their African American or Caucasian peers (Schulte & Dolfini-Reed, 2012).

Race and ethnicity are often considered when analyzing social effects of variables. Similar to the logic surrounding gender, race and ethnicity yield different social experiences. Race and ethnicity are evaluated during this research as a conglomeration defined as self-identifying as a minority or Caucasian. Minority types are joined into one subgroup due to the small numbers of some of the subgroups.

Age

The experience age brings and the vigor of youth both create different drives upon those who are experiencing those portions of life. Youth may be more likely to seek new challenges and opportunities and older individuals with families may err upon continuing in undesired employment to meet social and family obligations. Similarly, elder populaces may continue in employment for comfort reasons that would not be considered by their younger counterparts.

These assumptions were validated across numerous studies. Increased age negatively impacts the desire to leave non-profit (Kim & Lee, 2007) and state government employment (Moynihan & Landuyt, 2008). Llorens and Stazyk (2011) further found as state employees age their desire to seek alternatives dwindles. In contrast, Bae and colleagues (2017) found the age of state employees did not impact job enjoyment or desires of continuation. Federal service findings in literature mirror those found by Moynihan and Landuyt and Llorens and Stazyk: older employees continue to desire to stay in federal service; until they near retirement, when retirement becomes a viable option (Cho & Lewis, 2012). The strong fact of continuance does not carry over in expressions of dissatisfaction. Older employees are more likely to express a desire to leave federal service than their young counterparts (Cho & Perry, 2012); even if they do not carry forth on the action. Age was positively correlated with the job satisfaction among Air Force security personnel (Reiner & Zhao, 1999). Research associated with the job satisfaction of federal Department of Energy personnel working in Nevada revealed no statistical significance with the variable age (Kim S. , 2002).

Age was found to increase turnover among Korean government workers (Campbell & Im, 2016), but was not found statistically significant in determining their commitment to government work (Im, Campbell, & Jeong, 2016). Age was not found as statistically significant when determining turnover intentions (Quratulain & Khan, 2015), job satisfaction, or compassion towards work (Quratulain, Khan, & Sabharwal, 2017) of public servants in Pakistan. Among government workers in a federal Mexican pharmaceutical distributer age is positively correlated with turnover intentions (Clercq & Belausteguigoitia, 2017).

Age concerns are rarely considered among military literature. Age in service is associated with rank and influence and is not be considered during this research. Dates of commissioning are similarly managed to limit how the age of entry into service with an officer's commission. The policy driven entry of mostly twenty-year-old citizens into service results in age being equated with experience, rank and influence, and increased pay. Age invariably links to turnover as military officers eventually age out. By statute Majors must retire after twenty years of service, Lieutenant Colonels twenty-eight, and Colonels thirty (10 USC § 632-634, 2018). Personnel with ages outside of the norm are outliers.

Marriage and Children

The introduction of family into a lifestyle based upon moving at an organization's institutional whim is difficult at best. The literature studied did not focus on the impacts of family on turnover among the civilian government employees. The literature of military personnel was rife with insights into the impact of family on turnover rates. This is likely due to societal, congressional, and institutional concern with the impact of service upon family members. Pollard, Karney, and Loughran (2008) found that male military members were more likely to get married and less likely to get divorced than their peers, female members were more likely to get divorced than non-military females, and divorce rates for former or retired military members are higher than non-military members.

Glaser (2010) found marriage to not be a significant variable in separation from service with the exception of those who were married during their fifth to sixth year of service being 17% less likely to separate and those who married beyond their fifteenth year of service were 23% less likely to separate than their unmarried peers. His data considered officers commissioned between 1980 through 1990 using data through 2005.

Lien, Quester, and Shuford (2008) found dependents to not have statistical impact in officers leaving active service. Quester, Hattiangadi, Lee, and Shuford (2006) found officers serving between December 2004 to December 2005 without dependents more likely to leave service when compared to members with dependents. Glaser (2010) found having dependents positively impacted retention by 7 to 15% for officers who are between forty-two months and fifteen years of service. Across all periods of service, each dependent increases the propensity to continue in service by 8.2%. His research considered those commissioned between 1980 through 1990 using data through 2005.

The impact of family on reservists' career decisions vary. Officers with three or more children are more likely to join the reserves than their peers without children. Furthermore, officers with more than three children are more likely to continue in reserve service with an active duty unit (Schulte & Dolfini-Reed, 2012). Dolfini-Reed and McHugh (2007) found retention increased from 23% to 48% when a reserve member had dependents. Status as single, married, or divorced were not found as statistically significant for reservists joining or being retained in reserve service among active or reserve units (Schulte & Dolfini-Reed, 2012). Family size was not found statistically significant in impacting the retention of officers serving in the reserves during the initial phases of combat in Iraq and Afghanistan (Dolfini-Reed & McHugh, 2007). This insight is intriguing as these are the periods which would have found the greatest draw upon reserve service since the opening salvo of the terrorist attacks of 9/11.

Size of a military family is an important consideration when evaluating turnover of military members. Families could choose to stay in service due to the benefits received from

military service, including but not limited to free medical. Similarly, families may choose to leave service due to the chaotic shift in locations and general lack of familial support. To better understand the impact of family size upon the career decisions of Active Reserve officers, the size of families is included in this evaluation.

Military Occupational Specialty

Officers entering into the Marine Corps are either pre-selected for aviation duty or compete for service among the various specialties offered within the Marine Corps. These specialties impact the experiences an officer faces during his or her career. The work hours required, physical demand, intensity and number of deployments, and more are impacted by a decision made with less than eight months as an officer. Furthermore, these decisions reverberate throughout a career of up to forty-four years of service. The impact of specialty selection generally follows an officer from an active to reserve service. In rare cases, active component and reserve officers can apply for and be considered to transition into a new specialty.

Glaser (2010) found combat arms officers within the infantry, artillery, and tank specialties were more likely to get out during their first four years by 37% than their support specialty peers. Once the first four years initial obligation is complete, there is a shift in who transitions with combat arms officers becoming between 6 to 20% less likely to leave service, dependent upon total length of service when compared to non-combat arms, support specialty officers. Glaser's (2010) analysis included officers commissioned between 1980 through 1990 using data through 2005. Those who continue in service as combat arms officers likely consider the military a career and normally continue through retirement. Research into the accession or turnover of reserve officers by specialty was limited. Schulte and Dolfini-Reed (2012) found officers in logistics, supply, or aviation support were more likely to join the reserves than their non-support peers. Military occupation is not considered in this evaluation directly. However, only officers serving in an occupation which is held in the Active Reserve Program are considered for comparison to permit parity of experiences.

Choice to Serve as a Reservist in Active or Reserve Units

Officers transitioning from the active component or seeking a commission have several choices. Officers leaving active service have two distinct options. If offices have completed their mandatory eight years of active service, they can transition out of service or into the reserves. If officers have yet to complete their eight years of obligatory service, they transition into the reserves. Obligatory service includes three to five years of active service depending upon program of commissioning. Furthermore, officers who are serving among the Individual Ready Reserves can choose to join active or reserve units as desired. Hattiangadi, Parcell, Gregory, and MacLeod (2006) found 77% of officers in the Individual Ready Reserves chose to join either active or reserve units. Furthermore, the more senior an officer the earlier they were likely to join an active or reserve unit after separating from active service and were more likely to stay in service to these units longer. Hansen, MacLeod, and Gregory (2004) found reserve retention rates to be between 75.4% and 82.6% during pre- and post-9/11 data.

The literature surrounding individual factors influencing personnel turnover among government and military personnel is robust. Education, gender, race and ethnicity, age, marriage and children, deployments, occupational specialty, and choice to serve all found varying results; however, proved viability in the study of military officers. Evaluating the literature via Selden and Moynihan's (2000) framework where factors influencing turnover are economic, organizational, and individual provided a significant number of insights into transitions of federal employees, state public servants, and military members. Each of these factors were shown to impact turnover in some capacity across the literature. This research uses national unemployment as an economic variable, number of deployments to represent organizational variables, and gender, self-identification as a minority, and number of dependents as individual variables.

Chapter Conclusion

The literature surrounding the two recommended frameworks has proven the value in viewing turnover as into, out of, and between opportunities and further defined as influenced by

economic, organizational, and individual variables. The context of this study seeks to define

which how economic, organizational, and individual variables influence retirement or separation

of Active Reserve officers and adds insights into military turnover literature. Many variables

were reviewed in this literature review with race and ethnicity, national unemployment, family

size, and number of dependents accepted as methods of reviewing turnover during this research.

Gender and self-identification as a minority can be visualized using survival analysis. National

unemployment, number of deployments, gender, self-identification as a minority, and number of

dependents are all viable variables to study using logistic regression. The Chapter 4 provides

insights into how this research uses survival analysis and logistic regressions to analyze the career

actions of Active Reserve officers. The next chapter, Chapter 2: Marine Corps Componency,

provides details on how componency impacts career decisions and provides the foundation with

which the remaining chapters can be viewed.

CHAPTER 3: MARINE CORPS COMPONENCY

The Marine Corps maintains two distinct components with separate rules, regulations, and purposes for the components. The first component, the active component, is designed to be the nexus of the Marine Corps offering to support national defense at a moment's notice. The second component, the reserve component, is broken up into multiple categories by statute (10 USC § 12301, 2004). The Marine Corps maintains several of the categories permitted by law. This chapter compares and contrasts the active component and the components of the reserves. Reservists are members of a military organization who train in military skillsets with the understanding they may be called upon to leave their lives for military service in time of national need. Marine reservists wear the same uniform, hold the same ranks, and are held to the same standards as their active component peers; however, the experiences of reservists and active component members differ significantly in recruitment, retention, benefits, and transition.

This chapter sets the stage for comparing the career decisions of active component, reservists, and Active Reserve officers during the Data Analysis and Results and Discussion chapters of this dissertation. This chapter defines the differences in service among these groups from commissioning to retirement, including impacts of transitions. It further defines how federal benefits are received in each of the groups as these can play a very real role in decisions to separate; especially amongst those closer to a military pension. The concepts learned in this chapter add important depth to the analysis and findings in the close of this dissertation.

Active Component Service

Officers who commission into the active component should have an understanding they are entering into an organization where they train to prepare to deploy on a moment's notice to

support the desires of elected and appointed officials in the United States government. Officers

commissioning into the Marine Corps active forces are not given insights as to their occupation or

duty station, with exceptions granted for lawyers and pilots. Upon commissioning, officers attend

a six month basic officer training course, titled The Basic School, which educates officers on the

entry level skills an officer, regardless of specialty, is expected to master. Officers also gain

insights into the different specialties within the Marine Corps and apply for acceptance into these

occupations. Leadership within The Basic School's hierarchy eventually assign specializations to

officers. Officers then receive official orders to their specialization school, complete their school,

and finally receive orders to their first assignment within the Fleet Marine Forces. Dependent

upon their source of commissioning, officers are be obligated to serve in the active component for

three to five years, with additional obligation in the individual ready reserves[12].

Officers eventually arrive at their first duty station and begin their military career serving

as a specialized officer on active duty in the active component. Officers ultimately serve

sufficient time to be considered as a career officer via career designation (Kirk, 2019). Officers

who are career designated are officially permitted to continue in service through the statutory

maximums permitted by law. Colonels are permitted to serve through thirty years of

commissioned service (10 USC § 634, 2018). Lieutenant Colonels are permitted to serve through

twenty-eight years of commissioned service (10 USC § 633, 2018). Majors and Captains are

permitted to serve seven months beyond their second non-selection for promotion by law (10

USC § 632, 2018). Majors are normally permitted to continue in service through twenty years of

commissioned service. Captains are usually separated from service near or around their thirteenth

year of service, unless they have prior enlisted service. In such cases, they are normally

permitted to complete twenty years of service and vest in the military retirement.

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[12] Service in the Individual Ready Reserve requires no action by officers. Instead it is a service-wide pool of personnel who are still associated with the service and may be called upon when needed by the President or Congress within the limitations set by statute

Officers continue in service and compete for promotion can expect to serve across the globe with a new assignment every two to three years. Active component officers compete for promotion every five to seven years against their active component peers. During this same period of service, officers are beholden to the constraints mandated by the Uniform Code of Military Justice (10 USC § 801 – 946, 2016). Furthermore, officers in active duty may deploy at the will of the Marine Corps; whether in support of peaceful or combat operations abroad.

Those who serve within the active component receive a significant benefits package. The package includes free medical, dental, and thirty days of vacation a year. Officers reaching twenty years of active service have an opportunity to retire from service. Retirement brings with it the benefit of 50% of base salary and government subsidized medical program. Each full year of service beyond twenty years of active service results in an additional 2.5% added to an individual's retirement salary. For example, a Lieutenant Colonel retiring in 2020 with twenty-four years of service would receive a retirement stipend worth 60% of his base pay and a Colonel retiring in 2020 with thirty years of service would receive a retirement stipend worth 75% of his base pay. Receipt of a military retirement is immediate for individuals retiring with twenty years of active service (10 USC § 8323, 2018; 10 USC § 1412, 2011)

Officers may choose to separate from the active component once their active service obligation has been met. Officers who separate with less than eight years of commissioned service automatically transition into reserve service. For those who served in the active component for more than eight years they are permitted the choice of separating into the reserves or out of service. Those who separate out of service cease to have an association with the Marine Corps. Individuals who desire to transition into the reserves can seek and receive a reserve commission. Individuals who leave the active forces and seek to return to the active component

are seen as having "broken time" and are institutionally believed to have a more difficult time achieving promotion to senior ranks than their peers who do not have reserve service[13].

Reserve Component Service

Officers commissioning into the reserve have different expectations upon them when compared to their active component counterparts. Individuals who accept a reserve commission train to a specialization, but expect to serve only when the nation cannot meet war requirements with its active ranks. Officers who commission into the Reserves have the advantage of understanding where they will serve upon completion of their basic and specialization training. These officers compete for specialization at The Basic School, but do so within different constraints. Systematically they are only permitted to serve within occupations available within one hundred and fifty miles of their home of record. Reserve officers are permitted to waive this mandate if they desire to compete for a specialization outside of these confines. Doing so results in the reserve officer incurring cost in time and money to serve in the Marine Corps Reserves.

Upon return to the reserves from initial training, reserve officers can expect a career that is similar in many ways to their active component peers, albeit with slight variance. Reserve officers, like active component officers, serve in different capacities every few years. The difference is reserve officer opportunities are not centrally managed. Reserve officers must seek out their own opportunities. Those who do not are dropped from their reserve unit involuntarily every three to five years (Marine Corps, 2016). Reserve officers continuing in service past their initial obligation compete for promotions in the same general timelines as their active component peers, with the same limitations. The sole difference is reserve officers only compete for promotion amongst their reserve peers.

The major differences between active component and reserve service lie in benefits and accountability. Reserve officers do not live under the constraints of the Uniform Code of Military

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[13] This concept is spoken about throughout the senior reserve and active ranks informally, but has not been officially tested for viability as far as the author is aware.

Justice unless drilling. Time between drills is free of military law (10 USC § 802, 2016).

Reservists have the option of receiving medical and dental from the federal government; however, these benefits are not free. Reserve medical and dental are subsidized and offered at rates generally cheaper than offered by industry (10 USC § 199.24, 2017). Furthermore, reservists do not receive vacation benefits (10 USC § 701, 2019). Reservists are on active duty orders receive active component medical, dental, and vacation benefits.

Reserve officers can choose to leave reserve service once they have met their drilling reserve obligation. Dropping out of service results in them being removed from reserve officer roles and out of service (10 USC § 14901-14907, 1994). Reserve officers can seek to transition into the active component or Active Reserves Program at will. Transitioning into the active forces brings with it the bias of "broken time," however, earlier transitions may mitigate the impact over transition at more senior ranks or time in service[14]. Transitions into the Active Reserve Program do not incur a "broken time" bias[15].

Reserve officers who complete twenty satisfactory years of service are eligible to retire from reserve service. Officers who retire from reserve service without vesting in an active duty retirement receive their retirement at age sixty. Individuals who served active duty time as a reservist receive their retirement earlier than sixty. For every consecutive three months served on active duty orders their retirement is received three months earlier than sixty. A reservist's retirement can be received as early as age fifty via this method (10 U.S. Code § 12732, 2008). Satisfactory years occur via attaining fifty points of reserve service (Marine Forces Reserve, n.d.). Retirement pay for reservists is calculated as a percentage of active retirement. Reserve officers' annual retirement is calculated by dividing their total active duty days of service by 365.25, multiplying the years of active service by 2.5%, and then multiplying that product by the officer's

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[14] Once again, the bias against service in the reserves (i.e. broken time) is not a tested accepted social norm.
[15] This is a proven concept as many of the senior leaders within this program have reserve service.

base pay according to rank retired at and years of service. If a Colonel with twenty years of service retires with 2,310 points the following would apply:

$$Retirement\ Pay\ = Base\ pay\ at\ time\ of\ time\ of\ receipt * \left(\frac{active\ duty\ points}{365.25}\right) * 2.5\%$$

$$Retirement\ Pay\ = \$144,360 * \left(\frac{2310}{365.25}\right) * 2.5\% = \$22,825\ annually$$

In this case, reserve service provides a net monetary benefit of slightly more than $1,900 a month. Most officers have significantly more active points than this fictional reserve colonel and thus receive a larger benefit.

Active Reserve Service

Service in the Active Reserve Program is an intriguing mix of active and reserve service. Currently officers cannot commission directly into the Active Reserve Program. Officers seeking to become Active Reserve officers must first serve as either active component or reserve officers and apply for entry into the Active Reserve Program. A board selects candidates (Marine Corps, 2019) and schedules their accession[16] into the program. Once an officer joins the Active Reserve Program they are beholden to Uniform Code of Military Justice (10 USC § 801 – 946, 2016) and offered the same benefits as members of the active component; including fully-funded medical and dental, thirty days of vacation and accrual towards an immediate retirement at twenty years of active service. Active Reserve officers may further be required to deploy due to institutional need at a moment's notice. Officers joining the Active Reserve Program find themselves competing only against Active Reserve officers for promotion.

Retirement in the active reserves may be complicated by time spent in the reserves. Reserve time towards an active retirement accrues at a much slower pace and delays retirement for Active Reserve officers. Active Reserve officers who access with only active component service continue to work towards retirement vestment on the same timeline as their active

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[16] Accession is the formal term for hiring a Marine into the Active Reserve Program.

component peers. A majority of Active Reserve officers have some form of reserve service and must serve over twenty years of commissioned service to achieve twenty years of active service for vestment. Active Reserve officers are beholden to the same service limitations as active duty and reserve officers as set forth by statute (10 USC § 632-634, 2018). These limitations can be a driving force for entry into retirement for some Active Reserve officers.

Active Reserve officers can choose to leave the Active Reserve Program once they have completed a three year obligation (Marine Corps, 2019). Officers who leave may be selected to join the active component, transition to the reserves, or leave service. Officers leaving to the reserves do not face any bias against their service in the Active Reserve Program. Officers returning to active component service likely face bias for "broken time." Officers who separate can choose to reapply to the Active Reserve Program at a later date and do not face any repercussions for their time away from the program. Figure 5 provides a visual of the career paths between the three different components. Table 2 summarizes the similarities and difference between the active component, reserves, and Active Reserve Program.
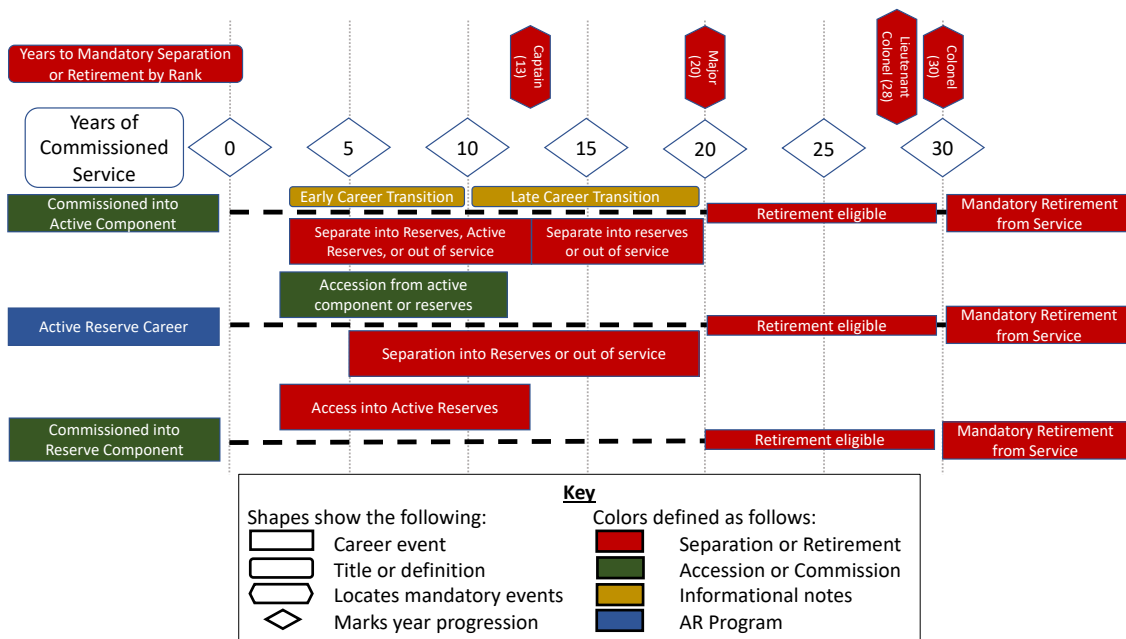
Figure 5: Career path options among Marine officers

Table 2: *Summary of Differences between Components and Categories*

MARINE CORPS OFFICERS

	Active Component	Reservists	Active Reservists
Recruiting	Recruited with at most an aviation contract. Sourced from multiple programs.	Sourced from multiple programs but does not produce aviators.	Only recruited from active component and reserve forces.
Continuing in Service	Must promote at regular intervals to continue in service. Reassigned at 2-6 year intervals.	Must promote at regular intervals. Must shift units every 3-4 years.	Must promote at regular intervals to continue in service. Reassigned at 2- to 6-year intervals.
Promotions	Competes against active component officers in a cohort for promotion.	Competes against reservist officers in a cohort for promotions.	Competes against Active Reserve officers in a cohort for promotion.
Regular Service	Accountable to the Uniformed Code of Military Justice daily.	Accountable to the UCMJ when drilling or on active orders.	Accountable to the Uniformed Code of Military Justice daily.
Deployment	Deploys at will of the service.	Limited on regularity of deployment.	Deploys at will of the service.
Transition between Components	Transitioning to active component from another is considered broken time.	Any transition is viewed positively with experience valued.	Any transition is viewed positively with experience valued.
Medical	Receives free federally-funded medical.	Must pay for benefits.	Receives free federally-funded medical.
Dental	Heavily discounted	Must pay for benefits	Heavily discounted
Vacation	30 days annually	None unless on active duty orders	30 days annually
Retirement	Vested at 20 years of active service. Immediate receipt.	Vested at 20 years of qualifying reserve service. Receipt at 60, as early as 50.	Can receive either a reserve or active retirement. Immediate receipt of active retirement.

Chapter Conclusion

Componency in the Marine Corps leads to vastly different military experiences. Active component officers are the United States shock force, deployable at a moment's notice. Reserve officers train regularly, but only serve full-time when mobilized to augment exceed active component capacity limitations. Officers within the Active Reserve program serve on active

duty, but are full time reservists; trained to be masters of the bureaucracy surrounding reserve mobilizations, training, and administration. Active component officers are commissioned into service and live their entire career under the rules and regulations of military service. They may deploy at a moment's notice to support the nation's need abroad and are rewarded for their service after twenty years of active service. Active component officers are supported during their service with free medical and dental and a generous vacation package. Reserve officers similarly support the nation's need but only as an augmentative force. Reservists receive discounted medical and dental. Reservists are also rewarded for a life's service; however, their pension arrives between fifty and sixty years of age. Active Reserve officers receive the same benefits program as active component officers, but may experience a delay in receipt of retirement income depending upon years spent as a reservist. These differences translate to difference in the military career members experience and are important considered when considering the career decisions of officers.

CHAPTER 4: METHODOLOGY

This study used validated statistical methods to explore how individual, organizational, and economic variables correlated with the career decisions of Active Reserve Officers to separate from service, transition between components, or retire out of service. Analysis used data provided by the Marine Corps to conduct survival analysis and logistic regressions. Survival analysis, a tool used to evaluate the rate at which individuals leave one status for another over a period of time (Kaplan & Meier, 1958), provided a visual understanding of officer separation trends for officers leaving service via retirement or separation according to gender, service before or after the terrorist attacks of September, 11, 2001, or self-identification as a minority or Caucasian. Logistic regressions were used to determine correlations with career decisions. Logistic regressions were noted by Speelman (2014, p. 487) as "widely accepted as a (or even the) dominant method for studies in which the response variable has two possible outcomes."

This chapter is divided into three distinct sections. The first section defines the population considered and sample size thereof. The second section provides insights into Kaplan-Meier survival analysis, logistical regression model, and defines variables used in this study. The third section provides this research's assumptions, limitations, and delimitations.

Population and Sample Size

This study includes longitudinal data of officers who served between January 1989 through January 2019 to determine which variables influence the separation and retirement decisions of Active Reserve officers of Active Reserve officers. Headquarters Marine Corps, Human Research Protection Program provided data 68,116 officers who served during this period. The data represented the entirety of an officer's career and included observations for time

spent in the active component, reserve component, and Active Reserve Program. Each

observation represented a moment in time for each officer and includes date of commissioning,

dates of promotion, race and ethnicity, gender, date of component change, and more.

Certain populations of officers were removed from the populace to better evaluate

transition propensities. Officers still in service who have yet to retire or separate were excluded

from the analysis as censored observations. Officers involuntarily separated from service were

also removed, as these officers would bias results towards increased separations. Involuntary

separation includes separation due to substandard performance, legal reasons, medical

disqualification from service, or other involuntary separations. Furthermore, the purpose of this

study is to focus on voluntary choices of individuals to separate or retire from service.

Involuntary separations are at the discretion of the enterprise, usually against the wishes of the

individual. Individuals who are assigned an occupation outside of those of officers serving inside

the Active Reserve Program were excluded from the analysis. Maintaining similar occupations

should ensure career experiences are as near to similar among those considered in this study. In

analysis of separation outcomes, officers who retired were removed from the sample. In analysis

of retirement outcomes, officers who separated were removed from the sample and officers who

retired due to service limitations. Service limits were defined as Majors with twenty or more

years of commissioned service, Lieutenant Colonels with more than twenty-eight years of

commissioned service, and Colonels with more than thirty years of commissioned service.

<div align="center">**Instrumentation**</div>

Kaplan-Meier Survival Analysis

The Kaplan-Meier survival analysis tool is one among several types of tools within the

survival analysis methodology. The Kaplan-Meier version of survivor analysis is widely

accepted as a statistical analysis tool and has been cited as one of the most referenced statistical

tools in the past sixty years; referenced more than 44,000 times between 1958 and 2017 (Stalpers

& Kaplan, 2018) and served as the basis of providing a visual representation of the transition of

Active Reserve Officers from the Active Reserve Program; either via voluntary separation or retirement.

Camilleri (2019) noted the Kaplan-Meier method of survival analysis was the first major breakthrough in survival analysis methods since the 17th century. The Kaplan-Meier survivor analysis created a method by which the transition of individuals leaving one status for another status over a period of observation could be studied. A Kaplan-Meier analysis is fully non-parametric an takes a period of observation and breaks it up into sections. The sections are then used to evaluate the propensities of a cohort to leave the status in question over time. Combining the propensities effectively creates a graph which begins with all of the population in a status, shows which percentage of that same population continues in the status throughout the period of observation, and finishes by displaying the remaining percentage of the original cohort who is still in the original status at the end of the period of evaluation.

The Kaplan-Meier survival method is often used within military literature. Menichini, Cunha, and Moynihan (2017) found a modernized retirement system could negatively impact retention of officers and enlisted members of the United States military via Kaplan-Meier. Xue and colleagues (2012) used Kapalan-Meier survival to show post-traumatic stress disorder influences higher mortality when considering cardiac variables. Wolfe and collaborators (2005) found Marine Corps recruits experiencing trauma before entry to boot camp experienced higher levels of attrition during boot camp. Another study used Kaplan-Meier to determine that recruits who joined the United States Army with waivers for hearing deficiency attrition from service at a faster pace than those with hearing within service parameters (Neibuhr, et al., 2007).

The second major evolution of the 20th century (Camilleri, 2019) was proposed by Cox (1972). Cox's method continued to evaluate transitions as a function of time via a semi-parametric model; allowing for survival and statistical regression analysis. The Cox Proportional Hazard Test method provides the additional benefit of creating hazard ratios. These ratios compare the ratio of risk between two groups at a point in time (Goel, Khanna, & Kishore, 2010).

Many of the studies referenced in the literature review used the advanced methods permitted by Cox's method; including: Schulte and Dolfini-Reed (2012), Dolfini-Reed and McHugh (2007), Fricker (2002), and Glaser (2010). The added complexity of Cox's method is unnecessary here as the goal is to provide a pictorial cue on transition tendencies of Active Reserve officers.

This research uses the Kaplan-Meier method of survival analysis to provide graphical details on Active Reserve officers' career propensities to either separate out of service or between components or retire out of service by the individual variables gender or self-identification as a minority or Caucasian and service through or after 2005. Survival analysis was not conducted on the economic variable national unemployment, organizational variable number of deployments, or individual variable number of dependents. Each of these variables has the flexibility to change erratically over the course of an individual's service

Logistical Regression Models

The crux of this research uses logistical regression to determine the correlations economic organizational, and individual variables have upon officers' career decisions to transition between components or out of service via separation or to transition out of service via retirement. Logistic regressions are regularly used in military personnel literature due to the statistical tool's ability to show statistical validity of models, direction of variable impact, and odds ratios of variable influence upon dependent variables. Retirement and separation are binary, categorical actions where a member is in service or out of service via separation or retirement.

Logistic regression is optimally designed to manage binary, categorical dependent variables. This makes logistic regressions the method of choice over multivariate regressions (Frost, n.d.). Logistic regressions transform data into a probability an event occurs in the future, holding all other variables constant (Hattiangadi, Parcell, Gregory, & MacLeod, 2006), and presents odds ratios as a results of this transformation. Odds ratios offer a method of comparing the likelihood a result occurs to a dependent variable given an interaction with an independent variable (Moynihan & Landuyt, 2008). Use of logistic regression is standard in transition studies.

Logistic Analysis in Military Studies

In military studies, the use of logistic regressions to study the transition of personnel between components or out of service is an accepted practice in the literature. Lien, Quester, and Schuford used logistic regressions to determine how likely an officer was to continue in service for retirement eligible and non-retirement eligible populations (2008). Hattiangadi, Lee, and Quester (2006) studied the retention decisions of officers between December 2004 to December 2005. Hattiangadi, Parcell, Gregory, and Macleod (2006) used multivariate analysis to study reenlistments into the reserves and the impact bonuses have in the maintenance of appropriate manning levels in the Marine Corps Reserve. Hansen, MacLeod, and Gregory (2004) used logistic regressions to determine retention rates among reservists of all components from FY00 to FY03. Fricker (2002) used logistic regression analysis to determine retention proclivities of junior officers when associated with deployments using data from 1987 through 1999.

Logistic Analysis in Non-Military Studies

Selden and Moynihan (2000) used logistic regressions to analyze variable's impact upon continuation in service for state employees. Their study included many similar variables to this study including unemployment rate, opportunity for promotion and training, region, pay, median state income, region, and childcare availability. Their model explained 54.6% of the variance in employees leaving state service with a limited set of variables. Lewis and Hu (2005) used logistic regressions to determine how many federal employees transition out of federal service between 1996 through 2003. Cho & Lewis (2012) used logit models to determine the impact age, experience, salary, educational attainment, race, and gender impact the turnover of federal employees. Moynihan and Landuyt (2008) used logit models to analyze a survey's results to determine propensities to continue work for the state of Texas.

Two distinct forms of logistic regression models were used in this analysis. The first model evaluated the selected economic, organizational, and individual variables impact upon the separation propensities of Active Reserve officers. The second model evaluated how these same

variables influenced the retirement propensities of Active Reserve officers and further compared these propensities to the propensities of active component and reservist officers.

Variables Used

This study's variables were purposefully selected among many variables maintained on a regular basis for each individual in service by the Marine Corps. Dependent variables selected were the end of active service date and retirement date. The end of active service date reflects when an Active Reserve officer transitions to the active component, reserves, or out of service. The retirement date shows when an office retires from the Active Reserve Program. Similar transactions for both the end of active service date and retirement date occur for officers transitioning or retiring from the active component or reserves.

Independent variables represent economic, organizational, and independent variables and study the relationship to turnover between jobs and out of the job market. National unemployment is the sole economic variable considered. Number of deployments is the sole organizational variable considered. Number of deployments is considered an organizational variable because the Marine Corps (organization) orders personnel to serve on deployments. Individual variables include gender, self-identifying as a minority or Caucasian, and number of dependents. Greater details on variables used in this study are shown in Table 3.

Research Model #1: Separation before Retirement

The first model uses multivariate analysis to determine the impact national unemployment, number of deployments, gender, self-identifying as a minority or Caucasian, and number of dependents had upon Active Reserve officer's decision to separate from service. The beginning state in this model was service in the Active Reserve Program with the end state defined as a transition into the active component, reserves, or out of the Marine Corps. Model 1 proposed females are less likely to separate than males (H_1), minorities are less likely to separate than Caucasians (H_3), an increase in family size lessens likelihood of separation (H_5), increased deployments lessen propensities to separate (H_7), and increased national unemployment lessen the

separation of Active Reserve Officers (H$_9$). Proposed variable impact is shown as a plus or

minus. A plus is used to show an increased propensity to leave service and minus was used to

show a lessened likelihood of transitioning out of the Active Reserve Program between

components or out of service. The end state reflects the sole options available for Active Reserve

officers who transition. They either leave service, become a reservist, or return to the active

component ranks. Figure 6 displays Model #1.

Table 3: *Variable definitions for Multivariate Analysis and Survival Models*

Variable	Definition
Dependent Variables	
End of active service date	An ordinal variable informing as to when an officer separates from active service. Multiple transactions can occur of this variable if multiple separations from active duty occur.
Retirement date	An ordinal variable describing when an officer retires from active, reserve service, or the Marine Corps.
Independent Individual Variables	
Gender	Individual, categorical variable defining if someone is either male or female.
Number of dependents	Individual, continuous variable reflecting how many children an officer has at a point in time.
Race and/or Ethnicity	Individual, categorical variable describing an individual's self-reported race or representing affiliation with an official ethnicity.
Independent Organizational Variables	
Number of deployments	Individual, discrete variable describing the number of times an officer was deployed away from his or her duty station to support combat operations abroad.
Independent Economic Variables	
National Unemployment Rate	Economic, continuous variable defining the national unemployment rate of the United States during a calendar year.
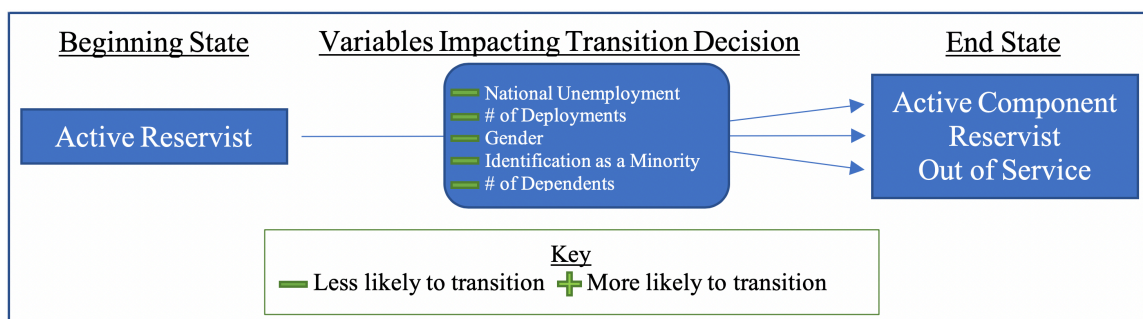
Figure 6: Early- to Mid-Career Separation Model

Research Model #2: Separation Via Retirement

The second model used multivariate analysis to determine the impact national unemployment, number of deployments, gender, self-identifying as a minority or Caucasian, and number of dependents had upon Active Reserve officer's decision to retire from service. This model compared the impact the economic, organizational and individual variables had upon Active Reserve Officers' decision to retire against the same variable's impact to retirement decisions of active component and reserve officers. Beginning state in this model continued to be service in the Active Reserves with the end state defined as retired from the Marine Corps. Model 2 proposed females are more likely to retire than males (H_2), minorities are more likely to retire than Caucasians (H_4), an increase in family size lessens likelihood of retirement (H_6), increased deployments should increase the propensities to retire (H_8), and increased unemployment lessens the separation of Active Reserve Officers (H_{10}). Proposed variable impact continued to mirror Model 1 with increased transition propensities represented by a plus and decreased transition propensities represented by a minus. The model is shown in Figure 7.

Use of survival analysis and logistic regressions is an accepted and often used practice when evaluating public administration career decisions. The literature shows this practice is standard among both military and non-military Public Administration studies. This research seeks to add to the Public Administration literature using these widely accepted tools. Specific variables considered in this research for comparison are race and ethnicity, national

unemployment, family size, and number of deployments. Models were created for both separation and retirement with populations to compare against during evaluation provided. Greater details on the literature surrounding the variables selected is given in Chapter 2.
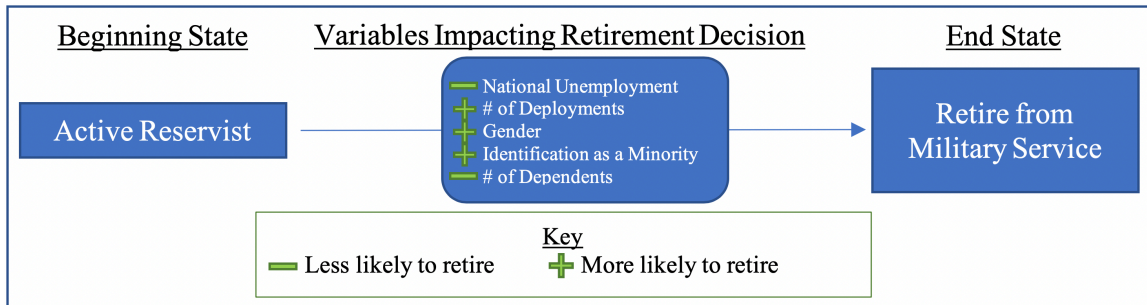
Figure 7: Retirement Model

Assumptions, Limitations, and Delimitations

This study developed insights into the turnover propensities of a small, but vitally important, cadre of officers who serve as career bureaucrats for the Marine Corps Reserve. The study maintained certain assumptions, delimitations, and limitations. This section further describes how this study was bound to limit its scope.

Assumptions

The methodological assumptions of this research adopt the standard practices of a preponderance of the research reviewed. Quantitative analysis of military manpower tends to utilize two tools for analysis: survival analysis to show transition rates over time and logistical analysis to determine correlations between binary choices. This research assumes peer reviewed literature uses acceptable statistical tools to analyze human actions and uses the same methods.

Theoretical assumptions consider the oft cited framework of work transition definitions and categorizing transitions to be true. Gottschalck (2004, p. 70) believes transition occurs into three distinct categories: into, out of, and between jobs. For this study it was assumed these three categories were inclusive of available options for employment transitions. The researcher further redefines "out of" as separating or retiring and "between jobs" as transitioning from Active Reserve Program into the reserves or active component. The basis for categorizing transitions is

found in Selden and Moynihan (2000); with turnover defined as potentially caused by economic, organizational, or individual reasons. This study assumes the three forms of transition and three categories of influences on turnover are all inclusive and assumes any additional demographic variables are assigned appropriately during the study into one of the noted categories.

Assumptions of the validity of methodological and theoretical methods and concepts used in this study demonstrated the value of this dissertation. The methodological assumptions discussed the value of using survival analysis and logistical regression. Theoretical assumptions provide a baseline method for defining transition as out of the Active Reserve Program or between components and classifying the variables influencing transition as either economic, organizational, or individual.

This research assumes there is some impact of service in the United States Military before and after the terrorist attacks of September 11, 2001. Research is conducted among the sample's service between 1989 to 2019, but is also be broken up into two separate groups for further evaluation. The first group includes members who separated or retired between 1989 and 2005. The second group contains the remnant of the sample who retired or separated between 2006 and 2019. The division between 2005 and 2006 was considered as it directly links to long term service in a nation at war. Operation Enduring Freedom began in 2001 and Operation Iraqi Freedom began in 2002. Evaluating through 2005 allows individuals who are serving while a nation is at war sufficient time to leave service due to the changed environment of service of a military at peace to one involved in two conflicts simultaneously.

Limitations

The data set provided by Headquarters Marine Corps includes career information and demographics of every officer who has served between January of 1989 and January of 2019. However, this data is not entirely viable. Earlier data has proven quality issues stemming from the lack of standardized protocol for the storing of personnel data. Values within the data may be missing or incorrect due to systematic errors or shifting data entry logic over time. Furthermore,

data entry is accomplished via manual entries in many cases. Inaccuracies in data are likely due to human error, oversight, or incompleteness. These limitations prohibit this data set from analysis as a population and resulted in the data being evaluated as a sample vice the entire populace. Traditional statistical analysis considered effective in samples were used.

Delimitations

Studies must have boundaries in order to find completion in a timely fashion. This study focused on a particular population of military officers over a certain period of time via certain demographic traits. Data provided by the Marine Corps purposefully limited data to officers serving between January 1989 through January 2019. The permission to establish an active duty, reserve-centric program was conceptually created in the National Defense Authorization Act of 1979 and formalized in the National Defense Authorization Act of 1980 (England, 1984). The Marine Corps' Active Reserve Program likely evolved as personnel were hired, a culture was created within the small program, and program's mission and goals were defined. Limiting the data to 1989 allows nearly nine years of maturation, likely creating a cadre sufficient to study its characteristics. The thirty-year period selected permitted at least one cohort to complete the statutorily limited career of thirty-years commissioned as an officer; while permitting at least ten additional cohorts to complete careers of twenty years or more of active service needed to vest in the retirement system.

Active component and reserve personnel data is available from the early 1960s but was not used due to the lack of a comparable Active Reserve officers. Additionally, data from before 1973 would possibly include draftees (Selective Service System, n.d.). Draftees likely have reasons for service and continued service which are disparate from those who served after President Nixon created the All-Volunteer Force (Rostker, 2006). Additionally, economic, cultural, and systematic differences from earlier periods likely cause different correlations among variables considered. For example, citizens may have volunteered for reserve service to evade active duty service in Vietnam (Stephens, 1977).

This research did not define consider impacts of selected economic, organizational, or individual variables upon officers involuntarily separated. Involuntary separation includes separation for administrative, medically, legal, or other means. Officers who were separated due to these institutional norms likely leave the service for reasons other than those who complete their service and leave via traditional separation or retirement.

Data from enlisted members and restricted officers is available during the same period studied; however, this research focused on unrestricted officers. Unrestricted officers in the Active Reserve Program directly interact with the Department of Defense, Department of the Navy, Headquarters Marine Corps, and Marine Forces Reserve leadership. Restricted officers and enlisted members generally serve within Marine Forces Reserve and have limited opportunity to serve in billets outside of reserve forces, with rare exceptions.

This research does not focus on any of the intricacies of accession into military service from civilian life, but instead focuses upon the transaction of transition between components or out of service. The Marine Corps Active Reserve Program solely accesses into its ranks from those who are currently serving in the active component or reserves. Studies looking to provide insights into who transitions into military service need focus on the active component or reserves. Research into accessions[17] of those other components is plentiful in the literature (Quester A. , Hattiangadi, Lee, Hiatt, & Shuford, 2007; Grefer, Desrosiers, Peterson, Lee, & Quester, 2016).

This study does not include the totality of officers who served during this period. Officers not holding an occupation held by Active Reserve officers were not considered. The experiences inside specialization can vary so greatly that only similar occupations provide a base with which to compare Active Reserve officers to reserve and active component officers.

The assumptions, limitations, and delimitations purposefully constrain the considerations of this study into a viable path towards valuable insights into the Active Reserve Program's

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[17] Military term to define a person enlisting or commissioning into military service. The term is occasionally used to describe transition between components.

propensities to turnover from military service. In this case, the goal is to focus on separation or retirement from service of unrestricted officers only, limited by the data provided, and specifically avoiding other near parallel considerations.

This study is constrained by assumptions, limitations, and delimitations. Assumptions accept methodological and theoretical validity of oft used tools and concepts associated with transition and the categories causing transition. Limitations speak to the fallibility of data entered over a thirty-year period. Delimitations specifically constrain the study to Active Reserve officers and career decisions.

Chapter Conclusion

This chapter provided insights as to the expectations for this research and tools which would be central to the success of this dissertation. The population size was defined as officers who served in the Marine Corps from 1989 to 2019, focusing on those who voluntarily separated or retired from military service. The statistical instruments Kaplan-Meier's survival analysis and logistic regression analysis were chosen as tools to evaluate Active Reserve officer propensities. Kaplan-Meier's survival analysis was chosen for its ability to visually portray transitory actions and logistic regressions were selected due to their ability to appropriately evaluate binary, categorical variables. The variables national unemployment, number of deployments, gender, self-identification as a minority or Caucasian, and number of dependents were selected to show economic, organizational, and individual variables. Models were designed using these variables to show their perceived impact upon separation (Model 1) and retirement (Model 2). Assumptions, limitations, and delimitations were applied to the study and frame the conduct of the study, which is presented in the Chapter 5.

CHAPTER 5: DATA ANALYSIS AND RESULTS

This chapter is divided into three distinct sections. The first section defines separation from the Active Reserves through a pictorial view separation using survival analysis then providing insights found from logistic regressions. The second section uses the same analytical tools and offers details associated with retirement from the Active Reserve Program. The results of these findings are presented in a third, closing section.

Separation

This section evaluates the impact of economic, organizational, and individual variables upon the choices of Active Reserve officers to separate from the service, also defined as transitioning between components or out of the military. The section begins with descriptive statistics, transitions to a longitudinal visual impact of gender, self-identification as a minority of Caucasian, or service before or after entry into the Global War on Terrorism via survival analysis, and finally provides logistical analysis of Active Reserve officer separations.

Separation Descriptive Statistics

Descriptive statistics provide an overview of the population considered. Information is provided on gender, self-identifying as a minority or Caucasian, number of dependents, and number of deployments. Totality of descriptive statistics may vary between the variables due to missing data. The gender variable was found in 738 of the individuals considered. Females made up 8.81% of the population when considering all data, 13.3% when viewing those who were in the program through 2005, and 8.14% when viewing those who separated after 2005. The active component officer corps was composed 7.53% females in 2017. Self-identifying as a minority or Caucasian was defined for 732 individuals who separated from the Active Reserve Program. The

percentage of Caucasians across all data was 84.29%, for those who separated through 2005 it was 90.91%, and Caucasians made up 83.25% of officers who separated after 2006. The active component officer corps was composed 76.94% Caucasians in 2017. Number of dependents varied across the three cohorts. Officers who separated had between zero and seven dependents with the average being within a tenth of a dependent for all three cohorts. Number of deployments varied dependent upon cohort considered. Average deployments were minimal among those who separated through 2005 and was larger for the group who separated after 2005. In both cases, the average number of deployments among separating Active Reserve officers was less than one. Table 4 provides the descriptive statistics for separated Active Reserve officers.

Table 4: *Descriptive Statistics for Separated Active Reserve Officers*

Variable	Male		Female		Total Sample
	n	%	n	%	n
Gender	672	91.06	66	8.94	738
Through 2005	86	86.00	14	14.00	100
After 2005	586	91.85	52	8.15	638
	Caucasian		Minority		
Minority or Caucasian	617	84.29	115	15.71	732
Through 2005	91	91.00	9	9.00	100
After 2005	526	83.23	106	16.67	632

Variable	n	M	SD	Range
# of Dependents	735	1.93	1.51	0-7
Through 2005	100	2.05	1.50	0-5
After 2005	635	1.91	1.51	0-7
# of Deployments	738	0.76	0.99	0-6
Through 2005	100	0.09	0.29	0-1
After 2005	638	0.86	1.02	0-6

Kaplan-Meier Survival Analysis for Separations

Survival analysis was used to provide graphical insights as to how Active Reserve officers transitioned between or out of jobs via separated from service. These analyses were conducted according to the impacts of the September 11, 2001 terrorist attacks, the individual variable gender, and individual variable of self-identification as a minority or Caucasian. In all cases, survival analysis was defined as a function of years of active service in lieu of years within the Active Reserve Program. Years of active service is directly correlated with vestment in an active duty retirement. Year of service in the Active Reserves yields erratic results as to the ramifications of a decision to leave the Active Reserve Program. For example: An officer can separate after three years on the Active Reserve Program with sixteen total years of active service or an officer can separate after twelve years on the Active Reserve Program with fifteen years of active service. In both hypothetical cases, the individuals are separating within five years of vestment in a retirement program. Viewing their situations based on active duty service would provide a significantly better picture than time serving within the Active Reserve Program.

Survival analysis was not conducted using the economic variable national unemployment or individual variable family size. National unemployment and number of dependents can shift with time. A family's size may change during an officer's career. As a family grows the number of dependents increases. As children reach adulthood, some are removed from military systems as dependents. Furthermore, other family members listed as dependents may be removed from the manpower system due to death, divorce, or many other reasons.

The first survival analysis focused on impacts of retention caused by the September 11, 2001 terrorist acts. Service before these attacks was in support of a military that may go at war. Service after the terrorist attacks for those joining the Active Reserve Program is known service in support of a nation at war, possibly changing the decision rules of the service members. This portion assumed pre-September 11, 2001 service includes personnel serving through 2005 as these individuals likely joined the Active Reserve Program before the nation entered into conflict

with Afghanistan in 2001 and Iraq in 2002. Individuals would have needed three years to
separate from the Active Reserve Program if they did not wish to serve with a nation at war.

Transitions out of the military or between components, both defined as separations by the
Marine Corps, were found to vary before and after 2005. Officers chose to stay in the active
reserve program longer through fifteen years of service for those who served before 2005. The
Kaplan-Meier survival analysis showed some individuals chose to separate from the Active
Reserve Program near to an active duty retirement. Generally, those officers transitioned
between components by returning to the active component. The curves show there was a
difference in service before and after the United States' involvement in steady war abroad, albeit
likely not statistically significant as noted by the overlapping confidence intervals. Details of
separations are shown in Figure 8.
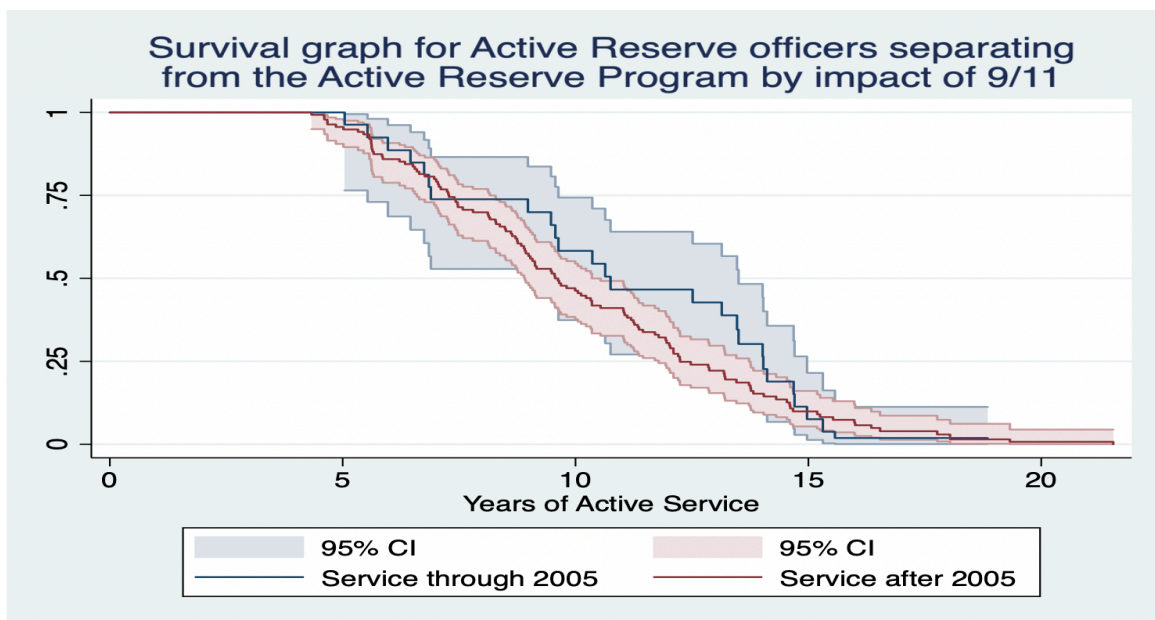
Figure 8: Survival analysis of separation of officers by years of service and impact of 9/11

Gender's impacts were slight upon the transition of officers out of service according to
Kaplan-Meier survival analysis. In general, males tended to separate earlier than females before
their thirteenth year of active service. After that period females separated earlier than males with
the entire populace of females separating having left the Active Reserve Program by the end of

their fifteenth year of service. These findings are also not likely statistically significant due to the overlap of confidence intervals. A larger sample of female separations would likely provide greater clarity to the results shown in Figure 9.
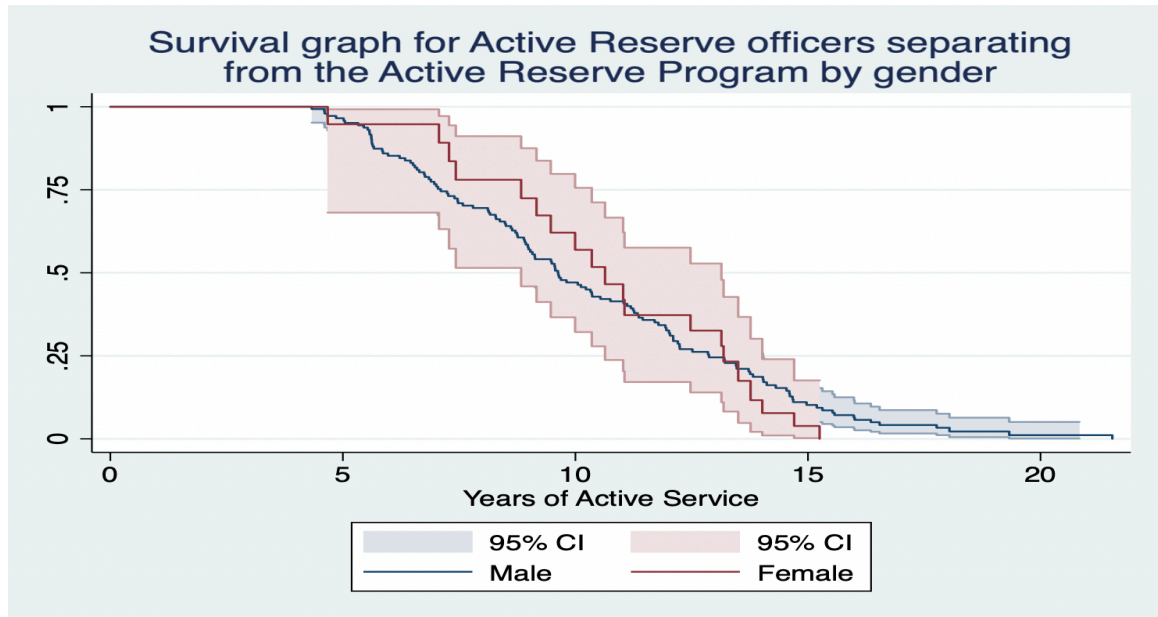
Figure 9: Survival analysis of separation of officers by years of service and gender

The impact of the individual variable self-identifying as a minority or Caucasian has upon the transition rates of officers either out of military service or between components varies, but not to the level of gender. Minorities and Caucasians tend to separate from the Active Reserve Program at nearly the same rates through ten years of service. Between ten years and sixteen years of service Caucasians tend to separate at higher rates than minorities; however shortly into the sixteenth year of active service minorities who choose to leave service have all left service with Caucasians continuing to leave service in the Active Reserve Program through twenty two years of service. The high level of interval in the confidence intervals likely means these findings are not statistically significant. A larger sample of female separations would likely provide greater clarity to the results shown in Figure 10.
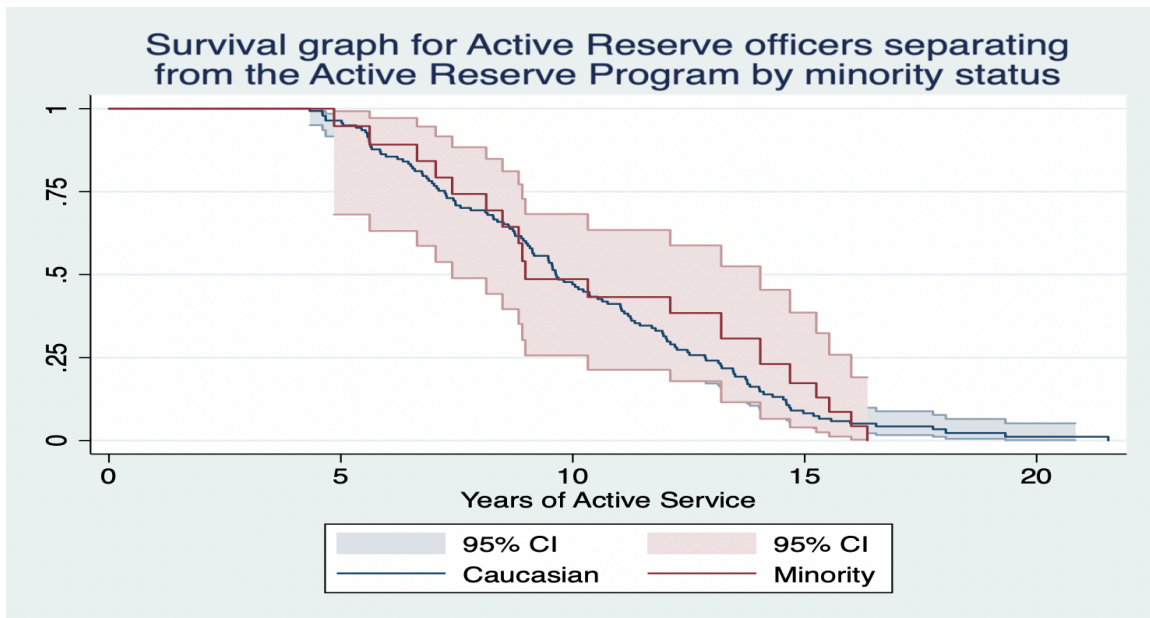
Figure 10: Separation of Officers by Years of Service and Self-Identification as a Minority or Caucasian

Survival analysis provided insights as to how variables impacted transition of the careers of officers who separated. Survival analysis proved the individual variables gender and self-identifying as a minority showed sufficient differences to merit future study during logistic regressions. Overall, trends shown via survival analysis showed slight differences between males and females, self-identification as a Caucasian or minority, and service through or after 2005. Few of these differences were significantly large; however, most differences were sufficient enough to note there is some underlying need to study gender and self-identification as a minority or Caucasian. The next section evaluates these variables, as well as national unemployment, number of deployments, and number of dependents via logistic regressions.

Separation Logistic Results

This section studies provides results on how the economic, organizational, and individual variables correlate with the act of separating from the Active Reserve Program between components or out of the Marine Corps. The first portion of this section validates lack of multicollinearity or correlation. The second portion of this section explains and displays logistic regression results. In each case, the dependent variable is categorically mutually exclusive with

individuals who are separated from the AR or not separated from the AR; excluding those who are retired. Independent variables are continuous (number of deployments, number of dependents, national unemployment rate) or nominal (gender or self-identification as a minority). Observations are all independent, as they solely include snapshots in time in an officer's career. Descriptions as to model multicollinearity, correlation, and regression results are defined.

Active Reserve Officer Separation from 1989 through 2019

A logistic regression for officers who transition out of the military or between Marine Corps components from the Active Reserve Program from 1989 through 2019 met the assumptions for a logistic regression. Multicollinearity was not found in the data as noted in Table 5. Correlation was not found among the variables as defined in

Table *6*.

Table 5: *Multicollinearity of Variables for Active Reserve Separations*

Variable	VIF	1/VIF
National Unemployment	4.39	0.226204
Number of Dependents	3.12	0.320880
Number of Deployments	2.09	0.478100
Minority or Caucasian	1.19	0.843294
Gender	1.11	0.900272
Mean VIF	2.38	

Table 6: *Correlation of Variables for Active Reserve Separations*

Variable	Separation	National Unemp.	# of Deploy.	# of Depend.	Minority or Cauc.	Gender
Separation	1.0000					
National Unemp.	-0.0642	1.0000				
# of Deployments	-0.0795	0.1864	1.0000			
# of Dependents	-0.0495	0.0318	0.0406	1.0000		
Minority or Cauc.	-0.0108	-0.0040	0.0230	-0.0629	1.0000	
# of Deployments	0.0242	-0.0065	-0.1277	-0.1918	0.0465	1.0000

Regression output for officers who separated from the Active Reserves provided useful insights as to the propensities of Active Reserve officers. The regression compared the act of transitioning between components or out of service against self-identifying as a minority or Caucasian, gender, number of deployments, number of dependents, and national unemployment. Future regressions in this section uses the same variables, albeit with varying populaces based upon service before or after 2005. The model was found to be a viable model ($X^2 < 0.001$) with three of the five variables showing statistical significance. An increase in national unemployment ($p < 0.001$) by one percentage decreases the odds of separation by 22.7%. Every additional deployment experienced ($p < 0.001$) was found to decrease the odds of separation by 45%. Additional dependents ($p < 0.001$) were shown to lessen the likelihood of separation by 17.5%. Self-identifying as a Caucasian or minority ($p = 0.280$) and gender ($p = 0.666$) were not found to significantly impact separation from service. The results also failed to prove the hypothesis (H_1)[18] showing female Active Reserve Officers were more likely to separate from service, failed to prove the hypothesis (H_3) that minorities were more likely to separate from the Active Reserve. The results showed three of the hypotheses to be true in the data set utilized. The research showed the propensities to transition from service in the Active Reserve Program drops if an officer experiences more deployments (H_7), maintains a larger family (H_5), or if national unemployment increases (H_9). These regression results are shown in Table 7 and odds ratios are shown in Table 8. Table 9 shows the statistically significant variables continue to be statistically significant regardless of the addition of variables.

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[18] Hypotheses are shown in their original form in the Introduction chapter and with a summary of results in the Data Analysis and Results chapter.

Table 7: *Regression of Officers Separating from the Active Reserve Program*

Variable	b	SE	z	p	95% CI	
					LL	UL
National Unemployment	-0.258	0.059	-4.37	0.000	-0.374	-0.142
# of Deployments	-0.603	0.098	-6.12	0.000	-0.795	-0.410
# of Dependents	-0.192	0.048	-3.99	0.000	-0.287	-0.098
Minority or Caucasian	-0.220	0.204	-1.08	0.280	-0.620	0.179
Gender	0.100	0.232	0.43	0.666	-0.354	0.554
Constant	-1.331	0.331	-4.02	0.000	-1.979	-0.683

Table 8: *Odds Ratio for Officers Separating from the Active Reserve Program*

Variable	OR	SE	z	p	95% CI	
					LL	UL
National Unemployment	0.773	0.457	-4.37	0.000	0.688	0.867
# of Deployments	0.547	0.054	-6.12	0.000	0.451	0.664
# of Dependents	0.825	0.040	-3.99	0.000	0.751	0.907
Minority or Caucasian	0.802	0.164	-1.08	0.280	0.538	1.197
Gender	1.105	0.256	0.43	0.666	0.702	1.741
Constant	0.264	0.087	-4.02	0.000	1.138	0.505

Table 9: *Table of Estimates for Officers Separating from the Active Reserve Program*

Variable	(1) Separation	(2) Separation	(3) Separation	(4) Separation	(5) Separation
National Unemployment	-0.327*** (-5.86)	-0.266*** (-4.56)	-0.262*** (-4.46)	-0.257*** (-4.35)	-0.258*** (-4.37)
# of Deployments		-0.615*** (-6.39)	-0.598*** (-6.22)	-6.07*** (-6.19)	-0.603*** (-6.12)
# of Dependents			-0.188*** (-4.01)	-0.196*** (-4.13)	-0.192*** (-3.99)
Minority or Caucasian				-0.220 (-1.08)	-0.220 (-1.08)
Gender					.100 (0.43)
Constant	-1.870*** (-6.20)	-1.721*** (-5.53)	-1.331*** (-4.09)	-1.316*** (-4.00)	-1.331*** (-4.02)
n	8665	8665	8656	8588	8588

t statistics in parenthesis
* $p<0.05$, ** $p<0.01$, *** $P<0.001$

Active Reserve Officer Separation through 2005

Central to this research is defining transition propensities associated with separation from service before or during long-term war efforts. This study uses 2005 as the marker for service before or after war efforts. Officers joining prior to September 11, 2001 serve in a nation occasionally involved in conflicts. Furthermore, in 2002 the United States invaded Iraq seeking a regime change. Officers who joined the Active Reserve Program near to 2001-2002 would have had a three year service obligation. Choosing 2005 as the defining marker permits the study to effectively evaluate officers who chose to separate without experiencing combat operations or those who chose to separate because of the introduction of them. Officers who separate after 2005 had served no less than three years of continued service during major combat operations abroad in a new norm. A logistic regression for officers who separated from the Active Reserve Program through 2005 met all the required assumptions for a logistic regression.

Multicollinearity was not found in the data as noted in Table 10. Correlation was not found among the variables as defined in Table 11.

Table 10: *Multicollinearity of Variables for Active Reserve Separations through 2005*

Variable	VIF	1/VIF
National Unemployment	4.36	0.229563
Number of Dependents	4.00	0.249885
Number of Deployments	1.32	0.760212
Minority or Caucasian	1.20	0.829883
Gender	1.14	0.878694
Mean VIF	2.40	

Table 11: *Correlation of Variables for Active Reserve Separations through 2005*

Variable	Separation	National Unemp.	# of Deploy.	# of Depend.	Minority or Cauc.	Gender
Separation	1.0000					
National Unemp.	-0.0953	1.0000				
# of Deployments	-0.0926	0.1055	1.0000			
# of Dependents	-0.0812	-0.0482	0.2242	1.0000		
Minority or Cauc.	-0.0112	-0.1102	-0.1455	0.0044	1.0000	
# of Deployments	0.0558	0.0202	-0.1482	-0.2479	-0.1089	1.0000

Regression analysis continued to provide useful insights as to the transition propensities of Active Reserve officers. This section provided information associated with the separation propensities of officers who separated from the Active Reserve Program through 2005 via transitions out of service or between components. The model was found to be a viable model ($X^2 =$ 0.0075) with the economic variable, national unemployment, statistically significant ($p = 0.022$). A one percentage increase in unemployment decrease the odds of separation by 48.8%. The individual variables number of dependents ($p = 0.154$) self-identifying as a minority ($p = 0.497$), and gender ($p = 0.563$) were found statistically insignificant. The organizational variable, number

of deployments ($p = 0.093$), was not found to be statistically significant in this model. Higher national unemployment was found to decrease the likelihood an officer would separate from service; proving one hypothesis (H_9). The model failed to prove any significance associated with turnover due to separation due to gender (H_1), self-identifying as a minority or Caucasian (H_3), family size (H_5), or number of deployments (H_7), These results are shown in the regression results of Table 12 and odds ratios are shown in

Table *13*. The table of estimates in Table 14 shows statistical significance does not shift as more variables are added to the model.

Table 12: *Regression of Officers Separating from the Active Reserves through 2005*

Variable	b	SE	z	p	95% CI	
					LL	UL
National Unemployment	-0.669	0.293	-2.29	0.022	-1.243	-0.096
# of Deployments	-1.732	1.033	-1.68	0.093	-3.756	0.292
# of Dependents	-0.178	0.125	-1.43	0.154	-0.424	0.067
Minority or Caucasian	-0.430	0.633	-0.68	0.497	-1.670	0.811
Gender	0.287	0.496	0.58	0.563	-0.686	1.260
Constant	1.008	1.432	0.70	0.482	-1.798	3.813

Table 13: *Odds Ratio for Officers Separating from the Active Reserves through 2005*

Variable	OR	SE	z	p	95% CI	
					LL	UL
National Unemployment	0.512	0.150	-2.29	0.022	0.289	0.908
# of Deployments	0.177	0.183	-1.68	0.093	0.023	1.339
# of Dependents	0.837	0.105	-1.43	0.154	0.655	1.069
Minority or Caucasian	0.651	0.412	-0.68	0.497	0.188	2.249
Gender	1.333	0.662	0.58	0.563	0.504	3.527
Constant	2.739	3.91	0.70	0.482	0.166	45.302

Table 14: *Table of Estimates for Officers Separating from the Active Reserve Program through 2005*

Variable	(1) Separation	(2) Separation	(3) Separation	(4) Separation	(5) Separation
National Unemployment	-0.663* (-2.33)	-0.623* (-2.15)	-0.641* (-2.21)	-0.663* (-2.27)	-0.669* (-2.29)
# of Deployments		-1.911 (-1.87)	-1.718 (-1.67)	-1.764 (-1.71)	-1.732 (-1.68)
# of Dependents			-0.193 (-1.61)	-0.195 (-1.61)	-0.178 (-1.43)
Minority or Caucasian				-0.478 (-0.76)	-0.430 (-0.68)
Gender					.287 (0.58)
Constant	0.427 (0.32)	0.392 (0.28)	0.902 (0.64)	1.060 (-6.20)	1.008 (0.70)
n	612	612	611	611	611

t statistics in parenthesis
* p<0.05, ** p<0.01, *** P<0.001

Active Reserve Officer Separation after 2005

The final cohort studied in this section includes officers who transitioned out of the Active Reserve Program or out of the Marine Corps after 2005. These officers experienced a minimum of three years of service in the Active Reserve Program during combat operations. Those who separated after 2005 had either served more of their career or their entire career during continuous combat operations abroad. Data for these officers met all the required assumptions for a logistic regression. Multicollinearity was not found in the data as noted in Table 15. Correlation was not found among the variables as defined in Table 16.

Table 15: *Multicollinearity of Variables for Active Reserve Separations after 2005*

Variable	VIF	1/VIF
National Unemployment	4.39	0.227733
Number of Dependents	3.11	0.321936
Number of Deployments	2.17	0.459929
Minority or Caucasian	1.19	0.838447
Gender	1.11	0.901969
Mean VIF	2.39	

Table 16: *Correlation of Variables for Active Reserve Separations after 2005*

Variable	Separation	National Unemp.	# of Deploy.	# of Depend.	Minority or Cauc.	Gender
Separation	1.0000					
National Unemp.	-0.0560	1.0000				
# of Deployments	-0.0697	0.1549	1.0000			
# of Dependents	-0.0467	0.0346	0.0377	1.0000		
Minority or Cauc.	-0.0074	-0.0105	0.0145	-0.0668	1.0000	
# of Deployments	0.0175	-0.0024	-0.1266	-0.1876	0.0596	1.0000

Regression analysis continued to provide useful insights as to the propensities of Active Reserve officers, in this case results provided information associated with the propensities of officers to transfer from the Active Reserve Program after 2005. The model was found to be a viable model ($X^2 < 0.001$). Number of deployments ($p < 0.001$), number of dependents ($p = 0.001$), and national unemployment ($p < 0.001$) were found statically significant. A one increase in deployments decreased separation odds by 46.6%. An increase in dependents by one was found to decrease separation odds by 17.7%. A one percent increase in national unemployment reduced the odds of separation by 20.3%. Self-identifying as a minority or Caucasian ($p = 0.403$) and gender ($p = 0.925$) were not found statistically significant. Higher numbers of dependents, more organizationally mandated deployments, and an increase in national unemployment were

shown to lessen the likelihood officers would transition between Marine Corps components or out

of service, titled separation among military personnel. Self-identifying as a Caucasian or

minority and gender were not found to significantly impact separation from service. These

results failed show female Active Reserve Officers were more likely to separate from service

(H_1), failed to prove minorities were more likely to separate from the Active Reserve (H_3). The

results did prove three of the separation hypotheses, proving officers' propensities to separate

from service in the Active Reserve Program drops if an officer has more deployments (H_7), a

larger family (H_5), or if national unemployment increases (H_9). These results are shown in the

regression results of Table 17 and odds ratios are shown in Table 18. The table of estimates in

Table 19 shows statistical significance does not shift as more variables are added to the model.

Table 17: *Regression of Officers Separating from the Active Reserve Program after 2005*

Variable	b	SE	z	p	95% CI	
					LL	UL
National Unemployment	-0.227	0.060	-3.80	0.000	-0.344	-0.110
# of Deployments	-0.538	0.101	-5.32	0.000	-0.736	-0.340
# of Dependents	-0.195	0.053	-3.70	0.000	-0.298	-0.092
Minority or Caucasian	-0.181	0.217	-0.84	0.403	-0.606	0.243
Gender	0.025	0.266	0.09	0.925	-0.496	0.546
Constant	-1.590	0.345	-4.61	0.000	-2.266	-0.914

Table 18: *Odds Ratio for Officers Separating from the Active Reserve Program after 2005*

Variable	OR	SE	z	p	95% CI	
					LL	UL
National Unemployment	0.797	0.048	-3.80	0.000	0.709	0.896
# of Deployments	0.534	0.059	-5.32	0.000	0.479	0.712
# of Dependents	0.823	0.043	-3.70	0.000	0.742	0.912
Minority or Caucasian	0.834	0.181	-0.84	0.403	0.546	1.275
Gender	1.025	0.273	0.09	0.925	0.609	1.726
Constant	0.204	0.070	-4.61	0.000	0.104	0.401

Table 19: *Table of Estimates for Officers Separating from the Active Reserves after 2005*

Variable	(1) Separation	(2) Separation	(3) Separation	(4) Separation	(5) Separation
National Unemployment	-0.284*** (-4.99)	-0.239*** (-4.04)	-0.233*** (-3.93)	-0.227*** (-3.80)	-0.227*** (-3.80)
# of Deployments		-0.547*** (-5.53)	-0.532*** (-5.38)	-0.539*** (-5.36)	-0.538*** (-5.32)
# of Dependents			-0.187*** (-3.66)	-0.196*** (-3.77)	-0.195*** (-3.70)
Minority or Caucasian				-0.181 (-0.83)	-0.181 (-0.84)
Gender					0.0249 (0.09)
Constant	-2.195*** (-6.96)	-1.970*** (-6.08)	-1.589*** (-4.69)	-1587*** (-4.63)	-1.590*** (-4.61)
n	8053	8053	8045	7977	7977

t statistics in parenthesis
* p<0.05, ** p<0.01, *** P<0.001

Summary of Officer Separations from the Active Reserve Program

Regressions revealed insights for officers separating from the Active Reserve Program

through 2005 and after 2005. Logistic regressions across the cohorts studied proved officers

become less likely to separate as national unemployment rises (H_9). This is a logical finding as

individuals may be leery of leaving the service during a troubled economy. The regression

proved among all officers studied and the cohort for officers who separated after 2005 that a

larger family (H$_5$) and increased deployments (H$_7$) decrease the possibility an officer separates.

Increased deployments may create a link to the mission of military service and decrease desire to

leave service. Deployed officers may have increased feelings of attachment to service. A larger

family could merge personal desires with family responsibilities. Leaving guaranteed

employment with great benefits is tough when family size increases. Number of dependents and

increased deployments were not found statistically significant in impacting retention of Active

Reserve officers who served prior to 2005. The variables gender and self-identification as a

minority or Caucasian were found not statistically significant across the three separation models;

failing to prove female (H$_1$) and minority (H$_3$) officers are less likely to separate from the Active

Reserve Program when compared to males. This comparative analysis is shown in Table 20.

Table 20: *Summary of Regressions for Active Reserve Officers Separating*

Separation	All Data	Separation Through 2005	Separation after 2005
National Unemployment	-0.258*** (-4.37)	-0.669* (-2.29)	-0.227*** (-3.80)
# of Deployments	-0.603*** (-6.12)	-1.732 (-1.68)	-0.538*** (-5.32)
# of Dependents	-0.192*** (-3.99)	-0.178 (-1.43)	-0.195*** (-3.70)
Minority or Caucasian	-0.220 (-1.08)	-0.430 (-0.68)	-0.181 (-0.84)
Gender	0.100 (0.43)	0.287 (0.58)	0.0249 (0.09)
Constant	-1.331*** (-4.02)	1.008 (0.70)	-1.590*** (-4.61)
Observations	8588	611	7977

t statistics in parenthesis
Notes: Assumes Caucasian, male, 0 unemployment, 0 deployments, and 0 dependents
* $p<0.05$, **$p<0.01$, *** $p<0.001$

Retirement

This section evaluates the impact of economic, organizational, and individual variables upon the choices of Active Reserve officers to retire from the service by transitioning out of the military service. The sole economic variable considered is national unemployment. The lone organizational variable considered is number of deployments. The individual variables considered are gender, self-identification as a minority or Caucasian, and number of dependents. Survival analysis is used to determine how gender, self-identifying as a minority or Caucasian, or service before or after entry into the Global War on Terrorism impact officers' choices to retire from service. Variables shown to impact retirement decisions are included in logistic regressions. Those regressions inform whether findings prove, disprove, or fail to inform the hypotheses.

Retirement Descriptive Statistics

Descriptive statistics provide an overview of the population considered. The statistics in this section are provided in line with the variables considered. Information is provided on gender, self-identifying as a minority or Caucasian, number of dependents, and number of deployments.

Descriptive statistics provide an understanding of the population evaluated through logistic regressions. Descriptive statistics provided only considered gender, self-identifying as a minority or Caucasian, number of dependents, and number of deployments. Totality of descriptive statistics may vary between the variables considered due to missing data. The gender variable was found in 350 of the Active Reserve officers who retired in this data. Females made up 5.14% of the population among all data, 6.86% of those who retired through 2005, and 4.44% of officers who retired after 2005. Self-identifying as a minority or Caucasian was defined for 350 individuals who separated from the Active Reserve Program. The percentage of Caucasians across all cohorts who retired was 88.57%, for those who retired through 2005 it was 92.14%, and Caucasians made up 83.25% of officers who retired after 2006. Number of dependents minimally varied across the three cohorts considered. Retiring officers had on average one more dependent than separating officers. The spread between cohorts continued to be small, with all cohorts

87

having on average 2.97 dependents, the cohort who retired through 2005 had 3.08 dependents, and the cohort retiring from 2006 on having 2.93 dependents. Number of deployments continued to vary by cohort. The average combat deployments were minimal among those who separated through 2005 and was larger for the offices who separated from 2006 by one deployment. In both cases, the average number of deployments among separating Active Reserve officers was close to one deployment. Table 21 provides details on the summary statistics.

Table 21: *Descriptive Statistics for Retired Active Reserve Officers*

Variable	Male		Female		Total Sample
	n	%	n	%	n
Gender	332	94.86	18	5.14	350
Through 2005	95	93.14	7	6.86	102
After 2005	237	95.56	11	4.44	248
	Caucasian		Minority		
Minority or Caucasian	310	88.57	40	11.43	350
Through 2005	95	92.14	7	6.86	102
After 2005	215	83.25	33	16.75	248

Variable	n	M	SD	Range
# of Dependents	347	2.98	1.56	0-8
Through 2005	99	3.08	1.57	0-8
After 2005	248	2.94	1.56	0-8
# of Deployments	342	0.99	1.12	0-7
Through 2005	98	0.17	0.41	0-2
After 2005	244	1.32	1.14	0-7

Kaplan-Meier Survival Analysis for Retirements

Survival analysis was used to provide insights as to how Active Reserve officers transitioned out of the military via retirement. Survival analysis shows the propensities of

officers to retire as associated with the September 11, 2001 terrorist attacks and individual

variables of gender, and self-identification as a minority or Caucasian. Retirements through 2005

and after 2005[19] are used to represent the implications of the September 11, 2001 terrorist attacks

and how it changed the military's atmosphere. Analysis continues to use years of service as the

baseline. Retirements solely consider those who serve twenty years of service and beyond. Other

cases are covered in the separation section. National unemployment, an economic variable, and

family size, an individual variable, were not considered during survival analysis due to the

regularly occurring change of the metrics. Results of the Kaplan-Meier survival analysis provide

a visual for understanding the behaviors of Active Reserve officers who chose to retire from

service while in the Active Reserve Program.

This section seeks to determine if the variables logistic analysis provided useful insights

as to how Active Reserve Officers choose to retire based upon service before or after the terrorist

attacks of September 11, 2001, gender, and self-identifying as a minority or Caucasian. Officers

who served through 2005 retired earlier than those who served after 2005. Minorities retired at

faster rates than Caucasians at the twenty year mark through the twenty-three year mark. At that

point Caucasians continued in service at greater rates than minorities through thirty-three years of

service. At that point minorities in the population are exhausted and the remaining Caucasian

officers in the Active Reserve retire by thirty-seven years of service. Females tended to retire at

higher rates through twenty-two years of service, then retire at slower rates than males through

twenty-three years of service, and have all retired by the twenty-fourth year of active service.

Males continue on in service through thirty-seven years of active service. Analysis among the

three groups considered showed there were differences in the retirement actions of officers by

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[19] The year 2005 was used to examine service before or after the United States entering into the Global War on Terrorism. Individuals who joined in 2002 may have believed the conflicts in Iraq and Afghanistan were short term wars abroad. However, by 2005, the engagements in Afghanistan would have been nearing four years and those in Iraq nearing three years; both without a likely end in sight. Officers from this point on had to make a choice of continued service within the Active Reserve Program on active duty understanding the implications of service to a nation involved in a long-term war.

cohort. Graphic displays of the retirement of officers can be found in Figure 11, Figure 12, and Figure 13.
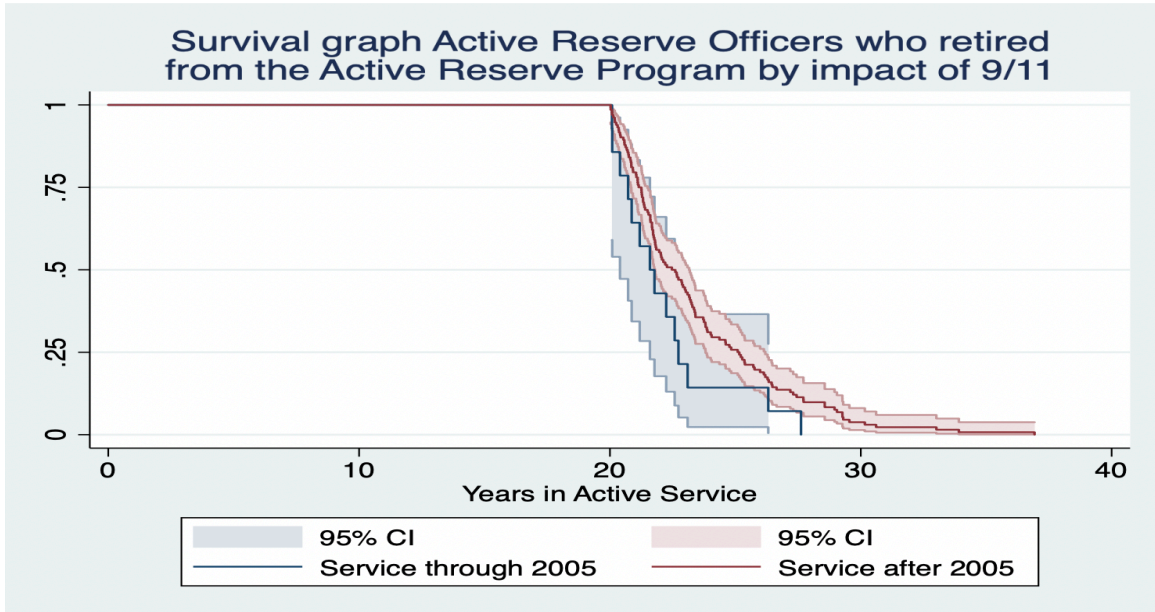
Figure 11: Survival Analysis of Active Reserve Officers Retirement as a function of Service through or after 2005
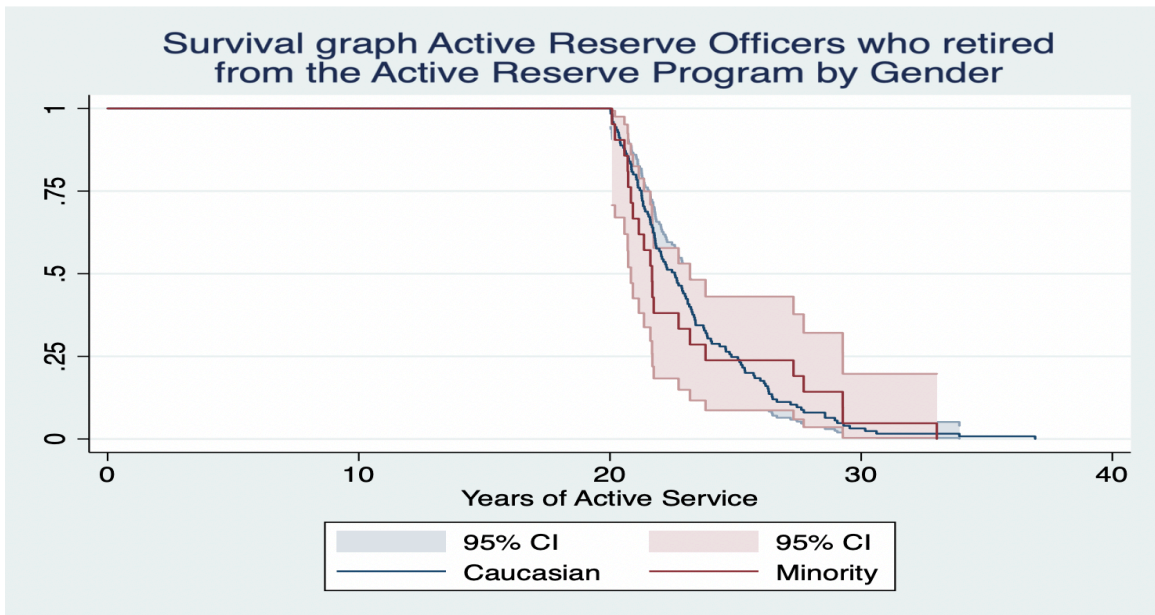
Figure 12: Survival Analysis of Active Reserve Officers Retirement as a function of Gender

Survival Graph Active Reserve Officers who retired from the Active Reserve Program by Minority Status
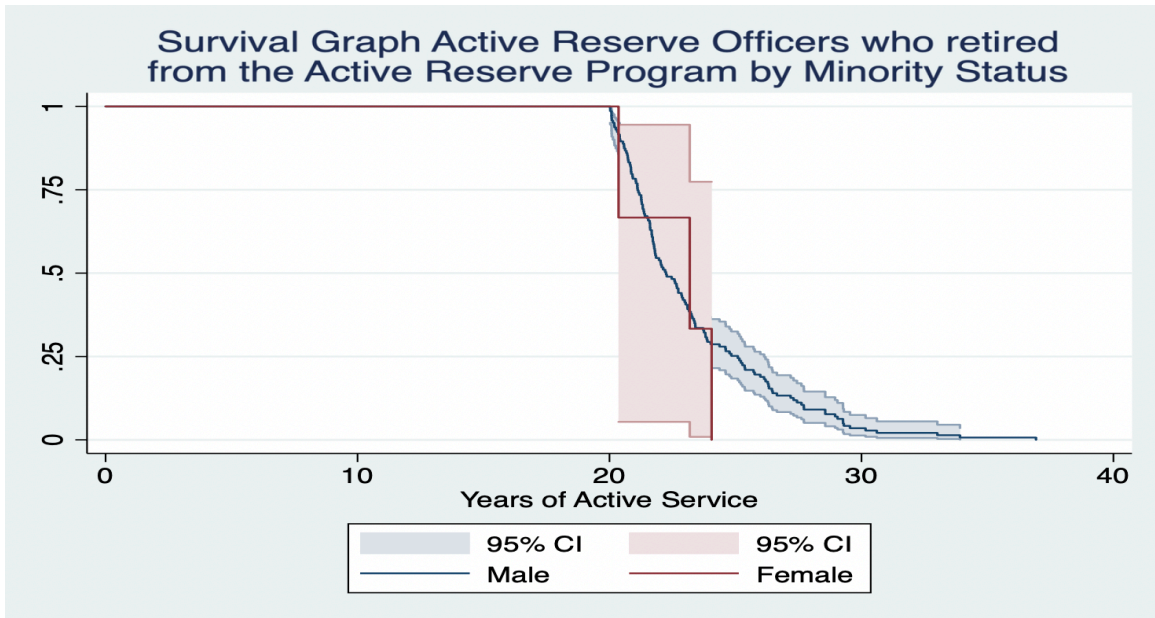
Figure 13: Survival Analysis of Active Reserve Officers Retiring as a function of Gender

Retirement Logistic Results for Active Reserve Officers

This section studies provides similar results to the previous section, but focuses instead upon the retirement of Active Reserve officers. The first portion of this section validates lack of multicollinearity or correlation. The second portion of this section explains and displays logistic regression results. The third portion of this section compares those logistic results to similar logistic regressions for officers serving within the active component or serving as reservists.

Each of the regressions below met the required assumptions required to conduct logistic regressions. The dependent variable is categorically mutually exclusive with individuals who are separated from the Active Reserves Program or not separated from the Active Reserve Program; excluding those who are retired. Independent variables are continuous (number of deployments, number of dependents, national unemployment rate) or nominal (gender or self-identification as a minority). Observations are all independent of one another as they solely include snapshots in time in an officer's career. Multicollinearity was not found in amongst the variables considered among the three cohorts considered: all who retired, those who retired through 2005, or those

who retired after 2005. Specifics on the multicollinearity results are found in Table 22. Strong correlation was not found in the variables considered with the results shown in Table 23.

Table 22: *Multicollinearity of Variables for Active Reserve Retirements*

Variable	VIF	1/VIF
Retirements		
National Unemployment	4.57	0.218941
Number of Dependents	3.57	0.280295
Number of Deployments	1.96	0.509807
Minority or Caucasian	1.17	0.853532
Gender	1.04	0.960393
Mean VIF	2.46	
Retirements through 2005		
National Unemployment	5.68	0.176147
Number of Dependents	5.21	0.191841
Number of Deployments	1.25	0.801564
Minority or Caucasian	1.09	0.915434
Gender	1.09	0.918810
Mean VIF	2.86	
Retirements after 2005		
National Unemployment	4.42	0.226065
Number of Dependents	3.55	0.282080
Number of Deployments	2.22	0.450319
Minority or Caucasian	1.19	0.838635
Gender	1.04	0.964998
Mean VIF	2.48	

Table 23: *Correlation of Variables for Active Reserve Retirements*

Variable	Retirement	National Unemp.	# of Deploy.	# of Depend.	Minority or Cauc.	Gender
Retirement	1.0000					
National Unemp.	-0.0715	1.0000				
# of Deployments	-0.0235	0.1366	1.0000			
# of Dependents	-0.0097	-0.0706	-0.0747	1.0000		
Minority or Cauc.	-0.0295	0.0674	0.0856	0.0200	1.0000	
# of Deployments	0.0175	-0.0268	-0.1388	-0.0683	-0.0118	1.0000
Retirement through 2005	1.0000					
National Unemp.	0.0900	1.0000				
# of Deployments	-0.0026	0.1691	1.0000			
# of Dependents	-0.0689	-0.1831	0.0140	1.0000		
Minority or Cauc.	0.0108	-0.0933	-0.1174	0.0433	1.0000	
# of Deployments	0.0740	0.0696	-0.0947	-0.1650	-0.0576	1.0000
Retirement after 2005	1.0000					
National Unemp.	-0.0696	1.0000				
# of Deployments	0.0174	0.0058	1.0000			
# of Dependents	0.0004	-0.0419	-0.0587	1.0000		
Minority or Cauc.	-0.0280	0.0471	0.0557	0.0251	1.0000	
# of Deployments	0.0650	-0.0261	-0.1498	-0.0408	0.0064	1.0000

Active Reserve Officer Retirement

The first model evaluated the retirement propensities of officers who had retired from the Active Reserve Program from 1989 through 2019. The model is found statistically significant (X^2 = 0.0107). The model further shows national unemployment ($p = 0.004$) and gender ($p = 0.006$) as statistically significant. Being female was shown to increase an officer's odds of retiring from the Active Reserves by 129%. Higher national unemployment was shown to lower the odds of retiring by 10.5% with a one percent increase in unemployment. Self-identifying as a minority or Caucasian ($p = 0.308$), number of deployments ($p = 0.864$), and number of dependents ($p = 0.689$) were found to be statistically insignificant in this model. Table 24 provides the regression

output and Table 25 provides odds ratios for this regression. The Table of estimates in Table 26 shows variables are minimally impacted with the model changing.

Table 24: *Regression of Officers Retiring from the Active Reserve Program*

Variable	b	SE	z	p	95% CI	
					LL	UL
National Unemployment	-0.110	0.038	-2.88	0.004	-0.186	-0.035
# of Deployments	-0.010	0.058	-0.17	0.864	-0.123	0.103
# of Dependents	-0.017	0.041	-0.40	0.689	-0.097	0.064
Minority or Caucasian	-0.193	0.189	-1.02	0.308	-0.564	0.178
Gender	0.829	0.304	2.73	0.006	0.233	1.425
Constant	-0.830	0.265	-3.13	0.002	-1.350	-0.311

Table 25: *Odds Ratio for Officers Retiring from the Active Reserve Program*

Variable	OR	SE	z	p	95% CI	
					LL	UL
National Unemployment	0.895	0.034	-2.88	0.004	0.831	0.965
# of Deployments	0.990	0.057	-0.17	0.864	0.884	1.109
# of Dependents	0.984	0.041	-0.40	0.689	0.907	1.066
Minority or Caucasian	0.824	0.156	-1.02	0.308	0.569	1.195
Gender	2.291	0.697	2.73	0.006	1.262	4.157
Constant	0.436	0.116	-3.13	0.002	0.259	0.733

Table 26: *Table of Estimates for Officers Retiring from the Active Reserves*

Variable	(1) Separation	(2) Separation	(3) Separation	(4) Separation	(5) Separation
National Unemployment	-0.116** (-304)	-0.113** (-4.56)	-0.114** (-2.98)	-0.112** (-2.92)	-0.110** (-2.88)
# of Deployments		-0.034 (-0.60)	-0.374 (-0.65)	-0.323 (-0.56)	-0.010 (-0.17)
# of Dependents			-0.028 (-0.68)	-0.027 (-0.66)	-0.017 (-0.40)
Minority or Caucasian				-0.194 (-1.02)	-0.193 (-1.02)
Gender					0.829** (2.73)
Constant	-0.855*** (-3.88)	-0.837*** (-3.76)	-0.741** (-2.82)	-0.734** (-2.79)	-0.830** (-3.13)
n	1828	1828	1827	1827	1827

t statistics in parenthesis
* p<0.05, ** p<0.01, *** P<0.001

Active Reserve Officer Retirement through 2005

The second model evaluated the cohort who retired through 2005. This group effectively served during the relative peace following the Vietnam Conflict potentially through the initial three years of wars in Iraq and Afghanistan. The model was not found to be statistically significant ($X^2 = 0.4580$). The variables in this model do not show any statistical impact upon retirement. Table 27 provides the output from the regression of Active Reserve officer retirements through 2005 and Table 28 provides the odds ratio for the same regression. The Table of Estimates in Table 29 shows variables are minimally impacted with the model changing.

Table 27: *Regression of Officers Retiring from the Active Reserves through 2005*

Variable	b	SE	z	p	95% CI	
					LL	UL
National Unemployment	0.283	0.173	1.63	0.103	-0.057	0.622
# of Deployments	-0.050	0.302	-0.17	0.869	-0.641	0.542
# of Dependents	-0.076	0.086	-0.88	0.380	-0.245	0.093
Minority or Caucasian	0.214	0.464	0.46	0.644	-0.695	1.124
Gender	0.586	0.515	1.14	0.256	-0.433	1.596
Constant	-1.315	0.934	-2.48	0.013	-4.146	-0.484

Table 28: *Odds Ratios for Officers Retiring from the Active Reserves through 2005*

Variable	OR	SE	z	p	95% CI	
					LL	UL
National Unemployment	1.327	0.230	1.63	0.103	0.945	1.863
# of Deployments	0.951	0.287	-0.17	0.869	0.527	1.719
# of Dependents	0.927	0.080	-0.88	0.380	0.783	1.098
Minority or Caucasian	1.239	0.575	0.46	0.644	0.499	3.076
Gender	1.796	0.925	1.14	0.256	0.654	4.930
Constant	0.099	0.092	-2.48	0.013	0.016	0.616

Table 29: *Table of Estimates for Officers Retiring from the Active Reserves through 2005*

Variable	(1) Retired	(2) Retired	(3) Retired	(4) Retired	(5) Retired
National Unemployment	0.300 (1.80)	0.310 (1.84)	0.289 (1.67)	0.293 (1.70)	0.283 (1.63)
# of Deployments		-0.107 (-0.36)	-0.101 (-0.34)	-0.089 (-0.30)	-0.045 (-0.17)
# of Dependents			-0.0899 (-1.05)	-0.091 (-1.07)	-0.076 (-0.88)
Minority or Caucasian				0.181 (0.39)	0.214 (0.46)
Gender					0.586 (1.14)
Constant	-2.604** (-3.16)	-2.635** (-3.18)	-2.246* (-2.82)	-2.279* (-2.44)	-2.315* (-2.48)
n	405	405	404	404	404

t statistics in parenthesis
* $p<0.05$, ** $p<0.01$, *** $P<0.001$

Active Reserve Officer Retirement after 2005

The third model evaluated the cohort of Active Reserve officers who retired after 2005. This faction of historical Active Reserve officers should be considered those who chose to continue to serve a nation at war for the end of a career. The model is statistically significant (X^2 = 0.0116). The model mirrored the first model, showing gender ($p = 0.007$) and national unemployment ($p = 0.015$) as statistically significant. Being female resulted in increased odds of retirement by 1.5 times the rate that males retired. When unemployment is increased by one percent the odds officers retire drops by 9.8%. Both these phenomena were predicted by H_2 and H_{10}. Self-identifying as a minority or Caucasian ($p = 0.303$), number of deployments ($p = 0.275$), or number of dependents ($p = 0.692$) were found to be statistically insignificant in this model. The lack of statistical significance does not permit any insights as to the impact of hypotheses according the individual variables of self-identifying as a minority or Caucasian (H_4) or number

of dependents (H_6). Similarly, the lack of statistical significance in the organizational variable

number of deployments (H_8) disallowed insights into its influence in retirement. Table 30

provides the output and Table 31 provides the odds ratio from this regression. Table 32 provides

the table of estimates for this regression and shows variables shift minimally with model changes.

Table 30: *Regression of Officers Retiring from the Active Reserve Program after 2005*

Variable	b	SE	z	p	95% CI	
					LL	UL
National Unemployment	-0.103	0.042	-2.49	0.013	-0.185	-0.022
# of Deployments	0.069	0.064	1.08	0.280	-0.056	0.195
# of Dependents	0.006	0.048	-0.12	0.905	-0.088	0.099
Minority or Caucasian	-0.211	0.210	-1.01	0.314	-0.622	0.200
Gender	0.933	0.382	2.44	0.015	0.184	1.681
Constant	-1.128	0.310	-3.63	0.000	-1.737	-0.520

Table 31: *Odds Ratios for Officers who Retired from the Active Reserves after 2005*

Variable	OR	SE	z	p	95% CI	
					LL	UL
National Unemployment	0.902	0.037	-2.49	0.013	0.831	0.978
# of Deployments	1.107	0.069	1.08	0.280	0.945	1.215
# of Dependents	1.006	0.048	-0.12	0.905	0.916	1.104
Minority or Caucasian	0.810	0.170	-1.01	0.314	0.537	1.221
Gender	2.541	0.970	2.44	0.015	1.202	5.371
Constant	0.324	0.100	-3.63	0.000	0.176	0.595

Table 32: *Table of Estimates for Officers Retiring from the Active Reserves through 2005*

Variable	(1) Retired	(2) Retired	(3) Retired	(4) Retired	(5) Retired
National Unemployment	-0.109** (-2.61)	-0.109** (-2.62)	-0.109** (-2.62)	-0.107* (2.57)	-0.103* (-2.49)
# of Deployments		0.042 (0.66)	0.042 (0.65)	0.045 (0.71)	0.069 (1.08)
# of Dependents			-0.003 (-0.05)	-0.002 (-0.03)	0.006 (0.12)
Minority or Caucasian				-0.206 (-0.98)	-0.211 (-1.01)
Gender					0.933* (2.44)
Constant	-0.990*** (-3.92)	-1.045*** (-3.92)	-1.037*** (-3.37)	-1.023*** (-3.32)	-1.128*** (-3.63)
n	1423	1423	1423	1423	1423

t statistics in parenthesis
* p<0.05, ** p<0.01, *** P<0.001

Summary of Officer Retirements from the Active Reserve Program

The regressions in this section provided insights as to how economic, organizational, and individual variables influenced an officer's choice to retire from the Active Reserve Program as a part of one the following three cohorts: officers retiring between 1989 through 2019, those retiring through 2005, and those retiring after 2005. The statistical insignificance of the model reflecting officers retiring through 2005 disallowed findings which were similar across all three models. The remaining two models including all officers and those who retired after 2005 found a positive correlation with females retiring earlier in line with this dissertations predicted impact of gender (H_2). Females retiring earlier may have cultural causes or be linked to limited promotions of females to higher rank. Higher national unemployment among these cohorts was found to influence an officer's desire to continue in service as proposed by hypothesis (H_{10}), in line with literature. Officers who have served an entire career in the military are likely unwilling to leave behind a career with a guaranteed paycheck and benefits while the economy is unruly.

The remaining hypothesis surrounding the individual variables, self-identifying as a minority or

Caucasian (H$_4$) and number of dependents (H$_6$), and sole organizational variable, number of

deployments (H$_8$), could not be proven or disproven due to variables not being statistically

significant in this study. Model comparisons in this section are shown in Table 33.

Table 33: *Summary of Regressions for Active Reserve Officers Retiring*

Retirement	All Data	Retirement through 2005	Retirement after 2005
National Unemployment	-0.110** (-2.88)	0.283 (1.63)	-0.103* (-2.49)
# of Deployments	-0.0099 (-0.17)	-0.0498 (-0.17)	0.0694 (1.08)
# of Dependents	-0.0165 (-0.40)	-0.0759 (-0.88)	0.00569 (0.12)
Minority or Caucasian	-0.193 (-1.02)	0.214 (0.46)	-0.211 (-1.01)
Gender	0.829** (2.73)	0.586 (1.14)	0.933* (2.44)
Constant	-0.830** (-3.79)	-2.315* (-2.48)	-1.128*** (-3.63)
Observations	1827	404	1423

t statistics in parenthesis
Notes: Assumes Caucasian, male, 0 unemployment, 0 deployments, and 0 dependents
* $p<0.05$, **$p<0.01$, *** $p<0.001$

Comparing retirement tendencies across Components and Categories

This section compares and contrasts the selected individual, organizational, and economic

variables have upon officers who retired from the Active Reserve Program, active component, or

reserves. The economic variable considered is national unemployment, the organizational

variable evaluated is number of deployments, and individual variables evaluated are gender, self-

identifying as a minority, and number of dependents. National unemployment was the sole

variable found statistically significant among officers in the Active Reserves, active component,

and reserves. Higher national unemployment continued to influence delaying retirement from

military service as proposed (H_{10}). Gender was found statistically significant among Active

Reserve and active component officers; with female officers more likely to retire from service

prior to male officers as predicted in the hypothesis speaking to gender and retirement (H_2).

Number of dependents was found statistically significant among active component and reserve

officers. In both cases an increase in dependents resulted in a decrease in propensities to retire as

proposed (H_6). Number of deployments was only significant among active component officers.

Increased deployments influenced officers to retire later in their careers. The finding did not

provide any insights to the proposed impacts to Active Reserve officers (H_8). Hypothesis

surrounding self-identifying as a minority or Caucasian could not be proven due to statistical

insignificance in this variable in this model (H_4). Table 34 compares the retirement models for

officers who retired from the Active Reserve Program, active component, or reserves.

Table 34: *Summary of Regressions for Officers Retiring*

Retirement	Active Reserve Officers	Active Component Officers	Reserve Officers
National Unemployment	-0.110** (-2.88)	-0.119*** (16.65)	-0.128*** (-10.89)
# of Deployments	-0.010 (-0.17)	-0.020*** (-4.26)	-0.015 (1.30)
# of Dependents	-0.016 (-0.40)	-0.026*** (-3.44)	-0.049*** (-4.36)
Minority or Caucasian	-0.193 (-1.02)	0.0305 (0.94)	-0.006 (1.19)
Gender	0.829** (2.73)	0.309*** (5.12)	0.0893 (2.44)
Constant	-0.830** (-3.79)	-0.639*** (-13.61)	-1.726*** (-22.86)
Observations	1827	57105	49976

t statistics in parenthesis
Notes: Assumes Caucasian, male, 0 unemployment, 0 deployments, and 0 dependents
* $p<0.05$, **$p<0.01$, *** $p<0.001$

The second model evaluated in this section compares the propensities of officers to retire

as a function of the selected economic, organizational, and individual variables through 2005.

The first item to note is the active reserve model was not found statistically significant. Active reserve non-statistical tendencies generally match those of officers who retired from the active component with the exception of impact self-identifying a minority creates. An increase in national unemployment was found to increase the likelihood officers separate among active component, reservists, and Active Reserve officers, with only the reserve officer finding being statistically significant. This finding is counter to the hypothesis (H_{10}) and literature.

An increased number of deployments was found to decrease an individual's propensity to retire, counter to hypothesis (H_8). Deployment's impact was not statistically significant for Active Reserve officers, but was for active component and reservists. The parity across the three components likely means it was a shared trait among Marine officers at the time. The hypothesis was built based off the reality of the post-terrorist attack world where deployments were plentiful, not the pre-terrorist attack world where they were rare.

An increased number of dependents was found to decrease the rate at which officers retired from service, as predicted by hypothesis (H_6). This finding was only significant among active component members, but was shared across the active component, Active Reserves and Reserves. Individuals with dependents still living in their house may choose to avoid the risks of retirement, job hunting, and other unknowns by continuing in service.

Self-identification as a minority had varied impacts depending upon group studied. Active Reserve officers experienced greater retention than their Caucasian counterparts; as predicted by hypothesis (H_4). Active component and reserve Marines found retention negatively impacted with individuals who self-identify as a minority. The difference is likely due to the small sample size of minorities within the Active Reserves. A larger sample may have created parity with the active component and reserve populations.

Gender also had varied impacts dependent upon cohort. The research showed females serving in the active component and Active Reserves were more likely to retire than males in the same component, counter to hypothesis (H_2) and female reservists were less likely to retire than

male reservists. Only the active component findings were statistically significant. The findings

likely speak to females on active duty generally retiring earlier than their male counterparts.

Females in the reserves were noted to retire later than their male counterparts. Of the findings,

only the active component findings were statistically significant. Once again behavioral

differences can be attributed to either service in active duty or a reserve status. Table 35

compares the retirement models for officers who retired through 2005 from the Active Reserve

Program, active component, or reserves.

Table 35: *Summary of Regressions for Officers Retiring through 2005*

Retirement	Active Reserve Officers	Active Component Officers	Reserve Officers
National Unemployment	0.283 (1.63)	0.0312 (1.65)	0.279*** (6.03)
# of Deployments	-0.0498 (-0.17)	-0.145*** (-3.48)	-0.369*** (-5.00)
# of Dependents	-0.0759 (-0.88)	-0.0264* (-1.97)	-0.00461 (-0.23)
Minority or Caucasian	0.214 (0.46)	-0.120 (-1.69)	-0.344 (-2.70)
Gender	0.586 (1.14)	0.613*** (5.72)	-1.94 (-1.43)
Constant	-2.315* (-2.48)	-1.303*** (-11.71)	-3.134*** (-12.53)
Observations	404	18963	7789

t statistics in parenthesis
Notes: Assumes Caucasian, male, 0 unemployment, 0 deployments, and 0 dependents
* $p<0.05$, **$p<0.01$, *** $p<0.001$

The best model to use to evaluate officers may be the one only considering officers who

retire after 2005. These officers are in the group who has experienced the threat of deploying to

combat for likely the entirety of their career. The insights from this group are the most applicable

to current policy makers and manpower planners given the United States' continued propensities

in military operations across the globe for nearly two decades. The individual variable gender

and economic variable national unemployment were statistically significant among the three cohorts considered. The influences of both variables upon the populaces marries what has been noted in previous sections and support hypotheses surrounding national unemployment (H_{10}) and gender (H_2). Females tend to retire earlier than their male counterparts and higher national unemployment negatively influences officers' desire to retire. Higher unemployment's negative influence on retirement speaks to the risks involved with transitioning during a chaotic market. Females retiring earlier than men may speak to cultural issues in play or may point to the limited number of females achieving the senior most ranks within the Active Reserve Program[20]. The number of dependents continues to be statistically significant for officers serving within the active component or reserves. In both cases, having more dependents decreases the likelihood an officer retires earlier in his career. This finding is important as it likely signals increased family responsibilities heavily influence an officer's desire to leave a guaranteed paycheck with a robust benefits package. Race was only found to be statistically significant for active component officers. Race negatively impacted their desire to continue in service, vice retire. Number of deployments was found statistically significant among reserve officers and increased their propensity to retire earlier in their career. Hypotheses surrounding the self-identification as a minority or Caucasian (H_4), family size (H_6), both individual variables, and number of deployments (H_8), the sole organizational variable, could not be compared due to their statistical insignificance in the model. Table 36 provides an overview of the comparison between the different categories of officers.

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[20] At the time of this dissertation the author has been in the Active Reserve Program since 2011 and has only known of one female Colonel within its ranks, she has yet to retire and is not counted in this data.

Table 36: *Summary of Regressions for Officers Retiring after 2005*

Retirement	Active Reserve Officers	Active Component Officers	Reserve Officers
National Unemployment	-0.103* (-2.49)	-0.139*** (-17.49)	-0.109*** (-8.45)
# of Deployments	0.0694 (1.08)	0.00930 (1.78)	0.0749*** (7.00)
# of Dependents	0.00569 (0.12)	-0.0239* (-2.56)	-0.0673*** (-4.95)
Minority or Caucasian	-0.211 (-1.01)	-0.131*** (-3.57)	0.106** (-2.70)
Gender	0.933* (2.44)	0.219** (2.97)	1.86* (2.04)
Constant	-1.128*** (-3.63)	-0.689 *** (12.38)	-2.161*** (-24.61)
Observations	1423	38142	42187

t statistics in parenthesis
Notes: Assumes Caucasian, male, 0 unemployment, 0 deployments, and 0 dependents
* $p<0.05$, **$p<0.01$, *** $p<0.001$

Chapter Conclusion

This research studied the impacts individual, organizational, and economic variables have upon the career decisions of Active Reserve officers. Individual variables included gender, self-identifying as a minority or Caucasian, and number of dependents. The sole organizational variable considered was number of deployments an officer had experienced at the point of separation or retirement. The sole economic variable considered was national unemployment. Two distinct statistical tools were used to evaluate the impact these variables have upon an officer's choice to retire from the Active Reserve Program. The second tool, logistic regressions, determined the correlation of these individual, organizational, and economic variables may have upon an officer's choice to separate or retire from service. Further comparison was conducted to determine the similarities or differences in retirement propensities of Active Reserve, active

component, and reserve officers using the selected individual, organizational, and economic

variables on the Active Reserve officer population. Findings showed two variables influenced

retirement of Active Reserve officers. Being female was found to influence retiring earlier than

male peers and higher national unemployment was found to delay retirement of officers. The

impact of gender and national unemployment upon the retirement decisions of active component

and reservist officers was found to mirror those of Active Reserve officers. Table 37 provides a

summary of the findings.

Table 37: *Summary of Findings*

Hypothesis	Findings
Individual Factors	
Gender	
H_1: Female Active Reserve officers separate from the Active Reserve Program after male Active Reserve officers.	Hypothesis was not confirmed. Findings were not statistically significant, but showed females slightly more likely to separate than males, counter to hypothesis.
H_2: Female Active Reserve officers retire from the Active Reserve Program before male Active Reserve officers.	Hypothesis confirmed. Female Active Reserve officers are more likely to retire from the Active Reserve Program than their male counterparts who served after 2005.
Race and Ethnicity	
H_3: Self-identified minority Active Reserve officers separate from the Active Reserve Program after Caucasian Active Reserve officers.	Hypothesis was not confirmed. Findings were not statistically significant, but showed self-identified minorities less likely to separate than Caucasians as predicted.
H_4: Self-identified minority Active Reserve officers retire from the Active Reserve Program before Caucasian Active Reserve officers.	Hypothesis was not confirmed. Findings were not statistically significant, but showed self-identified minorities less likely to retire after 2005, counter to hypothesis, and more likely to separate through 2005 as predicted.
Number of Dependents	
H_5: The larger the family size an Active Reserve officer has the later the officer will separate from the Active Reserve Program	Hypothesis confirmed. A larger family reduced the propensities of officers to separate from the Active Reserve Program for officers who served after 2005.

Hypothesis	Findings
Number of Dependents	
H_6: The larger the family size an Active Reserve officer has the longer an Active Reserve officer waits to retire from the Active Reserve Program.	Hypothesis was not confirmed. Findings were not statistically significant, but showed members with larger families more likely to retire after 2005, counter to hypothesis, and less likely to retire through 2005 as predicted.
Organizational Factors	
Number of Deployments	
H_7: The more deployments an Active Reserve officer has completed the longer an officer waits to separate from the Active Reserve Program.	Hypothesis confirmed. Officers are less likely to separate the more they are deployed for officers who served after 2005.
H_8: The more deployments an Active Reserve officer has completed the sooner an officer retires from the Active Reserve Program.	Hypothesis was not confirmed. Findings were not statistically significant, but showed members with more deployments were less likely to retire through 2005, counter to hypothesis, and more likely to retire through 2005 as predicted.
Economic Factors	
National Unemployment	
H_9: Increased national unemployment will delay separation from the Active Reserve Program.	Hypothesis confirmed. An increase in unemployment was found to reduce separation across all cohorts studied.
H_{10}: Increased national unemployment will delay retirement from the Active Reserve Program.	Hypothesis confirmed. An increase in unemployment was found to reduce retirement for officers who served after 2005.

CHAPTER 6: DISCUSSION

This dissertation has evaluated the propensities of economic, organizational, and individual variables to impact the career decisions of Active Reserve officers to separate or retire from service. Literature surrounding the career decisions of Marine Corps officers included variables influencing the retirement and separation of active component and reserve officers. This dissertation sought to provide insights into Active Reserve officers' career decisions to answer the research questions:

1. How do economic, organizational, or individual variables influence the decisions of Active Reserve Officers' transition from the Active Reserve Program via separation or retirement?

2. Are these factors similar or different to active component officers' career decisions to retire? Are these factors similar or different to reserve officers' decisions to retire?

The research questions were further defined using two distinct frameworks. The first framework used Gottschalck's (2004) concept that turnover occurs as either into, between, or out of employment. In this research, turnover between jobs was defined as between the active component, reserves, or Active Reserve Program. Transitions out of employment were defined as leaving the service via separation or retirement. This research did not consider transitions into the military. The second framework considered Selden and Moynihan's (2000) perspective that variables impacting turnover are economic, organizational, or individual. Considered in this study were one economic, one organizational, and three individual variables. The economic variable was national unemployment. The organizational variable was number of deployments. The individual variables were number of dependents, gender, and self-identification as a minority or Caucasian.

Hypothesis were created to estimate the impact of each variable upon the separation of officers or retirement of officers serving on the Active Reserve Program. National unemployment, number of deployments, gender, self-identification as a minority or Caucasian, and number of dependents were each believed to negatively impact separation. Otherwise stated females (H_1) and minorities (H_3) are more likely to stay in service, more dependents increased the likelihood an officer would continue in service (H_5), more deployments decreased separation rates (H_7), and higher unemployment lessened the chance officers would leave service. Reactions to retirement were estimated to differ in some cases. Increased number of dependents (H_6) and higher national unemployment (H_{10}) were still believed to delay retirement. Females (H_2) Minorities (H_4), and a higher number of deployments (H_8) were believed to retire at faster rates than males, Caucasians, and those with fewer deployments.

Survival and logistical analysis provided insights as to the propensities and trends of separation and retirement. Survival analysis showed the rate at which individuals separated based upon gender, self-identification as a minority or Caucasian, or service through or after 2005 were nearly identical with slight deviations. Logistical regressions were used to test each hypothesis due to the binary, categorical nature of the phenomena being tested. The results of those hypothesis are discussed in the following section.

Survival analysis showed a majority of the differences in separations or retirements according to gender, self-identification, or service through or after 2005 were minimal. Officers tended to separate faster and retire later after the terrorist attacks of September 11, 2001. Minority status had limited impact in the separation or retirement rates. Gender had limited influence in the separation rates, but showed a strong detriment to continuing in service when retirement eligible. The gender disparities may be due to culture or achievement of senior ranks. The current Active Reserve population of officers has one female amongst its thirty-two Colonels. When she retires, she will invariably skew retirement longevity significantly to the right as she is able to continue in service until thirty years of service.

<center>**Generalizations**</center>

This dissertation studied the impact of economic, organizational, and individual variables upon an Active Reserve officer's decision to separate or retire from service. The two acts are differentiated with how one leaves service. Separation is defined as transitioning out of service entirely or transitioning between components, in this case transitioning from the Active Reserves into the reserves or Active Component, without any benefits. Retirement is transitioning out of service after vestment in the retirement system; which brings with it a fixed benefit retirement and heavily discounted medical. Findings for separation and retirement provide discernments as to the propensities of Active Reserve officers. This section solely focuses upon the statistically significant findings as compared to literature.

Marine Corps Separations

The findings on separation show the current generation of Active Reserve officers (i.e. those serving after 2005) are less likely to leave service if they have been deployed more by the organization, face an economy with higher national unemployment, or have a larger family. This finding is in keeping with much of the literature showing increased deployments helps maintain Marine Corps officers within the active duty ranks; including those who served from 2004-2005 (Quester A. O., Hattiangadi, Lee, & Shuford, 2006) and 2006-2007 (Lien, Quester, & Shuford, 2008). Deployments were found to improve the retention of reservist officers in one study (Hansen, MacLeod, & Gregory, 2004). Mobilizations of more junior officers were found to impact retention (Schulte & Dolfini-Reed, 2012; Dolfini-Reed & McHugh, 2007; Dolfini-Reed, Parcell, & Horne, 2005). The literature tends to lean towards junior officers experiencing higher rates of mobilization likely leave service or do not affiliate. Most Active Reserve officers access as senior Captains or junior Majors. Increased deployments among officers likely create a feeling of institutional belonging and help to maintain officers within the Active Reserve Program. This study found deployments as the most impactful variable of those studied; with each deployment increasing the delay in separation by 45.3%. The findings show deployments among Active

<center>110</center>

Reserve officers increase retention. The force writ large can use this study to simply state deployments increase retention of Marine Corps officers, regardless of service in the active component, reserves, or Active Reserves.

Higher unemployment, an economic variable in turnover, would seem to negatively impact separation rates and was found as the second most influential variable by odds ratio. The tougher the job market, the less likely someone would consider transitioning away from a guaranteed paycheck and robust benefits package. For every 1% increase in unemployment, separation was delayed by 22.7%. Literature already notes increased national unemployment rates are correlated with greater numbers of officers continuing in service (Glaser, 2010). The findings of this study are in line with those found by Glaser: as national unemployment rates increase the propensity of officers to separate is negatively affected. In this case, this research proves Active Reserve officers are less likely to separate when unemployment rises. These findings can be further generalized as unemployment increases officers on active duty, regardless of status as an active component or Active Reserve officer, are less likely to separate.

Findings in this study surrounding family size and transition, via separation, between components or out of service augment the findings throughout literature. Literature has shown an increased family size negatively impacts the separation rates among active (Lien, Quester, & Shuford, 2008; Glaser, 2010; Quester A. O., Hattiangadi, Lee, & Shuford, 2006) and reserve officers (Schulte & Dolfini-Reed, 2012; Dolfini-Reed & McHugh, 2007). This study showed the known impacts of family size on retention as a positive influencer are equally as applicable to the Active Reserve officer population and further revealed number of dependents as the final statistically significant variable in separation of Active Reserve officers. Increased retention among those with larger families is the expected result. Each additional dependent an individual has in their family was found to delay retention by 17.5%. The military offers a guaranteed fixed income and robust benefits package, with free medical and heavily discounted dental. The cost savings of these plans are easily in the thousands annually for families. Families, like

unemployment and number of deployments, are important variables for the services to be aware of. Increased number of dependents increases retention, regardless of component or category of service.

Findings on the remaining variables, self-identification as a minority or Caucasian and gender were not found to be statistically significant. Findings, although not statistically significant, showed women were more likely to separate than males, counter to the hypothesis (H_1). Findings which are not statistically significant when evaluating gender are common in the literature and are found in the literature surrounding the turnover of state employees (Moynihan & Landuyt, 2008; Bae, Sabharwal, Smith, & Berman, 2017), international public servants (Quratulain & Khan, 2015), and military studies (Quester A. O., Hattiangadi, Lee, & Shuford, 2006; Lien, Quester, & Shuford, 2008; Dolfini-Reed & McHugh, 2007; Asch, Miller, & Weinberger, 2016).

Results on separation proclivities of those self-identifying as a minority or Caucasian show minorities were less likely to separate, as predicted by the hypothesis (H_3); albeit without statistical significance. Studies vary as to whether or not statistical significance is found. There are numerous studies showing no significance in military (Lien, Quester, & Shuford, 2008; Quester A. , Hattiangadi, Lee, Hiatt, & Shuford, 2007), federal employees (Reiner & Zhao, 1999), and state employees (Moynihan & Landuyt, 2008). Other studies have shown minorities less satisfied with federal employment (Cho & Perry, 2012) but are less likely to leave it (Cho & Lewis, 2012). Minority status has been shown to improve retention in the active component (Lien, Quester, & Shuford, 2008; Quester A. , Hattiangadi, Lee, Hiatt, & Shuford, 2007) and reserves (Schulte & Dolfini-Reed, 2012). Studies seem to confirm the non-statistically significant findings that self-identifying as a minority improves retention of Active Reserve officers.

Marine Corps Retirements

Retirement from the Marine Corps is a final act which severs ties to a career lasting at least twenty years of an officer's life, likely including the totality of their young adulthood. Most

military studies up to this point have not found gender a statistically significant variable in turnover of military officers (Quester A. O., Hattiangadi, Lee, & Shuford, 2006; Lien, Quester, & Shuford, 2008; Dolfini-Reed & McHugh, 2007). This study found the impact of gender as the most significant variable by odds ratio and as a significant variable. Female officers were found 112.91% more likely to retire earlier than their male officers. Furthermore, the data studied showed this phenomenon applied to officers in the active component and active reserves. There is little logic to discern why one gender is more likely to retire over the other later in a career. Senior officers likely deploy less often and when deployed are likely less involved in kinetic operations with enemy combatants. By nature of fighting unit structures, there is limited capacity for senior personnel among their ranks. Many senior officers instead fill staff roles within the Marine Corps various headquarters units. Limited deployments and increased stability offered by staff roles should normalize a previously erratic career choice.

Unemployment was once again found to be a statistically significant, but not nearly to the level of impact as gender. For every 1% increase in unemployment an officer's likelihood of retirement drops by 10.5%. This phenomenon continues to be a logical finding. Individuals are unlikely to leave a job with a guaranteed job, generous benefits, and annually increasing pension when the market's opportunities are limited nationally. It is logical to wait until the market settles into a more conducive environment to transition from military service.

Findings on the remaining variables, self-identification as a minority or Caucasian, number of dependents, and number of deployments were not found statistically significant. Findings, although not statistically significant, showed self-identified minorities were less likely to retire after 2005 and more likely to retire through 2005. Active component separation was found to match Active Reserve propensities in both cases, with statistical significance, and reservists' tendencies were found counter to active component and Active Reserve ones. Active component and active reserve similarities likely show minorities on active duty had a lesser inclination to leave service prior to 2005 and have since shifted to choosing to leave service

earlier than Caucasians. That cultural trend deserves further analysis and may show minorities are more willing to serve longer military careers during peace time and less willing to increase service past vestment when continued military employment is for a nation at continuous war.

Non-statistically significant findings for dependents show a higher number of dependents increases the propensities of officers to continue in service for Active Reserve officers who served through 2005, as predicted by hypothesis, and decreases the likelihood Active Reserve officers continuing in service for those who served after 2005, albeit at a level without economic significance. Among active component and reserve officers among cohorts serving through 2005 and after 2005 increased number of dependents was shown to reduce the retirement propensities of officers. This finding was statistically significant for active component members serving through 2005 and for both active component and reserve officers serving after 2005. The combined statistically significant and non-statistically significant findings across components provide insights which validate the hypothesis that a larger family decreases the rate at which personnel retire. In a program as small as the Active Reserves, this finding should serve as a cue that members with larger families may have tendencies to stick around until as such time as service is non-conducive for their family's situation.

The impact of deployments was not found to be statistically significant and was found to concur with the hypothesis that number of deployments increases retirement propensities for Active Reserve officers retiring after 2005. The increased tendencies were in concurrence with the actions of active component officers and reserve officers who retired after 2005. Reserve findings were found to be statistically significant. Retirement tendencies through 2005 were reverse of those afterwards for all components considered. Active reserve officers were not statistically significant; however active component and reserve officers were statistically significant. These findings were counter with the literature showing vested officers were less likely to retire if they served in combat zones. Across the components there is concurrence to be found that likely speaks to greater underlying phenomena. Officers retiring through 2005 were

less likely to retire with more deployments and individuals after 2005 were more likely to retire with increased deployments.

This shift in retirement propensities likely speaks to the regularity with which deployments happened pre- and post-terrorist attacks. Before 2001, deployments were relatively rare and service members could serve an entire thirty year career without a single combat deployment. After 2005, deployments increased in regularity, likely influencing officers decisions to retire; regardless of component. Deployments are generally mandated for Active Reserve and active component officers, detract from time with family, and cause an irregular interruption to life. Reservists who are expected to deploy more often experience significant tumult to family life and civilian careers.

This research was conducted to answer to determine how economic, organizational, and individual variables impact Active Reserve officers' decisions to transition via separation or retirement and then to determine if the retirement impacts are different from active component and reserve Marines. Findings showed higher unemployment negatively impacts both retirements and separations, members with more dependents are less likely to separate, increased deployments positively impact retention, and females are more likely to retire from the Active Reserve Program before their male counterparts. The implications of these findings are defined in the next section.

Implications

Active Reserve Separation Implications

This research found statistical significance in number of deployments, number of dependents and the national unemployment rate. As national unemployment, number of and number of dependents increase the propensities to continue in service as an Active Reserve officer rise. Implications beneficial to literature are working citizens with family likely choose to remain employed in a stable job over the risk of transitioning. Furthermore, employees working within the government are more likely to continue work in a steady job with guaranteed benefits

when the national economy is struggling. The implications of deployments apply strictly to the

military members and can be assumed that some level of deployment is necessary to create a

connection with the military lifestyle. This connection may be associated with transitioning from

training for war to utilizing these same skill sets.

Active Reserve Retirement Implications

Analysis of the retirement propensities of Active Reserve, active component, and

reservist officers showed being a female and decreased national unemployment rate increase the

retirement rates of military officers. These findings should show there is some underlying

reasoning as to why females do not choose to continue in service as a Marine Corps Officer. The

2018 Marine Corps Almanac clearly shows as officers reach seniority females among their ranks

dwindle with the largest percentage in service at First Lieutenant 15.5% through General Officer

where one of eighty-five is a female (United States Marine Corps, 2018, p. 265). The findings of

this study support females retiring earlier, regardless of the component.

National unemployment continues to provide the same effect as noted in the above

section. Active Reserve Officers who are eligible for retirement during an economy with high

national unemployment are more likely to delay retirement.

Suggestions for Future Research

The core of future research should consider research of these phenomena separately to

delve into the details impacting them each. This research should focus on qualitative insights.

Qualitative insights would add a richness to the research here with opinions of people who

experience the variable considered daily, whether deployments, service with families, career

decisions with varied national unemployment, or variances experienced as a female in service.

This study showed these variables are important in career decisions but only define this

importance in the aggregate. Qualitative studies will validate or invalidate the study's insights

with the opinions of real service members.

Furthermore, studies should focus on the quality of officers where retention is desired. Retention of the entire populace may not be for the betterment of the Marine Corps. However, focused retention efforts based upon unemployment, deployments, gender, and family size as associated with the opinions of individuals who were highly considered during service may provide intuitions into which tools are more viable in the retention of similar individuals of similar quality.

Deployment Studies

Future studies should consider the impacts of deployments, including combat, non-combat, training, and long-term service abroad without family, upon retention of high quality officers. Studies should only consider populations after 2005 to normalize for continued combat operations and allow for greater number of deployments to be considered. This study should include active component, Active Reserve, and reserve members with a focus on updating or creating distinct retention policies within the Active Reserve, active component, and reserves. The new policies should strive to normalize the regularity of deployment to help minimize undesired transition out of or between the Active Reserve Program, active component, or reserves. These policies should be designed to consider the ebb and flow of combat operations.

Military Family Studies

Studies specifically focused upon military families, particularly officers should seek to consider what may have retained talented officers who have separated and what was considered important to talented officers who were retained. Considerations should be given to dual spouse expectations, medical systems, policies, and laws, day care facilities, family support structures, and currently policies surrounding military moves to support military manpower requirements across the globe. Dual spouse implications can consider the supportability of career paths supporting dual working members. This study's results can likely be applied to service members with working spouses as that population is likely to increase in the future. Medical studies can inquire as to where current policies frustrate or inhibit medical support for military families. Day

care facility studies can delve into the ability of base childcare's ability to support military families at a cost and availability appropriate for a military lifestyle. Family support structure studies should concentrate on the current litany of family support programs, their use, and effectiveness across officer families. Increased effectiveness or focus may lead decades-old programs into modernization and improve retention of those with families. Military move studies should consider the impact upon officers transferring to new duty station locations every two to three years. This tumult experienced by families may increase the output of military personnel. Permitting greater levels of stability, defined as homesteading in military terminology, may improve retention of officers with families.

Additional studies should focus on the other side of the coin: quality officers who currently choose to separate at higher rates than those with families. These studies should ask high quality officers what variables influence their decisions and what may assist with motivating future or current officers towards continuing in service. Funding should be allocated towards programs which are successful. If certain duty stations are more sought by single members who continue, and less desired by officers with dependents, these locations should be generally assigned to single officers. Understanding these variables provides guidelines to improve retention according to number of dependents and how to design policies and practices to retain quality officers.

Military and Unemployment Studies

Academic consideration should be given to study officers who have transitioned during periods of high and low national unemployment. Specific consideration should be given for transitions of average to high quality officers. This study included all offers and their transition rates without consideration to quality of officer. Tiering officers to determine the transition propensities of quality of officer during economic variance likely provides amazing insights which would be invaluable to the military construct. The military should be prepared to incentivize officers more when the economy is healthy and less as the economy declines.

Military Gender Studies

This is the one of a group of rare studies showing gender having an impact upon the transition rates of military officers leaving service. Future studies should continue to delve into these concepts, preferably using qualitative measures. Studies should seek to determine why females choose to leave service at higher rates than their male peers. The Marine Corps is currently the sole service to not have promoted a female four-star general within its rank. Studies into gender provides insights as to why female rates of service are less than males and may provide guidance as to where cultural shifts can help increase representation within the Marine Corps.

It is important to fill the void of officers in the senior-most positions of the Marine Corps. Culture cannot adapt to being more female-friendly unless there are females present to guide the shift. In the Active Reserves, there is currently one female[21] serving as a Colonel of the thirty-two eligible to serve within the program. The slow road towards appropriate representation likely requires super-saturation of females within the junior ranks to ensure sufficient amounts of them continue in service through senior ranks; including generalships. Combining focused recruiting efforts with recommended policy changes found via additional studies may go a long way towards improving the representation of American females within the United States Marine Corps.

Many of the recommendations above can be built into current manpower systems. The Marine Corps can systematically track number of deployments to ensure quality officers are less likely to leave due to exhaustion or desire to deploy. Family program's use can be tracked and funded accordingly. Bonuses can be offered during periods of low national unemployment with take rates evaluated; understanding there will be economic rents in the process. Marine Corps

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[21] Known from the author's personal experience, but not published elsewhere.

Recruiting Command can seek significantly greater numbers of females to serve and policies can be adapted to increase retention. Each of these recommendations can be systematic if desired.

Dissertation Conclusion

The Active Reserve Program has three hundred unrestricted officers within its ranks who are tasked with the management of the Marine Corps' strategic reserve. Previous studies on military manpower and transitions into, between components, and out of service are plentiful, but have only included Marine Corps officers who serve among the active component or reserves. This study used Gottschalck's framework of personnel transitioning into, between, and out of employment and Selden and Moynihan's framework as transition occurring through the visage of individual, organizational, or economic variables to define the variables which influence the propensities of Active Reserve officers to either separate or retire from service. The dissertation found larger families, more deployments, and higher national unemployment lessened the propensities of officers to separate from the Active Reserves and found being a male and a higher national unemployment rate lessened the likelihood officers would retire from the Active Reserve program earlier.

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